

OBG

2018 SEMIANNUAL REPORT – FINAL REPORT

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

**RACER TRUST
Detroit, Michigan**

August 2018

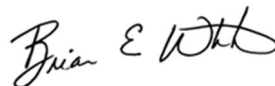


AUGUST 30, 2018 | CLIENT # 15388 | PROJECT # 68545

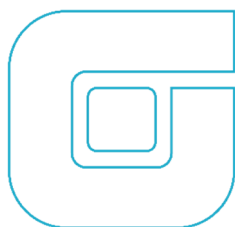
Post-Closure Groundwater Monitoring Coldwater Road Landfill MID 005 356 860

Flint, Michigan

Prepared for: RACER Trust
Detroit, Michigan



BRIAN E. WHITE, PE
SENIOR VICE PRESIDENT
O'BRIEN & GERE ENGINEERS, INC.



August 30, 2018

Mr. Richard Conforti, P.E.

Environmental Engineer
Michigan Department of Environmental Quality
Office of Waste Management and Radiological Protection
P.O. Box 30473
Lansing, Michigan 48909-7973

RE: Post-Closure Groundwater Monitoring 2018 Semiannual Report
Coldwater Road Landfill, Flint, Michigan
MID 005 356 860
FILE: 15388 /68545/rep

Dear **Mr. Conforti**

On behalf of Revitalizing Auto Communities Environmental Response (RACER) Trust, O'Brien & Gere (OBG) is pleased to present the results of the semiannual groundwater sampling event conducted in June 2018 for the Coldwater Road Landfill site ([Figure 1](#)).

The groundwater samples were analyzed for specific conductivity (Method 120.1), chloride (Method 300.0), cyanide (CN, Method 335.4), sulfate (Method 300.0), phenols (Method 420.1), volatile organic compounds (VOCs, Method 8260B), dissolved metals (chromium (Cr), copper (Cu), nickel (Ni), zinc (Zn), iron (Fe), manganese (Mn)), and total sodium ([Na], Method 200.8).

The event also included field measurements for pH, specific conductivity, dissolved oxygen, oxidation reduction potential, temperature, and turbidity. Groundwater samples from the perched aquifer were collected using a Whale pump (B-18A and B-19Ar) or peristaltic pump, and the wells were purged "dry" and allowed to recharge, and the samples were collected as soon as sufficient water was present to obtain the necessary sample volume. This was done in accordance with OBG procedures and the site-specific Field Method Guide ([Appendix A](#)) because low-flow sampling techniques resulted in greater than 0.3 ft of drawdown in each of the shallow wells sampled during this event.

The groundwater samples from the drift aquifer were collected using a bladder pump and low-flow sampling techniques. Samples to be analyzed for dissolved metals were field filtered. Groundwater sampling logs are included in [Appendix B](#).

Gauging and sampling were conducted on June 12, 2018. The results are presented in three separate tables: [Table 1](#) - Depth to Groundwater Levels in Monitoring Wells; [Table 2](#) - Post-Closure Monitoring - Historical Analytical Results (Physical Parameters, TOC, TOX, and Metals); and [Table 3](#) - Post-Closure Monitoring - Analytical Results (Volatile Organics). Laboratory analytical reports are included in [Appendix C](#).

A site location map ([Figure 1](#)) and monitoring well location (*i.e.*, site layout) map ([Figure 2](#)) are also included. A groundwater potentiometric surface map was completed for the shallow wells ([Figure 3](#)) and for the deeper drift aquifer ([Figure 4](#)).



Groundwater in the perched aquifer flows in a predominantly toward the northwest as shown on [Figure 3](#). The drift aquifer static water elevations were consistent with historical data. Groundwater in the drift aquifer flows in a southerly direction as shown on [Figure 4](#).

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

A review of the analytical data presented in the attached tables indicates analytical results similar to previous sampling events, a summary of the data is provided below:

- Chromium concentrations were not detected above the method detection limit of 5 µg/L, which is similar or less than the historic sample results.
- Copper concentrations were not detected above the method detection limit of 5 µg/L, which is similar or less than the historic sample results.
- Nickel concentrations were not detected above the method detection limit of 5 µg/L; except in monitoring well B-9 (6 µg/L). The results were similar or less than historic results, which ranged from below the method detection limit to 370 µg/L at B-22D (6/21/1995).
- Zinc concentrations ranged from below the method detection limit of 5 µg/L in monitoring wells B-19Ar, B-23Dr, and B-28 to 11 µg/L in monitoring well B-21D. The results were similar or less than historic results, which ranged from below the method detection limit to 150 µg/L at B-18A (6/21/1995).
- Iron concentrations ranged from 20 µg/L in monitoring well B-9 to 4,310 µg/L in monitoring well B-21D. The results were similar or less than historic results which ranged from below the method detection limit to 10,600 µg/L at B-24r (6/7/2005) except for B-2D (2,640 µg/L) and B-21D (4,310 µg/L), which were elevated compared to historic results that have historically ranged from non-detect (both B-2D and B-21D) to 990 µg/L at B-2D and 1,540 µg/L at B-21D.
- Manganese concentrations ranged from below the method detection limit of 5 µg/L in monitoring well B-19Ar to 162 µg/L in monitoring well B-2D. The results were similar or less than historic results which ranged from below the method detection limit to 1,900 µg/L at B-9 (6/5/2007).
- Sodium concentrations ranged from 13,400 µg/L in monitoring well B-2D to 64,500 µg/L in monitoring well B-24r. The results were comparable to the historic results which ranged from 7,280 µg/L in monitoring well B-2D (6/25/2014) to 114,000 µg/L at B-19Ar (12/9/2004).
- Chloride concentrations ranged from below the method detection limit of 5 mg/L in monitoring wells B-2D, B-20D, B-21D, B-22D, and B-27D to 85 mg/L in monitoring well B-9. The results were similar or less than historic results which ranged from below the method detection limit to 149 mg/L at B-9 (12/9/2004).
- Sulfate concentrations ranged from 16 mg/L in monitoring well B-27D to 931 mg/L in monitoring well B-9. The results were similar or less than historic results which ranged from 15 mg/L in monitoring well B-27D to 1,350 mg/L in monitoring well B-9 (12/9/2004).
- TOC concentrations ranged from 1.3 mg/L in monitoring wells B-23Dr to 4.2 mg/L in monitoring well B-7. The results were similar or less than historic results, which ranged from below the method detection limit to 71 mg/L at B-9 (11/13/1996).
- TOX concentrations were not detected above the method detection limit of 60 µg/L. The results were similar or less than historic results, which ranged from below the method detection limit to 230 µg/L at B-7 (11/30/2016).
- pH concentrations ranged from 5.78 in monitoring well B-9 to 8.63 in monitoring well B-19Ar. The results were within the range of the historic results, which ranged from 4.84 in monitoring well B-20D (12/8/2005) to 9.01 in monitoring well B-2D (6/21/1995).

- Specific conductivity ranged from 667 $\mu\text{s}/\text{cm}$ in monitoring well B-27D to 2,420 $\mu\text{s}/\text{cm}$ in monitoring well B-9. The results were comparable to the historic results, which ranged from 434 $\mu\text{s}/\text{cm}$ in monitoring well B-2D (6/21/1995) to 3,290 $\mu\text{s}/\text{cm}$ in monitoring well B-9 (11/20/2008).
- Cyanide, phenols, and VOCs concentrations were not detected above their respective method detection limits in the monitoring wells sampled during the June 2018 sampling event.

A QA/QC review of the field and analytical data indicates that the data is useable for the intended purpose without deviations from quality assurance standards that would require rejection or further qualification of the data. Details of the data verification results for the groundwater monitoring data are included in [Appendix D](#).

The duplicate sample results collected from monitoring well B-20D were comparable to the original sample.

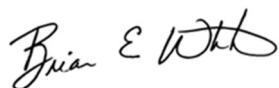
There were no exceedances of the Shewart control limits (SCL) during this sampling event. There was a positive (increasing) trend for specific conductivity in B-23Dr and a negative (decreasing) trend for specific conductivity in B-20D. The trend was calculated using regression analysis over the last four sampling events per the Post Closure Care Plan, January 2014.

The positive and negative trends were not confirmed by the concentrations of metals, which were either not detected (for the four primary metals [Cr, Cu, Ni, and Zn] in particular) or stable. The positive and negative trends do not suggest there was a release from the landfill and they will continue to be evaluated during future sampling events. No other trends or spikes (in the primary metals) were observed during this monitoring event, and the spikes in iron concentrations do not indicate a leak from landfill. The Shewart control charts are included as [Appendix E](#).

The next sampling event (annual event) is currently scheduled for November 2018. If you have any questions, please feel free to contact Clifford Yantz at (313) 333-0211.

Very truly yours,

O'BRIEN & GERE ENGINEERS, INC.



Brian E. White, PE
Senior Vice President

Very truly yours,

O'BRIEN & GERE ENGINEERS, INC.



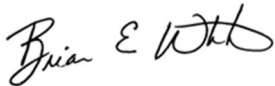
Clifford S. Yantz
Senior Hydrogeologist

ENCLOSURES:

cc: David Favero – RACER Trust
Kevin Schneider – OBG

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

On Behalf of RACER Trust

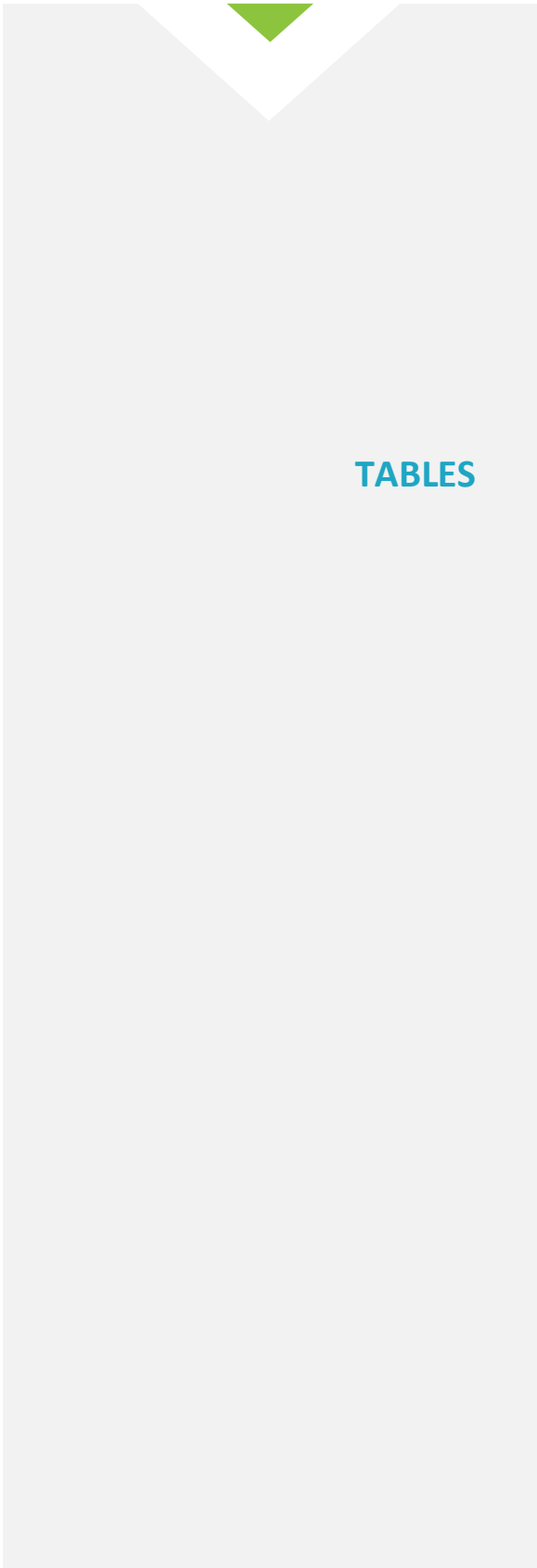


Brian E. White, PE
Senior Vice President – O'Brien & Gere Engineers, Inc.

Agent for RACER Trust

Date: August 30, 2018

cc: file



TABLES

TABLE 1
RACER Trust - Coldwater Road Landfill Facility
Depth to Groundwater Levels in Monitoring Wells

June 12, 2018

<i>Well</i>	<i>Top of Casing Elev. (ft)*</i>	<i>Depth to Water(ft)</i>	<i>Static Water Elev. (ft)</i>
B-2D	803.80	53.69	750.11
B-7	813.63	22.61	791.02
B-9	807.45	6.48	800.97
B-18A	810.85	24.08	786.77
B-19A	812.66	--	812.66
B-19AR	811.80	38.51	773.29
B-20D	815.14	69.17	745.97
B-21D	821.07	80.01	741.06
B-22D	822.15	84.19	737.96
B-23DR	812.12	80.85	731.27
B-24R	816.04	13.82	802.22
B-27D	812.70	75.52	737.18
B-28	816.46	5.60	810.86

Notes

Casing elevations were provided by Norwy & Hale Surveyors and are in feet relative to National Geodetic Vertical Datum

NA - Not available

NG - No ground water detected

Top of casing elevations were resurveyed in June 2017.

R - Indicates a replacement well location.



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

Well ID	Sample Date	Indicator Parameters					Dissolved Metals (µg/L)						Inorganics (mg/L)				
		TOC (mg/L)	TOX (µg/L)	pH	SpC	Temp	Cr	Cu	Ni	Zn	Fe	Mn	Na	Chloride	Cyanide	Phenols	Sulfate
		<i>MDEQ Residential Drinking Water Criteria & RBSLs</i>					<i>100 (A)</i>	<i>1,000 (E)</i>	<i>100 (A)</i>	<i>2,400</i>							
B-2D	6/21/1995	5.3	<10	9.01	434	15.0	<20	<20	<30	<20	--	--	--	--	--	--	--
	8/31/1995	6.3	130	8.27	479	14.4	<20	<20	<40	<20	--	--	--	--	--	--	--
	2/9/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	6/19/1996	5.2	<100	7.52	580	12.4	<20	<20	<20	<20	--	--	--	--	--	--	--
	8/21/1996	7.4	<5	7.69	641	13.9	<20	<20	<20	50	--	--	--	--	--	--	--
	11/13/1996	11.0	<5	7.26	769	7.6	<20	<20	<20	30	--	--	--	--	--	--	--
	5/6/1997	26.0	<100	6.30	1500	7.0	10	<10	28	30	--	--	--	--	--	--	--
	11/6/1997	15.0	<100	6.90	660	9.0	<10	<10	39	<10	280	577	--	12	<0.005	<0.020	79
	5/4/1998	29.0	12	6.68	549	12.4	<10	<10	<5	<10	--	--	--	--	--	--	--
	11/5/1998	52.0	18	4.70	498	8.6	<10	<10	<5	10	<10	17	33,600	--	--	--	--
12/23/1998	--	--	--	--	--	--	--	--	--	--	--	--	13	<0.005	<0.020	40	
4/26/1999	52.0	<100	8.50	523	14.5	<10	<10	<5	<10	--	--	--	--	--	--	--	
11/5/1999	6.4	<100	7.40	405	12.8	<10	<10	<5	40	70	21	35,100	4	<0.005	<0.020	42	
4/26/2000	5.4	<100	7.96	770	17.4	<10	<10	<5	<10	--	--	--	--	--	--	--	
12/8/2000	5.5	<10	6.68	610	9.7	<10	<10	9	<10	40	--	22,900	7	<0.005	<0.020	81	
5/15/2001	5.5	<100	7.79	890	13.2	<10	<10	<5	<10	--	--	--	--	--	--	--	
10/18/2001	4.1	<100	7.43	1830	9.4	<10	<10	<5	<10	230	--	12,900	2	<0.005	<0.020	32	
Duplicate	10/18/2001	3.6	<100	7.39	1780	7.8	<10	<10	<5	<10	210	--	12,700	1	<0.005	<0.020	32
5/16/2002	4.0	<100	7.19	1000	11.6	<10	<10	<5	<10	--	--	--	--	--	--	--	
11/7/2002	2.6	<30	7.38	490	9.5	<5	<5	<5	<5	140	8	11,900	2	<0.005	<0.020	32	
Duplicate	11/7/2002	2.7	<30	--	--	--	<5	<5	<5	140	6	11,200	2	<0.005	<0.020	30	
6/3/2003	4.4	<30	6.91	530	12.9	<5	<5	<5	<5	--	--	--	--	--	--	--	
11/13/2003	2.8	<30	7.97	630	7.7	<5	<5	<5	<5	110	7	--	2	<0.005	<0.010	31	
6/30/2004	4.2	<30	6.28	570	15.8	<5	<5	<5	7	--	--	--	--	--	--	--	
12/10/2004	2.0	<30	6.83	550	10.2	<5	<5	<5	10	760	145	10,700	2	<0.005	<0.010	35	
6/8/2005	2.0	<30	7.95	620	11.5	<5	<5	<5	<5	660	199	10,900	<5	<0.005	<0.010	34	
12/8/2005	3.0	<30	6.89	642	10.2	9	<4	<5	<10	140	120	13,300	--	--	--	--	
6/28/2006	6.3	<30	7.41	671	12.2	<5	<4	<5	8	110	70	15,000	2	<0.005	<0.010	50	
Duplicate	6/28/2006	5.1	<30	7.41	682	12.2	<5	<4	<5	8	120	70	15,200	3	<0.005	<0.010	50
11/30/2006	5.1	43.3	7.21	677	8.4	<5	<4	<5	18	--	--	--	--	--	--	--	
6/8/2007	2.4	69.1	6.78	644	14.1	8	2	1	6	110	104	14,800	4	<0.005	<0.010	44	
11/14/2007	5.2	<30	7.06	783	14.9	1	1	4	9	--	--	--	--	--	--	--	
6/25/2008	5.7	<60	6.90	920	18.4	<5	1	5	7	350	32	26,100	10	<0.005	<0.010	98	
11/20/2008	4.5	<30	6.84	806	9.1	<5	<1	<5	<5	--	--	--	--	--	--	--	
6/25/2009	5.6	<30	6.95	924	23.7	<5	203	<5	113	22	77	29,700	10	<0.005	<0.010	104	
B-2D	11/16/2009	4	<30	7.17	835	10.2	<5	<4	<5	6	--	--	--	--	--	--	
6/16/2010	5	<30	7.09	841	13.9	<5	<4	<5	<5	40	83	19,000	7	<0.005	<0.020	75	
11/10/2010	4	<30	7.17	779	11.3	11	<4	<5	<5	--	--	--	--	--	--	--	
6/21/2011	2.9	<30	6.99	742	19.3	9	<4	<5	<5	250	55	16,900	6	<0.005	<0.010	57	
Replicate	6/21/2011	--	--	--	--	--	<5	--	--	--	--	--	--	--	--	--	
11/15/2011	3	16	7.05	751	11.3	<5	<4	<5	<5	--	--	--	--	--	--	--	
6/27/2012	2.2	16	7.00	714	12.7	<5	<4	<5	<5	<20	25	17,300	<5	<0.005	<0.02	43	
12/6/2012	2.6	<40	7.47	714	10.2	<5	<4	<5	<5	--	--	--	--	--	--	--	
6/6/2013	1.6	<10	6.78	742	12.5	<5	<4	<5	26	990	31	24,400	<5	<0.005	<0.02	68	
11/6/2013	2.6	<10	7.34	726	11.8	<5	<4	<5	<5	--	--	--	--	--	--	--	
6/25/2014	2.6	<30	7.27	717	12.8	<5	<5	11	7	<20	26	7,280	<5	<0.005	<0.02	48	
6/24/2015	2.2	<30	7.12	621	12.4	<5	<5	<5	<5	<20	11	15,100	<5	<0.005	<0.02	41	
6/27/2016	2.6	55	6.42	730	17.2	<5	<5	<5	<5	40	<5	16,100	<5	<0.005	<0.02	50	
6/22/2017	2.3	<30	7.09	691	12.5	<5	<5	<5	<5	20	7	15,500	<5	<0.005	<0.02	44	
6/13/2018	2.1	<60	6.85	679	14.1	<5	<5	<5	5	2,640	162	13,400	<5	<0.005	<0.02	40	

See notes on page 16.



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

Well ID	Sample Date	Indicator Parameters					Dissolved Metals (µg/L)						Inorganics (mg/L)				
		TOC (mg/L)	TOX (µg/L)	pH	SpC	Temp	Cr	Cu	Ni	Zn	Fe	Mn	Na	Chloride	Cyanide	Phenols	Sulfate
		MDEQ Residential Drinking Water Criteria & RBSLs					100 (A)	1,000 (E)	100 (A)	2,400							
B-7	6/21/1995	8.7	23	7.48	1509	13.8	<20	<20	<30	<20	--	--	--	--	--	--	--
	8/31/1995	--	--	--	--	--	<20	<20	<40	<20	--	--	--	--	--	--	--
	2/9/1996	14.0	120	--	--	--	<20	<20	<40	22	--	--	--	--	--	--	--
	6/19/1996	20.0	<100	6.91	1,508	13.2	<20	<20	<20	20	--	--	--	--	--	--	--
	8/21/1996	55.0	26	7.59	1,567	17.1	<20	<20	<20	60	--	--	--	--	--	--	--
	11/13/1996	27.0	<5	7.95	1,960	7.2	<20	<20	<20	50	--	--	--	--	--	--	--
	5/6/1997	16.0	<100	7.20	780	11.0	<10	10	14	10	--	--	--	--	--	--	--
	11/6/1997	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/4/1998	6.0	<5	6.61	1,270	10.7	<10	<10	<5	20	--	--	--	--	--	--	--
	11/5/1998	4.0	<10	4.60	1,240	11.2	<10	<10	8	30	10	424	31,000	--	--	--	--
12/23/1998	--	--	--	--	--	--	--	--	--	--	--	--	58	<0.005	<0.020	161	
4/26/1999	3.9	<100	7.50	1,413	14.2	<10	<10	10	<10	--	--	--	--	--	--	--	
11/5/1999	5.1	<100	6.50	1,230	14.2	<10	<10	8	30	260	313	41,800	64	<0.005	<0.020	301	
4/26/2000	4.8	<100	7.58	1,450	10.2	<10	<10	<5	<10	--	--	--	--	--	--	--	
Duplicate 4/26/2000	5.9	<100	NS	NS	NS	<10	<10	6	10	--	--	--	--	--	--	--	
12/8/2000	4.2	<10	7.05	1,180	9.5	<10	<10	20	10	50	--	58,900	79	<0.005	<0.020	227	
5/16/2001	5.0	<100	7.30	1,330	13.0	<10	<10	7	<10	--	--	--	--	--	--	--	
10/18/2001	5.3	<100	7.19	1,210	12.5	<10	<10	5	<10	330	--	60,800	81	<0.005	NA	205	
5/16/2002	3.9	<100	7.19	1,850	11.9	<10	<10	<5	10	--	--	--	--	--	--	--	
11/7/2002	NR	NR	7.35	1,120	10.3	<5	<5	5	5	250	<5	65,500	NA	NA	NA	NA	
6/4/2003	3.3	<30	6.90	1,460	12.6	<5	<5	<5	<5	--	--	--	--	--	--	--	
11/13/2003	3.9	<30	6.90	1,590	9.6	<5	<5	<5	5	190	<5	--	85	<0.005	<0.010	279	
6/30/2004	4.3	43	7.13	1,353	16.0	<5	<5	9	7	--	--	--	--	--	--	--	
12/9/2004	4.0	<30	5.32	1,290	10.8	<5	<5	7	14	180	74	71,200	78	<0.005	<0.010	251	
6/8/2005	7.0	86	7.36	1,121	10.9	5	<5	9	13	170	31	81,900	80	<0.005	<0.010	254	
12/7/2005	7.5	<30	8.70	1,430	12.2	10	<4	6	20	150	50	85,300	--	--	--	--	
6/29/2006	4.3	<30	7.19	1,470	11.7	5	<4	9	18	190	150	76,900	73	<0.005	<0.010	270	
11/29/2006	4.4	<30	6.88	1,380	15.3	<5	<4	9	11	--	--	--	--	--	--	--	
6/7/2007	3.9	23.7	6.87	1,400	13.4	11	27	5	14	130	42	87,300	72	<0.005	<0.010	208	
11/14/2007	3.5	<30	6.85	1,350	13.4	14	6	16	20	--	--	--	--	--	--	--	
6/25/2008	3.8	72.9	6.90	1,410	20.7	<5	3	6	<5	350	10	94,800	68	<0.005	<0.010	222	
11/17/2008	4.6	20.5	6.80	1,258	5.5	<5	3	5	17	--	--	--	--	--	--	--	
6/24/2009	4.5	<30	6.90	1,184	20.0	<5	3	<5	14	67	36	84,500	40	<0.005	<0.010	154	
11/17/2009	8	25.3	7.31	1,090	10.3	<5	<4	<5	<5	--	--	--	--	--	--	--	
6/17/2010	5	<30	7.04	1,290	16.3	<5	<4	<5	<5	<20	47	86,000	61	<0.005	<0.020	160	
11/8/2010	8	103	7.16	997	13.9	17	<4	<5	<5	--	--	--	--	--	--	--	
6/22/2011	4.3	25	7.25	910	13.7	10	<4	5	6	220	6	55,200	26	<0.005	<0.010	88	
Replicate 6/22/2011	--	--	--	--	--	<5	--	--	--	--	--	--	--	--	--	--	
11/16/2011	5	28	7.04	974	12.8	<5	6	8	11	--	--	--	--	--	--	--	
6/27/2012	3.7	97	6.77	1,082	15.0	<5	<4	<5	<5	<20	58	64,900	40	<0.005	<0.02	134	
12/6/2012	7.9	<40	7.12	825	8.7	<5	4	<5	9	--	--	--	--	--	--	--	
B-7 6/5/2013	4.5	6	7.24	921	14.0	<5	<4	<5	24	30	13	27,500	32	<0.005	<0.02	106	
11/4/2013	8.7	16	7.10	733	11.6	14	6	<5	<5	--	--	--	--	--	--	--	
6/25/2014	--	--	7.10	--	13.3	--	--	--	--	--	--	--	--	--	--	--	
11/18/2014	6.5	28	7.31	896	4.8	<5	6	6	6	--	--	--	--	--	--	--	
6/24/2015	4.2	<30	6.98	1,019	16.3	<5	<5	<5	<5	<20	69	58,900	36	<0.005	<0.02	122	
11/18/2015	3.7	16	7.06	1,231	14.7	<5	<5	7	7	--	--	--	--	--	--	--	
6/23/2016	3.9	77	7.14	852	15.1	<5	<5	<5	<5	30	41	41,700	22	<0.005	<0.02	82	
11/30/2016	5.3	230	7.21	880	13.3	<5	<5	<5	<5	--	--	--	--	--	--	--	
6/21/2017	3.9	12	6.78	1,092	11.0	<5	<5	<5	<5	40	37	51,700	41	<0.005	<0.02	155	
11/7/2017	6.5	39	6.94	841	10.8	<5	5	<5	<5	--	--	--	--	--	--	--	
6/12/2018	4.2	<60	6.95	932	11.0	<5	<5	<5	10	230	26	39,800	27	<0.005	<0.02	116	

See notes on page 16.



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

Well ID	Sample Date	Indicator Parameters					Dissolved Metals (µg/L)						Inorganics (mg/L)				
		TOC (mg/L)	TOX (µg/L)	pH	SpC	Temp	Cr	Cu	Ni	Zn	Fe	Mn	Na	Chloride	Cyanide	Phenols	Sulfate
		MDEQ Residential Drinking Water Criteria & RBSLs					100 (A)	1,000 (E)	100 (A)	2,400							
B-9	6/21/1995	3.5	34	7.68	2,400	14.6	<20	<20	<30	<20	--	--	--	--	--	--	--
	8/31/1995	3.9	<10	7.72	1,829	14.8	37	43	<40	<20	--	--	--	--	--	--	--
	2/9/1996	3.1	<10	7.34	2,860	8.0	<20	<20	<40	<20	--	--	--	--	--	--	--
	6/19/1996	2.1	<100	6.81	2,550	11.5	<20	<20	<20	<20	--	--	--	--	--	--	--
	8/21/1996	2.3	<5	8.04	2,310	16.4	<20	<20	<20	70	--	--	--	--	--	--	--
	11/13/1996	71.0	<5	6.79	3,280	9.2	<20	<20	<20	40	--	--	--	--	--	--	--
	5/6/1997	3.0	<100	6.80	2,600	10.0	<10	<10	51	20	--	--	--	--	--	--	--
	11/6/1997	2.0	<100	6.50	2,800	11.0	<10	<10	183	40	650	741	--	141	<0.005	<0.020	1,178
	5/4/1998	3.0	<5	6.58	2,400	14.5	10	10	18	40	--	--	--	--	--	--	--
	11/5/1998	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	--	--	--	--	--
	12/23/1998	--	--	--	--	--	--	--	--	--	--	--	--	NS	NS	NS	NS
	4/26/1999	4.0	<100	7.69	1,860	12.2	<10	<10	19	20	--	--	--	--	--	--	--
	11/5/1999	2.5	<100	6.75	2,340	15.4	<10	<10	20	30	610	1280	47,100	128	<0.005	<0.020	1,222
	4/26/2000	5.5	<100	7.56	2,780	9.5	<10	<10	12	30	--	--	--	--	--	--	--
	12/8/2000	5.0	<10	7.56	2,400	7.8	<10	<10	46	<10	50	--	69,500	142	<0.005	<0.020	1,246
	5/16/2001	4.8	<100	7.41	1,070	12.6	<10	<10	7	10	--	--	--	--	--	--	--
	10/17/2001	4.0	<100	7.54	2,130	10.8	<10	<10	8	20	940	--	66,000	122	<0.005	NA	1,150
	5/16/2002	1.9	<100	7.19	2,470	11.6	<10	<10	7	10	--	--	--	--	--	--	--
	11/7/2002	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	6/4/2003	2.2	57	6.78	2,690	10.7	<5	<5	15	13	--	--	--	--	--	--	--
	11/13/2003	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	6/30/2004	3.8	NS	6.91	2,379	12.7	<5	8	19	28	--	--	--	--	--	--	--
	12/9/2004	3.0	<30	5.88	2,480	11.4	<5	<5	11	19	570	248	55,900	149	<0.005	<0.010	1,350
	6/8/2005	4.0	<30	7.09	2,116	10.3	6	6	12	17	480	701	58,300	128	<0.005	<0.010	1,160
	12/7/2005	5.0	<30	8.58	2,830	11.9	11	5	12	40	320	410	58,500	--	--	--	--
6/29/2006	1.9	<30	6.82	2,820	12.4	6	6	13	19	390	330	63,600	125	<0.005	<0.010	1,150	
11/30/2006	2.7	36.7	7.15	2,830	12.5	<5	6	<5	14	--	--	--	--	--	--	--	
6/5/2007	2.1	<30	6.70	2,770	11.0	12	6	24	21	320	1,900	67,300	112	<0.005	<0.010	1,120	
11/16/2007	2.0	27.4	6.67	3,000	9.4	2	6	24	18	--	--	--	--	--	--	--	
7/2/2008	1.8	36.4	6.44	3,060	19.7	<5	4	13	19	780	812	64,200	133	<0.005	<0.010	1,280	
11/20/2008	2.2	15.9	6.35	3,290	8.1	<5	<1	13	<5	--	--	--	--	--	--	--	
Duplicate 11/20/2008	2.0	127	6.35	3,280	8.1	<5	<1	13	<5	--	--	--	--	--	--	--	
6/25/2009	1.6	<30	6.67	2,700	19.8	<5	<1	<5	<5	59	173	65,300	107	<0.005	<0.010	1,120	
11/16/2009	3	84.1	6.71	3,030	12.7	<5	<4	16	8	--	--	--	--	--	--	--	
6/15/2010	3	27.5	6.69	3,030	13.0	<5	<4	7	6	460	475	70,700	117	<0.005	<0.020	1,230	
11/11/2010	3	37.5	6.37	2,910	12.9	19	4	7	15	--	--	--	--	--	--	--	
6/22/2011	1.9	<30	6.70	2,600	14.0	17	6	21	12	780	661	63,300	99	<0.005	<0.010	972	
Replicate 6/22/2011	--	--	--	--	--	<5	--	--	--	--	--	--	--	--	--	--	
11/16/2011	2	50	7.18	3,060	12.9	<5	<4	7	<5	--	--	--	--	--	--	--	
B-9 6/26/2012	2	21	6.53	2,770	14.0	<5	<4	8	<5	60	433	73,700	101	<0.005	<0.02	1,110	
12/5/2012	2.3	19	6.80	3,210	12.0	<5	8	17	23	--	--	--	--	--	--	--	
6/5/2013	2.1	15	7.07	2,660	12.5	<5	<4	6	25	40	173	66,400	106	<0.005	<0.02	1,150	
11/6/2013	2.2	NS	6.36	2,730	13.0	10	8	47	8	--	--	--	--	--	--	--	
6/25/2014	1.9	25	6.82	2,650	11.5	<5	<5	18	8	<20	159	27,100	108	<0.005	<0.02	1,070	
11/19/2014	2.1	29	6.77	2,670	8.12	<5	6	14	12	--	--	--	--	--	--	--	
6/24/2015	2.0	17	6.38	2,480	11.8	<5	<5	<5	<5	<20	89	62,400	87	<0.005	<0.02	1,040	
11/18/2015	2.0	<30	6.68	2,670	13.5	<5	<5	7	<5	--	--	--	--	--	--	--	
6/24/2016	1.9	150	6.68	2,190	12.9	<5	<5	10	<5	20	95	52,800	71	<0.005	<0.02	776	
11/29/2016	1.9	13	6.77	2,780	13.9	<5	<5	8	9	--	--	--	--	--	--	--	
6/20/2017	1.8	12	6.75	2,250	11.5	<5	<5	5	<5	17	172	54,600	74	<0.005	<0.02	770	
11/7/2017	2.1	<30	6.57	2,540	13.1	<5	<5	8	11	--	--	--	--	--	--	--	
B-9 6/12/2018	1.9	<60	5.78	2,420	11.6	<5	<5	6	8	20	89	55,500	85	<0.005	<0.02	931	

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TABLE 2
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Physical Parameters, TOC, TOX, Metals, Chloride, Cyanide, Phenols, and Sulfate

Well ID	Sample Date	Indicator Parameters					Dissolved Metals (µg/L)						Inorganics (mg/L)				
		TOC (mg/L)	TOX (µg/L)	pH	SpC	Temp	Cr	Cu	Ni	Zn	Fe	Mn	Na	Chloride	Cyanide	Phenols	Sulfate
		<i>MDEQ Residential Drinking Water Criteria & RBSLs</i>					<i>100 (A)</i>	<i>1,000 (E)</i>	<i>100 (A)</i>	<i>2,400</i>							
B-14	6/21/1995	4.0	<10	--	--	--	<20	<20	<30	<20	--	--	--	--	--	--	--
	8/31/1995	--	25	--	--	--	<20	<20	<40	<20	--	--	--	--	--	--	--
	2/9/1996	3.0	<10	7.64	776	8.9	<20	<20	<40	<20	--	--	--	--	--	--	--
	6/19/1996	1.7	<100	7.26	704	13.6	<20	<20	<20	<20	--	--	--	--	--	--	--
	8/21/1996	2.6	<5	8.90	748	13.1	<20	<20	<20	60	--	--	--	--	--	--	--
	11/13/1996	76.0	<5	7.80	980	7.2	<20	<20	<20	40	--	--	--	--	--	--	--
	5/6/1997	3.0	<100	7.00	670	10.0	<10	<10	11	<10	--	--	--	--	--	--	--
	11/6/1997	2.0	<100	6.80	670	10.0	<10	<10	43	10	550	67	--	12	<0.005	<0.020	61
	5/4/1998	6.0	<5	6.68	558	13.3	<10	<10	<5	<10	--	--	--	--	--	--	--
	11/5/1998	2.0	<10	6.40	642	9.9	<10	<10	<5	10	<10	<5	13,900	--	--	--	--
	12/23/1998	--	--	--	--	--	--	--	--	--	--	--	--	8	<0.005	<0.020	47
	4/26/1999	4.5	<100	8.00	488	13.3	<10	<10	<5	30	--	--	--	--	--	--	--
	11/5/1999	NS	NS	7.29	609	14.2	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	4/26/2000	7.1	<100	7.40	510	14.7	<10	<10	<5	960	--	--	--	--	--	--	--
	12/8/2000	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/15/2001	5.0	--	7.81	510	13.2	<10	<10	6	380	--	--	--	--	--	--	--
	10/18/2001	2.1	<100	7.34	750	10.7	<10	<10	8	90	260	--	21,500	6	<0.005	NA	72
	5/16/2002	2.3	NR	7.11	1,790	12.1	<10	<10	<5	60	--	--	--	--	--	--	--
	11/7/2002	NR	NR	7.53	540	9.9	<5	<5	<5	31	170	15	14,400	NA	NA	NA	NA
	6/3/2003	2.4	<30	6.93	710	12.4	<5	<5	<5	54	--	--	--	--	--	--	--
11/13/2003	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
6/29/2004	2.8	<30	7.25	693	14.9	<5	<5	<5	26	--	--	--	--	--	--	--	
12/9/2004	5.0	<30	6.64	560	10.5	<5	<5	<5	1,260	160	62	4,390	5	<0.005	<0.010	84	
Re-sample	2/10/2005	--	--	--	--	--	--	--	160	--	--	--	--	--	--	--	
	6/8/2005	4.0	<30	7.56	647	11.4	<5	<5	12	40	110	56	18,500	8	<0.005	<0.010	79
	12/8/2005	4.6	<30	6.11	818	1.6	8	<4	<5	30	210	40	16,000	--	--	--	--
Re-sample	2/14/2006	--	--	8.09	603	9.5	--	--	--	100	--	--	--	--	--	--	--
	6/27/2006	3.5	<30	7.09	767	13.2	<5	<4	<5	1,090	160	90	14,600	6	<0.005	<0.010	93
Re-sample	8/3/2006	--	--	7.46	840	12.4	--	--	--	203	--	--	--	--	--	--	--
	12/1/2006	3.2	<30	7.41	873	12.3	<5	<5	<5	1,440	--	--	--	--	--	--	--
Re-sample	1/30/2007	--	--	8.29	607	10.1	--	--	--	1,850	--	--	--	--	--	--	--
	6/5/2007	1.6	26.1	6.97	849	11.0	9	3	1	355	520	245	15,200	10	<0.005	<0.010	82
	11/15/2007	1.2	16.1	7.06	803	7.8	2	1	4	134	--	--	--	--	--	--	--

See notes on page 16.



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Physical Parameters, TOC, TOX, Metals, Chloride, Cyanide, Phenols, and Sulfate

Well ID	Sample Date	Indicator Parameters					Dissolved Metals (µg/L)						Inorganics (mg/L)				
		TOC (mg/L)	TOX (µg/L)	pH	SpC	Temp	Cr	Cu	Ni	Zn	Fe	Mn	Na	Chloride	Cyanide	Phenols	Sulfate
		MDEQ Residential Drinking Water Criteria & RBSLs					100 (A)	1,000 (E)	100 (A)	2,400							
B-18A	6/21/1995	2.7	<10	7.54	1,048	13.3	<20	<20	<30	150	--	--	--	--	--	--	--
	8/31/1995	3.0	<10	7.91	989	13.2	<20	<20	<40	<20	--	--	--	--	--	--	--
	2/9/1996	2.3	<10	7.42	1,021	9.3	<20	<20	<40	<20	--	--	--	--	--	--	--
	6/19/1996	1.4	<100	7.04	944	13.2	<20	<20	<20	<20	--	--	--	--	--	--	--
	8/21/1996	2.4	<5	7.49	1,041	12.8	<20	<20	<20	60	--	--	--	--	--	--	--
	11/13/1996	19.0	<5	7.22	1,331	6.4	<20	<20	<20	70	--	--	--	--	--	--	--
	5/6/1997	2.0	<100	6.50	900	10.0	<10	<10	13	10	--	--	--	--	--	--	--
	11/6/1997	4.0	<100	6.40	1,100	10.0	<10	<10	62	10	380	62	--	12	<0.005	<0.020	130
	5/4/1998	2.0	<5	6.72	862	11.8	<10	<10	<5	20	--	--	--	--	--	--	--
	11/5/1998	1.0	<10	6.00	1,090	11.8	<10	<10	<5	10	240	128	46,000	--	--	--	--
12/23/1998	--	--	--	--	--	--	--	--	--	--	--	--	10	<0.005	<0.020	133	
4/26/1999	2.1	<100	8.10	921	14.0	<10	<10	<5	20	--	--	--	--	--	--	--	
11/5/1999	4.3	<100	7.10	832	14.0	<10	<10	<5	60	180	155	39,200	8	<0.005	<0.020	130	
4/26/2000	2.4	<100	7.50	980	10.4	<10	<10	<5	30	--	--	--	--	--	--	--	
12/8/2000	2.6	<10	6.96	990	9.9	<10	<10	15	<10	<10	--	34,500	7	<0.005	<0.020	126	
Duplicate	12/8/2000	2.6	<10	--	--	--	<10	<10	13	<10	40	--	35,100	7	<0.005	<0.020	112
5/16/2001	2.4	<100	7.91	1,160	12.9	<10	<10	<5	10	--	--	--	--	--	--	--	
10/17/2001	2.2	<100	7.09	1,020	12.2	<10	<10	<5	<10	350	--	35,400	7	<0.005	<0.020	132	
5/16/2002	1.5	<100	7.19	2,080	12.2	<10	<10	<5	10	--	--	--	--	--	--	--	
11/7/2002	1.9	<30	7.16	820	10.1	<5	<5	<5	<5	190	26	40,800	10	<0.005	<0.020	134	
6/4/2003	1.6	<30	6.92	790	13.1	<5	<5	<5	5	--	--	--	--	--	--	--	
Duplicate	11/13/2003	1	<30	7.68	1,180	7.1	<5	<5	<5	160	<5	--	10	<0.005	<0.010	129	
11/13/2003	--	--	--	--	--	--	--	--	--	--	--	--	11	<0.005	<0.010	130	
6/29/2004	1.2	<30	7.19	863	12.0	<5	<5	7	10	--	--	--	--	--	--	--	
12/9/2004	3	<30	6.19	960	10.5	<5	<5	9	12	900	363	37,900	14	<0.005	<0.010	127	
6/8/2005	2	<30	7.38	819	10.9	<5	<5	6	16	170	80	40,000	11	<0.005	<0.010	120	
12/8/2005	2.6	<30	9.73	1,120	10.1	11	<4	<5	10	390	170	47,000	--	--	--	--	
6/27/2006	1.2	<30	7.09	1,110	13.2	5	4	<5	46	170	50	48,200	13	<0.005	<0.010	125	
11/30/2006	1.4	119	7.18	1,100	11.5	5	<4	<5	9	--	--	--	--	--	--	--	
6/4/2007	1	19.9	7.01	1,070	13.2	9	3	3	14	110	22	51,800	15	<0.005	<0.010	114	
11/14/2007	<1	19	6.91	1,090	13.7	1	2	6	11	--	--	--	--	--	--	--	
6/25/2008	12	34.1	7.10	1,060	20.4	<5	2	<5	11	310	<5	54,800	15	<0.005	<0.010	110	
11/18/2008	<1	<30	6.58	1,088	2.9	<5	<1	<5	<5	--	--	--	--	--	--	--	
6/24/2009	<1	<30	7.25	1,060	26.2	<5	1	<5	15	<20	<5	53,100	16	<0.005	<0.010	111	
11/18/2009	2	<30	6.89	1,070	11.7	<5	<4	<5	45	--	--	--	--	--	--	--	
6/17/2010	1	<30	7.19	1,080	17.5	<5	<4	<5	8	<20	<5	45,500	15	<0.005	<0.020	109	
11/10/2010	2	28	6.91	1,065	9.5	12	<4	<5	<5	--	--	--	--	--	--	--	
6/21/2011	1.2	<30	7.16	1,031	18.8	10	<4	5	12	240	<5	46,100	17	<0.005	<0.010	103	
Replicate	6/21/2011	--	--	--	--	--	<5	--	--	--	--	--	--	--	--	--	
11/15/2011	1	28	7.01	1,063	12.0	<5	<4	<5	<5	--	--	--	--	--	--	--	
Duplicate	6/27/2012	1.2	<40	6.99	1,057	14.4	<5	<4	<5	30	26	50,000	18	<0.005	<0.02	103	
6/27/2012	1.2	<40	6.99	1,054	14.4	<5	<4	<5	5	40	27	46,500	18	<0.005	<0.02	101	
12/6/2012	1.5	<40	7.03	1,071	9.3	<5	<4	5	9	--	--	--	--	--	--	--	
B-18A	6/5/2013	1.5	4.7	7.17	1,040	14.6	<5	<4	<5	31	20	43,900	19	<0.005	<0.02	110	
11/5/2013	1.4	<10	7.15	1,063	12.1	<5	<4	<5	11	--	--	--	--	--	--	--	
6/24/2014	1.5	<30	7.03	1,048	12.8	<5	<5	6	7	<20	20	20,500	18	<0.005	<0.02	107	
Duplicate	11/19/2014	1.4	16	7.10	1,073	6.27	<5	<4	5	7	--	--	--	--	--	--	
11/19/2014	1.5	<60	7.10	1,072	6.27	<5	<4	5	7	--	--	--	--	--	--	--	
6/23/2015	1.3	<30	6.95	1,060	15.5	<5	<5	<5	<5	30	10	43,600	18	<0.005	<0.02	110	
11/18/2015	1.4	<30	7.03	1,065	12.2	<5	<5	<5	5	--	--	--	--	--	--	--	
6/23/2016	1.4	55	7.08	1,063	13.8	<5	<5	<5	<5	30	7	42,400	19	<0.005	<0.02	108	
11/30/2016	1.2	<30	7.10	1,059	11.4	<5	<5	<5	7	--	--	--	--	--	--	--	
6/20/2017	1.5	<30	6.97	1,075	12.7	<5	<5	<5	8	<20	27	36,300	18	<0.005	<0.02	118	
11/7/2017	1.2	<30	6.96	1,092	11.6	<5	<5	<5	<5	--	--	--	--	--	--	--	
6/12/2018	1.4	<60	6.90	1,074	12.4	<5	<5	<5	10	160	41	32,900	16	<0.005	<0.02	131	

See notes on page 16.



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

Well ID	Sample Date	Indicator Parameters					Dissolved Metals (µg/L)						Inorganics (mg/L)				
		TOC (mg/L)	TOX (µg/L)	pH	SpC	Temp	Cr	Cu	Ni	Zn	Fe	Mn	Na	Chloride	Cyanide	Phenols	Sulfate
		MDEQ Residential Drinking Water Criteria & RBSLs					100 (A)	1,000 (E)	100 (A)	2,400							
B-19A	6/21/1995	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	--	--	--	--
	8/31/1995	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	--	--	--	--
	2/9/1996	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	--	--	--	--
	6/19/1996	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	--	--	--	--
	8/21/1996	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	--	--	--	--
	11/13/1996	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	--	--	--	--
	5/6/1997	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	--	--	--	--
	11/6/1997	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	WD	WD	WD	WD
	5/4/1998	3.0	<5	6.84	1,480	10.1	<10	<10	<5	30	--	--	--	--	--	--	--
	11/5/1998	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	--	--	--	--
	12/23/1998	--	--	--	--	--	--	--	--	--	--	--	--	NS	NS	NS	NS
	4/26/1999	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	--	--	--	--
	11/5/1999	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	4/26/2000	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	--	--	--	--
	12/8/2000	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/16/2001	4.0	<100	7.14	1,050	11.8	<10	<10	<5	<10	--	--	--	--	--	--	--
	10/17/2001	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/16/2002	6.0	<100	7.19	1,740	10.6	<10	<10	<5	10	--	--	--	--	--	--	--
	11/7/2002	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	6/4/2003	5.8	<30	6.92	1,350	12.9	<5	<5	<5	<5	--	--	--	--	--	--	--
11/13/2003	3.4	<30	7.59	1,620	10.2	<5	<5	<5	<5	20	<5	--	148	<0.005	<0.010	229	
6/29/2004	3.9	<30	7.17	1,316	14.7	<5	<5	<5	8	--	--	--	--	--	--	--	
12/9/2004	5.0	33	6.24	1,340	9.9	<5	<5	<5	9	240	11	111,000	116	<0.005	<0.010	233	
Duplicate	12/9/2004	5.0	<30	--	--	<5	<5	<5	7	170	<5	114,000	116	<0.005	<0.010	233	
B-19AR	6/7/2005	3.0	<30	7.09	829	12.2	<5	<5	7	<5	1,320	228	15,700	52	<0.005	<0.010	130
Duplicate	12/8/2005	5.5	<30	--	1,390	--	10	<4	<5	20	160	<20	81,400	--	--	--	--
12/8/2005	5.3	<30	7.13	1,390	12.3	10	<4	<5	<10	150	<20	74,800	--	--	--	--	
Re-sample	2/14/2006	--	--	7.95	840	5.9	<5	--	--	--	--	--	--	--	--	--	--
6/29/2006	2.7	<30	7.58	860	12.0	<5	<4	12	21	240	210	22,400	51	<0.005	<0.010	153	
11/30/2006	6.2	33.7	7.18	1,300	11.4	5	<4	<5	<5	--	--	--	--	--	--	--	--
6/7/2007	2	<30	6.97	899	11.4	6	4	4	9	70	21	19,700	58	<0.005	<0.010	136	
11/13/2007	1.5	<30	7.27	1,070	12.1	3	7	26	11	--	--	--	--	--	--	--	--
6/25/2008	2.4	38.8	7.13	1,060	17.4	<5	3	<5	16	380	9	18,500	58	<0.005	<0.010	148	
11/18/2008	1.3	<30	7.00	1,052	8.0	<5	1	<5	14	--	--	--	--	--	--	--	--
6/24/2009	1.0	<30	7.74	911	17.3	<5	2	<5	<5	36	<5	21,200	60	<0.005	<0.010	147	
11/19/2009	2	<30	7.41	994	10.4	<5	<4	<5	7	--	--	--	--	--	--	--	--
6/15/2010	2	<30	7.57	992	16.1	<5	<4	<5	<5	<20	<5	19,800	59	<0.005	<0.020	154	
11/10/2010	2	<30	6.91	1,128	8.7	12	<4	<5	<5	--	--	--	--	--	--	--	--
6/22/2011	1.5	<30	7.35	902	17.2	5	<4	5	<5	240	<5	22,400	64	<0.005	<0.010	140	
Replicate	6/22/2011	--	--	--	--	<5	--	--	--	--	--	--	--	--	--	--	--
11/16/2011	2	26	7.06	1,091	8.4	<5	<4	<5	5	--	--	--	--	--	--	--	--
6/27/2012	1.5	<40	7.78	1,005	13.3	<5	<4	<5	<5	<20	<5	23,200	62	<0.005	<0.02	145	
12/6/2012	1.8	<40	7.36	1,129	10.2	<5	<4	5	6	--	--	--	--	--	--	--	--
6/5/2013	1.5	39	8.16	777	13.0	<5	<4	<5	25	40	<5	27,700	72	<0.005	<0.02	136	
11/6/2013	1.6	3.6	7.33	1,104	11.6	<5	<4	10	<5	--	--	--	--	--	--	--	--
B-19AR	6/23/2014	2.0	23	8.40	817	17.3	<5	<5	5	<5	<20	<5	11,900	74	<0.005	<0.02	136
11/20/2014	2.1	190	7.37	1,038	6.16	<5	6	6	10	--	--	--	--	--	--	--	--
6/23/2015	1.5	<30	6.77	1,165	20.2	<5	6	<5	26	30	50	28,700	72	<0.005	<0.02	132	
11/19/2015	1.4	17	6.90	1,170	10.6	<5	<5	7	7	--	--	--	--	--	--	--	--
6/27/2016	1.5	71	8.13	712	18.8	<5	<5	<5	<5	40	<5	26,700	70	<0.005	<0.02	128	
11/30/2016	1.8	12	7.39	1,104	11.2	14	14	20	39	--	--	--	--	--	--	--	--
Re-sample	1/12/2017	--	--	7.34	--	11.1	<5	<5	6	11	--	--	--	--	--	--	--
6/21/2017	2.0	30	7.29	1,064	12.1	<5	<5	<5	<5	<20	13	28,200	75	<0.005	<0.02	131	
11/7/2017	2.6	120	7.05	1,134	12.0	<5	<5	<5	<5	--	--	--	--	--	--	--	--
6/12/2018	1.8	<60	8.63	688	12.5	<5	<5	<5	<5	30	<5	24,700	81	<0.005	<0.02	135	

See notes on page 16.



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Physical Parameters, TOC, TOX, Metals, Chloride, Cyanide, Phenols, and Sulfate

Well ID	Sample Date	Indicator Parameters					Dissolved Metals (µg/L)						Inorganics (mg/L)				
		TOC (mg/L)	TOX (µg/L)	pH	SpC	Temp	Cr	Cu	Ni	Zn	Fe	Mn	Na	Chloride	Cyanide	Phenols	Sulfate
		MDEQ Residential Drinking Water Criteria & RBSLs					100 (A)	1,000 (E)	100 (A)	2,400							
	6/21/1995	2.8	<10	8.27	771	15.1	<20	<20	<30	<20	--	--	--	--	--	--	--
	8/31/1995	4.7	47	8.10	1,204	14.6	<20	20	<40	<20	--	--	--	--	--	--	--
	2/9/1996	21.0	38	7.12	801	9.1	32	28	54	120	--	--	--	--	--	--	--
	6/19/1996	2.4	<100	7.92	745	11.9	<20	<20	<20	<20	--	--	--	--	--	--	--
	8/21/1996	3.0	<5	7.97	750	13.1	<20	<20	<20	40	--	--	--	--	--	--	--
	11/13/1996	16.0	<5	7.69	1,075	6.7	<20	<20	<20	40	--	--	--	--	--	--	--
	5/6/1997	3.0	<100	6.80	640	10.0	<10	<10	15	10	--	--	--	--	--	--	--
	11/6/1997	5.0	<100	6.70	700	10.0	<10	20	41	<10	260	35	--	5	<0.005	<0.020	101
	5/4/1998	4.0	<5	6.77	579	12.2	<10	<10	<5	<10	--	--	--	--	--	--	--
	11/5/1998	3.0	11	6.47	667	13.5	<10	<10	<5	10	<10	18	31,000	--	--	--	--
Duplicate	11/5/1998	5.0	16	6.48	677	13.6	<10	<10	<5	10	170	8	30,300	--	--	--	--
	12/23/1998	--	--	--	--	--	--	--	--	--	--	--	--	3	<0.005	<0.020	92
Duplicate	12/23/1998	--	--	--	--	--	--	--	--	--	--	--	--	3	<0.005	<0.020	89
	4/26/1999	3.2	<100	8.40	506	13.0	<10	<10	<5	10	--	--	--	--	--	--	--
	11/5/1999	5.3	<100	7.45	677	12.5	<10	<10	<5	60	130	60	31,400	33	<0.005	<0.020	105
	4/26/2000	3.2	<100	7.40	760	14.9	<10	<10	<5	<10	--	--	--	--	--	--	--
	12/8/2000	3.2	<10	7.45	780	4.7	<10	<10	15	<10	20	--	19,700	2	<0.005	<0.020	113
	5/15/2001	2.7	<100	6.99	590	13.0	<10	<10	<5	<10	--	--	--	--	--	--	--
	10/18/2001	2.5	<100	7.85	930	10.4	<10	<10	<5	<10	300	--	20,600	2	<0.005	<0.020	105
	5/16/2002	3.2	<100	7.21	780	11.9	<10	<10	<5	10	--	--	--	--	--	--	--
	11/7/2002	1.8	<30	7.59	610	8.7	<5	<5	<5	<5	250	74	20,900	3	<0.005	<0.020	115
	6/3/2003	2.5	<30	7.36	620	12.8	<5	<5	<5	<5	--	--	--	--	--	--	--
	11/13/2003	1.3	<30	7.97	630	7.7	<5	<5	5	<5	200	15	--	5	<0.005	<0.010	127
	6/29/2004	9.4	<30	7.48	666	13.1	<5	<5	11	<5	--	--	--	--	--	--	--
	12/10/2004	2.0	<30	6.59	830	10.8	<5	<5	11	10	2,110	92	16,800	3	<0.005	<0.010	148
	6/7/2005	4.0	<30	7.30	707	11.9	7	<5	5	<5	2,140	66	16,500	<5	<0.005	<0.010	155
	12/8/2005	4.1	<30	4.84	957	11.1	11	<4	26	<10	120	120	20,600	--	--	--	--
	6/28/2006	1.7	<30	7.36	979	12.5	7	<4	<5	5	2,120	60	17,600	2	<0.005	<0.010	169
	11/30/2006	3.4	<30	7.49	980	12.5	6	<4	6	<5	--	--	--	--	--	--	--
	6/8/2007	3.4	30.9	6.72	929	13.4	10	22	19	124	610	160	25,500	4	<0.005	0.074	144
	11/13/2007	2.1	<30	7.19	932	13.5	3	1	13	9	--	--	--	--	--	--	--
	6/25/2008	<1	<60	7.01	946	15.5	<5	2	<5	7	2,400	55	19,500	4	<0.005	<0.010	164
	11/18/2008	1	36.1	6.89	1,006	12.6	<5	4	6	22	--	--	--	--	--	--	--
	6/24/2009	1.1	<30	7.17	1,000	19.4	<5	<1	<5	<5	1,720	56	21,000	3	<0.005	<0.010	180
Duplicate	6/24/2009	<1	<30	7.17	1,010	19.4	<5	<1	<5	<5	1,640	56	20,800	3	<0.005	<0.010	183
	11/18/2009	2	<30	7.02	1,030	12.1	<5	<4	<5	5	--	--	--	--	--	--	--
	6/16/2010	2	<30	7.30	1,020	15.1	<5	<4	<5	<5	1,930	49	19,000	2	<0.005	<0.020	177
	11/9/2010	3	<30	7.02	998	11.7	11	<4	<5	<5	--	--	--	--	--	--	--
	6/22/2011	1.6	<30	7.23	967	15.5	9	<4	<5	13	2,550	54	18,600	<5	<0.005	<0.010	164
Replicate	6/22/2011	--	--	--	--	--	<5	--	--	--	--	--	--	--	--	--	--
	11/16/2011	2	50	7.02	1,006	9.8	<5	<4	<5	5	--	--	--	--	--	--	--
Duplicate	11/16/2011	2	26	7.02	1,002	9.8	<5	<4	<5	6	--	--	--	--	--	--	--
	6/25/2012	2	15	6.79	1,003	12.8	<5	<4	<5	<5	1,700	53	21,400	<5	<0.005	<0.02	183
	12/6/2012	1.8	<40	7.54	1,008	9.8	<5	<4	<5	7	--	--	--	--	--	--	--
	6/5/2013	1.7	<10	7.00	1,000	11.5	<5	<4	<5	11	1,840	48	19,500	<5	<0.005	<0.02	201
Duplicate	6/5/2013	1.9	<10	7.00	1,000	11.5	<5	<4	<5	<5	1,780	47	17,100	<5	<0.005	<0.02	200
	11/5/2013	1.7	NS	7.22	992	11.8	<5	<4	<5	39	--	--	--	--	--	--	--
	6/23/2014	1.9	<30	7.01	972	13.8	<5	<5	5	<5	1,360	47	8,620	<5	<0.005	<0.02	192
	6/24/2015	1.8	<30	7.13	959	13.7	<5	<5	<5	<5	1,960	48	18,500	<10	<0.005	<0.02	178
Duplicate	6/24/2015	1.7	<30	7.13	958	13.7	<5	<5	<5	<5	1,970	50	18,600	<10	<0.005	<0.02	178
	6/23/2016	1.7	68	7.01	945	17.4	<5	<5	<5	<5	1,880	65	18,500	<5	<0.005	<0.02	161
	6/22/2017	1.6	<30	7.11	926	12.4	<5	<5	<5	<5	2,080	48	18,700	<5	<0.005	<0.02	144
Duplicate	6/22/2017	1.6	<30	7.11	926	12.4	<5	<5	<5	<5	2,140	49	18,300	<5	<0.005	<0.02	146
	6/14/2018	1.5	<60	6.96	882	14.3	<5	<5	<5	5	2,440	67	18,100	<5	<0.005	<0.02	132
Duplicate	6/14/2018	3.0	<60	6.96	892	14.3	<5	<5	<5	7	2,630	72	17,300	<5	<0.005	<0.02	130

See notes on page 16.



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Physical Parameters, TOC, TOX, Metals, Chloride, Cyanide, Phenols, and Sulfate

Well ID	Sample Date	Indicator Parameters					Dissolved Metals (µg/L)						Inorganics (mg/L)				
		TOC (mg/L)	TOX (µg/L)	pH	SpC	Temp	Cr	Cu	Ni	Zn	Fe	Mn	Na	Chloride	Cyanide	Phenols	Sulfate
		MDEQ Residential Drinking Water Criteria & RBSLs					100 (A)	1,000 (E)	100 (A)	2,400							
B-21D	6/21/1995	4.2	<10	8.27	870	14.5	<20	<20	<30	61	--	--	--	--	--	--	--
	8/31/1995	3.3	19	8.09	684	14.2	<20	21	<40	<20	--	--	--	--	--	--	--
	2/9/1996	4.1	<10	7.70	646	8.6	<20	<20	<40	<20	--	--	--	--	--	--	--
	6/19/1996	5.3	<100	7.58	577	14.1	<20	<20	<20	<20	--	--	--	--	--	--	--
	8/21/1996	2.5	<5	7.93	576	13.8	<20	<20	<20	50	--	--	--	--	--	--	--
	11/13/1996	17.0	<5	7.28	810	8.8	<20	<20	<20	40	--	--	--	--	--	--	--
	5/6/1997	2.0	<100	6.82	530	10.2	<10	<10	8	<10	--	--	--	--	--	--	--
	11/6/1997	3.0	<100	6.70	540	10.0	<10	<10	30	<10	240	27	--	2	<0.005	<0.020	33
	5/4/1998	16.0	<5	6.90	480	11.5	<10	<10	<5	20	--	--	--	--	--	--	--
	11/5/1998	5.0	<10	7.24	565	7.8	<10	<10	<5	10	240	43	26,700	--	--	--	--
12/23/1998	--	--	--	--	--	--	--	--	--	--	--	--	2	<0.005	<0.020	15	
4/26/1999	11.0	<100	8.24	506	13.0	<10	<10	<5	10	--	--	--	--	--	--	--	
11/5/1999	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
4/26/2000	2.5	<100	8.20	660	14.1	<10	<10	<5	<10	--	--	--	--	--	--	--	
12/8/2000	4.2	<10	8.44	680	7.1	<10	<10	11	<10	<10	--	29,600	2	<0.005	<0.020	36	
5/15/2001	1.9	<100	7.94	570	13.0	<10	<10	<5	10	--	--	--	--	--	--	--	
Duplicate 5/15/2001	1.9	<100	8.32	560	13.0	<10	<10	<5	10	--	--	--	--	--	--	--	
10/18/2001	3.4	<100	7.61	570	13.7	<10	<10	<5	<10	200	--	22,200	1	<0.005	<0.020	41	
5/16/2002	6.1	<100	7.19	630	11.7	<10	<10	<5	<10	--	--	--	--	--	--	--	
11/7/2002	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
6/3/2003	5.8	<30	7.27	510	13.0	<5	<5	<5	6	--	--	--	--	--	--	--	
11/13/2003	1.0	<30	7.81	710	8.7	<5	<5	<5	9	100	<5	--	4	<0.005	<0.010	48	
6/30/2004	4.0	<30	6.77	570	14.8	<5	<5	<5	7	--	--	--	--	--	--	--	
12/10/2004	2.0	<30	6.40	600	9.9	<5	<5	<5	7	1,330	44	20,100	2	<0.005	<0.010	50	
6/8/2005	3.0	<30	7.70	560	14.2	<5	<5	12	6	1,350	72	21,000	<5	<0.005	<0.010	44	
12/8/2005	4.4	<30	5.49	741	11.4	8	<4	8	<10	1,070	60	21,500	--	--	--	--	
6/28/2006	1.5	<30	7.44	718	12.8	<5	6	5	13	430	60	23,500	2	<0.005	<0.010	53	
11/30/2006	1.8	49.1	7.59	693	11.5	<5	<4	<5	<5	--	--	--	--	--	--	--	
6/8/2007	1.2	<30	6.30	709	13.2	10	2	5	7	1,200	49	21,500	4	<0.005	<0.010	60	
11/14/2007	<1	<30	7.26	738	14.5	2	1	5	8	--	--	--	--	--	--	--	
6/26/2008	1.8	16.8	7.07	738	16.9	<5	1	<5	<5	1,390	40	22,700	3	<0.005	<0.010	60	
11/19/2008	1.1	<30	6.93	739	11.0	<5	<1	5	<5	--	--	--	--	--	--	--	
6/25/2009	<1	<30	6.69	743	16.1	<5	<1	<5	<5	1,210	34	25,100	3	<0.005	<0.010	64	
11/19/2009	2	41.2	7.17	745	10.2	<5	<4	<5	6	--	--	--	--	--	--	--	
Duplicate 11/19/2009	2	<30	7.17	739	10.2	<5	<4	<5	<5	--	--	--	--	--	--	--	
6/17/2010	2	<30	7.40	736	13.2	<5	<4	<5	<5	980	34	23,700	3	<0.005	<0.020	58	
11/10/2010	1	<30	7.28	739	11.0	11	<4	<5	<5	--	--	--	--	--	--	--	
6/22/2011	1.4	<30	7.41	718	19.5	10	<4	<5	<5	1,540	33	23,300	<5	<0.005	<0.010	61	
Replicate 6/22/2011	--	--	--	--	--	7	--	--	--	--	--	--	--	--	--	--	
11/16/2011	1	7.9	7.16	753	10.6	<5	<4	<5	<5	--	--	--	--	--	--	--	
6/26/2012	1.3	<40	7.26	745	19.5	<5	<4	<5	<5	640	42	25,800	<5	<0.005	<0.02	66	
B-21D 12/6/2012	1.6	<40	7.57	754	9.1	<5	<4	<5	8	--	--	--	--	--	--	--	
6/5/2013	1.6	<10	7.16	742	13.5	<5	<4	<5	26	990	31	24,400	<5	<0.005	<0.02	68	
11/6/2013	1.5	<10	7.49	760	12.1	<5	<4	<5	14	--	--	--	--	--	--	--	
6/24/2014	1.5	<30	7.43	754	16.5	<5	<5	<5	<5	850	28	11,200	<5	<0.005	<0.02	77	
6/24/2015	1.4	<30	7.19	683	15.2	<5	<5	<5	<5	710	37	24,700	<10	<0.005	<0.02	81	
6/24/2016	1.4	59	6.94	790	15.2	<5	<5	<5	<5	1,290	35	22,600	<5	<0.005	<0.02	91	
6/21/2017	1.4	<30	7.21	790	13.0	<5	<5	<5	<5	1,210	36	25,000	<5	<0.005	<0.02	90	
6/14/2018	1.4	<60	7.02	786	14.4	<5	<5	5	11	4,310	123	22,700	<5	<0.005	<0.02	90	

See notes on page 16.



TABLE 2

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

Well ID	Sample Date	Indicator Parameters					Dissolved Metals (µg/L)						Inorganics (mg/L)				
		TOC (mg/L)	TOX (µg/L)	pH	SpC	Temp	Cr	Cu	Ni	Zn	Fe	Mn	Na	Chloride	Cyanide	Phenols	Sulfate
		MDEQ Residential Drinking Water Criteria & RBSLs					100 (A)	1,000 (E)	100 (A)	2,400							
B-22D	6/21/1995	2.6	<10	7.71	573	15.5	<20	<20	370	<20	--	--	--	--	--	--	--
	8/31/1995	4.5	47	8.25	739	14.3	<20	<20	<40	47	--	--	--	--	--	--	--
	2/9/1996	6.9	<10	NS	NS	NS	<20	<20	<40	80	--	--	--	--	--	--	--
	6/19/1996	1.8	<100	7.51	600	13.4	<20	<20	<20	20	--	--	--	--	--	--	--
	8/21/1996	1.7	<5	8.08	608	14.2	<20	<20	<20	50	--	--	--	--	--	--	--
	11/13/1996	10.0	<5	7.22	817	7.7	<20	<20	<20	50	--	--	--	--	--	--	--
	5/6/1997	2.0	<100	6.67	550	10.1	<10	<10	<5	<10	--	--	--	--	--	--	--
	11/6/1997	7.0	<100	6.90	550	10.0	<10	<10	29	10	1,360	55	--	2	<0.005	<0.020	32
	5/4/1998	5.0	<5	7.07	501	11.7	<10	<10	<5	<10	--	--	--	--	--	--	--
	11/5/1998	6.0	<10	6.60	559	9.8	<10	<10	<5	10	1,180	47	23,800	--	--	--	--
	12/23/1998	--	--	--	--	--	--	--	--	--	--	--	--	2	<0.005	<0.020	28
	4/26/1999	18.0	<100	8.20	485	13.2	<10	<10	<5	10	--	--	--	--	--	--	--
	11/5/1999	2.6	<100	7.30	474	13.6	<10	<10	<5	20	90	31	27,900	2	<0.005	<0.020	29
	4/26/2000	2.5	<100	8.20	670	14.2	<10	<10	<5	<10	--	--	--	--	--	--	--
	12/8/2000	2.5	<10	7.49	510	5.4	<10	<10	8	<10	<10	--	26,500	2	<0.005	<0.020	31
	5/15/2001	6.7	<100	8.01	690	13.7	<10	<10	6	30	--	--	--	--	--	--	--
	10/18/2001	1.7	<100	7.59	2,610	10.2	<10	<10	<5	<10	200	--	27,800	1	<0.005	<0.020	33
	5/16/2002	3.2	<100	7.06	630	12.1	<10	<10	<5	<10	--	--	--	--	--	--	--
	11/7/2002	1.5	<30	7.39	480	8.8	<5	<5	<5	<5	120	11	25,200	2	<0.005	<0.020	35
	6/3/2003	2.3	<30	6.78	570	13.1	<5	<5	<5	<5	--	--	--	--	--	--	--
11/14/2003	1.6	<30	8.05	660	9.8	<5	<5	<5	9	6	<5	--	3	<0.005	<0.010	37	
6/30/2004	1.7	<30	6.27	610	15.5	<5	<5	<5	6	--	--	--	--	--	--	--	
12/10/2004	2.0	<30	6.95	600	10.3	<5	<5	<5	6	1,280	37	25,100	2	<0.005	<0.010	42	
6/8/2005	2.0	<30	7.67	531	13.2	6	<5	<5	<5	1,370	38	23,700	<5	<0.005	<0.010	40	
12/8/2005	2.7	<30	5.75	702	11.7	10	<4	46	<10	2,200	250	25,400	--	--	--	--	
6/28/2006	<1	<30	7.48	682	13.0	<5	<4	<5	<5	1,290	30	25,800	2	<0.005	<0.010	42	
11/30/2006	2.2	<30	7.53	684	13.3	<5	<4	<5	7	--	--	--	--	--	--	--	
Duplicate	11/30/2006	5.3	<30	7.53	676	13.3	<5	<4	<5	<5	--	--	--	--	--	--	
6/8/2007	3.8	<30	6.59	680	14.3	7	2	1	5	1,180	32	28,100	3	<0.005	<0.010	46	
Duplicate	6/8/2007	3.1	21.1	6.59	669	14.3	9	2	1	4	1,210	31	28,400	4	<0.005	<0.010	47
11/14/2007	1.1	<30	7.30	710	14.2	2	2	3	6	--	--	--	--	--	--	--	
6/26/2008	1.7	22.6	7.09	694	19.3	<5	<1	<5	5	1,100	33	25,900	3	<0.005	<0.010	46	
Duplicate	6/26/2008	2.6	<30	7.09	710	19.3	<5	<1	<5	7	1,150	34	26,400	3	<0.005	<0.010	46
11/19/2008	8.9	<30	6.93	699	8.2	<5	<1	8	8	--	--	--	--	--	--	--	
6/25/2009	1.1	<30	6.74	705	16.6	<5	<1	<5	<5	1,340	30	28,500	2	<0.005	<0.010	54	
11/18/2009	2	<30	7.15	710	11.4	<5	<4	<5	<5	--	--	--	--	--	--	--	
B-22D	6/16/2010	2	<30	7.43	715	15.7	<5	<4	<5	1,100	28	26,000	2	<0.005	<0.020	51	
11/11/2010	2	<30	7.31	704	10.3	11	<4	<5	<5	--	--	--	--	--	--	--	
6/21/2011	1.3	<30	7.35	705	17.0	9	<4	<5	<5	1,460	30	27,300	<5	<0.005	<0.010	50	
Replicate	6/21/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
11/14/2011	2	76	7.39	714	10.1	<5	<4	<5	12	--	--	--	--	--	--	--	
6/25/2012	2	<40	6.45	714	12.7	<5	<4	<5	8	1,830	42	30,000	<5	<0.005	<0.02	51	
12/6/2012	1.6	<40	7.58	716	10.1	<5	<4	<5	9	--	--	--	--	--	--	--	
6/3/2013	1.6	46	6.81	701	15.6	<5	<4	<5	<5	1,000	27	28,100	<5	<0.005	<0.02	53	
11/6/2013	1.5	<10	7.52	713	11.4	<5	<4	<5	12	--	--	--	--	--	--	--	
6/24/2014	1.5	<30	7.46	707	14.7	<5	<5	<5	<5	850	26	12,700	<5	<0.005	<0.02	53	
6/23/2015	1.8	<30	7.46	710		<5	<5	<5	8	1,030	27	28,300	<10	<0.005	<0.02	55	
6/22/2016	2.4	100	7.19	716	13.0	<5	<5	<5	<5	920	27	27,100	<5	<0.005	<0.02	54	
Duplicate	6/22/2016	2.4	29	7.19	716	13.0	<5	<5	<5	950	28	27,300	<5	<0.005	<0.02	54	
6/21/2017	1.5	<30	7.21	718	13.4	<5	<5	<5	<5	970	30	29,000	<5	<0.005	<0.02	54	
6/13/2018	1.5	<60	7.02	707	14.6	<5	<5	<5	5	1,320	29	31,000	<5	<0.005	<0.02	54	

See notes on page 16.



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

Well ID	Sample Date	Indicator Parameters					Dissolved Metals (µg/L)						Inorganics (mg/L)				
		TOC (mg/L)	TOX (µg/L)	pH	SpC	Temp	Cr	Cu	Ni	Zn	Fe	Mn	Na	Chloride	Cyanide	Phenols	Sulfate
		<i>MDEQ Residential Drinking Water Criteria & RBSLs</i>					<i>100 (A)</i>	<i>1,000 (E)</i>	<i>100 (A)</i>	<i>2,400</i>							
	6/21/1995	3.4	<10	7.27	680	15.1	<20	<20	<30	<20	--	--	--	--	--	--	--
	8/31/1995	3.9	96	8.24	845	15.4	<20	<20	<40	<20	--	--	--	--	--	--	--
	2/9/1996	3.8	34	7.54	751	11.3	<20	<20	<40	<20	--	--	--	--	--	--	--
B-23D	6/19/1996	2.2	<100	8.25	632	14.2	<20	<20	<20	<20	--	--	--	--	--	--	--
	8/21/1996	1.7	<5	8.94	691	14.6	<20	<20	<20	50	--	--	--	--	--	--	--
	11/13/1996	40.0	<5	7.66	977	7.6	<20	<20	<20	40	--	--	--	--	--	--	--
	5/6/1997	2.0	<100	6.80	610	11.0	<10	<10	9	<10	--	--	--	--	--	--	--
	11/6/1997	3.0	<100	6.00	620	10.0	<10	<10	31	<10	160	15	--	2	<0.005	<0.020	25
	5/4/1998	2.0	<5	6.38	558	12.2	<10	<10	<5	<10	--	--	--	--	--	--	--
	11/5/1998	5.0	<10	6.50	639	9.8	<10	<10	<5	70	<10	<5	29,700	--	--	--	--
	12/23/1998	--	--	--	--	--	--	--	--	--	--	--	--	2	<0.005	<0.020	21
	4/26/1999	3.6	<100	8.10	552	13.3	<10	<10	<5	<10	--	--	--	--	--	--	--
	Duplicate	4/26/1999	3.0	<100	NS	NS	NS	<10	<10	<5	<10	--	--	--	--	--	--
Duplicate	11/5/1999	3.4	<100	7.40	546	13.3	<10	<10	<5	<10	80	14	34,700	3	<0.005	<0.020	26
	11/5/1999	3.1	<100	NS	NS	NS	<10	<10	<5	<10	90	15	33,300	3	<0.005	<0.020	25
	4/26/2000	3.2	<100	7.90	800	13.7	<10	<10	<5	<10	--	--	--	--	--	--	--
	12/8/2000	2.0	<10	6.99	570	7.0	<10	<10	7	<10	60	--	35,400	2	<0.005	<0.020	22
	5/15/2001	3.2	<100	7.88	790	13.1	<10	<10	<5	10	--	--	--	--	--	--	--
	10/17/2001	1.8	<100	7.46	600	11.3	<10	<10	<5	<10	170	--	32,800	2	<0.005	<0.020	23
	5/16/2002	5.4	<100	7.19	1200	11.2	<10	<10	<5	10	--	--	--	--	--	--	--
	11/7/2002	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Duplicate	6/3/2003	3.9	<30	6.86	640	12.9	<5	<5	<5	<5	--	--	--	--	--	--	--
	6/3/2003	3.7	<30	--	--	--	<5	<5	<5	<5	--	--	--	--	--	--	--
	11/13/2003	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	6/30/2004	NS	NS	NS	NS	NS	NS	NS	NS	NS	--	--	--	--	--	--	--
Duplicate	12/10/2004	2.0	<30	6.66	640.0	11.3	<5	<5	11	10	500	65	30,500	2	<0.005	<0.010	25
	6/7/2005	2.0	<30	7.34	594.0	12.2	<5	<5	<5	<5	2,520	49	20,600	25	<0.005	<0.010	60
Duplicate	6/7/2005	2.0	<30	--	--	--	<5	<5	<5	<5	2,580	48	20,600	25	<0.005	<0.010	59
	12/8/2005	3.8	<30	6.22	700.0	6.1	7	<4	<5	<10	370	60	39,200	--	--	--	--
	6/27/2006	1.2	<30	7.12	760.0	13.4	5	<4	<5	5	2,280	50	20,500	26	<0.005	0.010	67
	11/30/2006	2.2	<30	7.56	568.0	11.8	<5	<4	<5	6	--	--	--	--	--	--	--
	6/8/2007	1.1	33.7	6.49	736	13.1	7	1	1	5	1,100	43	23,800	28	<0.005	<0.010	62
	11/16/2007	<1	<30	7.28	780	21.4	2	1	3	8	--	--	--	--	--	--	--
	6/26/2008	2.0	27.2	7.00	753	18.2	<5	1	<5	<5	1,850	44	23,700	22	<0.005	<0.010	54
	11/21/2008	<1	<30	6.74	763	6.0	<5	<1	<5	19	--	--	--	--	--	--	--
	6/25/2009	<1	<30	6.73	776	18.9	<5	<1	<5	<5	1,500	43	23,900	29	<0.005	<0.010	63
	11/18/2009	2	<30	7.22	756	11.9	<5	<4	<5	10	--	--	--	--	--	--	--
	6/16/2010	2	<30	7.36	747	18.2	<5	<4	<5	<5	950	35	23,200	20	<0.005	<0.020	45
Duplicate	11/11/2010	2	21.5	7.28	743	12.8	11	<4	<5	<5	--	--	--	--	--	--	--
	11/11/2010	2	<30	7.28	742	12.8	11	<4	<5	<5	--	--	--	--	--	--	--
Replicate	6/21/2011	1.2	<30	7.33	721	18.0	8	<4	<5	<5	1,520	37	22,400	22	<0.005	<0.010	48
	6/21/2011	--	--	--	--	--	<5	--	--	--	--	--	--	--	--	--	--
	11/15/2011	1	49	7.19	721	13.1	<5	<4	<5	8	--	--	--	--	--	--	--
	6/26/2012	1	<40	6.78	748	12.7	<5	<4	<5	<5	1,810	42	25,100	25	<0.005	<0.02	50
B-23Dr	12/5/2012	1.6	<40	6.63	755	9.6	<5	<4	<5	7	--	--	--	--	--	--	--
	6/3/2013	1.4	14	7.06	720	15.4	<5	<4	<5	<5	980	32	23,500	20	<0.005	<0.02	44
	11/5/2013	1.4	4	7.32	746	12.6	<5	<4	<5	28	--	--	--	--	--	--	--
	6/25/2014	3.0	<30	7.31	746	13.9	<5	<5	6	5	970	36	10,900	26	<0.005	0.025	51
	6/24/2015	1.9	<30	7.16	747	14.9	<5	<5	<5	<5	1,370	39	24,300	22	<0.005	<0.02	47
	6/22/2016	1.5	60	7.10	788	14.6	<5	<5	<5	<5	1,600	38	23,500	30	<0.005	<0.02	54
	6/21/2017	1.5	<30	7.41	844	12.8	<5	<5	<5	<5	400	45	27,300	38	<0.005	<0.02	64
	6/14/2018	1.3	<60	6.92	865	15.9	<5	<5	<5	<5	2,320	53	30,100	43	<0.005	<0.02	65

See notes on page 16.



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

Well ID	Sample Date	Indicator Parameters					Dissolved Metals (µg/L)						Inorganics (mg/L)				
		TOC (mg/L)	TOX (µg/L)	pH	SpC	Temp	Cr	Cu	Ni	Zn	Fe	Mn	Na	Chloride	Cyanide	Phenols	Sulfate
		MDEQ Residential Drinking Water Criteria & RBSLs					100 (A)	1,000 (E)	100 (A)	2,400							
	6/21/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	8/31/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	2/9/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	6/19/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-24	8/21/1996	5.6	<5	7.80	1,502	12.7	<20	<20	<20	90	--	--	--	--	--	--	--
	11/13/1996	20.0	<5	7.09	2,030	7.8	<20	<20	<20	50	--	--	--	--	--	--	--
	5/6/1997	5.0	<100	6.40	1,700	10.0	<10	<10	31	10	--	--	--	--	--	--	--
	11/6/1997	--	--	--	--	--	--	--	--	--	--	--	NS	NS	NS	NS	NS
	5/4/1998	4.0	<5	6.52	1,410	11.6	<10	<10	8	20	--	--	--	--	--	--	--
	11/5/1998	4.0	23	5.50	1,595	10.4	<10	<10	9	20	60	120	27,700	--	--	--	--
	12/23/1998	--	--	--	--	--	--	--	--	--	--	--	--	163	<0.005	<0.020	205
	4/26/1999	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	--	--	--	--
	11/5/1999	NS	NS	7.20	1,152	13.8	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	4/26/2000	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	--	--	--	--
	12/8/2000	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/15/2001	NS	NS	6.40	1,450	12.9	NS	NS	NS	NS	NS	NS	NS	--	--	--	--
	10/17/2001	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/16/2002	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	--	--	--	--
	11/7/2002	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	6/3/2003	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	--	--	--	--
	11/13/2003	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	6/30/2004	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	--	--	--	--
B-24R	12/9/2004	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	6/7/2005	8.0	<30	7.27	857	10.6	8	<5	<5	<5	10,600	448	27,100	49	<0.005	<0.010	206
	12/8/2005	6.6	<30	5.16	1,120	11.9	11	<4	<5	10	3,180	210	28,700	--	--	--	--
	6/28/2006	4.7	<30	7.31	1,080	11.9	6	<4	<5	<5	3,760	210	27,700	48	<0.005	<0.010	182
	11/30/2006	4.8	30	7.31	1,100	11.7	6	<4	<5	<5	--	--	--	--	--	--	--
	6/4/2007	4.5	110	7.19	1,080	11.0	9	2	2	19	2,400	194	27,900	47	<0.005	<0.010	184
	11/13/2007	4.1	30.1	7.13	1,130	14.0	3	1	5	7	--	--	--	--	--	--	--
	6/26/2008	4.3	<30	6.99	1,130	19.0	<5	1	<5	8	3,490	175	39,600	46	<0.005	<0.010	189
	11/18/2008	3.8	<30	6.76	1,125	5.3	<5	<1	<5	<5	--	--	--	--	--	--	--
	6/24/2009	5.2	<30	6.62	1,120	17.4	<5	<1	<5	<5	4,000	155	38,400	48	<0.005	<0.010	201
	11/18/2009	5	86.4	7.08	1,140	12.9	<5	<4	<5	<5	--	--	--	--	--	--	--
	6/16/2010	4	22.7	7.02	1,150	16.3	<5	<4	<5	<5	1,880	222	39,500	46	<0.005	<0.020	196
	11/9/2010	5	26.8	6.90	1,136	13.5	11	<4	<5	<5	--	--	--	--	--	--	--
	6/21/2011	3.7	<30	7.11	1,136	17.5	10	<4	6	<5	1,130	255	51,700	45	<0.005	<0.010	206
Duplicate	6/21/2011	3.7	<30	7.11	1,137	17.5	8	<4	6	<5	1,070	255	52,000	45	<0.005	<0.010	206
Replicate	6/21/2011	--	--	--	--	--	<5	--	--	--	--	--	--	--	--	--	--
Dup. Replicate	6/21/2011	--	--	--	--	--	<5	--	--	--	--	--	--	--	--	--	--
	11/16/2011	4	24	7.69	1,141	11.1	<5	<4	<5	<5	--	--	--	--	--	--	--
	6/26/2012	3.5	16	6.80	1,219	13.7	<5	<4	<5	<5	1,200	242	72,000	45	<0.005	<0.02	219
B-24R	12/6/2012	4.2	48	6.98	1,204	10.2	<5	<4	<5	6	--	--	--	--	--	--	--
	6/3/2013	4	4.8	7.19	1,127	11.4	<5	<4	<5	<5	110	130	38,600	45	<0.005	<0.02	227
	11/5/2013	4	5.5	7.16	1,203	12.6	<5	<4	<5	<5	--	--	--	--	--	--	--
Duplicate	11/5/2013	4	<10	7.16	1,203	12.6	<5	<4	<5	<5	--	--	--	--	--	--	--
	6/24/2014	3.7	16	7.10	1,202	13.9	<5	8	8	9	60	238	24,300	45	<0.005	<0.02	243
Duplicate	6/24/2014	3.7	16	7.10	1,201	13.9	<5	<5	7	<5	8	231	25,000	46	<0.005	<0.02	240
	11/19/2014	3.9	21	6.98	1,290	5.44	<5	<4	11	<5	--	--	--	--	--	--	--
	6/24/2015	3.5	<30	7.03	1,235	15.4	<5	<5	7	<5	<20	240	59,600	44	<0.005	<0.02	261
	11/18/2015	3.6	19	7.03	1,234	12.9	<5	<5	5	<5	--	--	--	--	--	--	--
Duplicate	11/18/2015	3.5	18	7.03	1,233	12.9	<5	<5	6	7	--	--	--	--	--	--	--
	6/23/2016	3.2	110	6.88	1,275	15.0	<5	<5	<5	<5	320	210	67,800	45	<0.005	<0.02	245
	11/29/2016	3.4	12	7.19	1,220	10.7	<5	<5	<5	<5	--	--	--	--	--	--	--
	6/20/2017	3.1	14	7.10	1,307	11.4	<5	<5	<5	<5	<20	74	74,400	48	<0.005	<0.02	246
	11/7/2017	3.4	<30	7.09	1,231	11.3	<5	<5	<5	<5	--	--	--	--	--	--	--
	6/12/2018	2.9	<60	7.07	1,280	11.4	<5	<5	<5	7	100	64	64,500	47	<0.005	<0.02	240

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TABLE 2
RACER Trust - Coldwater Road Landfill Facility
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Physical Parameters, TOC, TOX, Metals, Chloride, Cyanide, Phenols, and Sulfate

Well ID	Sample Date	Indicator Parameters					Dissolved Metals (µg/L)						Inorganics (mg/L)					
		TOC (mg/L)	TOX (µg/L)	pH	SpC	Temp	Cr	Cu	Ni	Zn	Fe	Mn	Na	Chloride	Cyanide	Phenols	Sulfate	
		<i>MDEQ Residential Drinking Water Criteria & RBSLs</i>					<i>100 (A)</i>	<i>1,000 (E)</i>	<i>100 (A)</i>	<i>2,400</i>								
	12/8/2005	3.7	<30	5.14	714	4.8	9	<4	6	<10	240	140	34,200	--	--	--	--	
	6/27/2006	1.3	<30	7.11	644	13.5	6	<4	7	6	1,050	110	32,300	--	--	--	--	
	11/30/2006	<1	<30	7.49	540	11.7	<5	<4	<5	6	--	--	--	--	--	--	--	
B-27D	6/8/2007	4	25.7	6.58	628	14.6	9	2	3	36	1,520	58	36,300	4	<0.005	<0.010	23	
	11/15/2007	1.9	<30	7.33	649	11.6	2	1	5	32	--	--	--	--	--	--	--	
	6/26/2008	1.7	<30	7.05	659	16.3	<5	<1	<5	<5	300	59	33,900	2	<0.005	<0.010	23	
	11/21/2008	1.3	<30	6.81	667	6.6	<5	<1	<5	<5	--	--	--	--	--	--	--	
	6/25/2009	<1	<30	6.79	651	16.5	<5	1	<5	<5	2,030	52	37,200	2	<0.005	<0.010	20	
	11/18/2009	2	<30	7.29	653	11.2	<5	<4	<5	<5	--	--	--	--	--	--	--	
	6/15/2010	2	<30	7.41	646	15.7	<5	<4	<5	<5	1,250	36	32,200	2	<0.005	<0.020	19	
	Duplicate	6/15/2010	2	31.2	7.41	652	15.7	<5	<4	<5	<5	1,220	35	31,700	2	<0.005	<0.020	20
		11/9/2010	2	<30	7.18	651	13.3	10	<4	<5	<5	--	--	--	--	--	--	--
	Replicate	6/21/2011	1.5	<30	7.47	640	15.6	9	<4	<5	<5	1,370	29	34,600	<5	<0.005	<0.010	19
	6/21/2011	--	--	--	--	--	<5	--	--	--	--	--	--	--	--	--	--	
	11/15/2011	1	34	7.22	652	12.1	<5	<4	6	8	--	--	--	--	--	--	--	
	6/26/2012	1.5	<40	7.17	653	13.0	<5	<4	<5	<5	1,450	28	34,200	<5	<0.005	<0.02	20	
	12/5/2012	1.7	<40	6.79	654	11.0	<5	<4	<5	10	--	--	--	--	--	--	--	
	6/3/2013	1.5	4.3	8.34	645	12.1	<5	<4	<5	<5	1,670	29	32,500	<5	<0.005	<0.02	21	
	11/5/2013	1.8	<10	7.37	640	12.0	<5	<4	<5	28	--	--	--	--	--	--	--	
B-27D	6/24/2014	1.9	<30	7.40	637	16.0	<5	<5	<5	<5	680	34	15,800	<5	<0.005	<0.02	18	
	6/22/2015	1.8	<30	7.20	635	14.2	<5	<5	<5	<5	710	27	34,100	<5	<0.005	<0.02	18	
	6/22/2016	1.6	30	7.20	640	14.1	<5	<5	<5	<5	930	20	33,200	<5	<0.005	<0.02	15	
	6/20/2017	1.4	<30	7.40	642	14.7	<5	<5	<5	<5	1,220	43	35,600	<5	<0.005	<0.02	17	
	6/12/2018	1.7	<60	7.16	667	12.6	<5	<5	<5	6	1,380	33	43,700	<5	<0.005	<0.02	16	

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Physical Parameters, TOC, TOX, Metals, Chloride, Cyanide, Phenols, and Sulfate

Well ID	Sample Date	Indicator Parameters					Dissolved Metals (µg/L)					Inorganics (mg/L)					
		TOC (mg/L)	TOX (µg/L)	pH	SpC	Temp	Cr	Cu	Ni	Zn	Fe	Mn	Na	Chloride	Cyanide	Phenols	Sulfate
		<i>MDEQ Residential Drinking Water Criteria & RBSLs</i>					<i>100 (A)</i>	<i>1,000 (E)</i>	<i>100 (A)</i>	<i>2,400</i>							
Duplicate	11/21/2005	--	--	6.21	994	12.3	--	--	--	<5	--	--	--	--	--	--	--
	11/21/2005	--	--	6.21	--	12.3	--	--	--	7	--	--	--	--	--	--	--
	6/27/2006	3	<30	7.12	828	13.2	5	<4	<5	18	2,380	210	17,000	--	--	--	--
	12/1/2006	2.4	<30	7.48	812	12.3	<5	<4	<5	5	--	--	--	--	--	--	--
Duplicate	12/1/2006	3.3	<30	7.48	810	12.3	<5	<4	<5	--	--	--	--	--	--	--	--
B-28	6/5/2007	2.1	<30	6.84	845	10.6	9	2	3	6	1,690	160	25,100	12	<0.005	<0.010	87
	11/15/2007	2.5	15	6.81	816	9.1	3	2	5	11	--	--	--	--	--	--	--
	6/27/2008	1.8	<30	6.87	840	17.6	<5	1	<5	5	370	84	16,300	10	<0.005	<0.010	88
	11/19/2008	1.1	<30	6.75	804	7.0	<5	<1	<5	<5	--	--	--	--	--	--	--
	6/24/2009	1.1	<30	6.96	822	19.5	<5	<1	<5	<5	204	132	14,600	10	<0.005	<0.010	84
	11/18/2009	2	<30	6.94	814	11.6	<5	<4	<5	20	--	--	--	--	--	--	--
	6/16/2010	2	<30	7.02	841	17.6	<5	<4	<5	<5	790	173	19,100	12	<0.005	<0.020	78
	11/10/2010	3	<30	7.05	813	13.3	18	<4	<5	<5	--	--	--	--	--	--	--
	6/21/2011	1.5	<30	7.23	837	14.1	9	<4	5	<5	1,380	130	23,400	12	<0.005	<0.010	80
Replicate	6/21/2011	--	--	--	--	--	<5	--	--	--	--	--	--	--	--	--	--
	11/15/2011	2	160	7.17	823	12.5	<5	<4	<5	<5	--	--	--	--	--	--	--
	6/26/2012	2	<40	6.45	849	13.0	<5	<4	<5	<5	1,960	84	29,800	12	<0.005	<0.02	80
Duplicate	12/6/2012	1.6	<40	7.25	823	11.4	<5	<4	<5	<5	--	--	--	--	--	--	--
	12/6/2012	1.7	<40	7.25	823	11.4	<5	<4	<5	<5	--	--	--	--	--	--	--
	6/3/2013	1.5	10	6.88	834	13.1	<5	<4	5	<5	1,310	111	26,000	12	<0.005	<0.02	87
	11/5/2013	1.6	<10	7.26	842	12.9	<5	<4	<5	<5	--	--	--	--	--	--	--
	6/24/2014	1.5	<30	7.03	852	12.2	<5	9	<5	<5	1,490	53	15,400	12	<0.005	<0.02	89
Replicate	7/28/2014	--	--	--	--	--	--	<5	--	--	--	--	--	--	--	--	--
	11/19/2014	1.6	<60	7.05	844	7.48	<5	<4	<5	<5	--	--	--	--	--	--	--
	6/22/2015	1.5	<30	7.04	860	13.4	<5	<5	<5	<5	3,330	53	37,100	11	<0.005	<0.02	92
	11/18/2015	1.6	<30	7.13	849	13.8	<5	<5	<5	6	--	--	--	--	--	--	--
B-28	6/24/2016	1.6	49	7.18	866	15.0	<5	<5	<5	<5	4,960	53	45,800	11	<0.005	<0.02	92
	11/29/2016	1.5	<30	7.27	853	12.6	<5	<5	<5	<5	--	--	--	--	--	--	--
Duplicate	11/29/2016	1.5	16	7.27	860	12.6	<5	<5	<5	<5	--	--	--	--	--	--	--
	6/20/2017	1.6	18	7.05	863	11.4	<5	<5	<5	<5	80	35	30,000	13	<0.005	<0.02	106
	11/7/2017	1.6	<30	7.11	859	12.5	<5	<5	<5	<5	--	--	--	--	--	--	--
Duplicate	11/7/2017	1.5	<30	7.11	867	12.5	<5	<5	<5	<5	--	--	--	--	--	--	--
	6/12/2018	1.6	<60	7.09	839	12.2	<5	<5	<5	<5	60	27	14,600	12	<0.005	<0.02	100

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Well ID	Sample Date	Indicator Parameters					Dissolved Metals (µg/L)					Inorganics (mg/L)					
		TOC (mg/L)	TOX (µg/L)	pH	SpC	Temp	Cr <i>100 (A)</i>	Cu <i>1,000 (E)</i>	Ni <i>100 (A)</i>	Zn <i>2,400</i>	Fe	Mn	Na	Chloride	Cyanide	Phenols	Sulfate
		<i>MDEQ Residential Drinking Water Criteria & RBSLs</i>															
B-29	11/21/2005	--	--	6.79	1,870	11.7	--	--	--	11	--	--	--	--	--	--	
	6/27/2006	--	--	7.14	1,480	12.3	6	<4	<5	28	1,480	140	47,300	--	--	--	
	12/1/2006	--	--	7.31	--	11.4	8	<4	5	9	--	--	--	--	--	--	
	6/5/2007	2.4	31.1	6.91	1,402	10.3	11	3	3	8	800	118	46,300	70	<0.005	<0.010	218
	11/15/2007	3.2	17.3	6.89	1,370	12.2	4	2	7	14	--	--	--	--	--	--	
Duplicate	11/15/2007	2.7	16.5	6.89	1,380	12.2	3	2	7	10	--	--	--	--	--	--	

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Well ID	Sample Date	Indicator Parameters					Dissolved Metals (µg/L)						Inorganics (mg/L)				
		TOC (mg/L)	TOX (µg/L)	pH	SpC	Temp	Cr <i>100 (A)</i>	Cu <i>1,000 (E)</i>	Ni <i>100 (A)</i>	Zn <i>2,400</i>	Fe	Mn	Na	Chloride	Cyanide	Phenols	Sulfate
		<i>MDEQ Residential Drinking Water Criteria & RBSLs</i>															
B-30	11/21/2005	--	--	6.78	1,450	12.1	--	--	--	212	--	--	--	--	--	--	--
	6/27/2006	--	--	7.10	1,330	12.3	6	<4	<5	16	2,690	100	21,300	--	--	--	--
	12/1/2006	--	--	7.27	--	10.6	6	<4	<5	8	--	--	--	--	--	--	--
	6/5/2007	2.7	<30	6.98	1,542	10.9	11	4	4	17	1,260	171	25,000	35	<0.005	<0.010	452
	11/15/2007	2.4	17.4	6.97	1,510	9.3	4	3	7	14	--	--	--	--	--	--	--

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Well ID	Sample Date	Indicator Parameters					Dissolved Metals (µg/L)						Inorganics (mg/L)				
		TOC (mg/L)	TOX (µg/L)	pH	SpC	Temp	Cr	Cu	Ni	Zn	Fe	Mn	Na	Chloride	Cyanide	Phenols	Sulfate
		MDEQ Residential Drinking Water Criteria & RBSLs					100 (A)	1,000 (E)	100 (A)	2,400							
Equipment Blank	12/10/2004	<1	<30	--	--	--	<5	<5	<5	11	<20	13	810	<2	<0.005	<0.010	<2
	6/8/2005	<1	<30	--	--	--	<5	<5	<5	<5	<20	<5	120	<5	<0.005	<0.010	<5
	12/8/2005	<1	<30	--	5	--	<5	<4	<5	<10	<100	<20	<1000	--	--	--	--
	6/28/2006	<1	<30	--	12	--	<5	<4	<5	<5	<100	<20	<1000	<1	<0.005	<0.010	<1
	12/1/2006	<1	<30	--	26	--	<5	<4	<5	<5	--	--	--	--	--	--	--
	6/8/2007	<1	26	--	13	--	<5	1	1	13	<20	11	340	<2	<0.005	<0.010	<2
	11/15/2007	<1	<30	--	4	--	<5	1	1	9	--	--	--	--	--	--	--
	6/26/2008	<1	<30	--	3	--	<5	1	<5	<5	100	7	420	<2	<0.005	<0.010	<2
	11/19/2008	<1	<30	--	6	--	<5	1	<5	<5	--	--	--	--	--	--	--
	6/25/2009	<1	<30	--	24	--	<5	<1	<5	<5	110	<5	200	<2	<0.005	<0.010	<2
	11/19/2009	0.7	<30	--	5	--	<5	<4	<5	<5	--	--	--	--	--	--	--
	6/17/2010	0.4	<30	--	4	--	<5	<4	<5	<5	<20	<5	<200	<2	<0.005	<0.020	<2
	11/11/2010	1	<30	--	1.2	--	<5	<4	<5	<5	--	--	--	--	--	--	--
	6/22/2011	0.88	<30	--	3	--	<5	<4	<5	<5	<20	<5	460	<2	<0.005	<0.010	<2
	11/16/2011	<1	4.9	--	1,330	--	<5	<4	<5	<5	--	--	--	--	--	--	--
	6/27/2012	<1	<20	--	3	--	<5	<4	<5	13	50	<5	6350	<2	<0.005	<0.02	<2
	12/6/2012	<1	<40	--	17.0	--	<5	<4	<5	<5	--	--	--	--	--	--	--
	6/6/2013	<1	<10	--	1,370	--	<5	<4	<5	<5	<20	<5	<500	<2	<0.005	<0.02	<2
	11/6/2013	<1	<10	--	2,350	--	<5	<4	<5	<5	--	--	--	--	--	--	--
	6/24/2014	<1	<30	--	1,930	--	<5	<5	<5	<5	<20	<5	<1000	<2.5	<0.005	<0.02	<2.5
6/24/2015	<1	<30	--	4.09	--	<5	<5	<5	<5	<20	<5	140	<2	<0.005	<0.02	<2	
6/24/2016	<1	6.2	--	2,220	--	<5	<5	<5	<5	<20	<5	<500	<2.5	<0.005	<0.02	<2	
6/22/2017	<1	<30	--	5,780	--	<5	<5	<5	<5	<20	<5	<200	<5	<0.005	<0.02	<5	
11/7/2017	<1	<30	--	7.07	--	<5	<5	<5	<5	--	--	--	--	--	--	--	
6/14/2018	1.2	<60	--	28.8	--	<5	<5	<5	<5	<20	<5	<250	<2.5	<0.005	<0.02	<2.5	

Notes

- 1) < = Not detected.
- 2) NS = Not sampled, insufficient liquid encountered.
- 3) NR = No Result, insufficient sample volume.
- 4) T = Temperature in degrees Celsius.
- 5) -- = Not analyzed.
- 6) Dup = Duplicate sample.
- Exceeds MDEQ Residential Drinking Water Criteria
- 7) A = Criterion is the state of Michigan drinking water standard established pursuant to Section 5 of 1976 PA 399, MCL 325.1005.
- 8) E = Criterion is the aesthetic drinking water value, as required by Section 20120a(5) of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (NREPA)



TABLE 3
RACER Trust-Coldwater Road Landfill Facility
Post-Closure Monitoring- Analytical Results
Volatile Organics (VOCs)

Well ID	B-20D													Trip	Trip	Equipment
	B-2D	B-7	B-9	B-18A	B-19AR	B-20D	(Dup-1)	B-21D	B-22D	B-23DR	B-24R	B-27D	B-28	Blank-1	Blank-2	Blank-1
Sample Date	6/13/2018	6/12/2018	6/12/2018	6/12/2018	6/12/2018	6/14/2018	6/14/2018	6/14/2018	6/13/2018	6/14/2018	6/12/2018	6/12/2018	6/12/2018	6/13/2018	6/14/2018	6/14/2018
Diethyl ether	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Acetone	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
Methyl iodide	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Carbon Disulfide	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
tert-Methyl butyl ether (MTBE)	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Acrylonitrile	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
2-Butanone	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Dichlorodifluoromethane	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Chloromethane	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Vinyl chloride	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Bromomethane	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Chloroethane	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Trichlorofluoromethane	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Methylene chloride	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
trans-1,2-Dichloroethene	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Tetrahydrofuran	<90	<90	<90	<90	<90	<90	<90	<90	<90	<90	<90	<90	<90	<90	<90	<90
Chloroform	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Bromochloromethane	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,1-Trichloroethane	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
4-Methyl-2-pentanone	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
2-Hexanone	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
Carbon tetrachloride	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Benzene	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloropropane	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Dibromomethane	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
cis-1,3-Dichloropropene	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Toluene	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
trans-1,4-Dichloro-2-butene	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Dibromochloromethane	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,2-Dibromoethane	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chlorobenzene	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,1,2-Tetrachloroethane	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Ethylbenzene	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
p,m-Xylene	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
o-Xylene	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Styrene	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Isopropylbenzene	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Bromoform	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
n-Propylbenzene	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Bromobenzene	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
tert-Butylbenzene	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
sec-Butylbenzene	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
p-Isopropyltoluene	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,3-Dichlorobenzene	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,4-Dichlorobenzene	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trimethylbenzene	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
n-Butylbenzene	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Hexachloroethane	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,2-Dibromo-3-chloropropane	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,2,4-Trichlorobenzene	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,2,3-Trichlorobenzene	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Napthalene	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
2-Methylnapthalene	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5

Notes: EPA Method 8260 used for analysis.
Dup- Duplicate analysis
Analysis in µg/L



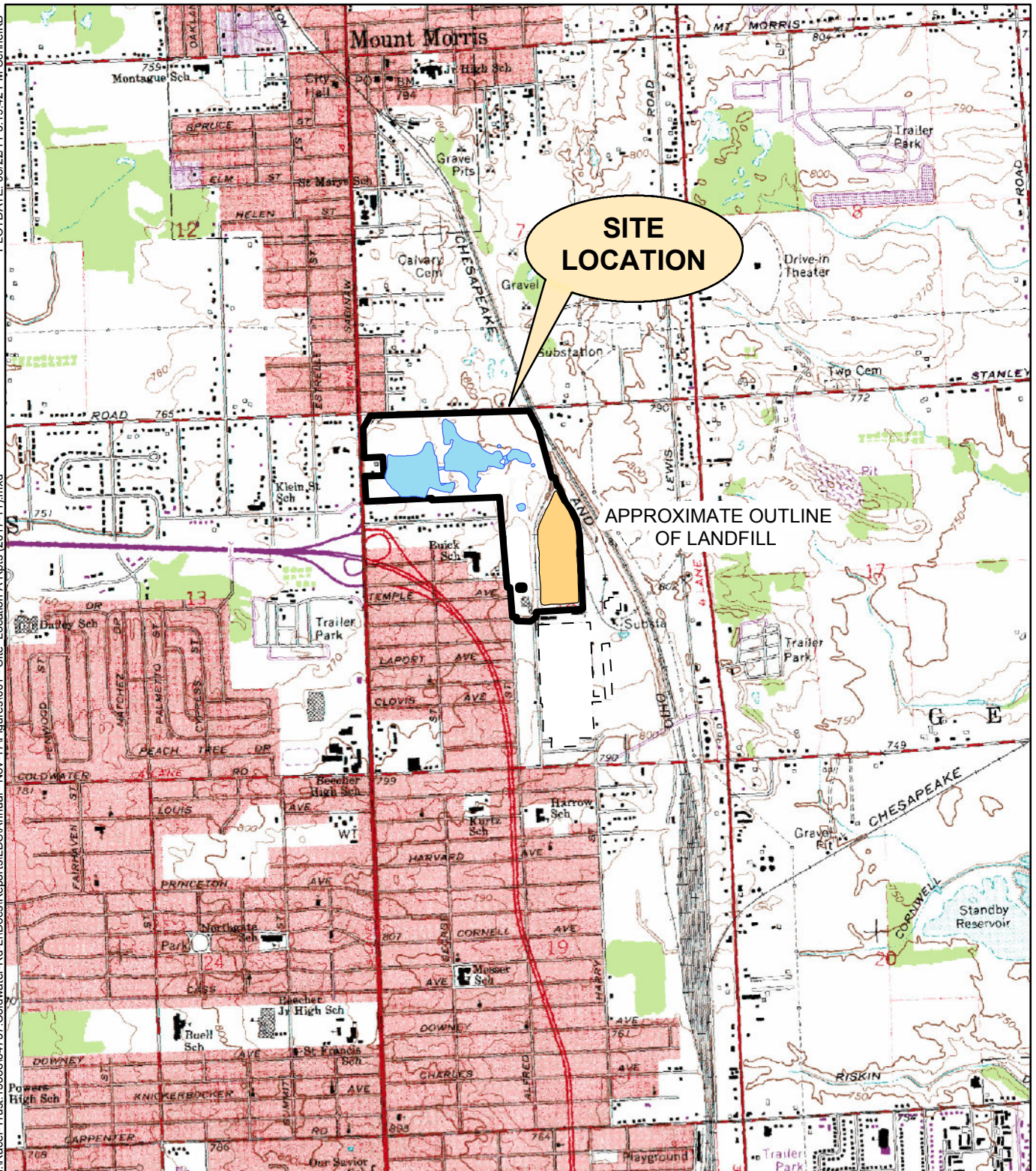


FIGURES



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**RACER TRUST
COLDWATER ROAD LANDFILL FACILITY
FLINT, MICHIGAN**

SITE LOCATION MAP






Miles





LEGEND

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

**RACER TRUST
COLDWATER ROAD
LANDFILL FACILITY
FLINT, MICHIGAN**

SITE LAYOUT



FILE NO. 68545
DATE AUGUST 2018






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LEGEND

-  MONITORING WELL
-  GROUNDWATER ELEVATION
-  GROUNDWATER ELEVATION (748.45)

RACER TRUST
COLDWATER ROAD
LANDFILL FACILITY
FLINT, MICHIGAN

**SHALLOW
GROUNDWATER
ELEVATION MAP
JUNE 12, 2018**



FILE NO. 68545
DATE AUGUST 2018






O'BRIEN & GERE ENGINEERS, INC.

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

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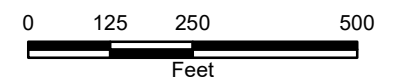


LEGEND

-  MONITORING WELL
-  GROUNDWATER ELEVATION
-  (748.45) GROUNDWATER ELEVATION

**RACER TRUST
COLDWATER ROAD
LANDFILL FACILITY
FLINT, MICHIGAN**

**DRIFT AQUIFER
GROUNDWATER
ELEVATION MAP
JUNE 12, 2018**



FILE NO. 68545
DATE AUGUST 2018



O'BRIEN & GERE ENGINEERS, INC.

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



APPENDIX A
Sampling Procedures

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1 INTRODUCTION

This procedure is for the collection of groundwater samples for laboratory analysis.

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

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

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

The “Low Stress/Low Flow” purging and sampling method will be utilized to purge the well to allow representative water from the formation to replace the standing water within the sampling zone of the well. Experience has shown that the low stress/low flow technique typically achieves representative groundwater samples with minimal particulate interference.

Lastly, in extreme cases “ultra-low flow” techniques have been employed at select sites where low stress/low flow methods were used, yet particulate-sensitive constituents continue to bias the analytical results, or excessive drawdown is produced using standard low stress/low flow methods due to the presence of low permeability materials within a well’s screened zone. Ultra-low flow techniques are conducted at purging rates below 100 ml per minute, and should only be utilized after low stress/low flow methods have been attempted (see Section 2.2 for further discussion on the purging of wells prior to sample collection).



2 PROCEDURAL GUIDELINES

The following describes techniques for groundwater sampling: Low Stress/Low Flow Methods.

Low stress/low flow methods will be employed when it is critical to collect groundwater samples truly representative of the groundwater present, and to minimize the impact of sediment/colloid presence.

2.1 PREPARATORY REQUIREMENTS

Prior to groundwater sampling, an inspection will be performed on each well. The inspection will include:

- Inspecting the concrete pad for cracks
- Inspecting the protective steel cover
- Inspecting the integrity of the PVC well casing (to the extent possible)
- Inspecting the well caps
- Inspecting the well identification markings to confirm they are legible (if illegible, re-mark)
- Inspecting the locks to assess whether they are in good working condition.

Results of the well inspection will be documented on the Groundwater Sampling Log for each well. If the inspection indicates repairs are required, these will be performed prior to the next sampling event. Corrective actions implemented to repair well(s) will also be documented on the Groundwater Sampling Log and/or the field notebook for the facility.

Groundwater purging and sampling data will be recorded on the Groundwater Sampling Log.

2.2 WELL PURGING AND STABILIZATION MONITORING (LOW STRESS/LOW FLOW METHOD)

The procedure for sampling the monitoring wells is as follows:

- 1) Sampling equipment will first be decontaminated prior to each use by the following protocol:
 - Scrub equipment thoroughly in a low-sudsing detergent solution (*e.g.*, Alconox). Pump low-sudsing detergent solution through submersible pump for approximately 5 minutes, if utilized
 - Rinse equipment thoroughly with distilled water, and pump distilled water through submersible pump, if utilized
 - Wrap equipment in plastic for handling and/or storage until next use
 - Decontamination of disposable tubing, if used, will not be necessary
- 2) Calibrate field instrument and document calibration activity. Calibration shall be performed in accordance with manufacturer's recommendations, and noted on the Groundwater Sampling Log
- 3) An electric water level probe will be used to measure the depth from the top of the casing to the top of water to the nearest 0.01-ft. The measurement will be recorded in a dedicated field notebook and Groundwater Sampling Log
- 4) Measure the depth from the top of casing to the bottom of the well for the initial sampling event
- 5) Slowly lower the pump and/or tubing into the well positioning the pump intake at the mid-point of the well screen taking care to minimize disturbing the well
- 6) During the purging of the well, monitor and record the field indicator parameters (pH, temperature, conductivity, oxidation-reduction (redox) reaction potential (ORP), dissolved oxygen (DO), and turbidity)

approximately every 5 minutes. Stabilization is considered achieved when the final groundwater flow rate is achieved, and three consecutive readings for each parameter are within the following limits:

pH	±0.1 pH units for three consecutive readings;
temperature	±3 percent for three consecutive readings;
conductivity	±3 percent for three consecutive readings;
ORP	±10 millivolts (mV) for three consecutive readings;
DO	±10 percent for three consecutive readings; and
Turbidity	±10 percent for three consecutive readings or a final value of less than 5 nephelometric turbidity units (NTU).

- 7) Verify that drawdowns of 0.3 ft or less are maintained and make adjustments as necessary. Record drawdown measurements and note adjustments in pumping rates as necessary on the Groundwater Sampling Log. If drawdowns of 0.3 ft or less cannot be maintained utilize ultra-low flow purge techniques. However, if ultra-low flow purging still results in excessive drawdown, the well will be purged “dry” and allowed to recharge, and the sample will be collected as soon as sufficient water is present to obtain the necessary sample volume
- 8) Obtain a sample for chemical analyses immediately upon stabilization of field parameter measurements. Field filter the sample for dissolved metals using a 0.45-micron filter prior to preserving with acid. Samples are to be collected in the order of volatility as follows: TOC/TOX (or VOCs) and dissolved metals.

If after 2 hours of purging the indicator parameters have not stabilized, as recommended in the USEPA guidance, the purging will be discontinued and the sample will be collected with an explanation of attempts to achieve stabilization.

Either a decontaminated submersible pump or peristaltic pump (for shallow wells only) may be utilized to purge each well. If a submersible pump is utilized in the purging process, then it will be decontaminated prior to and after sampling each well. Sampling equipment must be protected from the ground surface by a clean plastic sheet laid around the work area. Water from purging will not be containerized.

2.3 SAMPLE PRESERVATION

Sample bottles will be labeled with sample identification, collection date and time, filtration/preservative status. Sample bottles will be filled and capped securely and immediately preserved (if required) and stored at 4 degrees Celsius in a cooler.

The cooler and samples will be prepared for shipment or transport by the following procedure:

- 1) Prepare cooler(s) for shipment.
 - Tape drain(s) of cooler shut
 - Place mailing label with laboratory address on top of cooler(s).
- 2) Arrange sample containers in a manner to prevent potential sample container breakage.
- 3) Confirm the bottle labels are completed correctly. Place clear tape over bottle labels to prevent moisture accumulation from causing the label to peel off.
- 4) Seal sample containers within plastic zip-lock bags to prevent packing material from contacting samples.
- 5) Place packing material at the bottom of the cooler to act as a cushion for the sample containers.
- 6) Fill remaining spaces with packing material.



- 7) Confirm containers are firmly packed in cooler.
- 8) If ice is required to preserve the samples, cubes should be repackaged in double zip-lock bags, and placed on top of the packing material.
- 9) Sign COC form (or obtain signature) and indicate the time and date it was relinquished to Federal Express or other carrier, as appropriate.
- 10) Separate copies of COC forms. Seal proper copies within a large zip-lock bag and tape to inside lid of cooler. Retain copies of forms in-house.
- 11) Close lid and latch.
- 12) Tape cooler shut on both ends, making several complete revolutions with strapping tape.
- 13) Relinquish to Federal Express or other courier service. Retain airbill receipt for project records (Note: Samples will be shipped for "NEXT DAY" delivery).

If samples are delivered directly to the laboratory, or the laboratories in-house courier, by the sampling team, the packaging/shipping requirements may be omitted. COC procedures; however, must be strictly maintained.

2.4 SAMPLE MANAGEMENT AND CHAIN-OF-CUSTODY

COC procedures document the history of sample containers and samples from the time of preparation of sample containers through sample collection, shipment, and analysis. A sample is considered in custody if:

- The sample is in the sampler's physical possession
- The sample is secured by the sampler to prevent tampering
- The sample is secured by the sampler employee in an area that is restricted to authorized personnel.

To maintain a record of sample collection, transfer between personnel, shipment, and receipt by the laboratory, a COC record will be completed for each sample at each sampling location. Each time the samples are transferred, signatures of the person relinquishing and receiving the samples, as well as the date and time, will be documented.

Parallel field notebook/Groundwater Sampling Log and COC records will be maintained. Recorded information will include:

- Sampling Location
- Time and Date
- Sampling Method
- Method of Preservation.

Additionally, the field notebook will also include information on weather conditions, depth to water, total depth of the well, field parameter and instrument calibration records and other useful or pertinent information. The notebook will be kept at the facility or with their designated contractor.

2.5 QUALITY ASSURANCE/QUALITY CONTROL (QA/QC) MEASURES

Field QA/QC procedures will consist of collecting one equipment blank (if reusable equipment is used) and one duplicate sample (one additional sample from one of the wells) for each sampling event. The duplicate sample will be assigned a separate sample identification and submitted to the laboratory "blind".



The procedure for collecting an equipment blank will be to pass distilled water through the decontaminated sampling device into a laboratory-supplied sample bottles. An equipment blank sample will not be required if disposable sampling equipment is used.




3 REFERENCES

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

USEPA (Region 1) Low Stress (low flow) Purging and Sampling Procedure for the Collection of Groundwater Samples from Monitoring Wells (EQASOP-GW 001), January 19, 2010.

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

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



APPENDIX B
*Groundwater Sampling
Logs*

O'Brien & Gere Engineers, Inc.

Standard Groundwater Sampling Log

Date 6/13/18
 Site Name Coldwater Rd
 Location Flint, MI
 Project No. 68454
 Personnel KBS

Weather mostly cloudy 80's
 Well # B-2D
 Evacuation Method Bladder Pump
 Sampling Method LOW FLOW

Well Information:

Depth of Well * _____ ft.
 Depth to Water * 57.95 ~~48.5~~ ft.
 Length of Water Column _____ ft.
 Volume of Water in Well _____ gal.(s)
 3X Volume of Water in Well _____ gal.(s)

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

Volume removed before sampling 3 1/2 gal.(s)
 Did well go dry? NO

(Other, Specify) _____

* Measurements taken from Well Casing Protective Casing _____

Instrument Calibration:

Calibrated within range

pH Yes
 ORP Yes
 Conductivity Yes
 DO Yes

Water parameters:

	Drawdown measured	Temperature Celsius	Conductivity mS/cm	Dissolved Oxygen mg/L	pH	ORP mV	Turbidity NTUs
initial	<u>57.95</u>	initial <u>17.1</u>	initial <u>0.720</u>	initial <u>11.38</u>	initial <u>6.66</u>	initial <u>47.7</u>	initial <u>202</u>
5 min		<u>13.9</u>	<u>0.700</u>	<u>6.00</u>	<u>6.56</u>	<u>54.5</u>	<u>113</u>
10 min		<u>13.8</u>	<u>0.670</u>	<u>4.34</u>	<u>6.62</u>	<u>49.3</u>	<u>87</u>
15 min		<u>14.1</u>	<u>0.660</u>	<u>3.47</u>	<u>6.64</u>	<u>45.7</u>	<u>73</u>
20 min		<u>14.1</u>	<u>0.640</u>	<u>3.02</u>	<u>6.68</u>	<u>40.6</u>	<u>73</u>
25 min		<u>13.8</u>	<u>0.640</u>	<u>2.88</u>	<u>6.71</u>	<u>37.9</u>	<u>59</u>
30 min		<u>13.8</u>	<u>0.636</u>	<u>2.69</u>	<u>6.75</u>	<u>32.5</u>	<u>61</u>
35 min		<u>13.8</u>	<u>0.626</u>	<u>2.37</u>	<u>6.78</u>	<u>29.7</u>	<u>48</u>
40 min		<u>14.3</u>	<u>0.618</u>	<u>2.16</u>	<u>6.82</u>	<u>24.9</u>	<u>44</u>
45 min		<u>14.1</u>	<u>0.616</u>	<u>2.12</u>	<u>6.84</u>	<u>22.6</u>	<u>46</u>
50 min		<u>14.1</u>	<u>0.613</u>	<u>1.95</u>	<u>6.85</u>	<u>20.4</u>	<u>39</u>
55 min		_____	_____	_____	_____	_____	_____
60 min		_____	_____	_____	_____	_____	_____

Water Sample:

Time Collected 1300

Physical Appearance at Start

Color light Gray
 Odor NONE
 Turbidity (> 100 NTU) 202
 Sheen/Free Product NONE

Physical Appearance at Sampling

Color slightly cloudy
 Odor NONE
 Turbidity (> 100 NTU) 39
 Sheen/Free Product NONE

Samples collected:

Analyses	# Bottles	Bottle size/type	Preservative	Field Filtered

Notes:

PFAS MS/MSD collected

O'Brien & Gere Engineers, Inc. Standard Groundwater Sampling Log

Date: 6/11/17
 Site Name: Colchester Rd LF
 Location: Flint MI
 Project No.: 68543
 Personnel: CEP/KBS
 Weather: _____
 Well #: B-7
 Evacuation Method: Whale Pump
 Sampling Method: Purged Dry

Well Information:
 Depth of Well * 29.1 ft.
 Depth to Water * 22.61 ft.
 Length of Water Column 6.49 ft.
 Volume of Water in Well 1.06 gal.(s)
 3X Volume of Water in Well 3.17 gal.(s)
 Water Volume /ft. for:
 X 2" Diameter Well = 0.163 X LWC
 4" Diameter Well = 0.653 X LWC
 6" Diameter Well = 1.469 X LWC
 Volume removed before sampling 2.75 gal.(s)
 Did well go dry? yes
 * Measurements taken from Well Casing Protective Casing (Other, Specify) _____

Instrument Calibration: Calibrated within range
 pH _____
 ORP _____
 Conductivity _____
 DO _____

Water parameters:

	Drawdown measured	Temperature Celsius	Conductivity mS/cm	Dissolved Oxygen mg/L	pH	ORP mV	Turbidity NTUs
initial	<u>0</u>	initial <u>11.4</u>	initial <u>1.00</u>	initial <u>0.98</u>	initial <u>7.19</u>	initial <u>81.4</u>	initial <u>340</u>
5 min	<u>26.3</u>	<u>10.9</u>	<u>0.86</u>	<u>5.71</u>	<u>7.16</u>	<u>81.2</u>	<u>81</u>
10 min	<u>26.43</u>	<u>10.8</u>	<u>0.59</u>	<u>0.05</u>	<u>6.91</u>	<u>88.0</u>	<u>41</u>
15 min	<u>28.12</u>	<u>11.0</u>	<u>1.02</u>	<u>1.01</u>	<u>6.95</u>	<u>85.0</u>	<u>174</u>
20 min	<u>Dry</u>						
25 min							
30 min							
35 min	<u>26.94</u>						
40 min							
45 min							
50 min							
55 min							
60 min							

Water Sample:
 Time Collected: 10320
 Physical Appearance at Start: _____
 Physical Appearance at Sampling: _____
 Color: moderate cloudy
 Odor: None
 Turbidity (> 100 NTU): 340
 Sheen/Free Product: None
 Color: Cloudy
 Odor: None
 Turbidity (> 100 NTU): moderate
 Sheen/Free Product: None

Samples collected:

Analyses	# Bottles	Bottle size/type	Preservative	Field Filtered

Notes: _____

O'Brien & Gere Engineers, Inc.

Standard Groundwater Sampling Log

Date 6/11/18
 Site Name Chickadee Rd LF
 Location Hint 1 MF
 Project No. 108545
 Personnel ESY / KRS

Weather _____
 Well # B-9
 Evacuation Method Whole Pump
 Sampling Method Purged Dry

Well Information:

Depth of Well * 24.6 ft.
 Depth to Water * 10.48 ft.
 Length of Water Column 14.12 ft.
 Volume of Water in Well 2.95 gal. (s)
 3X Volume of Water in Well 8.86 gal. (s)

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

Volume removed before sampling 5.1 gal. (s)
 Did well go dry? Yes

(Other, Specify) _____

* Measurements taken from Well Casing Protective Casing

Instrument Calibration:

Calibrated within range

pH _____
 ORP _____
 Conductivity _____
 DO _____

Water parameters:

13:45 DTW

	Drawdown measured	Temperature Celsius	Conductivity mS/cm	Dissolved Oxygen mg/L	pH	ORP mV	Turbidity NTUs
initial		initial 11.7	initial 2.77	initial 0.63	initial 6.69	initial 110.8	initial 1100
5 min	0.77	11.2	2.79	0.29	6.61	110.3	1100
10 min	1.96	11.4	2.78	0.32	6.61	110.1	317
15 min	16.08	11.4	2.78	0.23	6.04	106.2	205
20 min	19.23	11.4	2.79	0.25	6.65	103.9	172
25 min	19.97	11.6	2.73	0.43	6.66	102.1	121
30 min	21.80	11.6	2.90		5.78	98.1	1100
35 min	22.00	11.6	2.66		5.78	99.2	1100
40 min	Dry 24.35						
45 min							
50 min							
55 min							
60 min							

Water Sample:

Time Collected 14:15

Physical Appearance at Start

Physical Appearance at Sampling

Color very cloudy
 Odor None
 Turbidity (> 100 NTU) 11.00
 Sheen/Free Product None

Color Cloudy
 Odor None
 Turbidity (> 100 NTU) ~ 500
 Sheen/Free Product None

Samples collected:

Analyses	# Bottles	Bottle size/type	Preservative	Field Filtered

Notes:

O'Brien & Gere Engineers, Inc.

Standard Groundwater Sampling Log

Date 01/11/18
 Site Name Co W water Rd LF
 Location Flint, MI
 Project No. 08845
 Personnel CSY / KBS

Weather _____
 Well # B-18A
 Evacuation Method Whale Pump
 Sampling Method Purged Dry

Well Information:

Depth of Well * 43.5 ft.
 Depth to Water * 24.08 ft.
 Length of Water Column 19.42 ft.
 Volume of Water in Well 3.166 gal. (s)
 3X Volume of Water in Well 9.50 gal. (s)

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

Volume removed before sampling ~ 9.5 gal. (s)
 Did well go dry? Yes

(Other, Specify) _____

* Measurements taken from Well Casing Protective Casing

Instrument Calibration:

Calibrated within range

pH Yes
 ORP Yes
 Conductivity Yes
 DO Yes

Water parameters:

09:43

	Drawdown measured	Temperature Celsius	Conductivity mS/cm	Dissolved Oxygen mg/L	pH	ORP mV	Turbidity NTUs
initial	<u>DTW 0</u>	initial <u>11.3</u>	initial <u>1.18</u>	initial <u>5.12</u>	initial <u>7.00</u>	initial <u>142.7</u>	initial <u>3</u>
5 min	<u>27.75</u>	<u>11.2</u>	<u>1.16</u>	<u>2.72</u>	<u>6.83</u>	<u>126.1</u>	<u>3</u>
10 min	<u>34.10</u>	<u>11.2</u>	<u>1.16</u>	<u>1.20</u>	<u>6.85</u>	<u>116.1</u>	<u>6</u>
15 min	<u>39.28</u>	<u>11.5</u>	<u>1.17</u>	<u>0.35</u>	<u>6.85</u>	<u>108.7</u>	<u>6</u>
20 min	<u>39.70</u>	<u>11.5</u>	<u>1.18</u>	<u>0.42</u>	<u>6.82</u>	<u>106.0</u>	<u>3</u>
25 min	<u>41.73</u>	<u>11.6</u>	<u>1.18</u>	<u>0.50</u>	<u>6.85</u>	<u>87.4</u>	<u>7</u>
30 min	<u>41.73</u>	<u>11.6</u>	<u>1.17</u>	<u>0.52</u>	<u>6.88</u>	<u>87.4</u>	<u>6</u>
35 min	<u>42.70</u>	<u>11.7</u>	<u>1.17</u>	<u>0.63</u>	<u>6.90</u>	<u>87.9</u>	<u>10</u>
40 min	<u>43.3</u>	<u>12.4</u>	<u>1.18</u>	<u>0.54</u>	<u>6.90</u>	<u>85.0</u>	<u>8</u>
45 min	<u>12.22</u>	<u>Dry</u>					
50 min							
55 min							
60 min	<u>15.45</u>	<u>12.2</u>	<u>0.96</u>	<u>4.22</u>	<u>6.87</u>	<u>62.8</u>	<u>~10</u>

6/12/18

Water Sample:

Time Collected 15:35

* DO may not be calibrating correctly

Physical Appearance at Start

Color Clear
 Odor None
 Turbidity (> 100 NTU) 3
 Sheen/Free Product None

Physical Appearance at Sampling

Color Clear
 Odor None
 Turbidity (> 100 NTU) ~10
 Sheen/Free Product None

Samples collected:

Analyses	# Bottles	Bottle size/type	Preservative	Field Filtered

Notes:

O'Brien & Gere Engineers, Inc.

Standard Groundwater Sampling Log

Date 6/11/18
 Site Name Colony Rd & CF
 Location Flint, MI
 Project No. 08545
 Personnel CSY / RBS

Weather _____
 Well # B-19AR
 Evacuation Method Whale Pump
 Sampling Method Purged Day

Well Information:

Depth of Well * 47.15 ft.
 Depth to Water * 38.51 ft.
 Length of Water Column 8.64 ft.
 Volume of Water in Well 1.41 gal.(s)
 3X Volume of Water in Well 4.23 gal.(s)

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

Volume removed before sampling 4.2 gal.(s)
 Did well go dry? Yes

(Other, Specify) _____

* Measurements taken from Well Casing Protective Casing

Instrument Calibration:

Calibrated within range

pH _____
 ORP _____
 Conductivity _____
 DO _____

Water parameters:

	Drawdown measured	Temperature Celsius	Conductivity mS/cm	Dissolved Oxygen mg/L	pH	ORP mV	Turbidity NTUs
14:54 DTW	initial <u>44.3</u>	initial <u>13.4</u>	initial <u>0.75</u>	initial <u>1.82</u>	initial <u>9.68</u>	initial <u>82.2</u>	initial <u>443</u>
	5 min <u>44.3</u>	<u>12.7</u>	<u>0.71</u>	<u>3.34</u>	<u>10.86</u>	<u>78.8</u>	<u>33.7</u>
	10 min <u>42.97</u>	<u>12.5</u>	<u>0.67</u>	<u>1.91</u>	<u>9.11</u>	<u>84.6</u>	<u>55</u>
	15 min <u>43.93</u>	<u>12.5</u>	<u>0.67</u>	<u>1.08</u>	<u>8.43</u>	<u>82.1</u>	<u>72</u>
15:17	20 min <u>46.68</u>	<u>12.5</u>	<u>0.75</u>	<u>0.49</u>	<u>8.03</u>	<u>82.4</u>	<u>82</u>
	25 min <u>Dry</u>						
	30 min <u>Dry</u>						
6/12/18	35 min <u>Dry</u>						
	40 min <u>Dry</u>						
	45 min _____						
	50 min _____						
	55 min _____						
	60 min _____						

Water Sample:

Time Collected 16:15

Physical Appearance at Start

Color Cloudy
 Odor None
 Turbidity (> 100 NTU) 443 - moderately turbid
 Sheen/Free Product None

Physical Appearance at Sampling

Color Cloudy
 Odor None
 Turbidity (> 100 NTU) ~ 250
 Sheen/Free Product None

Samples collected:

Analyses	# Bottles	Bottle size/type	Preservative	Field Filtered

Notes:

O'Brien & Gere Engineers, Inc.

Standard Groundwater Sampling Log

Date 01/14/18
 Site Name Coldwater Rd
 Location Elm Mt
 Project No. 168454
 Personnel RGS

Weather Sunny 80's
 Well # B-200
 Evacuation Method Handless Pump
 Sampling Method LOW FLOW

Well Information:

Depth of Well * 20.55 ft.
 Depth to Water * 69.17 ft.
 Length of Water Column _____ ft.
 Volume of Water in Well _____ gal.(s)
 3X Volume of Water in Well _____ gal.(s)

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

Volume removed before sampling 3/2 gal.(s)
 Did well go dry? NO

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

Instrument Calibration:

Calibrated within range

pH yes
 ORP yes
 Conductivity yes
 DO yes

Water parameters:

	Drawdown measured	Temperature Celsius	Conductivity mS/cm	Dissolved Oxygen mg/L	pH	ORP mV	Turbidity NTUs
initial		initial <u>17.1</u>	initial <u>0.790</u>	initial <u>5.58</u>	initial <u>6.81</u>	initial <u>-31.0</u>	initial <u>722</u>
11:55 5 min	<u>69.95</u>	<u>16.2</u>	<u>0.800</u>	<u>0.42</u>	<u>6.83</u>	<u>-1.4</u>	<u>628</u>
12:00 10 min	<u>69.95</u>	<u>15.7</u>	<u>0.810</u>	<u>0.28</u>	<u>6.81</u>	<u>-0.1</u>	<u>530</u>
12:05 15 min	<u>69.95</u>	<u>15.2</u>	<u>0.800</u>	<u>0.21</u>	<u>6.83</u>	<u>-7.3</u>	<u>346</u>
12:10 20 min	<u>69.95</u>	<u>14.5</u>	<u>0.800</u>	<u>0.23</u>	<u>6.85</u>	<u>-9.4</u>	<u>267</u>
12:15 25 min	<u>69.95</u>	<u>14.3</u>	<u>0.800</u>	<u>0.20</u>	<u>6.80</u>	<u>-8.4</u>	<u>230</u>
12:20 30 min	<u>69.95</u>	<u>14.5</u>	<u>0.800</u>	<u>0.14</u>	<u>6.87</u>	<u>-6.3</u>	<u>152</u>
12:25 35 min	<u>69.95</u>	<u>14.6</u>	<u>0.800</u>	<u>0.12</u>	<u>6.89</u>	<u>-5.6</u>	<u>110</u>
12:30 40 min	<u>69.95</u>	<u>14.8</u>	<u>0.800</u>	<u>0.10</u>	<u>6.89</u>	<u>-7.8</u>	<u>105</u>
12:35 45 min	<u>69.95</u>	<u>15.0</u>	<u>0.800</u>	<u>0.11</u>	<u>6.90</u>	<u>-5.0</u>	<u>83</u>
12:40 50 min	<u>69.95</u>	<u>14.7</u>	<u>0.800</u>	<u>0.10</u>	<u>6.92</u>	<u>-4.1</u>	<u>72</u>
12:45 55 min	<u>69.95</u>	<u>14.8</u>	<u>0.800</u>	<u>0.10</u>	<u>6.92</u>	<u>-5.9</u>	<u>68</u>
12:50 60 min	<u>69.95</u>	<u>15.1</u>	<u>0.800</u>	<u>0.09</u>	<u>6.93</u>	<u>-14.9</u>	<u>59</u>
12:55	<u>69.95</u>	<u>14.6</u>	<u>0.800</u>	<u>0.09</u>	<u>6.94</u>	<u>-10.1</u>	<u>51</u>

Water Sample:

Time Collected 1305

OVER =>

Physical Appearance at Start

Color light Gray
 Odor NONE
 Turbidity (> 100 NTU) 722
 Sheen/Free Product NONE

Physical Appearance at Sampling

Color Slightly cloudy
 Odor NONE
 Turbidity (> 100 NTU) 39
 Sheen/Free Product NONE

Samples collected:

Analyses	# Bottles	Bottle size/type	Preservative	Field Filtered

Notes:

DUP-1 collected

B-20D

DD	Temp	Con	DO	pH	ORP	Turb
1355	69.95	0.800	0.09	6.95	-15.1	43
1360	14.8	0.800	0.10	6.95	-14.6	41
1365	14.3	0.800	0.09	6.96	-13.4	39
1370						
1375						

1305

O'Brien & Gere Engineers, Inc.

Standard Groundwater Sampling Log

Date 6/14/18
 Site Name Coldwater Rd
 Location Flint, MI
 Project No. 62-454
 Personnel KBS

Weather Sunny 70's
 Well # B-21D
 Evacuation Method Bladder Pump
 Sampling Method Low Flow

Well Information:

Depth of Well * _____ ft.
 Depth to Water * 79.45 ft.
 Length of Water Column _____ ft.
 Volume of Water in Well _____ gal. (s)
 3X Volume of Water in Well _____ gal. (s)

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

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

(Other, Specify) _____

* Measurements taken from Well Casing Protective Casing

Instrument Calibration:

Calibrated within range
 pH XLS
 ORP XLS
 Conductivity XLS
 DO XLS

Water parameters:

	Drawdown measured	Temperature Celsius	Conductivity mS/cm	Dissolved Oxygen mg/L	pH	ORP mV	Turbidity NTUs
initial	<u>79.80</u>	initial <u>13.7</u>	initial <u>0.611</u>	initial <u>2.61</u>	initial <u>6.71</u>	initial <u>33.4</u>	initial _____
9:25 5 min	<u>79.98</u>	<u>13.4</u>	<u>0.606</u>	<u>3.96</u>	<u>6.83</u>	<u>13.8</u>	<u>500</u>
9:30 10 min	<u>80.22</u>	<u>13.2</u>	<u>0.614</u>		<u>6.90</u>	<u>8.2</u>	<u>485</u>
9:35 15 min		<u>issue w/ pump</u>					
9:40 20 min							
9:45 25 min	<u>80.44</u>	<u>17.1</u>	<u>0.348</u>	<u>4.90</u>	<u>6.93</u>	<u>-11.2</u>	<u>346</u>
9:50 30 min	<u>80.69</u>	<u>14.5</u>	<u>0.600</u>		<u>6.99</u>	<u>2.1</u>	<u>790</u>
9:55 35 min	<u>80.69</u>	<u>15.0</u>	<u>0.650</u>		<u>7.05</u>	<u>23.4</u>	<u>1100+</u>
10:00 40 min	<u>80.69</u>	<u>13.4</u>	<u>0.660</u>		<u>7.04</u>	<u>21.1</u>	<u>695</u>
10:05 45 min	<u>80.69</u>	<u>14.2</u>	<u>0.670</u>		<u>7.02</u>	<u>-9.4</u>	<u>325</u>
10:10 50 min	<u>80.69</u>	<u>14.7</u>	<u>0.670</u>		<u>7.01</u>	<u>-11.9</u>	<u>304</u>
10:15 55 min	<u>80.69</u>	<u>14.5</u>	<u>0.670</u>		<u>7.01</u>	<u>-13.1</u>	<u>289</u>
10:20 60 min	<u>80.69</u>	<u>14.5</u>	<u>0.670</u>		<u>7.01</u>	<u>-25.4</u>	<u>251</u>
10:25	<u>80.69</u>	<u>14.3</u>	<u>0.670</u>		<u>7.02</u>	<u>-32.1</u>	<u>202</u>

Water Sample:

Time Collected 1100

Physical Appearance at Start

Color light gray
 Odor NONE
 Turbidity (> 100 NTU) 500
 Sheen/Free Product NONE

Physical Appearance at Sampling

Color cloudy
 Odor NONE
 Turbidity (> 100 NTU) 112
 Sheen/Free Product NONE

Samples collected:

Analyses	# Bottles	Bottle size/type	Preservative	Field Filtered

Notes:

issues w/ DO probe will need to recalibrate

B-210

DD	Temp	Con	DO	pH	ORP	Turb	
1030	80.69	14.1	2.54	7.03	-36.7	186	
1035	80.69	14.6		0.670	7.02	-39.4	166
1040	80.69	14.2		0.680	7.02	-44.8	137
1045	80.69	14.3		0.680	7.02	-46.2	104
1050	80.09	14.1		0.680	7.02	-49.6	120
1055	80.47	14.4		0.680	7.02	-52.1	112
1100							

collected @ 1100

O'Brien & Gere Engineers, Inc.

Standard Groundwater Sampling Log

Date 6/13/18
 Site Name RACOR Coldwater Rd
 Location Flint, MI
 Project No. 68454
 Personnel KBS

Weather cloudy 70's
 Well # B-220
 Evacuation Method _____
 Sampling Method _____

Well Information:

Depth of Well * 99.30 ft.
 Depth to Water * 83.90 ft.
 Length of Water Column 15.40 ft.
 Volume of Water in Well 2.51 gal.(s)
 3X Volume of Water in Well 7.53 gal.(s)

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

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

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

Instrument Calibration:

Calibrated within range

pH Yes
 ORP Yes
 Conductivity Yes
 DO Yes

Water parameters:

	Drawdown measured	Temperature Celsius	Conductivity mS/cm	Dissolved Oxygen mg/L	pH	ORP mV	Turbidity NTUs
	initial <u>84.39</u>	initial <u>15.0</u>	initial <u>0.65</u>	initial <u>3.99</u>	initial <u>6.86</u>	initial <u>107.0</u>	initial <u>635</u>
9:35	5 min <u>84.44</u>	<u>13.9</u>	<u>0.65</u>	<u>0.51</u>	<u>6.87</u>	<u>35.2</u>	<u>408</u>
9:40	10 min <u>84.50</u>	<u>13.6</u>	<u>0.64</u>	<u>0.12</u>	<u>6.88</u>	<u>-28.9</u>	<u>398</u>
9:45	15 min <u>84.53</u>	<u>13.0</u>	<u>0.643</u>	<u>0.15</u>	<u>6.89</u>	<u>-51.8</u>	<u>194</u>
9:50	20 min <u>84.60</u>	<u>13.2</u>	<u>0.642</u>	<u>0.14</u>	<u>6.90</u>	<u>-58.7</u>	<u>161</u>
9:55	25 min <u>84.60</u>	<u>13.1</u>	<u>0.642</u>	<u>0.14</u>	<u>6.90</u>	<u>-60.3</u>	<u>82</u>
10:00	30 min <u>84.60</u>	<u>13.3</u>	<u>0.641</u>	<u>0.12</u>	<u>6.93</u>	<u>-66.4</u>	<u>69</u>
10:05	35 min <u>84.60</u>	<u>13.5</u>	<u>0.640</u>	<u>0.10</u>	<u>6.96</u>	<u>-72.6</u>	<u>57</u>
10:10	40 min <u>84.60</u>	<u>13.6</u>	<u>0.640</u>	<u>0.10</u>	<u>6.97</u>	<u>-76.6</u>	<u>41</u>
10:15	45 min <u>84.45</u>	<u>13.8</u>	<u>0.640</u>	<u>0.09</u>	<u>6.99</u>	<u>-77.7</u>	<u>36</u>
10:20	50 min <u>84.45</u>	<u>14.3</u>	<u>0.640</u>	<u>0.09</u>	<u>7.00</u>	<u>-82.3</u>	<u>35</u>
10:25	55 min <u>84.45</u>	<u>14.6</u>	<u>0.640</u>	<u>0.08</u>	<u>7.02</u>	<u>-85.6</u>	<u>32</u>
10:30	60 min _____	_____	_____	_____	_____	_____	_____

Water Sample:

Time Collected 1030

Physical Appearance at Start

Color light gray
 Odor NONE
 Turbidity (> 100 NTU) 635
 Sheen/Free Product NONE

Physical Appearance at Sampling

Color clear/slightly cloudy
 Odor NONE
 Turbidity (> 100 NTU) 32
 Sheen/Free Product NONE

Samples collected:

Analyses	# Bottles	Bottle size/type	Preservative	Field Filtered

Notes:

PEAS dup'd collected

O'Brien & Gere Engineers, Inc.

Standard Groundwater Sampling Log

Date 10/14/18
 Site Name Coldwater
 Location Flint, MI
 Project No. 08595
 Personnel KBS

Weather Sunny 80's
 Well # B-23Br
 Evacuation Method Bladder Pump
 Sampling Method Low Flow

Well Information:

Depth of Well * _____ ft.
 Depth to Water * 80.90 ft.
 Length of Water Column _____ ft.
 Volume of Water in Well _____ gal.(s)
 3X Volume of Water in Well _____ gal.(s)

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

Volume removed before sampling 0 gal.(s)
 Did well go dry? NO

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

Instrument Calibration:

Calibrated within range

pH KBS
 ORP KBS
 Conductivity KBS
 DO KBS

Water parameters:

	Drawdown measured	Temperature Celsius	Conductivity mS/cm	Dissolved Oxygen mg/L	pH	ORP mV	Turbidity NTUs
initial	<u>80.90</u>	initial <u>22.5</u>	initial <u>0.790</u>	initial <u>2.30</u>	initial <u>6.58</u>	initial <u>-67.9</u>	initial <u>211</u>
1400 5 min	<u>80.90</u>	<u>19.1</u>	<u>0.820</u>	<u>1.69</u>	<u>6.59</u>	<u>-73.5</u>	<u>234</u>
1405 10 min	<u>80.90</u>	<u>17.2</u>	<u>0.810</u>	<u>0.63</u>	<u>6.66</u>	<u>-74.2</u>	<u>211</u>
1430 15 min	<u>80.90</u>	<u>16.4</u>	<u>0.800</u>	<u>0.40</u>	<u>6.69</u>	<u>-81.5</u>	<u>195</u>
1435 20 min	<u>80.90</u>	<u>16.7</u>	<u>0.800</u>	<u>0.29</u>	<u>6.70</u>	<u>-84.6</u>	<u>177</u>
1440 25 min	<u>80.90</u>	<u>16.4</u>	<u>0.790</u>	<u>0.21</u>	<u>6.72</u>	<u>-86.7</u>	<u>173</u>
1445 30 min	<u>80.90</u>	<u>16.1</u>	<u>0.790</u>	<u>0.18</u>	<u>6.73</u>	<u>-87.3</u>	<u>176</u>
1450 35 min	<u>80.90</u>	<u>16.0</u>	<u>0.790</u>	<u>0.17</u>	<u>6.72</u>	<u>-86.9</u>	<u>160</u>
1455 40 min	<u>80.90</u>	<u>16.4</u>	<u>0.770</u>	<u>0.15</u>	<u>6.72</u>	<u>-87.4</u>	<u>127</u>
1500 45 min	<u>80.90</u>	<u>17.3</u>	<u>0.760</u>	<u>0.15</u>	<u>6.75</u>	<u>-89.7</u>	<u>98</u>
1505 50 min	<u>80.90</u>	<u>16.0</u>	<u>0.760</u>	<u>0.16</u>	<u>6.82</u>	<u>-93.7</u>	<u>77</u>
1510 55 min	<u>80.90</u>	<u>15.7</u>	<u>0.770</u>	<u>0.16</u>	<u>6.85</u>	<u>-94.0</u>	<u>65</u>
1515 60 min	<u>80.90</u>	<u>16.1</u>	<u>0.770</u>	<u>0.15</u>	<u>6.87</u>	<u>-97.8</u>	<u>51</u>
1520	<u>80.90</u>	<u>16.1</u>	<u>0.780</u>	<u>0.14</u>	<u>6.90</u>	<u>-101.0</u>	<u>42</u>

Water Sample: 1540
 Time Collected

OVER =>

Physical Appearance at Start

Physical Appearance at Sampling

Color light Gray
 Odor NONE
 Turbidity (> 100 NTU) all
 Sheen/Free Product NONE

Color Slightly cloudy
 Odor NONE
 Turbidity (> 100 NTU) 37
 Sheen/Free Product NONE

Samples collected:

Analyses	# Bottles	Bottle size/type	Preservative	Field Filtered

Notes:

B-230C

DD	TEMP	Con	DO	pH	ORP	turb
1525 80.90	16.0	0.780	0.11	6.91	-101.7	42
1530 80.90	16.1	0.770	0.11	6.91	-102.6	40
1535 80.90	15.9	0.780	0.11	6.92	-103.1	39

1540

O'Brien & Gere Engineers, Inc.

Standard Groundwater Sampling Log

Date 6/14/18
 Site Name Coldwater Rd LF
 Location Flint ME
 Project No. 8545
 Personnel SSY / KBS

Weather _____
 Well # B-24r
 Evacuation Method Whirl Pump
 Sampling Method Purged Dry

Well Information:

Depth of Well * 30.41 ft.
 Depth to Water * 13.82 ft.
 Length of Water Column 16.59 ft.
 Volume of Water in Well 2.70 gal.(s)
 3X Volume of Water in Well 8.11 gal.(s)

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

Volume removed before sampling 8.5 gal.(s)
 Did well go dry? Dry Yes
 (Other, Specify) _____

* Measurements taken from Well Casing Protective Casing _____

Instrument Calibration:

Calibrated within range

pH _____
 ORP _____
 Conductivity _____
 DO _____

Water parameters:

15:39

DTW 0

	Drawdown measured	Temperature Celsius	Conductivity mS/cm	Dissolved Oxygen mg/L	pH	ORP mV	Turbidity NTUs
Initial		initial 11.7	initial 1.24	initial 0.23	initial 7.32	initial 79.3	initial 1100
5 min	17.9	10.9	1.29	0.17	7.19	87.6	410
10 min	19.25	10.9	1.37	0.18	7.14	90.5	253
15 min	20.70	11.1	1.30	0.35	7.13	91.1	139
20 min	22.77	11.1	1.33	0.32	7.41	92.0	144
25 min	21.62	11.3	1.35	0.59	7.08	92.8	350
30 min	22.63	11.2	1.36	0.94	7.08	92.0	654
35 min	23.05	11.5	1.36	0.95	7.07	91.0	583
40 min		11.2	1.32	0.42	7.05	87.9	399
45 min		11.2	1.30	0.42	7.05	83.6	359
50 min		11.3	1.33	0.35	7.07	94.1	221
55 min		11.4	1.22	0.76	7.08	74.8	252
60 min	39.8	11.4	1.22	0.74	7.07	94.2	233

6/14/18

Water Sample:

Time Collected _____

Physical Appearance at Start _____

Physical Appearance at Sampling _____

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

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

Samples collected:

Analyses	# Bottles	Bottle size/type	Preservative	Field Filtered

Notes:

O'Brien & Gere Engineers, Inc.

Standard Groundwater Sampling Log

Date 6/10/18
 Site Name Coldwater Rd
 Location Flint, MI
 Project No. 68545
 Personnel KBS

Weather Partly Sunny 80s
 Well # B-27D
 Evacuation Method Bladder
 Sampling Method Low Flow

Well Information:

Depth of Well * 87.30 ft.
 Depth to Water * 75.50 ft.
 Length of Water Column 11.8 ft.
 Volume of Water in Well 1.9 gal. (s)
 3X Volume of Water in Well 5.7 gal. (s)

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

Volume removed before sampling 6 gal. (s)
 Did well go dry? No

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

Instrument Calibration:

Calibrated within range

pH Yes
 ORP Yes
 Conductivity Yes
 DO Yes

Water parameters:

	Drawdown measured	Temperature Celsius	Conductivity mS/cm	Dissolved Oxygen mg/L	pH	ORP mV	Turbidity NTUs
initial	<u>75.79</u>	initial <u>22.7</u>	initial <u>1.79</u>	initial <u>8.36</u>	initial <u>7.19</u>	initial <u>-2.9</u>	initial <u>496</u>
1455 5 min	<u>75.69</u>	<u>20.0</u>	<u>0.607</u>	<u>3.09</u>	<u>6.97</u>	<u>-10.4</u>	<u>1100+</u>
1500 10 min	<u>75.85</u>	<u>14.4</u>	<u>0.620</u>	<u>0.45</u>	<u>6.91</u>	<u>-16.6</u>	<u>1100+</u>
1515 15 min	<u>75.91</u>	<u>14.3</u>	<u>0.612</u>	<u>0.41</u>	<u>6.93</u>	<u>-29.2</u>	<u>1100+</u>
1510 20 min	<u>75.91</u>	<u>14.3</u>	<u>0.613</u>	<u>0.32</u>	<u>4.94</u>	<u>-40.2</u>	<u>920</u>
1515 25 min	<u>75.91</u>	<u>14.2</u>	<u>0.614</u>	<u>0.33</u>	<u>4.96</u>	<u>-49.3</u>	<u>976</u>
1530 30 min	<u>75.91</u>	<u>14.2</u>	<u>0.612</u>	<u>0.38</u>	<u>6.98</u>	<u>-58.2</u>	<u>895</u>
1535 35 min	<u>75.91</u>	<u>14.4</u>	<u>0.610</u>	<u>0.29</u>	<u>7.00</u>	<u>-66.4</u>	<u>950</u>
1535 40 min	<u>75.91</u>	<u>14.7</u>	<u>0.618</u>	<u>0.27</u>	<u>7.02</u>	<u>-70.4</u>	<u>1100+</u>
1535 45 min	<u>75.91</u>	<u>15.0</u>	<u>0.617</u>	<u>0.26</u>	<u>7.04</u>	<u>-75.6</u>	<u>1100</u>
1540 50 min	<u>75.91</u>	<u>14.4</u>	<u>0.623</u>	<u>0.24</u>	<u>7.07</u>	<u>-80.4</u>	<u>1600</u>
1545 55 min	<u>75.91</u>	<u>14.6</u>	<u>0.630</u>	<u>0.20</u>	<u>7.09</u>	<u>-84.5</u>	<u>992</u>
1550 60 min	<u>75.91</u>	<u>14.7</u>	<u>0.630</u>	<u>0.21</u>	<u>7.10</u>	<u>-87.7</u>	<u>844</u>
1555	<u>75.91</u>	<u>12.9</u>	<u>0.628</u>	<u>0.18</u>	<u>7.13</u>	<u>-93.2</u>	<u>600</u>

Water Sample:

Time Collected 1645

OVER =>

Physical Appearance at Start

Color light Gray
 Odor NONE
 Turbidity (> 100 NTU) 196
 Sheen/Free Product NONE

Physical Appearance at Sampling

Color cloudy
 Odor NONE
 Turbidity (> 100 NTU) 269
 Sheen/Free Product NONE

Samples collected:

Analyses	# Bottles	Bottle size/type	Preservative	Field Filtered

Notes:

B-27D

	DD	Temp	Con	DO	pH	ORP	Turb
1600	76.09	12.9	0.628	0.19	7.14	-93.6	347
1605	76.09	13.0	0.625	0.14	7.14	-94.0	349
1610	76.09	13.0	0.625	0.14	7.14	-94.3	360
1615	76.09	12.8	0.626	0.18	7.14	-96.0	375
1620	76.09	12.8	0.622	0.10	7.14	-97.8	350
1625	76.09	12.7	0.617	0.12	7.14	-98.3	398
1630	76.09	12.8	0.613	0.11	7.15	-99.9	350
1635	76.09	12.7	0.612	0.09	7.15	-100.8	333
1640	76.09	12.6	0.608	0.06	7.16	-102.1	333
1645	76.09	12.6	0.608	0.06	7.16	-102.6	269

collected 3 well volumes

1645

O'Brien & Gere Engineers, Inc.

Standard Groundwater Sampling Log

Date 6/11/18
 Site Name Coldwater Rd LP
 Location Flint, MI
 Project No. 08545
 Personnel CSY / KBS

Weather _____
 Well # B-28
 Evacuation Method Whale Pump
 Sampling Method Purged Dry

Well Information:

Depth of Well * 34.00 ft.
 Depth to Water * 5.60 ft.
 Length of Water Column 28.4 ft.
 Volume of Water in Well 4.63 gal.(s)
 3X Volume of Water in Well 13.89 gal.(s)

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

Volume removed before sampling 11.5 gal.(s)
 Did well go dry? Dry - Yes
 (Other, Specify) _____

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

Instrument Calibration:

Calibrated within range

pH _____
 ORP _____
 Conductivity _____
 DO _____

Water parameters:

Drawdown measured	Temperature Celsius	Conductivity mS/cm	Dissolved Oxygen mg/L	pH	ORP mV	Turbidity NTUs
initial <u>0</u>	initial <u>10.9</u>	initial <u>0.78</u>	initial <u>1.10</u>	initial <u>7.22</u>	initial <u>84.6</u>	initial <u>76</u>
5 min <u>18.10</u>	<u>10.8</u>	<u>0.77</u>	<u>0.20</u>	<u>7.09</u>	<u>71.6</u>	<u>20</u>
10 min <u>27.51</u>	<u>11.7</u>	<u>0.77</u>	<u>0.95</u>	<u>7.04</u>	<u>42.6</u>	<u>81</u>
15 min <u>30.17</u>	<u>12.8</u>	<u>0.74</u>	<u>0.24</u>	<u>7.07</u>	<u>34</u>	<u>270</u>
20 min <u>30.83</u>	<u>11.2</u>	<u>0.72</u>	<u>1.21</u>	<u>7.09</u>	<u>31.5</u>	<u>405</u>
25 min <u>31.30</u>	<u>12.4</u>	<u>0.91</u>	<u>2.46</u>	<u>7.12</u>	<u>33.8</u>	<u>552</u>
30 min <u>32.2</u> <u>stop pump</u>	<u>12.2</u>	<u>0.91</u>	<u>2.22</u>	<u>7.09</u>	<u>38.3</u>	<u>512</u>
35 min <u>Dry</u>						
40 min _____						
45 min _____						
50 min <u>31.6</u> <u>0.45</u>	<u>12.1</u>	<u>0.78</u>	<u>5.88</u>	<u>6.74</u>	<u>115.8</u>	<u>627</u>
55 min <u>26.55</u>	<u>11.1</u>	<u>0.76</u>	<u>-</u>	<u>6.07</u>	<u>111.6</u>	<u>89</u>
60 min _____	<u>11.8</u>	<u>0.79</u>	<u>- (3.09)</u>	<u>6.69</u>	<u>99.2</u>	<u>28</u>

Water Sample:

Time Collected 09:45 + used 09:30

* DO was calibrated, but reading 1165 which is not real - with recalibrate after sampling this well

Physical Appearance at Start

Color Slightly cloudy
 Odor None
 Turbidity (> 100 NTU) ~ 76
 Sheen/Free Product None

Physical Appearance at Sampling

Color Clear
 Odor None
 Turbidity (> 100 NTU) 28
 Sheen/Free Product None

Samples collected:

Analyses	# Bottles	Bottle size/type	Preservative	Field Filtered

Notes:



APPENDIX C
Analytical Results



Report ID: S90664.01(02)
Generated on 08/20/2018

Report to

Attention: Clifford Yantz
O'Brien & Gere Engineers, Inc.
2260 E Saginaw St
East Lansing, MI 48823

Phone: 248-477-5701 FAX:
Email: Clifford.Yantz@obg.com

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Contacts for report questions:
John Lavery (johnlavery@meritlabs.com)
Barbara Ball (bball@meritlabs.com)

Report Summary

Lab Sample ID(s): S90664.01-S90664.09
Project: RACER Coldwater Rd Landfill
Collected Date: 06/12/2018 - 06/13/2018
Submitted Date/Time: 06/13/2018 13:35
Sampled by: Kevin Schneider
P.O. #: 11800350

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- Method Summary (Page 4)
- Sample Summary (Page 5)

Maya Murshak
Technical Director



General Report Notes

Analytical results relate only to the samples tested, in the condition 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 reporting limit (RL).

40 CFR Part 136 Table II Required Containers, Preservation Techniques and Holding Times for the Clean Water Act specify that samples for acrolein and acrylonitrile need to be preserved at a pH in the range of 4 to 5 or if not preserved, analyzed within 3 days of sampling.

QA/QC corresponding to this analytical report is a separate document with the same Merit ID reference and is available upon request.

Full accreditation certificates are available upon request. Starred (*) analytes are not NELAP accredited.

Samples are held by the lab for 30 days from the final report date unless a written request to hold longer is provided by the client.

Report shall not be reproduced except in full, without the written approval of Merit Laboratories, Inc.

Limits for drinking water samples, are listed as the MCL Limits (Maximum Contaminant Level Concentrations)

Report Narrative

Metals RLs lowered per client request



Laboratory Certifications

Authority	Certification ID
Michigan DEQ	#9956
DOD ELAP/ISO 17025	#69699
WBENC	#2005110032
Ohio VAP	#CL0002
Indiana DOH	#C-MI-07
New York NELAC	#11814
North Carolina DENR	#680
North Carolina DOH	#26702
Alaska CSLAP	#17-001

Qualifier Descriptions

Qualifier	Description
!	Result is outside of stated limit criteria
B	Compound also found in associated method blank
E	Concentration exceeds calibration range
F	Analysis run outside of holding time
G	Estimated result due to extraction run outside of holding time
H	Sample submitted and run outside of holding time
I	Matrix interference with internal standard
J	Estimated value less than reporting limit, but greater than MDL
L	Elevated reporting limit due to low sample amount
M	Result reported to MDL not RDL
O	Analysis performed by outside laboratory. See attached report.
R	Preliminary result
S	Surrogate recovery outside of control limits
T	No correction for total solids
X	Elevated reporting limit due to matrix interference
Y	Elevated reporting limit due to high target concentration
b	Value detected less than reporting limit, but greater than MDL
e	Reported value estimated due to interference
j	Analyte also found in associated method blank
p	Benzo(b)Fluoranthene and Benzo(k)Fluoranthene integrated as one peak.
x	Preserved from bulk sample

Glossary of Abbreviations

Abbreviation	Description
RL/RDL	Reporting Limit
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
SW	EPA SW 846 (Soil and Wastewater) Methods
E	EPA Methods
SM	Standard Methods
LN	Linear
BR	Branched



Method Summary

Method	Version
E120.1	EPA Method 120.1 Revision 1982
E200.8	EPA Method 200.8 Revision 5.4
E300.0	EPA Method 300.0 Revision 2.1
E335.4/SM4500-CN	EPA Method 335.4 Revision 1.0 / Standard Method 4500-CN E 20th Edition
E420.1	EPA Method 420.1 Editorial Revision 1978
N/A	Not Applicable
SM5310C	Standard Method 5310C 2011
SW3015A	SW 846 Method 3015A Revision 1 February 2007
SW5030C/8260C	SW 846 Method 8260C Revision 3 August 2006 / 5030C Revision 3 May 2003
SW9020B	SW 846 Method 9020B Revision 2 September 1994



Sample Summary (9 samples)

Sample ID	Sample Tag	Matrix	Collected Date/Time
S90664.01	B-28	Groundwater	06/12/18 09:30
S90664.02	B-7	Groundwater	06/12/18 10:20
S90664.03	B-24r	Groundwater	06/12/18 12:11
S90664.04	B-9	Groundwater	06/12/18 14:15
S90664.05	B-18A	Groundwater	06/12/18 15:35
S90664.06	B-19Ar	Groundwater	06/12/18 16:15
S90664.07	B-27D	Groundwater	06/12/18 16:45
S90664.08	B-22D	Groundwater	06/13/18 10:30
S90664.09	Trip Blank - 1	Water	06/13/18 00:01



Lab Sample ID: S90664.01

Sample Tag: B-28

Collected Date/Time: 06/12/2018 09:30

Matrix: Groundwater

COC Reference: 111367

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	125ml Plastic	HNO3	Yes	3.2	IR
2	40ml Glass	H2SO4	Yes	3.2	IR
1	250ml Amber	H2SO4	Yes	3.2	IR
1	1L Plastic	None	Yes	3.2	IR
1	125ml Plastic	NaOH	Yes	3.2	IR
3	40ml Glass	HCL	Yes	3.2	IR
1	125ml Amber	H2SO4	Yes	3.2	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	06/15/18 13:40	JGH	
Metal Digestion	Completed	SW3015A	06/15/18 13:40	CCM	
Metal Digestion	Completed	SW3015A	06/15/18 13:40	CCM	

Inorganics

Method: E120.1, Run Date: 06/22/18 11:10, Analyst: JKB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Conductivity	839			umhos/cm	1		

Method: E300.0, Run Date: 06/14/18 11:30, Analyst: JDP

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chloride	12	5	0.08	mg/L	5	16887-00-6	
Sulfate	100	10	0.42	mg/L	10	14808-79-8	

Method: E335.4/SM4500-CN, Run Date: 06/14/18 11:08, Analyst: JDP

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Cyanide, Total	Not detected	0.005	0.002	mg/L	1	57-12-5	

Method: E420.1, Run Date: 06/20/18 16:08, Analyst: JKB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Phenols	Not detected	0.02		mg/L	1.7		

Method: SM5310C, Run Date: 06/18/18 13:47, Analyst: JKB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
TOC	1.6	1		mg/L	1		

Metals

Method: E200.8, Run Date: 06/19/18 15:01, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Sodium	14.6	2.5		mg/L	50	7440-23-5	

Method: E200.8, Run Date: 06/19/18 14:05, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chromium, Dissolved	Not detected	0.005		mg/L	5	7440-47-3	
Copper, Dissolved	Not detected	0.005		mg/L	5	7440-50-8	
Iron, Dissolved	0.06	0.02		mg/L	5	7439-89-6	

Lab Sample ID: S90664.01 (continued)

Sample Tag: B-28

Method: E200.8, Run Date: 06/19/18 14:05, Analyst: CCM (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Manganese, Dissolved	0.027	0.005		mg/L	5	7439-96-5	
Nickel, Dissolved	Not detected	0.005		mg/L	5	7440-02-0	
Zinc, Dissolved	Not detected	0.005		mg/L	5	7440-66-6	

Organics - Volatiles
Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 06/14/18 18:49, Analyst: JML

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Diethyl ether	Not detected	10		ug/L	1	60-29-7	
Acetone	Not detected	50		ug/L	1	67-64-1	
Methyl iodide	Not detected	1		ug/L	1	74-88-4	
Carbon disulfide	Not detected	5		ug/L	1	75-15-0	
tert-Methyl butyl ether (MTBE)	Not detected	5		ug/L	1	1634-04-4	
Acrylonitrile	Not detected	2		ug/L	1	107-13-1	
2-Butanone (MEK)	Not detected	25		ug/L	1	78-93-3	
Dichlorodifluoromethane	Not detected	5		ug/L	1	75-71-8	
Chloromethane	Not detected	5		ug/L	1	74-87-3	
Vinyl chloride	Not detected	1		ug/L	1	75-01-4	
Bromomethane	Not detected	5		ug/L	1	74-83-9	
Chloroethane	Not detected	5		ug/L	1	75-00-3	
Trichlorofluoromethane	Not detected	1		ug/L	1	75-69-4	
1,1-Dichloroethene	Not detected	1		ug/L	1	75-35-4	
Methylene chloride	Not detected	5		ug/L	1	75-09-2	
trans-1,2-Dichloroethene	Not detected	1		ug/L	1	156-60-5	
1,1-Dichloroethane	Not detected	1		ug/L	1	75-34-3	
cis-1,2-Dichloroethene	Not detected	1		ug/L	1	156-59-2	
Tetrahydrofuran*	Not detected	90		ug/L	1	109-99-9	
Chloroform	Not detected	1		ug/L	1	67-66-3	
Bromochloromethane	Not detected	1		ug/L	1	74-97-5	
1,1,1-Trichloroethane	Not detected	1		ug/L	1	71-55-6	
4-Methyl-2-pentanone (MIBK)	Not detected	50		ug/L	1	108-10-1	
2-Hexanone	Not detected	50		ug/L	1	591-78-6	
Carbon tetrachloride	Not detected	1		ug/L	1	56-23-5	
Benzene	Not detected	1		ug/L	1	71-43-2	
1,2-Dichloroethane	Not detected	1		ug/L	1	107-06-2	
Trichloroethene	Not detected	1		ug/L	1	79-01-6	
1,2-Dichloropropane	Not detected	1		ug/L	1	78-87-5	
Bromodichloromethane	Not detected	1		ug/L	1	75-27-4	
Dibromomethane	Not detected	5		ug/L	1	74-95-3	
cis-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-01-5	
Toluene	Not detected	1		ug/L	1	108-88-3	
trans-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-02-6	
1,1,2-Trichloroethane	Not detected	1		ug/L	1	79-00-5	
Tetrachloroethene	Not detected	1		ug/L	1	127-18-4	
trans-1,4-Dichloro-2-butene	Not detected	1		ug/L	1	110-57-6	
Dibromochloromethane	Not detected	5		ug/L	1	124-48-1	
1,2-Dibromoethane	Not detected	1		ug/L	1	106-93-4	
Chlorobenzene	Not detected	1		ug/L	1	108-90-7	
1,1,1,2-Tetrachloroethane	Not detected	1		ug/L	1	630-20-6	
Ethylbenzene	Not detected	1		ug/L	1	100-41-4	
p,m-Xylene*	Not detected	2		ug/L	1		



Lab Sample ID: S90664.01 (continued)

Sample Tag: B-28

Volatiles Organics - DEQ List, Method: SW5030C/8260C, Run Date: 06/14/18 18:49, Analyst: JML (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
o-Xylene	Not detected	1		ug/L	1	95-47-6	
Styrene	Not detected	1		ug/L	1	100-42-5	
Isopropylbenzene	Not detected	5		ug/L	1	98-82-8	
Bromoform	Not detected	1		ug/L	1	75-25-2	
1,1,2,2-Tetrachloroethane	Not detected	1		ug/L	1	79-34-5	
1,2,3-Trichloropropane	Not detected	1		ug/L	1	96-18-4	
n-Propylbenzene	Not detected	1		ug/L	1	103-65-1	
Bromobenzene	Not detected	1		ug/L	1	108-86-1	
1,3,5-Trimethylbenzene	Not detected	1		ug/L	1	108-67-8	
tert-Butylbenzene	Not detected	1		ug/L	1	98-06-6	
1,2,4-Trimethylbenzene	Not detected	1		ug/L	1	95-63-6	
sec-Butylbenzene	Not detected	1		ug/L	1	135-98-8	
p-Isopropyltoluene	Not detected	5		ug/L	1	99-87-6	
1,3-Dichlorobenzene	Not detected	1		ug/L	1	541-73-1	
1,4-Dichlorobenzene	Not detected	1		ug/L	1	106-46-7	
1,2-Dichlorobenzene	Not detected	1		ug/L	1	95-50-1	
1,2,3-Trimethylbenzene	Not detected	1		ug/L	1	526-73-8	
n-Butylbenzene	Not detected	1		ug/L	1	104-51-8	
Hexachloroethane	Not detected	5		ug/L	1	67-72-1	
1,2-Dibromo-3-chloropropane	Not detected	5		ug/L	1	96-12-8	
1,2,4-Trichlorobenzene	Not detected	5		ug/L	1	120-82-1	
1,2,3-Trichlorobenzene	Not detected	5		ug/L	1	87-61-6	
Naphthalene	Not detected	5		ug/L	1	91-20-3	
2-Methylnaphthalene	Not detected	5		ug/L	1	91-57-6	

Organics

Method: SW9020B, Run Date: 06/18/18 08:34, Analyst: TA

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
TOX*	Not detected	60.0		ug/L	1		O

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



Analytical Laboratory Report

Supplemental Report

Lab Sample ID: S90664.02

Sample Tag: B-7

Collected Date/Time: 06/12/2018 10:20

Matrix: Groundwater

COC Reference: 111367

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	125ml Plastic	HNO3	Yes	3.2	IR
2	40ml Glass	H2SO4	Yes	3.2	IR
1	250ml Amber	H2SO4	Yes	3.2	IR
1	1L Plastic	None	Yes	3.2	IR
1	125ml Plastic	NaOH	Yes	3.2	IR
3	40ml Glass	HCL	Yes	3.2	IR
1	125ml Amber	H2SO4	Yes	3.2	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	06/15/18 13:40	JGH	
Metal Digestion	Completed	SW3015A	06/15/18 13:40	CCM	
Metal Digestion	Completed	SW3015A	06/15/18 13:40	CCM	

Inorganics

Method: E120.1, Run Date: 06/22/18 11:14, Analyst: JKB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Conductivity	932			umhos/cm	1		

Method: E300.0, Run Date: 06/14/18 11:42, Analyst: JDP

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chloride	27	10	0.15	mg/L	10	16887-00-6	
Sulfate	116	10	0.21	mg/L	10	14808-79-8	

Method: E335.4/SM4500-CN, Run Date: 06/14/18 11:16, Analyst: JDP

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Cyanide, Total	Not detected	0.005	0.002	mg/L	1	57-12-5	

Method: E420.1, Run Date: 06/20/18 16:12, Analyst: JKB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Phenols	Not detected	0.02		mg/L	1.7		

Method: SM5310C, Run Date: 06/18/18 14:32, Analyst: JKB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
TOC	4.2	1		mg/L	1		

Metals

Method: E200.8, Run Date: 06/19/18 15:03, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Sodium	39.8	2.5		mg/L	50	7440-23-5	

Method: E200.8, Run Date: 06/19/18 14:07, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chromium, Dissolved	Not detected	0.005		mg/L	5	7440-47-3	
Copper, Dissolved	Not detected	0.005		mg/L	5	7440-50-8	
Iron, Dissolved	0.23	0.02		mg/L	5	7439-89-6	

Lab Sample ID: S90664.02 (continued)

Sample Tag: B-7

Method: E200.8, Run Date: 06/19/18 14:07, Analyst: CCM (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Manganese, Dissolved	0.026	0.005		mg/L	5	7439-96-5	
Nickel, Dissolved	Not detected	0.005		mg/L	5	7440-02-0	
Zinc, Dissolved	0.010	0.005		mg/L	5	7440-66-6	

Organics - Volatiles
Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 06/14/18 19:08, Analyst: JML

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Diethyl ether	Not detected	10		ug/L	1	60-29-7	
Acetone	Not detected	50		ug/L	1	67-64-1	
Methyl iodide	Not detected	1		ug/L	1	74-88-4	
Carbon disulfide	Not detected	5		ug/L	1	75-15-0	
tert-Methyl butyl ether (MTBE)	Not detected	5		ug/L	1	1634-04-4	
Acrylonitrile	Not detected	2		ug/L	1	107-13-1	
2-Butanone (MEK)	Not detected	25		ug/L	1	78-93-3	
Dichlorodifluoromethane	Not detected	5		ug/L	1	75-71-8	
Chloromethane	Not detected	5		ug/L	1	74-87-3	
Vinyl chloride	Not detected	1		ug/L	1	75-01-4	
Bromomethane	Not detected	5		ug/L	1	74-83-9	
Chloroethane	Not detected	5		ug/L	1	75-00-3	
Trichlorofluoromethane	Not detected	1		ug/L	1	75-69-4	
1,1-Dichloroethene	Not detected	1		ug/L	1	75-35-4	
Methylene chloride	Not detected	5		ug/L	1	75-09-2	
trans-1,2-Dichloroethene	Not detected	1		ug/L	1	156-60-5	
1,1-Dichloroethane	Not detected	1		ug/L	1	75-34-3	
cis-1,2-Dichloroethene	Not detected	1		ug/L	1	156-59-2	
Tetrahydrofuran*	Not detected	90		ug/L	1	109-99-9	
Chloroform	Not detected	1		ug/L	1	67-66-3	
Bromochloromethane	Not detected	1		ug/L	1	74-97-5	
1,1,1-Trichloroethane	Not detected	1		ug/L	1	71-55-6	
4-Methyl-2-pentanone (MIBK)	Not detected	50		ug/L	1	108-10-1	
2-Hexanone	Not detected	50		ug/L	1	591-78-6	
Carbon tetrachloride	Not detected	1		ug/L	1	56-23-5	
Benzene	Not detected	1		ug/L	1	71-43-2	
1,2-Dichloroethane	Not detected	1		ug/L	1	107-06-2	
Trichloroethene	Not detected	1		ug/L	1	79-01-6	
1,2-Dichloropropane	Not detected	1		ug/L	1	78-87-5	
Bromodichloromethane	Not detected	1		ug/L	1	75-27-4	
Dibromomethane	Not detected	5		ug/L	1	74-95-3	
cis-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-01-5	
Toluene	Not detected	1		ug/L	1	108-88-3	
trans-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-02-6	
1,1,2-Trichloroethane	Not detected	1		ug/L	1	79-00-5	
Tetrachloroethene	Not detected	1		ug/L	1	127-18-4	
trans-1,4-Dichloro-2-butene	Not detected	1		ug/L	1	110-57-6	
Dibromochloromethane	Not detected	5		ug/L	1	124-48-1	
1,2-Dibromoethane	Not detected	1		ug/L	1	106-93-4	
Chlorobenzene	Not detected	1		ug/L	1	108-90-7	
1,1,1,2-Tetrachloroethane	Not detected	1		ug/L	1	630-20-6	
Ethylbenzene	Not detected	1		ug/L	1	100-41-4	
p,m-Xylene*	Not detected	2		ug/L	1		



Lab Sample ID: S90664.02 (continued)

Sample Tag: B-7

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 06/14/18 19:08, Analyst: JML (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
o-Xylene	Not detected	1		ug/L	1	95-47-6	
Styrene	Not detected	1		ug/L	1	100-42-5	
Isopropylbenzene	Not detected	5		ug/L	1	98-82-8	
Bromoform	Not detected	1		ug/L	1	75-25-2	
1,1,2,2-Tetrachloroethane	Not detected	1		ug/L	1	79-34-5	
1,2,3-Trichloropropane	Not detected	1		ug/L	1	96-18-4	
n-Propylbenzene	Not detected	1		ug/L	1	103-65-1	
Bromobenzene	Not detected	1		ug/L	1	108-86-1	
1,3,5-Trimethylbenzene	Not detected	1		ug/L	1	108-67-8	
tert-Butylbenzene	Not detected	1		ug/L	1	98-06-6	
1,2,4-Trimethylbenzene	Not detected	1		ug/L	1	95-63-6	
sec-Butylbenzene	Not detected	1		ug/L	1	135-98-8	
p-Isopropyltoluene	Not detected	5		ug/L	1	99-87-6	
1,3-Dichlorobenzene	Not detected	1		ug/L	1	541-73-1	
1,4-Dichlorobenzene	Not detected	1		ug/L	1	106-46-7	
1,2-Dichlorobenzene	Not detected	1		ug/L	1	95-50-1	
1,2,3-Trimethylbenzene	Not detected	1		ug/L	1	526-73-8	
n-Butylbenzene	Not detected	1		ug/L	1	104-51-8	
Hexachloroethane	Not detected	5		ug/L	1	67-72-1	
1,2-Dibromo-3-chloropropane	Not detected	5		ug/L	1	96-12-8	
1,2,4-Trichlorobenzene	Not detected	5		ug/L	1	120-82-1	
1,2,3-Trichlorobenzene	Not detected	5		ug/L	1	87-61-6	
Naphthalene	Not detected	5		ug/L	1	91-20-3	
2-Methylnaphthalene	Not detected	5		ug/L	1	91-57-6	

Organics

Method: SW9020B, Run Date: 06/18/18 08:34, Analyst: TA

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
TOX*	Not detected	60.0		ug/L	1		O

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



Lab Sample ID: S90664.03

Sample Tag: B-24r

Collected Date/Time: 06/12/2018 12:11

Matrix: Groundwater

COC Reference: 111367

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	125ml Plastic	HNO3	Yes	3.2	IR
2	40ml Glass	H2SO4	Yes	3.2	IR
1	250ml Amber	H2SO4	Yes	3.2	IR
1	1L Plastic	None	Yes	3.2	IR
1	125ml Plastic	NaOH	Yes	3.2	IR
3	40ml Glass	HCL	Yes	3.2	IR
1	125ml Amber	H2SO4	Yes	3.2	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	06/15/18 13:40	JGH	
Metal Digestion	Completed	SW3015A	06/15/18 13:40	CCM	
Metal Digestion	Completed	SW3015A	06/15/18 13:40	CCM	

Inorganics

Method: E120.1, Run Date: 06/22/18 11:16, Analyst: JKB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Conductivity	1,280			umhos/cm	1		

Method: E300.0, Run Date: 06/14/18 11:55, Analyst: JDP

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chloride	47	20	0.30	mg/L	20	16887-00-6	
Sulfate	240	20	0.84	mg/L	20	14808-79-8	

Method: E335.4/SM4500-CN, Run Date: 06/14/18 11:18, Analyst: JDP

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Cyanide, Total	Not detected	0.005	0.002	mg/L	1	57-12-5	

Method: E420.1, Run Date: 06/20/18 16:16, Analyst: JKB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Phenols	Not detected	0.02		mg/L	1.7		

Method: SM5310C, Run Date: 06/18/18 15:40, Analyst: JKB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
TOC	2.9	1		mg/L	1		

Metals

Method: E200.8, Run Date: 06/19/18 15:05, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Sodium	64.5	2.5		mg/L	50	7440-23-5	

Method: E200.8, Run Date: 06/19/18 14:09, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chromium, Dissolved	Not detected	0.005		mg/L	5	7440-47-3	
Copper, Dissolved	Not detected	0.005		mg/L	5	7440-50-8	
Iron, Dissolved	0.10	0.02		mg/L	5	7439-89-6	

Lab Sample ID: S90664.03 (continued)

Sample Tag: B-24r

Method: E200.8, Run Date: 06/19/18 14:09, Analyst: CCM (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Manganese, Dissolved	0.064	0.005		mg/L	5	7439-96-5	
Nickel, Dissolved	0.005	0.005		mg/L	5	7440-02-0	
Zinc, Dissolved	0.007	0.005		mg/L	5	7440-66-6	

Organics - Volatiles
Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 06/14/18 19:27, Analyst: JML

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Diethyl ether	Not detected	10		ug/L	1	60-29-7	
Acetone	Not detected	50		ug/L	1	67-64-1	
Methyl iodide	Not detected	1		ug/L	1	74-88-4	
Carbon disulfide	Not detected	5		ug/L	1	75-15-0	
tert-Methyl butyl ether (MTBE)	Not detected	5		ug/L	1	1634-04-4	
Acrylonitrile	Not detected	2		ug/L	1	107-13-1	
2-Butanone (MEK)	Not detected	25		ug/L	1	78-93-3	
Dichlorodifluoromethane	Not detected	5		ug/L	1	75-71-8	
Chloromethane	Not detected	5		ug/L	1	74-87-3	
Vinyl chloride	Not detected	1		ug/L	1	75-01-4	
Bromomethane	Not detected	5		ug/L	1	74-83-9	
Chloroethane	Not detected	5		ug/L	1	75-00-3	
Trichlorofluoromethane	Not detected	1		ug/L	1	75-69-4	
1,1-Dichloroethene	Not detected	1		ug/L	1	75-35-4	
Methylene chloride	Not detected	5		ug/L	1	75-09-2	
trans-1,2-Dichloroethene	Not detected	1		ug/L	1	156-60-5	
1,1-Dichloroethane	Not detected	1		ug/L	1	75-34-3	
cis-1,2-Dichloroethene	Not detected	1		ug/L	1	156-59-2	
Tetrahydrofuran*	Not detected	90		ug/L	1	109-99-9	
Chloroform	Not detected	1		ug/L	1	67-66-3	
Bromochloromethane	Not detected	1		ug/L	1	74-97-5	
1,1,1-Trichloroethane	Not detected	1		ug/L	1	71-55-6	
4-Methyl-2-pentanone (MIBK)	Not detected	50		ug/L	1	108-10-1	
2-Hexanone	Not detected	50		ug/L	1	591-78-6	
Carbon tetrachloride	Not detected	1		ug/L	1	56-23-5	
Benzene	Not detected	1		ug/L	1	71-43-2	
1,2-Dichloroethane	Not detected	1		ug/L	1	107-06-2	
Trichloroethene	Not detected	1		ug/L	1	79-01-6	
1,2-Dichloropropane	Not detected	1		ug/L	1	78-87-5	
Bromodichloromethane	Not detected	1		ug/L	1	75-27-4	
Dibromomethane	Not detected	5		ug/L	1	74-95-3	
cis-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-01-5	
Toluene	Not detected	1		ug/L	1	108-88-3	
trans-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-02-6	
1,1,2-Trichloroethane	Not detected	1		ug/L	1	79-00-5	
Tetrachloroethene	Not detected	1		ug/L	1	127-18-4	
trans-1,4-Dichloro-2-butene	Not detected	1		ug/L	1	110-57-6	
Dibromochloromethane	Not detected	5		ug/L	1	124-48-1	
1,2-Dibromoethane	Not detected	1		ug/L	1	106-93-4	
Chlorobenzene	Not detected	1		ug/L	1	108-90-7	
1,1,1,2-Tetrachloroethane	Not detected	1		ug/L	1	630-20-6	
Ethylbenzene	Not detected	1		ug/L	1	100-41-4	
p,m-Xylene*	Not detected	2		ug/L	1		



Lab Sample ID: S90664.03 (continued)

Sample Tag: B-24r

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 06/14/18 19:27, Analyst: JML (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
o-Xylene	Not detected	1		ug/L	1	95-47-6	
Styrene	Not detected	1		ug/L	1	100-42-5	
Isopropylbenzene	Not detected	5		ug/L	1	98-82-8	
Bromoform	Not detected	1		ug/L	1	75-25-2	
1,1,2,2-Tetrachloroethane	Not detected	1		ug/L	1	79-34-5	
1,2,3-Trichloropropane	Not detected	1		ug/L	1	96-18-4	
n-Propylbenzene	Not detected	1		ug/L	1	103-65-1	
Bromobenzene	Not detected	1		ug/L	1	108-86-1	
1,3,5-Trimethylbenzene	Not detected	1		ug/L	1	108-67-8	
tert-Butylbenzene	Not detected	1		ug/L	1	98-06-6	
1,2,4-Trimethylbenzene	Not detected	1		ug/L	1	95-63-6	
sec-Butylbenzene	Not detected	1		ug/L	1	135-98-8	
p-Isopropyltoluene	Not detected	5		ug/L	1	99-87-6	
1,3-Dichlorobenzene	Not detected	1		ug/L	1	541-73-1	
1,4-Dichlorobenzene	Not detected	1		ug/L	1	106-46-7	
1,2-Dichlorobenzene	Not detected	1		ug/L	1	95-50-1	
1,2,3-Trimethylbenzene	Not detected	1		ug/L	1	526-73-8	
n-Butylbenzene	Not detected	1		ug/L	1	104-51-8	
Hexachloroethane	Not detected	5		ug/L	1	67-72-1	
1,2-Dibromo-3-chloropropane	Not detected	5		ug/L	1	96-12-8	
1,2,4-Trichlorobenzene	Not detected	5		ug/L	1	120-82-1	
1,2,3-Trichlorobenzene	Not detected	5		ug/L	1	87-61-6	
Naphthalene	Not detected	5		ug/L	1	91-20-3	
2-Methylnaphthalene	Not detected	5		ug/L	1	91-57-6	

Organics

Method: SW9020B, Run Date: 06/18/18 08:34, Analyst: TA

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
TOX*	Not detected	60.0		ug/L	1		O

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



Lab Sample ID: S90664.04

Sample Tag: B-9

Collected Date/Time: 06/12/2018 14:15

Matrix: Groundwater

COC Reference: 111367

Sample Containers

Table with 6 columns: #, Type, Preservative(s), Refrigerated?, Arrival Temp. (C), Thermometer #. Rows include 125ml Plastic, 40ml Glass, 250ml Amber, 1L Plastic, 125ml Plastic, 40ml Glass, and 125ml Amber.

Extraction / Prep.

Table with 6 columns: Parameter, Result, Method, Run Date, Analyst, Flags. Rows include pH check for VOCs*, Metal Digestion, and Metal Digestion.

Inorganics

Method: E120.1, Run Date: 06/22/18 11:18, Analyst: JKB

Table with 8 columns: Parameter, Result, RL, MDL, Units, Dilution, CAS#, Flags. Row: Conductivity 2,420 umhos/cm.

Method: E300.0, Run Date: 06/14/18 11:01, Analyst: JDP

Table with 8 columns: Parameter, Result, RL, MDL, Units, Dilution, CAS#, Flags. Rows: Chloride 85, Sulfate 931.

Method: E335.4/SM4500-CN, Run Date: 06/14/18 11:20, Analyst: JDP

Table with 8 columns: Parameter, Result, RL, MDL, Units, Dilution, CAS#, Flags. Row: Cyanide, Total Not detected.

Method: E420.1, Run Date: 06/20/18 16:18, Analyst: JKB

Table with 8 columns: Parameter, Result, RL, MDL, Units, Dilution, CAS#, Flags. Row: Phenols Not detected.

Method: SM5310C, Run Date: 06/18/18 16:02, Analyst: JKB

Table with 8 columns: Parameter, Result, RL, MDL, Units, Dilution, CAS#, Flags. Row: TOC 1.9.

Metals

Method: E200.8, Run Date: 06/19/18 15:06, Analyst: CCM

Table with 8 columns: Parameter, Result, RL, MDL, Units, Dilution, CAS#, Flags. Row: Sodium 55.5.

Method: E200.8, Run Date: 06/19/18 14:11, Analyst: CCM

Table with 8 columns: Parameter, Result, RL, MDL, Units, Dilution, CAS#, Flags. Rows: Chromium, Dissolved; Copper, Dissolved; Iron, Dissolved.

Lab Sample ID: S90664.04 (continued)

Sample Tag: B-9

Method: E200.8, Run Date: 06/19/18 14:11, Analyst: CCM (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Manganese, Dissolved	0.089	0.005		mg/L	5	7439-96-5	
Nickel, Dissolved	0.006	0.005		mg/L	5	7440-02-0	
Zinc, Dissolved	0.008	0.005		mg/L	5	7440-66-6	

Organics - Volatiles
Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 06/14/18 19:46, Analyst: JML

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Diethyl ether	Not detected	10		ug/L	1	60-29-7	
Acetone	Not detected	50		ug/L	1	67-64-1	
Methyl iodide	Not detected	1		ug/L	1	74-88-4	
Carbon disulfide	Not detected	5		ug/L	1	75-15-0	
tert-Methyl butyl ether (MTBE)	Not detected	5		ug/L	1	1634-04-4	
Acrylonitrile	Not detected	2		ug/L	1	107-13-1	
2-Butanone (MEK)	Not detected	25		ug/L	1	78-93-3	
Dichlorodifluoromethane	Not detected	5		ug/L	1	75-71-8	
Chloromethane	Not detected	5		ug/L	1	74-87-3	
Vinyl chloride	Not detected	1		ug/L	1	75-01-4	
Bromomethane	Not detected	5		ug/L	1	74-83-9	
Chloroethane	Not detected	5		ug/L	1	75-00-3	
Trichlorofluoromethane	Not detected	1		ug/L	1	75-69-4	
1,1-Dichloroethene	Not detected	1		ug/L	1	75-35-4	
Methylene chloride	Not detected	5		ug/L	1	75-09-2	
trans-1,2-Dichloroethene	Not detected	1		ug/L	1	156-60-5	
1,1-Dichloroethane	Not detected	1		ug/L	1	75-34-3	
cis-1,2-Dichloroethene	Not detected	1		ug/L	1	156-59-2	
Tetrahydrofuran*	Not detected	90		ug/L	1	109-99-9	
Chloroform	Not detected	1		ug/L	1	67-66-3	
Bromochloromethane	Not detected	1		ug/L	1	74-97-5	
1,1,1-Trichloroethane	Not detected	1		ug/L	1	71-55-6	
4-Methyl-2-pentanone (MIBK)	Not detected	50		ug/L	1	108-10-1	
2-Hexanone	Not detected	50		ug/L	1	591-78-6	
Carbon tetrachloride	Not detected	1		ug/L	1	56-23-5	
Benzene	Not detected	1		ug/L	1	71-43-2	
1,2-Dichloroethane	Not detected	1		ug/L	1	107-06-2	
Trichloroethene	Not detected	1		ug/L	1	79-01-6	
1,2-Dichloropropane	Not detected	1		ug/L	1	78-87-5	
Bromodichloromethane	Not detected	1		ug/L	1	75-27-4	
Dibromomethane	Not detected	5		ug/L	1	74-95-3	
cis-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-01-5	
Toluene	Not detected	1		ug/L	1	108-88-3	
trans-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-02-6	
1,1,2-Trichloroethane	Not detected	1		ug/L	1	79-00-5	
Tetrachloroethene	Not detected	1		ug/L	1	127-18-4	
trans-1,4-Dichloro-2-butene	Not detected	1		ug/L	1	110-57-6	
Dibromochloromethane	Not detected	5		ug/L	1	124-48-1	
1,2-Dibromoethane	Not detected	1		ug/L	1	106-93-4	
Chlorobenzene	Not detected	1		ug/L	1	108-90-7	
1,1,1,2-Tetrachloroethane	Not detected	1		ug/L	1	630-20-6	
Ethylbenzene	Not detected	1		ug/L	1	100-41-4	
p,m-Xylene*	Not detected	2		ug/L	1		



Lab Sample ID: S90664.04 (continued)

Sample Tag: B-9

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 06/14/18 19:46, Analyst: JML (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
o-Xylene	Not detected	1		ug/L	1	95-47-6	
Styrene	Not detected	1		ug/L	1	100-42-5	
Isopropylbenzene	Not detected	5		ug/L	1	98-82-8	
Bromoform	Not detected	1		ug/L	1	75-25-2	
1,1,2,2-Tetrachloroethane	Not detected	1		ug/L	1	79-34-5	
1,2,3-Trichloropropane	Not detected	1		ug/L	1	96-18-4	
n-Propylbenzene	Not detected	1		ug/L	1	103-65-1	
Bromobenzene	Not detected	1		ug/L	1	108-86-1	
1,3,5-Trimethylbenzene	Not detected	1		ug/L	1	108-67-8	
tert-Butylbenzene	Not detected	1		ug/L	1	98-06-6	
1,2,4-Trimethylbenzene	Not detected	1		ug/L	1	95-63-6	
sec-Butylbenzene	Not detected	1		ug/L	1	135-98-8	
p-Isopropyltoluene	Not detected	5		ug/L	1	99-87-6	
1,3-Dichlorobenzene	Not detected	1		ug/L	1	541-73-1	
1,4-Dichlorobenzene	Not detected	1		ug/L	1	106-46-7	
1,2-Dichlorobenzene	Not detected	1		ug/L	1	95-50-1	
1,2,3-Trimethylbenzene	Not detected	1		ug/L	1	526-73-8	
n-Butylbenzene	Not detected	1		ug/L	1	104-51-8	
Hexachloroethane	Not detected	5		ug/L	1	67-72-1	
1,2-Dibromo-3-chloropropane	Not detected	5		ug/L	1	96-12-8	
1,2,4-Trichlorobenzene	Not detected	5		ug/L	1	120-82-1	
1,2,3-Trichlorobenzene	Not detected	5		ug/L	1	87-61-6	
Naphthalene	Not detected	5		ug/L	1	91-20-3	
2-Methylnaphthalene	Not detected	5		ug/L	1	91-57-6	

Organics

Method: SW9020B, Run Date: 06/19/18 07:26, Analyst: TA

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
TOX*	Not detected	60.0		ug/L	1		O

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



Analytical Laboratory Report

Supplemental Report

Lab Sample ID: S90664.05

Sample Tag: B-18A

Collected Date/Time: 06/12/2018 15:35

Matrix: Groundwater

COC Reference: 111367

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	125ml Plastic	HNO3	Yes	3.2	IR
2	40ml Glass	H2SO4	Yes	3.2	IR
1	250ml Amber	H2SO4	Yes	3.2	IR
1	1L Plastic	None	Yes	3.2	IR
1	125ml Plastic	NaOH	Yes	3.2	IR
3	40ml Glass	HCL	Yes	3.2	IR
1	125ml Amber	H2SO4	Yes	3.2	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	06/15/18 13:40	JGH	
Metal Digestion	Completed	SW3015A	06/15/18 13:40	CCM	
Metal Digestion	Completed	SW3015A	06/15/18 13:40	CCM	

Inorganics

Method: E120.1, Run Date: 06/22/18 11:20, Analyst: JKB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Conductivity	1,074			umhos/cm	1		

Method: E300.0, Run Date: 06/14/18 11:14, Analyst: JDP

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chloride	16	10	0.24	mg/L	10	16887-00-6	
Sulfate	131	10	0.62	mg/L	10	14808-79-8	

Method: E335.4/SM4500-CN, Run Date: 06/14/18 11:22, Analyst: JDP

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Cyanide, Total	Not detected	0.005	0.002	mg/L	1	57-12-5	

Method: E420.1, Run Date: 06/20/18 16:20, Analyst: JKB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Phenols	Not detected	0.02		mg/L	1.7		

Method: SM5310C, Run Date: 06/18/18 16:24, Analyst: JKB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
TOC	1.4	1		mg/L	1		

Metals

Method: E200.8, Run Date: 06/19/18 15:08, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Sodium	32.9	2.5		mg/L	50	7440-23-5	

Method: E200.8, Run Date: 06/19/18 14:12, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chromium, Dissolved	Not detected	0.005		mg/L	5	7440-47-3	
Copper, Dissolved	Not detected	0.005		mg/L	5	7440-50-8	
Iron, Dissolved	0.16	0.02		mg/L	5	7439-89-6	

Lab Sample ID: S90664.05 (continued)

Sample Tag: B-18A

Method: E200.8, Run Date: 06/19/18 14:12, Analyst: CCM (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Manganese, Dissolved	0.041	0.005		mg/L	5	7439-96-5	
Nickel, Dissolved	Not detected	0.005		mg/L	5	7440-02-0	
Zinc, Dissolved	0.010	0.005		mg/L	5	7440-66-6	

Organics - Volatiles
Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 06/14/18 20:05, Analyst: JML

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Diethyl ether	Not detected	10		ug/L	1	60-29-7	
Acetone	Not detected	50		ug/L	1	67-64-1	
Methyl iodide	Not detected	1		ug/L	1	74-88-4	
Carbon disulfide	Not detected	5		ug/L	1	75-15-0	
tert-Methyl butyl ether (MTBE)	Not detected	5		ug/L	1	1634-04-4	
Acrylonitrile	Not detected	2		ug/L	1	107-13-1	
2-Butanone (MEK)	Not detected	25		ug/L	1	78-93-3	
Dichlorodifluoromethane	Not detected	5		ug/L	1	75-71-8	
Chloromethane	Not detected	5		ug/L	1	74-87-3	
Vinyl chloride	Not detected	1		ug/L	1	75-01-4	
Bromomethane	Not detected	5		ug/L	1	74-83-9	
Chloroethane	Not detected	5		ug/L	1	75-00-3	
Trichlorofluoromethane	Not detected	1		ug/L	1	75-69-4	
1,1-Dichloroethene	Not detected	1		ug/L	1	75-35-4	
Methylene chloride	Not detected	5		ug/L	1	75-09-2	
trans-1,2-Dichloroethene	Not detected	1		ug/L	1	156-60-5	
1,1-Dichloroethane	Not detected	1		ug/L	1	75-34-3	
cis-1,2-Dichloroethene	Not detected	1		ug/L	1	156-59-2	
Tetrahydrofuran*	Not detected	90		ug/L	1	109-99-9	
Chloroform	Not detected	1		ug/L	1	67-66-3	
Bromochloromethane	Not detected	1		ug/L	1	74-97-5	
1,1,1-Trichloroethane	Not detected	1		ug/L	1	71-55-6	
4-Methyl-2-pentanone (MIBK)	Not detected	50		ug/L	1	108-10-1	
2-Hexanone	Not detected	50		ug/L	1	591-78-6	
Carbon tetrachloride	Not detected	1		ug/L	1	56-23-5	
Benzene	Not detected	1		ug/L	1	71-43-2	
1,2-Dichloroethane	Not detected	1		ug/L	1	107-06-2	
Trichloroethene	Not detected	1		ug/L	1	79-01-6	
1,2-Dichloropropane	Not detected	1		ug/L	1	78-87-5	
Bromodichloromethane	Not detected	1		ug/L	1	75-27-4	
Dibromomethane	Not detected	5		ug/L	1	74-95-3	
cis-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-01-5	
Toluene	Not detected	1		ug/L	1	108-88-3	
trans-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-02-6	
1,1,2-Trichloroethane	Not detected	1		ug/L	1	79-00-5	
Tetrachloroethene	Not detected	1		ug/L	1	127-18-4	
trans-1,4-Dichloro-2-butene	Not detected	1		ug/L	1	110-57-6	
Dibromochloromethane	Not detected	5		ug/L	1	124-48-1	
1,2-Dibromoethane	Not detected	1		ug/L	1	106-93-4	
Chlorobenzene	Not detected	1		ug/L	1	108-90-7	
1,1,1,2-Tetrachloroethane	Not detected	1		ug/L	1	630-20-6	
Ethylbenzene	Not detected	1		ug/L	1	100-41-4	
p,m-Xylene*	Not detected	2		ug/L	1		



Lab Sample ID: S90664.05 (continued)

Sample Tag: B-18A

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 06/14/18 20:05, Analyst: JML (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
o-Xylene	Not detected	1		ug/L	1	95-47-6	
Styrene	Not detected	1		ug/L	1	100-42-5	
Isopropylbenzene	Not detected	5		ug/L	1	98-82-8	
Bromoform	Not detected	1		ug/L	1	75-25-2	
1,1,2,2-Tetrachloroethane	Not detected	1		ug/L	1	79-34-5	
1,2,3-Trichloropropane	Not detected	1		ug/L	1	96-18-4	
n-Propylbenzene	Not detected	1		ug/L	1	103-65-1	
Bromobenzene	Not detected	1		ug/L	1	108-86-1	
1,3,5-Trimethylbenzene	Not detected	1		ug/L	1	108-67-8	
tert-Butylbenzene	Not detected	1		ug/L	1	98-06-6	
1,2,4-Trimethylbenzene	Not detected	1		ug/L	1	95-63-6	
sec-Butylbenzene	Not detected	1		ug/L	1	135-98-8	
p-Isopropyltoluene	Not detected	5		ug/L	1	99-87-6	
1,3-Dichlorobenzene	Not detected	1		ug/L	1	541-73-1	
1,4-Dichlorobenzene	Not detected	1		ug/L	1	106-46-7	
1,2-Dichlorobenzene	Not detected	1		ug/L	1	95-50-1	
1,2,3-Trimethylbenzene	Not detected	1		ug/L	1	526-73-8	
n-Butylbenzene	Not detected	1		ug/L	1	104-51-8	
Hexachloroethane	Not detected	5		ug/L	1	67-72-1	
1,2-Dibromo-3-chloropropane	Not detected	5		ug/L	1	96-12-8	
1,2,4-Trichlorobenzene	Not detected	5		ug/L	1	120-82-1	
1,2,3-Trichlorobenzene	Not detected	5		ug/L	1	87-61-6	
Naphthalene	Not detected	5		ug/L	1	91-20-3	
2-Methylnaphthalene	Not detected	5		ug/L	1	91-57-6	

Organics

Method: SW9020B, Run Date: 06/19/18 07:26, Analyst: TA

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
TOX*	Not detected	60.0		ug/L	1		O

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



Analytical Laboratory Report

Supplemental Report

Lab Sample ID: S90664.06

Sample Tag: B-19Ar

Collected Date/Time: 06/12/2018 16:15

Matrix: Groundwater

COC Reference: 111367

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	125ml Plastic	HNO3	Yes	3.2	IR
2	40ml Glass	H2SO4	Yes	3.2	IR
1	250ml Amber	H2SO4	Yes	3.2	IR
1	1L Plastic	None	Yes	3.2	IR
1	125ml Plastic	NaOH	Yes	3.2	IR
3	40ml Glass	HCL	Yes	3.2	IR
1	125ml Amber	H2SO4	Yes	3.2	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	06/15/18 13:40	JGH	
Metal Digestion	Completed	SW3015A	06/15/18 13:40	CCM	
Metal Digestion	Completed	SW3015A	06/15/18 13:40	CCM	

Inorganics

Method: E120.1, Run Date: 06/22/18 11:22, Analyst: JKB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Conductivity	688			umhos/cm	1		

Method: E300.0, Run Date: 06/14/18 11:27, Analyst: JDP

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chloride	81	10	0.24	mg/L	10	16887-00-6	
Sulfate	135	10	0.62	mg/L	10	14808-79-8	

Method: E335.4/SM4500-CN, Run Date: 06/14/18 11:24, Analyst: JDP

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Cyanide, Total	Not detected	0.005	0.002	mg/L	1	57-12-5	

Method: E420.1, Run Date: 06/20/18 16:22, Analyst: JKB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Phenols	Not detected	0.02		mg/L	1.7		

Method: SM5310C, Run Date: 06/18/18 16:47, Analyst: JKB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
TOC	1.8	1		mg/L	1		

Metals

Method: E200.8, Run Date: 06/19/18 15:09, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Sodium	24.7	2.5		mg/L	50	7440-23-5	

Method: E200.8, Run Date: 06/19/18 14:14, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chromium, Dissolved	Not detected	0.005		mg/L	5	7440-47-3	
Copper, Dissolved	Not detected	0.005		mg/L	5	7440-50-8	
Iron, Dissolved	0.03	0.02		mg/L	5	7439-89-6	

Lab Sample ID: S90664.06 (continued)

Sample Tag: B-19Ar

Method: E200.8, Run Date: 06/19/18 14:14, Analyst: CCM (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Manganese, Dissolved	Not detected	0.005		mg/L	5	7439-96-5	
Nickel, Dissolved	Not detected	0.005		mg/L	5	7440-02-0	
Zinc, Dissolved	Not detected	0.005		mg/L	5	7440-66-6	

Organics - Volatiles
Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 06/14/18 20:24, Analyst: JML

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Diethyl ether	Not detected	10		ug/L	1	60-29-7	
Acetone	Not detected	50		ug/L	1	67-64-1	
Methyl iodide	Not detected	1		ug/L	1	74-88-4	
Carbon disulfide	Not detected	5		ug/L	1	75-15-0	
tert-Methyl butyl ether (MTBE)	Not detected	5		ug/L	1	1634-04-4	
Acrylonitrile	Not detected	2		ug/L	1	107-13-1	
2-Butanone (MEK)	Not detected	25		ug/L	1	78-93-3	
Dichlorodifluoromethane	Not detected	5		ug/L	1	75-71-8	
Chloromethane	Not detected	5		ug/L	1	74-87-3	
Vinyl chloride	Not detected	1		ug/L	1	75-01-4	
Bromomethane	Not detected	5		ug/L	1	74-83-9	
Chloroethane	Not detected	5		ug/L	1	75-00-3	
Trichlorofluoromethane	Not detected	1		ug/L	1	75-69-4	
1,1-Dichloroethene	Not detected	1		ug/L	1	75-35-4	
Methylene chloride	Not detected	5		ug/L	1	75-09-2	
trans-1,2-Dichloroethene	Not detected	1		ug/L	1	156-60-5	
1,1-Dichloroethane	Not detected	1		ug/L	1	75-34-3	
cis-1,2-Dichloroethene	Not detected	1		ug/L	1	156-59-2	
Tetrahydrofuran*	Not detected	90		ug/L	1	109-99-9	
Chloroform	Not detected	1		ug/L	1	67-66-3	
Bromochloromethane	Not detected	1		ug/L	1	74-97-5	
1,1,1-Trichloroethane	Not detected	1		ug/L	1	71-55-6	
4-Methyl-2-pentanone (MIBK)	Not detected	50		ug/L	1	108-10-1	
2-Hexanone	Not detected	50		ug/L	1	591-78-6	
Carbon tetrachloride	Not detected	1		ug/L	1	56-23-5	
Benzene	Not detected	1		ug/L	1	71-43-2	
1,2-Dichloroethane	Not detected	1		ug/L	1	107-06-2	
Trichloroethene	Not detected	1		ug/L	1	79-01-6	
1,2-Dichloropropane	Not detected	1		ug/L	1	78-87-5	
Bromodichloromethane	Not detected	1		ug/L	1	75-27-4	
Dibromomethane	Not detected	5		ug/L	1	74-95-3	
cis-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-01-5	
Toluene	Not detected	1		ug/L	1	108-88-3	
trans-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-02-6	
1,1,2-Trichloroethane	Not detected	1		ug/L	1	79-00-5	
Tetrachloroethene	Not detected	1		ug/L	1	127-18-4	
trans-1,4-Dichloro-2-butene	Not detected	1		ug/L	1	110-57-6	
Dibromochloromethane	Not detected	5		ug/L	1	124-48-1	
1,2-Dibromoethane	Not detected	1		ug/L	1	106-93-4	
Chlorobenzene	Not detected	1		ug/L	1	108-90-7	
1,1,1,2-Tetrachloroethane	Not detected	1		ug/L	1	630-20-6	
Ethylbenzene	Not detected	1		ug/L	1	100-41-4	
p,m-Xylene*	Not detected	2		ug/L	1		



Lab Sample ID: S90664.06 (continued)

Sample Tag: B-19Ar

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 06/14/18 20:24, Analyst: JML (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
o-Xylene	Not detected	1		ug/L	1	95-47-6	
Styrene	Not detected	1		ug/L	1	100-42-5	
Isopropylbenzene	Not detected	5		ug/L	1	98-82-8	
Bromoform	Not detected	1		ug/L	1	75-25-2	
1,1,2,2-Tetrachloroethane	Not detected	1		ug/L	1	79-34-5	
1,2,3-Trichloropropane	Not detected	1		ug/L	1	96-18-4	
n-Propylbenzene	Not detected	1		ug/L	1	103-65-1	
Bromobenzene	Not detected	1		ug/L	1	108-86-1	
1,3,5-Trimethylbenzene	Not detected	1		ug/L	1	108-67-8	
tert-Butylbenzene	Not detected	1		ug/L	1	98-06-6	
1,2,4-Trimethylbenzene	Not detected	1		ug/L	1	95-63-6	
sec-Butylbenzene	Not detected	1		ug/L	1	135-98-8	
p-Isopropyltoluene	Not detected	5		ug/L	1	99-87-6	
1,3-Dichlorobenzene	Not detected	1		ug/L	1	541-73-1	
1,4-Dichlorobenzene	Not detected	1		ug/L	1	106-46-7	
1,2-Dichlorobenzene	Not detected	1		ug/L	1	95-50-1	
1,2,3-Trimethylbenzene	Not detected	1		ug/L	1	526-73-8	
n-Butylbenzene	Not detected	1		ug/L	1	104-51-8	
Hexachloroethane	Not detected	5		ug/L	1	67-72-1	
1,2-Dibromo-3-chloropropane	Not detected	5		ug/L	1	96-12-8	
1,2,4-Trichlorobenzene	Not detected	5		ug/L	1	120-82-1	
1,2,3-Trichlorobenzene	Not detected	5		ug/L	1	87-61-6	
Naphthalene	Not detected	5		ug/L	1	91-20-3	
2-Methylnaphthalene	Not detected	5		ug/L	1	91-57-6	

Organics

Method: SW9020B, Run Date: 06/19/18 07:26, Analyst: TA

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
TOX*	Not detected	60.0		ug/L	1		O

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



Analytical Laboratory Report

Supplemental Report

Lab Sample ID: S90664.07

Sample Tag: B-27D

Collected Date/Time: 06/12/2018 16:45

Matrix: Groundwater

COC Reference: 111367

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	125ml Plastic	HNO3	Yes	3.2	IR
2	40ml Glass	H2SO4	Yes	3.2	IR
1	250ml Amber	H2SO4	Yes	3.2	IR
1	1L Plastic	None	Yes	3.2	IR
1	125ml Plastic	NaOH	Yes	3.2	IR
3	40ml Glass	HCL	Yes	3.2	IR
1	125ml Amber	H2SO4	Yes	3.2	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	06/15/18 13:40	JGH	
Metal Digestion	Completed	SW3015A	06/15/18 13:40	CCM	
Metal Digestion	Completed	SW3015A	06/15/18 13:40	CCM	

Inorganics

Method: E120.1, Run Date: 06/22/18 11:24, Analyst: JKB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Conductivity	667			umhos/cm	1		

Method: E300.0, Run Date: 06/14/18 11:40, Analyst: JDP

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chloride	Not detected	5	0.12	mg/L	5	16887-00-6	
Sulfate	16	5	0.31	mg/L	5	14808-79-8	

Method: E335.4/SM4500-CN, Run Date: 06/14/18 11:26, Analyst: JDP

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Cyanide, Total	Not detected	0.005	0.002	mg/L	1	57-12-5	

Method: E420.1, Run Date: 06/20/18 16:24, Analyst: JKB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Phenols	Not detected	0.02		mg/L	1.7		

Method: SM5310C, Run Date: 06/18/18 17:09, Analyst: JKB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
TOC	1.7	1		mg/L	1		

Metals

Method: E200.8, Run Date: 06/19/18 15:11, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Sodium	43.7	2.5		mg/L	50	7440-23-5	

Method: E200.8, Run Date: 06/19/18 14:16, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chromium, Dissolved	Not detected	0.005		mg/L	5	7440-47-3	
Copper, Dissolved	Not detected	0.005		mg/L	5	7440-50-8	
Iron, Dissolved	1.38	0.02		mg/L	5	7439-89-6	

Lab Sample ID: S90664.07 (continued)

Sample Tag: B-27D

Method: E200.8, Run Date: 06/19/18 14:16, Analyst: CCM (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Manganese, Dissolved	0.033	0.005		mg/L	5	7439-96-5	
Nickel, Dissolved	Not detected	0.005		mg/L	5	7440-02-0	
Zinc, Dissolved	0.006	0.005		mg/L	5	7440-66-6	

Organics - Volatiles
Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 06/14/18 20:44, Analyst: JML

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Diethyl ether	Not detected	10		ug/L	1	60-29-7	
Acetone	Not detected	50		ug/L	1	67-64-1	
Methyl iodide	Not detected	1		ug/L	1	74-88-4	
Carbon disulfide	Not detected	5		ug/L	1	75-15-0	
tert-Methyl butyl ether (MTBE)	Not detected	5		ug/L	1	1634-04-4	
Acrylonitrile	Not detected	2		ug/L	1	107-13-1	
2-Butanone (MEK)	Not detected	25		ug/L	1	78-93-3	
Dichlorodifluoromethane	Not detected	5		ug/L	1	75-71-8	
Chloromethane	Not detected	5		ug/L	1	74-87-3	
Vinyl chloride	Not detected	1		ug/L	1	75-01-4	
Bromomethane	Not detected	5		ug/L	1	74-83-9	
Chloroethane	Not detected	5		ug/L	1	75-00-3	
Trichlorofluoromethane	Not detected	1		ug/L	1	75-69-4	
1,1-Dichloroethene	Not detected	1		ug/L	1	75-35-4	
Methylene chloride	Not detected	5		ug/L	1	75-09-2	
trans-1,2-Dichloroethene	Not detected	1		ug/L	1	156-60-5	
1,1-Dichloroethane	Not detected	1		ug/L	1	75-34-3	
cis-1,2-Dichloroethene	Not detected	1		ug/L	1	156-59-2	
Tetrahydrofuran*	Not detected	90		ug/L	1	109-99-9	
Chloroform	Not detected	1		ug/L	1	67-66-3	
Bromochloromethane	Not detected	1		ug/L	1	74-97-5	
1,1,1-Trichloroethane	Not detected	1		ug/L	1	71-55-6	
4-Methyl-2-pentanone (MIBK)	Not detected	50		ug/L	1	108-10-1	
2-Hexanone	Not detected	50		ug/L	1	591-78-6	
Carbon tetrachloride	Not detected	1		ug/L	1	56-23-5	
Benzene	Not detected	1		ug/L	1	71-43-2	
1,2-Dichloroethane	Not detected	1		ug/L	1	107-06-2	
Trichloroethene	Not detected	1		ug/L	1	79-01-6	
1,2-Dichloropropane	Not detected	1		ug/L	1	78-87-5	
Bromodichloromethane	Not detected	1		ug/L	1	75-27-4	
Dibromomethane	Not detected	5		ug/L	1	74-95-3	
cis-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-01-5	
Toluene	Not detected	1		ug/L	1	108-88-3	
trans-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-02-6	
1,1,2-Trichloroethane	Not detected	1		ug/L	1	79-00-5	
Tetrachloroethene	Not detected	1		ug/L	1	127-18-4	
trans-1,4-Dichloro-2-butene	Not detected	1		ug/L	1	110-57-6	
Dibromochloromethane	Not detected	5		ug/L	1	124-48-1	
1,2-Dibromoethane	Not detected	1		ug/L	1	106-93-4	
Chlorobenzene	Not detected	1		ug/L	1	108-90-7	
1,1,1,2-Tetrachloroethane	Not detected	1		ug/L	1	630-20-6	
Ethylbenzene	Not detected	1		ug/L	1	100-41-4	
p,m-Xylene*	Not detected	2		ug/L	1		



Lab Sample ID: S90664.07 (continued)

Sample Tag: B-27D

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 06/14/18 20:44, Analyst: JML (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
o-Xylene	Not detected	1		ug/L	1	95-47-6	
Styrene	Not detected	1		ug/L	1	100-42-5	
Isopropylbenzene	Not detected	5		ug/L	1	98-82-8	
Bromoform	Not detected	1		ug/L	1	75-25-2	
1,1,2,2-Tetrachloroethane	Not detected	1		ug/L	1	79-34-5	
1,2,3-Trichloropropane	Not detected	1		ug/L	1	96-18-4	
n-Propylbenzene	Not detected	1		ug/L	1	103-65-1	
Bromobenzene	Not detected	1		ug/L	1	108-86-1	
1,3,5-Trimethylbenzene	Not detected	1		ug/L	1	108-67-8	
tert-Butylbenzene	Not detected	1		ug/L	1	98-06-6	
1,2,4-Trimethylbenzene	Not detected	1		ug/L	1	95-63-6	
sec-Butylbenzene	Not detected	1		ug/L	1	135-98-8	
p-Isopropyltoluene	Not detected	5		ug/L	1	99-87-6	
1,3-Dichlorobenzene	Not detected	1		ug/L	1	541-73-1	
1,4-Dichlorobenzene	Not detected	1		ug/L	1	106-46-7	
1,2-Dichlorobenzene	Not detected	1		ug/L	1	95-50-1	
1,2,3-Trimethylbenzene	Not detected	1		ug/L	1	526-73-8	
n-Butylbenzene	Not detected	1		ug/L	1	104-51-8	
Hexachloroethane	Not detected	5		ug/L	1	67-72-1	
1,2-Dibromo-3-chloropropane	Not detected	5		ug/L	1	96-12-8	
1,2,4-Trichlorobenzene	Not detected	5		ug/L	1	120-82-1	
1,2,3-Trichlorobenzene	Not detected	5		ug/L	1	87-61-6	
Naphthalene	Not detected	5		ug/L	1	91-20-3	
2-Methylnaphthalene	Not detected	5		ug/L	1	91-57-6	

Organics

Method: SW9020B, Run Date: 06/19/18 07:26, Analyst: TA

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
TOX*	Not detected	60.0		ug/L	1		O

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



Lab Sample ID: S90664.08

Sample Tag: B-22D

Collected Date/Time: 06/13/2018 10:30

Matrix: Groundwater

COC Reference: 111367

Sample Containers

Table with 6 columns: #, Type, Preservative(s), Refrigerated?, Arrival Temp. (C), Thermometer #. Rows include 125ml Plastic, 40ml Glass, 250ml Amber, 1L Plastic, 125ml Plastic, 40ml Glass, 125ml Amber.

Extraction / Prep.

Table with 6 columns: Parameter, Result, Method, Run Date, Analyst, Flags. Rows include pH check for VOCs*, Metal Digestion.

Inorganics

Method: E120.1, Run Date: 06/22/18 11:26, Analyst: JKB

Table with 8 columns: Parameter, Result, RL, MDL, Units, Dilution, CAS#, Flags. Row: Conductivity 707 umhos/cm.

Method: E300.0, Run Date: 06/14/18 11:53, Analyst: JDP

Table with 8 columns: Parameter, Result, RL, MDL, Units, Dilution, CAS#, Flags. Rows: Chloride Not detected, Sulfate 54.

Method: E335.4/SM4500-CN, Run Date: 06/14/18 11:28, Analyst: JDP

Table with 8 columns: Parameter, Result, RL, MDL, Units, Dilution, CAS#, Flags. Row: Cyanide, Total Not detected.

Method: E420.1, Run Date: 06/20/18 16:26, Analyst: JKB

Table with 8 columns: Parameter, Result, RL, MDL, Units, Dilution, CAS#, Flags. Row: Phenols Not detected.

Method: SM5310C, Run Date: 06/18/18 17:32, Analyst: JKB

Table with 8 columns: Parameter, Result, RL, MDL, Units, Dilution, CAS#, Flags. Row: TOC 1.5.

Metals

Method: E200.8, Run Date: 06/19/18 15:13, Analyst: CCM

Table with 8 columns: Parameter, Result, RL, MDL, Units, Dilution, CAS#, Flags. Row: Sodium 31.0.

Method: E200.8, Run Date: 06/19/18 14:18, Analyst: CCM

Table with 8 columns: Parameter, Result, RL, MDL, Units, Dilution, CAS#, Flags. Rows: Chromium, Dissolved Not detected; Copper, Dissolved Not detected; Iron, Dissolved 1.32.

Lab Sample ID: S90664.08 (continued)

Sample Tag: B-22D

Method: E200.8, Run Date: 06/19/18 14:18, Analyst: CCM (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Manganese, Dissolved	0.029	0.005		mg/L	5	7439-96-5	
Nickel, Dissolved	Not detected	0.005		mg/L	5	7440-02-0	
Zinc, Dissolved	0.005	0.005		mg/L	5	7440-66-6	

Organics - Volatiles
Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 06/15/18 03:27, Analyst: JML

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Diethyl ether	Not detected	10		ug/L	1	60-29-7	
Acetone	Not detected	50		ug/L	1	67-64-1	
Methyl iodide	Not detected	1		ug/L	1	74-88-4	
Carbon disulfide	Not detected	5		ug/L	1	75-15-0	
tert-Methyl butyl ether (MTBE)	Not detected	5		ug/L	1	1634-04-4	
Acrylonitrile	Not detected	2		ug/L	1	107-13-1	
2-Butanone (MEK)	Not detected	25		ug/L	1	78-93-3	
Dichlorodifluoromethane	Not detected	5		ug/L	1	75-71-8	
Chloromethane	Not detected	5		ug/L	1	74-87-3	
Vinyl chloride	Not detected	1		ug/L	1	75-01-4	
Bromomethane	Not detected	5		ug/L	1	74-83-9	
Chloroethane	Not detected	5		ug/L	1	75-00-3	
Trichlorofluoromethane	Not detected	1		ug/L	1	75-69-4	
1,1-Dichloroethene	Not detected	1		ug/L	1	75-35-4	
Methylene chloride	Not detected	5		ug/L	1	75-09-2	
trans-1,2-Dichloroethene	Not detected	1		ug/L	1	156-60-5	
1,1-Dichloroethane	Not detected	1		ug/L	1	75-34-3	
cis-1,2-Dichloroethene	Not detected	1		ug/L	1	156-59-2	
Tetrahydrofuran*	Not detected	90		ug/L	1	109-99-9	
Chloroform	Not detected	1		ug/L	1	67-66-3	
Bromochloromethane	Not detected	1		ug/L	1	74-97-5	
1,1,1-Trichloroethane	Not detected	1		ug/L	1	71-55-6	
4-Methyl-2-pentanone (MIBK)	Not detected	50		ug/L	1	108-10-1	
2-Hexanone	Not detected	50		ug/L	1	591-78-6	
Carbon tetrachloride	Not detected	1		ug/L	1	56-23-5	
Benzene	Not detected	1		ug/L	1	71-43-2	
1,2-Dichloroethane	Not detected	1		ug/L	1	107-06-2	
Trichloroethene	Not detected	1		ug/L	1	79-01-6	
1,2-Dichloropropane	Not detected	1		ug/L	1	78-87-5	
Bromodichloromethane	Not detected	1		ug/L	1	75-27-4	
Dibromomethane	Not detected	5		ug/L	1	74-95-3	
cis-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-01-5	
Toluene	Not detected	1		ug/L	1	108-88-3	
trans-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-02-6	
1,1,2-Trichloroethane	Not detected	1		ug/L	1	79-00-5	
Tetrachloroethene	Not detected	1		ug/L	1	127-18-4	
trans-1,4-Dichloro-2-butene	Not detected	1		ug/L	1	110-57-6	
Dibromochloromethane	Not detected	5		ug/L	1	124-48-1	
1,2-Dibromoethane	Not detected	1		ug/L	1	106-93-4	
Chlorobenzene	Not detected	1		ug/L	1	108-90-7	
1,1,1,2-Tetrachloroethane	Not detected	1		ug/L	1	630-20-6	
Ethylbenzene	Not detected	1		ug/L	1	100-41-4	
p,m-Xylene*	Not detected	2		ug/L	1		



Lab Sample ID: S90664.08 (continued)

Sample Tag: B-22D

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 06/15/18 03:27, Analyst: JML (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
o-Xylene	Not detected	1		ug/L	1	95-47-6	
Styrene	Not detected	1		ug/L	1	100-42-5	
Isopropylbenzene	Not detected	5		ug/L	1	98-82-8	
Bromoform	Not detected	1		ug/L	1	75-25-2	
1,1,2,2-Tetrachloroethane	Not detected	1		ug/L	1	79-34-5	
1,2,3-Trichloropropane	Not detected	1		ug/L	1	96-18-4	
n-Propylbenzene	Not detected	1		ug/L	1	103-65-1	
Bromobenzene	Not detected	1		ug/L	1	108-86-1	
1,3,5-Trimethylbenzene	Not detected	1		ug/L	1	108-67-8	
tert-Butylbenzene	Not detected	1		ug/L	1	98-06-6	
1,2,4-Trimethylbenzene	Not detected	1		ug/L	1	95-63-6	
sec-Butylbenzene	Not detected	1		ug/L	1	135-98-8	
p-Isopropyltoluene	Not detected	5		ug/L	1	99-87-6	
1,3-Dichlorobenzene	Not detected	1		ug/L	1	541-73-1	
1,4-Dichlorobenzene	Not detected	1		ug/L	1	106-46-7	
1,2-Dichlorobenzene	Not detected	1		ug/L	1	95-50-1	
1,2,3-Trimethylbenzene	Not detected	1		ug/L	1	526-73-8	
n-Butylbenzene	Not detected	1		ug/L	1	104-51-8	
Hexachloroethane	Not detected	5		ug/L	1	67-72-1	
1,2-Dibromo-3-chloropropane	Not detected	5		ug/L	1	96-12-8	
1,2,4-Trichlorobenzene	Not detected	5		ug/L	1	120-82-1	
1,2,3-Trichlorobenzene	Not detected	5		ug/L	1	87-61-6	
Naphthalene	Not detected	5		ug/L	1	91-20-3	
2-Methylnaphthalene	Not detected	5		ug/L	1	91-57-6	

Organics

Method: SW9020B, Run Date: 06/19/18 07:26, Analyst: TA

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
TOX*	Not detected	60.0		ug/L	1		O

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



Analytical Laboratory Report

Supplemental Report

Lab Sample ID: S90664.09

Sample Tag: Trip Blank - 1

Collected Date/Time: 06/13/2018 00:01

Matrix: Water

COC Reference: 111367

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	40ml Glass	HCL	Yes	3.2	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	06/15/18 13:40	JGH	

Organics - Volatiles

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 06/14/18 13:23, Analyst: JML

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Diethyl ether	Not detected	10		ug/L	1	60-29-7	
Acetone	Not detected	50		ug/L	1	67-64-1	
Methyl iodide	Not detected	1		ug/L	1	74-88-4	
Carbon disulfide	Not detected	5		ug/L	1	75-15-0	
tert-Methyl butyl ether (MTBE)	Not detected	5		ug/L	1	1634-04-4	
Acrylonitrile	Not detected	2		ug/L	1	107-13-1	
2-Butanone (MEK)	Not detected	25		ug/L	1	78-93-3	
Dichlorodifluoromethane	Not detected	5		ug/L	1	75-71-8	
Chloromethane	Not detected	5		ug/L	1	74-87-3	
Vinyl chloride	Not detected	1		ug/L	1	75-01-4	
Bromomethane	Not detected	5		ug/L	1	74-83-9	
Chloroethane	Not detected	5		ug/L	1	75-00-3	
Trichlorofluoromethane	Not detected	1		ug/L	1	75-69-4	
1,1-Dichloroethene	Not detected	1		ug/L	1	75-35-4	
Methylene chloride	Not detected	5		ug/L	1	75-09-2	
trans-1,2-Dichloroethene	Not detected	1		ug/L	1	156-60-5	
1,1-Dichloroethane	Not detected	1		ug/L	1	75-34-3	
cis-1,2-Dichloroethene	Not detected	1		ug/L	1	156-59-2	
Tetrahydrofuran*	Not detected	90		ug/L	1	109-99-9	
Chloroform	Not detected	1		ug/L	1	67-66-3	
Bromochloromethane	Not detected	1		ug/L	1	74-97-5	
1,1,1-Trichloroethane	Not detected	1		ug/L	1	71-55-6	
4-Methyl-2-pentanone (MIBK)	Not detected	50		ug/L	1	108-10-1	
2-Hexanone	Not detected	50		ug/L	1	591-78-6	
Carbon tetrachloride	Not detected	1		ug/L	1	56-23-5	
Benzene	Not detected	1		ug/L	1	71-43-2	
1,2-Dichloroethane	Not detected	1		ug/L	1	107-06-2	
Trichloroethene	Not detected	1		ug/L	1	79-01-6	
1,2-Dichloropropane	Not detected	1		ug/L	1	78-87-5	
Bromodichloromethane	Not detected	1		ug/L	1	75-27-4	
Dibromomethane	Not detected	5		ug/L	1	74-95-3	
cis-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-01-5	
Toluene	Not detected	1		ug/L	1	108-88-3	
trans-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-02-6	
1,1,2-Trichloroethane	Not detected	1		ug/L	1	79-00-5	
Tetrachloroethene	Not detected	1		ug/L	1	127-18-4	
trans-1,4-Dichloro-2-butene	Not detected	1		ug/L	1	110-57-6	



Lab Sample ID: S90664.09 (continued)

Sample Tag: Trip Blank - 1

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 06/14/18 13:23, Analyst: JML (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Dibromochloromethane	Not detected	5		ug/L	1	124-48-1	
1,2-Dibromoethane	Not detected	1		ug/L	1	106-93-4	
Chlorobenzene	Not detected	1		ug/L	1	108-90-7	
1,1,1,2-Tetrachloroethane	Not detected	1		ug/L	1	630-20-6	
Ethylbenzene	Not detected	1		ug/L	1	100-41-4	
p,m-Xylene*	Not detected	2		ug/L	1		
o-Xylene	Not detected	1		ug/L	1	95-47-6	
Styrene	Not detected	1		ug/L	1	100-42-5	
Isopropylbenzene	Not detected	5		ug/L	1	98-82-8	
Bromoform	Not detected	1		ug/L	1	75-25-2	
1,1,2,2-Tetrachloroethane	Not detected	1		ug/L	1	79-34-5	
1,2,3-Trichloropropane	Not detected	1		ug/L	1	96-18-4	
n-Propylbenzene	Not detected	1		ug/L	1	103-65-1	
Bromobenzene	Not detected	1		ug/L	1	108-86-1	
1,3,5-Trimethylbenzene	Not detected	1		ug/L	1	108-67-8	
tert-Butylbenzene	Not detected	1		ug/L	1	98-06-6	
1,2,4-Trimethylbenzene	Not detected	1		ug/L	1	95-63-6	
sec-Butylbenzene	Not detected	1		ug/L	1	135-98-8	
p-Isopropyltoluene	Not detected	5		ug/L	1	99-87-6	
1,3-Dichlorobenzene	Not detected	1		ug/L	1	541-73-1	
1,4-Dichlorobenzene	Not detected	1		ug/L	1	106-46-7	
1,2-Dichlorobenzene	Not detected	1		ug/L	1	95-50-1	
1,2,3-Trimethylbenzene	Not detected	1		ug/L	1	526-73-8	
n-Butylbenzene	Not detected	1		ug/L	1	104-51-8	
Hexachloroethane	Not detected	5		ug/L	1	67-72-1	
1,2-Dibromo-3-chloropropane	Not detected	5		ug/L	1	96-12-8	
1,2,4-Trichlorobenzene	Not detected	5		ug/L	1	120-82-1	
1,2,3-Trichlorobenzene	Not detected	5		ug/L	1	87-61-6	
Naphthalene	Not detected	5		ug/L	1	91-20-3	
2-Methylnaphthalene	Not detected	5		ug/L	1	91-57-6	

Merit Laboratories Login Checklist

Lab Set ID: S90664

Attention: Clifford Yantz
 Address: O'Brien & Gere Engineers, Inc.
 2260 E Saginaw St
 East Lansing, MI 48823

Client: OBG02 (O'Brien & Gere Engineers, Inc.)

Project: RACER Coldwater Rd Landfill

Submitted: 06/13/2018 13:35 Login User: SRS

Phone: 248-477-5701 FAX:
 Email: Clifford.Yantz@obg.com

Selection	Description	Note
01. <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	Samples shipped	
02. <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	Samples left in 24 hr. drop box	
03. <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	Are there custody seals/tape or is the drop box locked	
04. <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Samples are received at 4C +/- 2C Thermometer #	IR 3.2
05. <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Received on ice/ cooling process begun	
06. <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	All bottles intact	
07. <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Appropriate analytical bottles are used	
08. <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Do sample have correct chemical preservation	
09. <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Merit bottles used	
10. <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Sufficient sample volume received	
11. <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	Samples require laboratory filtration	
12. <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Completed pH checks on preserved samples? (no VOAs)	
13. <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	Did any samples need to be preserved in the lab?	
14. <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Samples submitted within holding time	
15. <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	Do water VOC or TOX bottles contain headspace	
16. <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	COC adequately filled out	
17. <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	COC signed and relinquished to the lab	
18. <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Sample tag on bottles match COC	
19. <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Subcontracting needed? Subcontracted to:	Test America

Corrective action for all exceptions is to call the client and to notify the project manager.

Client Review By: _____ Date: _____



Merit
Laboratories, Inc.

2680 East Lansing Dr., East Lansing, MI 48823
Phone (517) 332-0167 Fax (517) 332-4034
www.meritlabs.com

C.O.C. PAGE # 1 OF 1

111367

REPORT TO

CHAIN OF CUSTODY RECORD

INVOICE TO

CONTACT NAME: Clifford Yantz
 COMPANY: O'Brien & Gere
 ADDRESS: 2260 E Saginaw St
 CITY: East Lansing STATE: MI ZIP CODE: 48823
 PHONE NO.: 313-333-0211 FAX NO.: P.O. NO.: 11800350
 E-MAIL ADDRESS: clifford.yantz@obg.com QUOTE NO.:

CONTACT NAME: SAME
 COMPANY:
 ADDRESS:
 CITY: STATE: ZIP CODE:
 PHONE NO.: E-MAIL ADDRESS:

ANALYSIS (ATTACH LIST IF MORE SPACE IS REQUIRED)

PROJECT NO./NAME: RACER Coldwater Rd Landfill SAMPLER(S) - PLEASE PRINT/SIGN NAME: Kevin Schneider
 TURNAROUND TIME REQUIRED: 1 DAY 2 DAYS 3 DAYS STANDARD OTHER
 DELIVERABLES REQUIRED: STD LEVEL II LEVEL III LEVEL IV EDD OTHER

MATRIX CODE: GW=GROUNDWATER WW=WASTEWATER S=SOIL L=LIQUID SD=SOLID SL=SLUDGE DW=DRINKING WATER O=OIL WP=WIPE A=AIR W=WASTE

Containers & Preservatives

MERIT LAB NO. FOR LAB USE ONLY	YEAR		SAMPLE TAG IDENTIFICATION-DESCRIPTION	MATRIX	# OF BOTTLES	NONE	HCl	HNO ₃	H ₂ SO ₄	NaOH	MeOH	OTHER	VOCs	TbC	TbX	Phenols	Cyanide	Sulfate	Specific Conductivity	Dissolved Metals	Chlorides	Total Sulfur	Certifications		Project Locations		Special Instructions	
	DATE	TIME																					<input type="checkbox"/> OHIO VAP	<input type="checkbox"/> Drinking Water	<input type="checkbox"/> DoD	<input type="checkbox"/> NPDES		<input type="checkbox"/> Detroit
90664.01	6/12/18	930	B-28	GW	1		3	2	4	1			X	X	X	X	X	X	X	X	X	X					Dissolved Metals were	
.02		1020	B-7										X	X	X	X	X	X	X	X	X	X					field Filtered	
.03		1211	B-24r										X	X	X	X	X	X	X	X	X	X						
.04		1415	B-9										X	X	X	X	X	X	X	X	X	X					Metals ARE!	
.05		1535	B-18A										X	X	X	X	X	X	X	X	X	X					Cu, Cr, Ni, Zn, Fe, Mn	
.06		1615	B-19Ac										X	X	X	X	X	X	X	X	X	X						
.07		1645	B-27D										X	X	X	X	X	X	X	X	X	X						
.08	6/13/18	1030	B-22D										X	X	X	X	X	X	X	X	X	X						
.09		-	TIP Blank-1		2		2						X															

RELINQUISHED BY: [Signature] DATE: 6/12/18 TIME: 11:30
 RECEIVED BY: [Signature] DATE: 6/13/18 TIME: 11:30
 RELINQUISHED BY: [Signature] DATE: 6/12/18 TIME: 12:35
 RECEIVED BY: [Signature] DATE: 6/13/18 TIME: 13:35

RELINQUISHED BY: [Signature] DATE: TIME:
 RECEIVED BY: [Signature] DATE: TIME:
 SEAL NO. SEAL INTACT YES NO INITIALS
 SEAL NO. SEAL INTACT YES NO INITIALS
 NOTES: TEMP. ON ARRIVAL 3.2

PLEASE NOTE: SIGNING ACKNOWLEDGES ADHERENCE TO MERIT'S SAMPLE ACCEPTANCE POLICY ON REVERSE SIDE

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Michigan

10448 Citation Drive

Suite 200

Brighton, MI 48116

Tel: (810)229-2763

TestAmerica Job ID: 190-16604-1

Client Project/Site: S90664

For:

Merit Laboratories

2680 E Lansing Drive

East Lansing, Michigan 48823

Attn: John Laverty

Sue Schafer

Authorized for release by:

6/24/2018 7:36:16 PM

Sue Schafer, Project Manager II

(810)229-2763

sue.schafer@testamericainc.com

LINKS

Review your project
results through

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Have a Question?



Visit us at:

www.testamericainc.com

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

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Sample Summary

Client: Merit Laboratories
Project/Site: S90664

TestAmerica Job ID: 190-16604-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
190-16604-1	90664.01	Ground Water	06/12/18 09:30	06/15/18 12:18
190-16604-2	90664.02	Ground Water	06/12/18 10:20	06/15/18 12:18
190-16604-3	90664.03	Ground Water	06/12/18 12:11	06/15/18 12:18
190-16604-4	90664.04	Ground Water	06/12/18 14:15	06/15/18 12:18
190-16604-5	90664.05	Ground Water	06/12/18 15:35	06/15/18 12:18
190-16604-6	90664.06	Ground Water	06/12/18 16:15	06/15/18 12:18
190-16604-7	90664.07	Ground Water	06/12/18 16:45	06/15/18 12:18
190-16604-8	90664.08	Ground Water	06/12/18 10:30	06/15/18 12:18

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Case Narrative

Client: Merit Laboratories
Project/Site: S90664

TestAmerica Job ID: 190-16604-1

Job ID: 190-16604-1

Laboratory: TestAmerica Michigan

Narrative

Job Narrative 190-16604-1

Comments

No additional comments.

Receipt

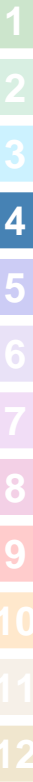
The samples were received on 6/15/2018 12:18 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 0.0° C.

General Chemistry

Method(s) 9020B: The following samples for batch 419029 (Total Organic Halides) were diluted to 2x due to the nature of the sample matrix based on CI pre-screen test: 90664.01 (190-16604-1), 90664.02 (190-16604-2) and 90664.03 (190-16604-3). Elevated reporting limits (RLs) are provided.

Method(s) 9020B: The following samples for batch 419390 (Total Organic Halides) were diluted to 2x due to the nature of the sample matrix based on CI pre-screen test: 90664.04 (190-16604-4), 90664.05 (190-16604-5), 90664.06 (190-16604-6), 90664.07 (190-16604-7) and 90664.08 (190-16604-8). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.



Client Sample Results

Client: Merit Laboratories
Project/Site: S90664

TestAmerica Job ID: 190-16604-1

Client Sample ID: 90664.01

Date Collected: 06/12/18 09:30

Date Received: 06/15/18 12:18

Lab Sample ID: 190-16604-1

Matrix: Ground Water

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
TOX Dup	<0.060		0.060	mg/L			06/18/18 08:34	1

Client Sample ID: 90664.02

Date Collected: 06/12/18 10:20

Date Received: 06/15/18 12:18

Lab Sample ID: 190-16604-2

Matrix: Ground Water

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
TOX Dup	<0.060		0.060	mg/L			06/18/18 08:34	1

Client Sample ID: 90664.03

Date Collected: 06/12/18 12:11

Date Received: 06/15/18 12:18

Lab Sample ID: 190-16604-3

Matrix: Ground Water

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
TOX Dup	<0.060		0.060	mg/L			06/18/18 08:34	1

Client Sample ID: 90664.04

Date Collected: 06/12/18 14:15

Date Received: 06/15/18 12:18

Lab Sample ID: 190-16604-4

Matrix: Ground Water

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
TOX Dup	<0.060		0.060	mg/L			06/19/18 07:26	1

Client Sample ID: 90664.05

Date Collected: 06/12/18 15:35

Date Received: 06/15/18 12:18

Lab Sample ID: 190-16604-5

Matrix: Ground Water

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
TOX Dup	<0.060		0.060	mg/L			06/19/18 07:26	1

Client Sample ID: 90664.06

Date Collected: 06/12/18 16:15

Date Received: 06/15/18 12:18

Lab Sample ID: 190-16604-6

Matrix: Ground Water

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
TOX Dup	<0.060		0.060	mg/L			06/19/18 07:26	1

Client Sample ID: 90664.07

Date Collected: 06/12/18 16:45

Date Received: 06/15/18 12:18

Lab Sample ID: 190-16604-7

Matrix: Ground Water

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
TOX Dup	<0.060		0.060	mg/L			06/19/18 07:26	1

TestAmerica Michigan

Client Sample Results

Client: Merit Laboratories
Project/Site: S90664

TestAmerica Job ID: 190-16604-1

Client Sample ID: 90664.08
Date Collected: 06/12/18 10:30
Date Received: 06/15/18 12:18

Lab Sample ID: 190-16604-8
Matrix: Ground Water

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
TOX Dup	<0.060		0.060	mg/L			06/19/18 07:26	1

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

QC Sample Results

Client: Merit Laboratories
Project/Site: S90664

TestAmerica Job ID: 190-16604-1

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

Lab Sample ID: MB 280-419029/2
Matrix: Water
Analysis Batch: 419029

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

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
TOX Dup	<0.030		0.030	mg/L			06/18/18 08:34	1

Lab Sample ID: LCS 280-419029/4
Matrix: Water
Analysis Batch: 419029

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
TOX Result 1	0.100	0.0985		mg/L		98	78 - 114
TOX Dup	0.100	0.0985		mg/L		99	78 - 114

Lab Sample ID: MB 280-419390/2
Matrix: Water
Analysis Batch: 419390

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

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
TOX Dup	<0.030		0.030	mg/L			06/19/18 07:26	1

Lab Sample ID: LCS 280-419390/4
Matrix: Water
Analysis Batch: 419390

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
TOX Result 1	0.100	0.0995		mg/L		99	78 - 114
TOX Dup	0.100	0.0995		mg/L		100	78 - 114

Lab Sample ID: LCSD 280-419390/5
Matrix: Water
Analysis Batch: 419390

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
TOX Result 1	0.100	0.0963		mg/L		96	78 - 114	3	23
TOX Dup	0.100	0.0963		mg/L		96	78 - 114	3	23

Definitions/Glossary

Client: Merit Laboratories
Project/Site: S90664

TestAmerica Job ID: 190-16604-1

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

QC Association Summary

Client: Merit Laboratories
Project/Site: S90664

TestAmerica Job ID: 190-16604-1

General Chemistry

Analysis Batch: 419029

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
190-16604-1	90664.01	Total/NA	Ground Water	9020B	
190-16604-2	90664.02	Total/NA	Ground Water	9020B	
190-16604-3	90664.03	Total/NA	Ground Water	9020B	
MB 280-419029/2	Method Blank	Total/NA	Water	9020B	
LCS 280-419029/4	Lab Control Sample	Total/NA	Water	9020B	

Analysis Batch: 419390

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
190-16604-4	90664.04	Total/NA	Ground Water	9020B	
190-16604-5	90664.05	Total/NA	Ground Water	9020B	
190-16604-6	90664.06	Total/NA	Ground Water	9020B	
190-16604-7	90664.07	Total/NA	Ground Water	9020B	
190-16604-8	90664.08	Total/NA	Ground Water	9020B	
MB 280-419390/2	Method Blank	Total/NA	Water	9020B	
LCS 280-419390/4	Lab Control Sample	Total/NA	Water	9020B	
LCSD 280-419390/5	Lab Control Sample Dup	Total/NA	Water	9020B	

Lab Chronicle

Client: Merit Laboratories
Project/Site: S90664

TestAmerica Job ID: 190-16604-1

Client Sample ID: 90664.01

Date Collected: 06/12/18 09:30

Date Received: 06/15/18 12:18

Lab Sample ID: 190-16604-1

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9020B		1	419029	06/18/18 08:34	IEU	TAL DEN

Client Sample ID: 90664.02

Date Collected: 06/12/18 10:20

Date Received: 06/15/18 12:18

Lab Sample ID: 190-16604-2

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9020B		1	419029	06/18/18 08:34	IEU	TAL DEN

Client Sample ID: 90664.03

Date Collected: 06/12/18 12:11

Date Received: 06/15/18 12:18

Lab Sample ID: 190-16604-3

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9020B		1	419029	06/18/18 08:34	IEU	TAL DEN

Client Sample ID: 90664.04

Date Collected: 06/12/18 14:15

Date Received: 06/15/18 12:18

Lab Sample ID: 190-16604-4

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9020B		1	419390	06/19/18 07:26	IEU	TAL DEN

Client Sample ID: 90664.05

Date Collected: 06/12/18 15:35

Date Received: 06/15/18 12:18

Lab Sample ID: 190-16604-5

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9020B		1	419390	06/19/18 07:26	IEU	TAL DEN

Client Sample ID: 90664.06

Date Collected: 06/12/18 16:15

Date Received: 06/15/18 12:18

Lab Sample ID: 190-16604-6

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9020B		1	419390	06/19/18 07:26	IEU	TAL DEN

TestAmerica Michigan

Lab Chronicle

Client: Merit Laboratories
Project/Site: S90664

TestAmerica Job ID: 190-16604-1

Client Sample ID: 90664.07

Date Collected: 06/12/18 16:45

Date Received: 06/15/18 12:18

Lab Sample ID: 190-16604-7

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9020B		1	419390	06/19/18 07:26	IEU	TAL DEN

Client Sample ID: 90664.08

Date Collected: 06/12/18 10:30

Date Received: 06/15/18 12:18

Lab Sample ID: 190-16604-8

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9020B		1	419390	06/19/18 07:26	IEU	TAL DEN

Laboratory References:

TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

Analyst References:

Lab: TAL DEN

Batch Type: Analysis

IEU = Ikem Uge

Accreditation/Certification Summary

Client: Merit Laboratories
Project/Site: S90664

TestAmerica Job ID: 190-16604-1

Laboratory: TestAmerica Michigan

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Michigan	State Program	5	57	05-05-20

Laboratory: TestAmerica Denver

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
A2LA	DoD ELAP		2907.01	10-31-19
A2LA	ISO/IEC 17025		2907.01	10-31-19
Alabama	State Program	4	40730	09-30-12 *
Alaska (UST)	State Program	10	UST-30	01-08-19
Arizona	State Program	9	AZ0713	12-20-18
California	State Program	9	2513	01-18-19
Connecticut	State Program	1	PH-0686	09-30-18
Florida	NELAP	4	E87667	06-30-18
Georgia	State Program	4	N/A	01-08-19 *
Illinois	NELAP	5	200017	04-30-18 *
Iowa	State Program	7	370	12-01-18
Kansas	NELAP	7	E-10166	05-31-18 *
Louisiana	NELAP	6	02096	06-30-18
Maine	State Program	1	CO0002	03-03-19
Minnesota	NELAP	5	8-999-405	12-31-18
Nevada	State Program	9	CO0026	07-31-18
New Hampshire	NELAP	1	205310	04-28-19
New Jersey	NELAP	2	CO004	06-30-18
New York	NELAP	2	11964	04-01-19
North Carolina (WW/SW)	State Program	4	358	12-31-18
North Dakota	State Program	8	R-034	01-08-19
Oklahoma	State Program	6	8614	08-31-18
Oregon	NELAP	10	4025	01-08-19
Pennsylvania	NELAP	3	68-00664	07-31-18
South Carolina	State Program	4	72002001	01-08-19
Texas	NELAP	6	T104704183-17-14	09-30-18
USDA	Federal			03-26-21
Utah	NELAP	8	CO00026	07-31-18
Virginia	NELAP	3	460232	06-14-19
Washington	State Program	10	C583	08-03-18
West Virginia DEP	State Program	3	354	12-31-18
Wisconsin	State Program	5	999615430	08-31-18
Wyoming (UST)	A2LA	8	2907.01	10-31-19

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Merit Laboratories
Project/Site: S90664

TestAmerica Job ID: 190-16604-1

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

Protocol References:

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

Laboratory References:

TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

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2680 East Lansing Dr., East Lansing, MI 48823
 Phone (517) 332-0167 Fax (517) 332-4034
 www.meritlabs.com

C.O.C. PAGE # 1 OF 1

REPORT TO

CONTACT NAME **John Lavery**

COMPANY **Merit Laboratories**

ADDRESS **2680 East Lansing Drive**

CITY **East Lansing**

PHONE NO. **517-332-0167**

E-MAIL ADDRESS **johnlavery@meritlabs.com**

CHAIN OF CUSTODY RECORD

CONTACT NAME **Julie Teague**

COMPANY **Merit Laboratories**

ADDRESS **2680 East Lansing Drive**

CITY **East Lansing**

PHONE NO. **517-332-0167**

E-MAIL ADDRESS **juliet@meritlabs.com**

INVOICE TO

CONTACT NAME SAME

COMPANY

ADDRESS

CITY

STATE **MI**

ZIP CODE **48823**

PROJECT NO./NAME **S90664**

SAMPLER(S) - PLEASE PRINT/SIGN NAME

TURNAROUND TIME REQUIRED 1 DAY 2 DAYS 3 DAYS STANDARD OTHER

DELIVERABLES REQUIRED STD LEVEL I LEVEL II LEVEL III LEVEL IV EDD OTHER

MATRIX CODE GW=GROUNDWATER WW=WASTEWATER S=SOIL L=LIQUID SD=SOLID
 SL=SLUDGE DW=DRINKING WATER O=OIL WP=WIPE A=AIR W=WASTE

Containers & Preservatives

MERIT LAB NO. FOR LAB USE ONLY	YEAR	DATE	TIME	IDENTIFICATION-DESCRIPTION	MATRIX	# OF BOTTLES											
							OTHER	MeOH	H ₂ SO ₄	HNO ₃	H ₂ O	NONE	OTHER				
	6/12/18	0930		90664.01	GW	1		X									
	6/12/18	1020		90664.02	GW	1		X									
	6/12/18	1211		90664.03	GW	1		X									
	6/12/18	1415		90664.04	GW	1		X									
	6/12/18	1535		90664.05	GW	1		X									
	6/12/18	1615		90664.06	GW	1		X									
	6/12/18	1645		90664.07	GW	1		X									
	6/12/18	1030		90664.08	GW	1		X									

XOL



190-16604 Chain of Custody

Subcontracted to Test America

ANALYSIS (ATTACH LIST IF MORE SPACE IS REQUIRED)

Certifications
 OHIO VAP Drinking Water
 DoD NPDES
 Project Locations
 Detroit New York
 Other _____
 Special Instructions _____

RELINQUISHED BY: SIGNATURE/ORGANIZATION	DATE	TIME
<i>Sam Smith</i>	6/15/18	12:18
RECEIVED BY: SIGNATURE/ORGANIZATION	DATE	TIME
RELINQUISHED BY: SIGNATURE/ORGANIZATION	DATE	TIME
RECEIVED BY: SIGNATURE/ORGANIZATION	DATE	TIME

RELINQUISHED BY: SIGNATURE/ORGANIZATION	DATE	TIME
RECEIVED BY: SIGNATURE/ORGANIZATION	DATE	TIME
SEAL NO.	SEAL INTACT	INITIALS
	YES <input type="checkbox"/> NO <input type="checkbox"/>	
SEAL NO.	SEAL INTACT	INITIALS
	YES <input type="checkbox"/> NO <input type="checkbox"/>	
NOTES:	TEMP. ON ARRIVAL	

PLEASE NOTE: SIGNING ACKNOWLEDGES ADHERENCE TO MERIT'S SAMPLE ACCEPTANCE POLICY ON REVERSE SIDE



TestAmerica

- MSDS or Known Hazard Information Supplied by Client
 Bottle stickers attached ELEMENT assignment entered MSDS COC scanned emailed to EH35
 - Discrepancies Client ID Merit
 - Short Hold Work Order # 190-116604
 - Rush 24hr 2day 3day 5day Other
- Receipt evaluation performed by - Initials NAC Date 6/15/18 Time 12:18

Cooler/Sample Receipt

(AFTER HOURS) (each) complete gray areas
 Place cooler in walk-in, place in a form in Receiving in Box Date Time rec'd Initials

Method of Shipment:

- Walk-In Client TestAmerica Field/Courier
- Other Client/3rd Party Courier
- Fed Ex Tracking #
- UPS Tracking # 1Z 4166 4777 03 6356 728
- Other Ground

Shipping Container Type:

- Cooler Box
 - None Other
- ### Packing Materials:
- Plastic Bags Foam
 - Bubble Wrap Paper
 - Packing Peanuts None
 - Other

Custody Seals Intact:

- Yes No
 - N/A (not used or required)
- ### Cooling Materials:
- Ice (solid) Ice (Melted)
 - Blue Ice None
 - Other

Bacteriological Temp (°C) Corrected Samples

Frozen
yes no

Received within 2 hours
yes no

Sample Flagged
yes no

Receipt Temperatures

Thermometer ID	Observed (°C)	Corrected (°C)	Temp Blank	Sample Temp	Received on same day sampled?	Acceptable?*	Cooler ID	Note Affected Samples if temperature not acceptable
140252433			<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No		
140252476	0.0	0.0	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No		
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No		

* Receipt temperatures are considered acceptable if the samples are received on the same day they were collected & show signs that the cooling process has started. Temperature acceptance for most tests is ≤6.0°C, but not frozen. For additional information, please refer to SOP DT-SCA-004 Sample Receipt and Login, Attachment 2 - Holding Times, Preservation and Container Requirements

Receipt Questions**

Question	Y	N	n/a	"No" answers require additional comment
COC present & TA receipt signature, date, & time properly documented?		<input checked="" type="checkbox"/>		No date and time when COC was relinquished
Containers & labels in good condition? (unbroken, not leaking, appropriately filled, labels legible & attached)	<input checked="" type="checkbox"/>			
Appropriate containers used & adequate volume provided?	<input checked="" type="checkbox"/>			Preserved Bottles Checked with pH Strips* Yes
Number of sample containers match COC?	<input checked="" type="checkbox"/>			
Samples received within hold time?	<input checked="" type="checkbox"/>			
Samples submitted for GRO and Volatiles analyses (8260, 624, 524) received without headspace?			<input checked="" type="checkbox"/>	
Was a Trip Blank received with VOA samples?			<input checked="" type="checkbox"/>	
Were the samples free of any questionable physical conformities? For example, field duplicates or multiple bottles of the same sample do not significantly vary in appearance (color, proportion of solids, etc)	<input checked="" type="checkbox"/>			
Were the COC, bottle labels, and all other items free of all other discrepancies or issues that would need to be addressed with the Project Manager and/or Client?	<input checked="" type="checkbox"/>			

** May not be applicable if samples are not for compliance testing

* Excludes FOG, Volatiles, TOC Vials

Client Contact Record

Contact via: Phone Email Other _____ Person Contacted: _____ Date/Time: _____
 Discrepancy allowance agreement is on record in the client project file
 Discussion/Resolution:

Any additional documentation and clarification from client must be noted in the narrative and/or scanned into the COC directory

Reviewed by PM Signature

Date

WI Page 1 of 1

WI No. DT-SCA-WI-001 TO effective 05/11/12

Chain of Custody Record



Client Information (Sub Contract Lab)		Sampler:	Lab PM:	Carrier Tracking No(s):	COC No:					
Client Contact: Shipping/Receiving		Phone:	Schafer, Sue	State of Origin: Michigan	190-19379-1					
Company: TestAmerica Laboratories, Inc.		E-Mail: sue.schafer@testamericainc.com		Page: 1 of 1	Job #: 190-16604-1					
Address: 4955 Yarrow Street,		Due Date Requested: 6/27/2018		Preservation Codes: A - HCL M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2S2O3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 X - EDTA Y - EDA Z - other (specify) Other:						
City: Arvada		TAT Requested (days):		Analysis Requested:						
State, Zip: CO, 80002		PO #:		Total Number of containers						
Phone: 303-736-0100(Tel) 303-431-7171(Fax)		WO #:		Field Filled Sample (Yes or No)						
Email:		Project #: 19007249		Perform MS/MSD (Yes or No)						
Project Name: Merit Laboratories		SSOW #:		9020B_Calc/TOX in duplicate						
Site:				Special Instructions/Note:						
Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=wastewater, I=I-Tissue, A=Air)	Preservation Code	Field Filled Sample (Yes or No)	Perform MS/MSD (Yes or No)	9020B_Calc/TOX in duplicate	Total Number of containers	Special Instructions/Note:
90664.01 (190-16604-1)	6/12/18	09:30 Eastern	Water	Water	X	X			1	
90664.02 (190-16604-2)	6/12/18	10:20 Eastern	Water	Water	X	X			1	
90664.03 (190-16604-3)	6/12/18	12:11 Eastern	Water	Water	X	X			1	
90664.04 (190-16604-4)	6/12/18	14:15 Eastern	Water	Water	X	X			1	
90664.05 (190-16604-5)	6/12/18	15:35 Eastern	Water	Water	X	X			1	
90664.06 (190-16604-6)	6/12/18	16:15 Eastern	Water	Water	X	X			1	
90664.07 (190-16604-7)	6/12/18	16:45 Eastern	Water	Water	X	X			1	
90664.08 (190-16604-8)	6/12/18	10:30 Eastern	Water	Water	X	X			1	

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/test/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to TestAmerica Laboratories, Inc.

Possible Hazard Identification
 Unconfirmed
 Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2
 Special Instructions/IOC Requirements:
 Return To Client Disposal By Lab Archive For _____ Months
 Method of Shipment:

Empty Kit Relinquished by: _____ Date: _____
 Relinquished by: _____ Date/Time: 6/13/18 13:55 Company: TH
 Relinquished by: _____ Date/Time: _____ Company: _____
 Relinquished by: _____ Date/Time: _____ Company: _____
 Custody Seals Intact: _____ Custody Seal No.: _____
 Δ Yes Δ No
 Cooler Temperature(s) °C and Other Remarks: 3.4 ILAG 6.0





Report ID: S90761.01(02)
Generated on 08/20/2018

Report to

Attention: Clifford Yantz
O'Brien & Gere Engineers, Inc.
2260 E Saginaw St
East Lansing, MI 48823

Phone: 248-477-5701 FAX:
Email: Clifford.Yantz@obg.com

Report produced by

Merit Laboratories, Inc.
2680 East Lansing Drive
East Lansing, MI 48823

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

Contacts for report questions:

John Lavery (johnlavery@meritlabs.com)
Barbara Ball (bball@meritlabs.com)

Report Summary

Lab Sample ID(s): S90761.01-S90761.07
Project: RACER Coldwater Rd Landfill
Collected Date: 06/13/2018 - 06/14/2018
Submitted Date/Time: 06/15/2018 08:00
Sampled by: Kevin Schneider
P.O. #: 11800350

Table of Contents

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Maya Murshak
Technical Director



General Report Notes

Analytical results relate only to the samples tested, in the condition 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 reporting limit (RL).

40 CFR Part 136 Table II Required Containers, Preservation Techniques and Holding Times for the Clean Water Act specify that samples for acrolein and acrylonitrile need to be preserved at a pH in the range of 4 to 5 or if not preserved, analyzed within 3 days of sampling.

QA/QC corresponding to this analytical report is a separate document with the same Merit ID reference and is available upon request.

Full accreditation certificates are available upon request. Starred (*) analytes are not NELAP accredited.

Samples are held by the lab for 30 days from the final report date unless a written request to hold longer is provided by the client.

Report shall not be reproduced except in full, without the written approval of Merit Laboratories, Inc.

Limits for drinking water samples, are listed as the MCL Limits (Maximum Contaminant Level Concentrations)

Report Narrative

Metals RLs lowered per client request



Laboratory Certifications

Authority	Certification ID
Michigan DEQ	#9956
DOD ELAP/ISO 17025	#69699
WBENC	#2005110032
Ohio VAP	#CL0002
Indiana DOH	#C-MI-07
New York NELAC	#11814
North Carolina DENR	#680
North Carolina DOH	#26702
Alaska CSLAP	#17-001

Qualifier Descriptions

Qualifier	Description
!	Result is outside of stated limit criteria
B	Compound also found in associated method blank
E	Concentration exceeds calibration range
F	Analysis run outside of holding time
G	Estimated result due to extraction run outside of holding time
H	Sample submitted and run outside of holding time
I	Matrix interference with internal standard
J	Estimated value less than reporting limit, but greater than MDL
L	Elevated reporting limit due to low sample amount
M	Result reported to MDL not RDL
O	Analysis performed by outside laboratory. See attached report.
R	Preliminary result
S	Surrogate recovery outside of control limits
T	No correction for total solids
X	Elevated reporting limit due to matrix interference
Y	Elevated reporting limit due to high target concentration
b	Value detected less than reporting limit, but greater than MDL
e	Reported value estimated due to interference
j	Analyte also found in associated method blank
p	Benzo(b)Fluoranthene and Benzo(k)Fluoranthene integrated as one peak.
x	Preserved from bulk sample

Glossary of Abbreviations

Abbreviation	Description
RL/RDL	Reporting Limit
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
SW	EPA SW 846 (Soil and Wastewater) Methods
E	EPA Methods
SM	Standard Methods
LN	Linear
BR	Branched



Method Summary

Method	Version
E120.1	EPA Method 120.1 Revision 1982
E200.8	EPA Method 200.8 Revision 5.4
E300.0	EPA Method 300.0 Revision 2.1
E335.4/SM4500-CN	EPA Method 335.4 Revision 1.0 / Standard Method 4500-CN E 20th Edition
E420.1	EPA Method 420.1 Editorial Revision 1978
N/A	Not Applicable
SM5310C	Standard Method 5310C 2011
SW3015A	SW 846 Method 3015A Revision 1 February 2007
SW5030C/8260C	SW 846 Method 8260C Revision 3 August 2006 / 5030C Revision 3 May 2003
SW9020B	SW 846 Method 9020B Revision 2 September 1994



Sample Summary (7 samples)

Sample ID	Sample Tag	Matrix	Collected Date/Time
S90761.01	B-2D	Groundwater	06/13/18 13:00
S90761.02	B-21D	Groundwater	06/14/18 11:00
S90761.03	B-20D	Groundwater	06/14/18 13:05
S90761.04	B-23Dr	Groundwater	06/14/18 15:40
S90761.05	DUP-1	Groundwater	06/14/18 00:01
S90761.06	Equipment Blank-1	Water	06/14/18 16:25
S90761.07	Trip Blank-2	Water	06/14/18 00:01



Analytical Laboratory Report

Supplemental Report

Lab Sample ID: S90761.01

Sample Tag: B-2D

Collected Date/Time: 06/13/2018 13:00

Matrix: Groundwater

COC Reference: 111365

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	125ml Plastic	HNO3	Yes	5.0	IR
2	40ml Glass	H2SO4	Yes	5.0	IR
1	250ml Amber	H2SO4	Yes	5.0	IR
1	1L Plastic	None	Yes	5.0	IR
1	125ml Plastic	NaOH	Yes	5.0	IR
3	40ml Glass	HCL	Yes	5.0	IR
1	125ml Amber	H2SO4	Yes	5.0	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	06/18/18 13:00	ADS	
Metal Digestion	Completed	SW3015A	06/18/18 13:00	CCM	
Metal Digestion	Completed	SW3015A	06/18/18 13:00	CCM	

Inorganics

Method: E120.1, Run Date: 06/22/18 11:28, Analyst: JKB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Conductivity	679			umhos/cm	1		

Method: E300.0, Run Date: 06/15/18 11:15, Analyst: JDP

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chloride	Not detected	5	0.08	mg/L	5	16887-00-6	
Sulfate	40	5	0.21	mg/L	5	14808-79-8	

Method: E335.4/SM4500-CN, Run Date: 06/15/18 11:20, Analyst: JDP

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Cyanide, Total	Not detected	0.005	0.002	mg/L	1	57-12-5	

Method: E420.1, Run Date: 06/25/18 17:08, Analyst: JKB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Phenols	Not detected	0.02		mg/L	1.7		

Method: SM5310C, Run Date: 06/18/18 17:55, Analyst: JKB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
TOC	2.1	1		mg/L	1		

Metals

Method: E200.8, Run Date: 06/19/18 15:18, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Sodium	13.4	2.5		mg/L	50	7440-23-5	

Method: E200.8, Run Date: 06/19/18 14:26, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chromium, Dissolved	Not detected	0.005		mg/L	5	7440-47-3	
Copper, Dissolved	Not detected	0.005		mg/L	5	7440-50-8	
Iron, Dissolved	2.64	0.02		mg/L	5	7439-89-6	



Analytical Laboratory Report

Supplemental Report

Lab Sample ID: S90761.01 (continued)

Sample Tag: B-2D

Method: E200.8, Run Date: 06/19/18 14:26, Analyst: CCM (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Manganese, Dissolved	0.162	0.005		mg/L	5	7439-96-5	
Nickel, Dissolved	Not detected	0.005		mg/L	5	7440-02-0	
Zinc, Dissolved	0.005	0.005		mg/L	5	7440-66-6	

Organics - Volatiles

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 06/15/18 15:47, Analyst: JML

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Diethyl ether	Not detected	10		ug/L	1	60-29-7	
Acetone	Not detected	50		ug/L	1	67-64-1	
Methyl iodide	Not detected	1		ug/L	1	74-88-4	
Carbon disulfide	Not detected	5		ug/L	1	75-15-0	
tert-Methyl butyl ether (MTBE)	Not detected	5		ug/L	1	1634-04-4	
Acrylonitrile	Not detected	2		ug/L	1	107-13-1	
2-Butanone (MEK)	Not detected	25		ug/L	1	78-93-3	
Dichlorodifluoromethane	Not detected	5		ug/L	1	75-71-8	
Chloromethane	Not detected	5		ug/L	1	74-87-3	
Vinyl chloride	Not detected	1		ug/L	1	75-01-4	
Bromomethane	Not detected	5		ug/L	1	74-83-9	
Chloroethane	Not detected	5		ug/L	1	75-00-3	
Trichlorofluoromethane	Not detected	1		ug/L	1	75-69-4	
1,1-Dichloroethene	Not detected	1		ug/L	1	75-35-4	
Methylene chloride	Not detected	5		ug/L	1	75-09-2	
trans-1,2-Dichloroethene	Not detected	1		ug/L	1	156-60-5	
1,1-Dichloroethane	Not detected	1		ug/L	1	75-34-3	
cis-1,2-Dichloroethene	Not detected	1		ug/L	1	156-59-2	
Tetrahydrofuran*	Not detected	90		ug/L	1	109-99-9	
Chloroform	Not detected	1		ug/L	1	67-66-3	
Bromochloromethane	Not detected	1		ug/L	1	74-97-5	
1,1,1-Trichloroethane	Not detected	1		ug/L	1	71-55-6	
4-Methyl-2-pentanone (MIBK)	Not detected	50		ug/L	1	108-10-1	
2-Hexanone	Not detected	50		ug/L	1	591-78-6	
Carbon tetrachloride	Not detected	1		ug/L	1	56-23-5	
Benzene	Not detected	1		ug/L	1	71-43-2	
1,2-Dichloroethane	Not detected	1		ug/L	1	107-06-2	
Trichloroethene	Not detected	1		ug/L	1	79-01-6	
1,2-Dichloropropane	Not detected	1		ug/L	1	78-87-5	
Bromodichloromethane	Not detected	1		ug/L	1	75-27-4	
Dibromomethane	Not detected	5		ug/L	1	74-95-3	
cis-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-01-5	
Toluene	Not detected	1		ug/L	1	108-88-3	
trans-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-02-6	
1,1,2-Trichloroethane	Not detected	1		ug/L	1	79-00-5	
Tetrachloroethene	Not detected	1		ug/L	1	127-18-4	
trans-1,4-Dichloro-2-butene	Not detected	1		ug/L	1	110-57-6	
Dibromochloromethane	Not detected	5		ug/L	1	124-48-1	
1,2-Dibromoethane	Not detected	1		ug/L	1	106-93-4	
Chlorobenzene	Not detected	1		ug/L	1	108-90-7	
1,1,1,2-Tetrachloroethane	Not detected	1		ug/L	1	630-20-6	
Ethylbenzene	Not detected	1		ug/L	1	100-41-4	
p,m-Xylene*	Not detected	2		ug/L	1		



Lab Sample ID: S90761.01 (continued)

Sample Tag: B-2D

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 06/15/18 15:47, Analyst: JML (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
o-Xylene	Not detected	1		ug/L	1	95-47-6	
Styrene	Not detected	1		ug/L	1	100-42-5	
Isopropylbenzene	Not detected	5		ug/L	1	98-82-8	
Bromoform	Not detected	1		ug/L	1	75-25-2	
1,1,2,2-Tetrachloroethane	Not detected	1		ug/L	1	79-34-5	
1,2,3-Trichloropropane	Not detected	1		ug/L	1	96-18-4	
n-Propylbenzene	Not detected	1		ug/L	1	103-65-1	
Bromobenzene	Not detected	1		ug/L	1	108-86-1	
1,3,5-Trimethylbenzene	Not detected	1		ug/L	1	108-67-8	
tert-Butylbenzene	Not detected	1		ug/L	1	98-06-6	
1,2,4-Trimethylbenzene	Not detected	1		ug/L	1	95-63-6	
sec-Butylbenzene	Not detected	1		ug/L	1	135-98-8	
p-Isopropyltoluene	Not detected	5		ug/L	1	99-87-6	
1,3-Dichlorobenzene	Not detected	1		ug/L	1	541-73-1	
1,4-Dichlorobenzene	Not detected	1		ug/L	1	106-46-7	
1,2-Dichlorobenzene	Not detected	1		ug/L	1	95-50-1	
1,2,3-Trimethylbenzene	Not detected	1		ug/L	1	526-73-8	
n-Butylbenzene	Not detected	1		ug/L	1	104-51-8	
Hexachloroethane	Not detected	5		ug/L	1	67-72-1	
1,2-Dibromo-3-chloropropane	Not detected	5		ug/L	1	96-12-8	
1,2,4-Trichlorobenzene	Not detected	5		ug/L	1	120-82-1	
1,2,3-Trichlorobenzene	Not detected	5		ug/L	1	87-61-6	
Naphthalene	Not detected	5		ug/L	1	91-20-3	
2-Methylnaphthalene	Not detected	5		ug/L	1	91-57-6	

Organics

Method: SW9020B, Run Date: 06/20/18 08:06, Analyst: TA

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
TOX*	Not detected	60.0		ug/L	1		O

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



Analytical Laboratory Report

Lab Sample ID: S90761.02

Sample Tag: B-21D

Collected Date/Time: 06/14/2018 11:00

Matrix: Groundwater

COC Reference: 111365

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	125ml Plastic	HNO3	Yes	5.0	IR
2	40ml Glass	H2SO4	Yes	5.0	IR
1	250ml Amber	H2SO4	Yes	5.0	IR
1	1L Plastic	None	Yes	5.0	IR
1	125ml Plastic	NaOH	Yes	5.0	IR
3	40ml Glass	HCL	Yes	5.0	IR
1	125ml Amber	H2SO4	Yes	5.0	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	06/18/18 13:00	ADS	
Metal Digestion	Completed	SW3015A	06/18/18 13:00	CCM	
Metal Digestion	Completed	SW3015A	06/18/18 13:00	CCM	

Inorganics

Method: E120.1, Run Date: 06/22/18 11:30, Analyst: JKB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Conductivity	786			umhos/cm	1		

Method: E300.0, Run Date: 06/15/18 11:27, Analyst: JDP

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chloride	Not detected	5	0.08	mg/L	5	16887-00-6	
Sulfate	90	5	0.21	mg/L	5	14808-79-8	

Method: E335.4/SM4500-CN, Run Date: 06/15/18 11:22, Analyst: JDP

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Cyanide, Total	Not detected	0.005	0.002	mg/L	1	57-12-5	

Method: E420.1, Run Date: 06/25/18 17:12, Analyst: JKB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Phenols	Not detected	0.02		mg/L	1.7		

Method: SM5310C, Run Date: 06/18/18 18:17, Analyst: JKB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
TOC	1.4	1		mg/L	1		

Metals

Method: E200.8, Run Date: 06/19/18 15:20, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Sodium	22.7	2.5		mg/L	50	7440-23-5	

Method: E200.8, Run Date: 06/19/18 14:28, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chromium, Dissolved	Not detected	0.005		mg/L	5	7440-47-3	
Copper, Dissolved	Not detected	0.005		mg/L	5	7440-50-8	
Iron, Dissolved	4.31	0.02		mg/L	5	7439-89-6	



Analytical Laboratory Report

Supplemental Report

Lab Sample ID: S90761.02 (continued)

Sample Tag: B-21D

Method: E200.8, Run Date: 06/19/18 14:28, Analyst: CCM (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Manganese, Dissolved	0.123	0.005		mg/L	5	7439-96-5	
Nickel, Dissolved	0.005	0.005		mg/L	5	7440-02-0	
Zinc, Dissolved	0.011	0.005		mg/L	5	7440-66-6	

Organics - Volatiles

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 06/15/18 16:06, Analyst: JML

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Diethyl ether	Not detected	10		ug/L	1	60-29-7	
Acetone	Not detected	50		ug/L	1	67-64-1	
Methyl iodide	Not detected	1		ug/L	1	74-88-4	
Carbon disulfide	Not detected	5		ug/L	1	75-15-0	
tert-Methyl butyl ether (MTBE)	Not detected	5		ug/L	1	1634-04-4	
Acrylonitrile	Not detected	2		ug/L	1	107-13-1	
2-Butanone (MEK)	Not detected	25		ug/L	1	78-93-3	
Dichlorodifluoromethane	Not detected	5		ug/L	1	75-71-8	
Chloromethane	Not detected	5		ug/L	1	74-87-3	
Vinyl chloride	Not detected	1		ug/L	1	75-01-4	
Bromomethane	Not detected	5		ug/L	1	74-83-9	
Chloroethane	Not detected	5		ug/L	1	75-00-3	
Trichlorofluoromethane	Not detected	1		ug/L	1	75-69-4	
1,1-Dichloroethene	Not detected	1		ug/L	1	75-35-4	
Methylene chloride	Not detected	5		ug/L	1	75-09-2	
trans-1,2-Dichloroethene	Not detected	1		ug/L	1	156-60-5	
1,1-Dichloroethane	Not detected	1		ug/L	1	75-34-3	
cis-1,2-Dichloroethene	Not detected	1		ug/L	1	156-59-2	
Tetrahydrofuran*	Not detected	90		ug/L	1	109-99-9	
Chloroform	Not detected	1		ug/L	1	67-66-3	
Bromochloromethane	Not detected	1		ug/L	1	74-97-5	
1,1,1-Trichloroethane	Not detected	1		ug/L	1	71-55-6	
4-Methyl-2-pentanone (MIBK)	Not detected	50		ug/L	1	108-10-1	
2-Hexanone	Not detected	50		ug/L	1	591-78-6	
Carbon tetrachloride	Not detected	1		ug/L	1	56-23-5	
Benzene	Not detected	1		ug/L	1	71-43-2	
1,2-Dichloroethane	Not detected	1		ug/L	1	107-06-2	
Trichloroethene	Not detected	1		ug/L	1	79-01-6	
1,2-Dichloropropane	Not detected	1		ug/L	1	78-87-5	
Bromodichloromethane	Not detected	1		ug/L	1	75-27-4	
Dibromomethane	Not detected	5		ug/L	1	74-95-3	
cis-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-01-5	
Toluene	Not detected	1		ug/L	1	108-88-3	
trans-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-02-6	
1,1,2-Trichloroethane	Not detected	1		ug/L	1	79-00-5	
Tetrachloroethene	Not detected	1		ug/L	1	127-18-4	
trans-1,4-Dichloro-2-butene	Not detected	1		ug/L	1	110-57-6	
Dibromochloromethane	Not detected	5		ug/L	1	124-48-1	
1,2-Dibromoethane	Not detected	1		ug/L	1	106-93-4	
Chlorobenzene	Not detected	1		ug/L	1	108-90-7	
1,1,1,2-Tetrachloroethane	Not detected	1		ug/L	1	630-20-6	
Ethylbenzene	Not detected	1		ug/L	1	100-41-4	
p,m-Xylene*	Not detected	2		ug/L	1		



Analytical Laboratory Report

Lab Sample ID: S90761.02 (continued)

Sample Tag: B-21D

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 06/15/18 16:06, Analyst: JML (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
o-Xylene	Not detected	1		ug/L	1	95-47-6	
Styrene	Not detected	1		ug/L	1	100-42-5	
Isopropylbenzene	Not detected	5		ug/L	1	98-82-8	
Bromoform	Not detected	1		ug/L	1	75-25-2	
1,1,2,2-Tetrachloroethane	Not detected	1		ug/L	1	79-34-5	
1,2,3-Trichloropropane	Not detected	1		ug/L	1	96-18-4	
n-Propylbenzene	Not detected	1		ug/L	1	103-65-1	
Bromobenzene	Not detected	1		ug/L	1	108-86-1	
1,3,5-Trimethylbenzene	Not detected	1		ug/L	1	108-67-8	
tert-Butylbenzene	Not detected	1		ug/L	1	98-06-6	
1,2,4-Trimethylbenzene	Not detected	1		ug/L	1	95-63-6	
sec-Butylbenzene	Not detected	1		ug/L	1	135-98-8	
p-Isopropyltoluene	Not detected	5		ug/L	1	99-87-6	
1,3-Dichlorobenzene	Not detected	1		ug/L	1	541-73-1	
1,4-Dichlorobenzene	Not detected	1		ug/L	1	106-46-7	
1,2-Dichlorobenzene	Not detected	1		ug/L	1	95-50-1	
1,2,3-Trimethylbenzene	Not detected	1		ug/L	1	526-73-8	
n-Butylbenzene	Not detected	1		ug/L	1	104-51-8	
Hexachloroethane	Not detected	5		ug/L	1	67-72-1	
1,2-Dibromo-3-chloropropane	Not detected	5		ug/L	1	96-12-8	
1,2,4-Trichlorobenzene	Not detected	5		ug/L	1	120-82-1	
1,2,3-Trichlorobenzene	Not detected	5		ug/L	1	87-61-6	
Naphthalene	Not detected	5		ug/L	1	91-20-3	
2-Methylnaphthalene	Not detected	5		ug/L	1	91-57-6	

Organics

Method: SW9020B, Run Date: 06/20/18 08:06, Analyst: TA

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
TOX*	Not detected	60.0		ug/L	1		O

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



Analytical Laboratory Report

Supplemental Report

Lab Sample ID: S90761.03

Sample Tag: B-20D

Collected Date/Time: 06/14/2018 13:05

Matrix: Groundwater

COC Reference: 111365

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	125ml Plastic	HNO3	Yes	5.0	IR
2	40ml Glass	H2SO4	Yes	5.0	IR
1	250ml Amber	H2SO4	Yes	5.0	IR
1	1L Plastic	None	Yes	5.0	IR
1	125ml Plastic	NaOH	Yes	5.0	IR
3	40ml Glass	HCL	Yes	5.0	IR
1	125ml Amber	H2SO4	Yes	5.0	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	06/18/18 13:00	ADS	
Metal Digestion	Completed	SW3015A	06/18/18 13:00	CCM	
Metal Digestion	Completed	SW3015A	06/18/18 13:00	CCM	

Inorganics

Method: E120.1, Run Date: 06/22/18 11:32, Analyst: JKB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Conductivity	882			umhos/cm	1		

Method: E300.0, Run Date: 06/15/18 11:40, Analyst: JDP

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chloride	Not detected	5	0.08	mg/L	5	16887-00-6	

Method: E300.0, Run Date: 06/15/18 12:44, Analyst: JDP

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Sulfate	132	10	0.42	mg/L	10	14808-79-8	

Method: E335.4/SM4500-CN, Run Date: 06/15/18 11:24, Analyst: JDP

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Cyanide, Total	Not detected	0.005	0.002	mg/L	1	57-12-5	

Method: E420.1, Run Date: 06/25/18 17:16, Analyst: JKB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Phenols	Not detected	0.02		mg/L	1.7		

Method: SM5310C, Run Date: 06/18/18 19:02, Analyst: JKB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
TOC	1.5	1		mg/L	1		

Metals

Method: E200.8, Run Date: 06/19/18 15:22, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Sodium	18.1	2.5		mg/L	50	7440-23-5	



Analytical Laboratory Report

Supplemental Report

Lab Sample ID: S90761.03 (continued)

Sample Tag: B-20D

Method: E200.8, Run Date: 06/19/18 14:30, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chromium, Dissolved	Not detected	0.005		mg/L	5	7440-47-3	
Copper, Dissolved	Not detected	0.005		mg/L	5	7440-50-8	
Iron, Dissolved	2.44	0.02		mg/L	5	7439-89-6	
Manganese, Dissolved	0.067	0.005		mg/L	5	7439-96-5	
Nickel, Dissolved	Not detected	0.005		mg/L	5	7440-02-0	
Zinc, Dissolved	0.005	0.005		mg/L	5	7440-66-6	

Organics - Volatiles

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 06/15/18 16:25, Analyst: JML

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Diethyl ether	Not detected	10		ug/L	1	60-29-7	
Acetone	Not detected	50		ug/L	1	67-64-1	
Methyl iodide	Not detected	1		ug/L	1	74-88-4	
Carbon disulfide	Not detected	5		ug/L	1	75-15-0	
tert-Methyl butyl ether (MTBE)	Not detected	5		ug/L	1	1634-04-4	
Acrylonitrile	Not detected	2		ug/L	1	107-13-1	
2-Butanone (MEK)	Not detected	25		ug/L	1	78-93-3	
Dichlorodifluoromethane	Not detected	5		ug/L	1	75-71-8	
Chloromethane	Not detected	5		ug/L	1	74-87-3	
Vinyl chloride	Not detected	1		ug/L	1	75-01-4	
Bromomethane	Not detected	5		ug/L	1	74-83-9	
Chloroethane	Not detected	5		ug/L	1	75-00-3	
Trichlorofluoromethane	Not detected	1		ug/L	1	75-69-4	
1,1-Dichloroethene	Not detected	1		ug/L	1	75-35-4	
Methylene chloride	Not detected	5		ug/L	1	75-09-2	
trans-1,2-Dichloroethene	Not detected	1		ug/L	1	156-60-5	
1,1-Dichloroethane	Not detected	1		ug/L	1	75-34-3	
cis-1,2-Dichloroethene	Not detected	1		ug/L	1	156-59-2	
Tetrahydrofuran*	Not detected	90		ug/L	1	109-99-9	
Chloroform	Not detected	1		ug/L	1	67-66-3	
Bromochloromethane	Not detected	1		ug/L	1	74-97-5	
1,1,1-Trichloroethane	Not detected	1		ug/L	1	71-55-6	
4-Methyl-2-pentanone (MIBK)	Not detected	50		ug/L	1	108-10-1	
2-Hexanone	Not detected	50		ug/L	1	591-78-6	
Carbon tetrachloride	Not detected	1		ug/L	1	56-23-5	
Benzene	Not detected	1		ug/L	1	71-43-2	
1,2-Dichloroethane	Not detected	1		ug/L	1	107-06-2	
Trichloroethene	Not detected	1		ug/L	1	79-01-6	
1,2-Dichloropropane	Not detected	1		ug/L	1	78-87-5	
Bromodichloromethane	Not detected	1		ug/L	1	75-27-4	
Dibromomethane	Not detected	5		ug/L	1	74-95-3	
cis-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-01-5	
Toluene	Not detected	1		ug/L	1	108-88-3	
trans-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-02-6	
1,1,2-Trichloroethane	Not detected	1		ug/L	1	79-00-5	
Tetrachloroethene	Not detected	1		ug/L	1	127-18-4	
trans-1,4-Dichloro-2-butene	Not detected	1		ug/L	1	110-57-6	
Dibromochloromethane	Not detected	5		ug/L	1	124-48-1	
1,2-Dibromoethane	Not detected	1		ug/L	1	106-93-4	
Chlorobenzene	Not detected	1		ug/L	1	108-90-7	



Lab Sample ID: S90761.03 (continued)

Sample Tag: B-20D

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 06/15/18 16:25, Analyst: JML (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,1,1,2-Tetrachloroethane	Not detected	1		ug/L	1	630-20-6	
Ethylbenzene	Not detected	1		ug/L	1	100-41-4	
p,m-Xylene*	Not detected	2		ug/L	1		
o-Xylene	Not detected	1		ug/L	1	95-47-6	
Styrene	Not detected	1		ug/L	1	100-42-5	
Isopropylbenzene	Not detected	5		ug/L	1	98-82-8	
Bromoform	Not detected	1		ug/L	1	75-25-2	
1,1,2,2-Tetrachloroethane	Not detected	1		ug/L	1	79-34-5	
1,2,3-Trichloropropane	Not detected	1		ug/L	1	96-18-4	
n-Propylbenzene	Not detected	1		ug/L	1	103-65-1	
Bromobenzene	Not detected	1		ug/L	1	108-86-1	
1,3,5-Trimethylbenzene	Not detected	1		ug/L	1	108-67-8	
tert-Butylbenzene	Not detected	1		ug/L	1	98-06-6	
1,2,4-Trimethylbenzene	Not detected	1		ug/L	1	95-63-6	
sec-Butylbenzene	Not detected	1		ug/L	1	135-98-8	
p-Isopropyltoluene	Not detected	5		ug/L	1	99-87-6	
1,3-Dichlorobenzene	Not detected	1		ug/L	1	541-73-1	
1,4-Dichlorobenzene	Not detected	1		ug/L	1	106-46-7	
1,2-Dichlorobenzene	Not detected	1		ug/L	1	95-50-1	
1,2,3-Trimethylbenzene	Not detected	1		ug/L	1	526-73-8	
n-Butylbenzene	Not detected	1		ug/L	1	104-51-8	
Hexachloroethane	Not detected	5		ug/L	1	67-72-1	
1,2-Dibromo-3-chloropropane	Not detected	5		ug/L	1	96-12-8	
1,2,4-Trichlorobenzene	Not detected	5		ug/L	1	120-82-1	
1,2,3-Trichlorobenzene	Not detected	5		ug/L	1	87-61-6	
Naphthalene	Not detected	5		ug/L	1	91-20-3	
2-Methylnaphthalene	Not detected	5		ug/L	1	91-57-6	

Organics

Method: SW9020B, Run Date: 06/20/18 08:06, Analyst: TA

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
TOX*	Not detected	60.0		ug/L	1		O

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



Analytical Laboratory Report

Supplemental Report

Lab Sample ID: S90761.04

Sample Tag: B-23Dr

Collected Date/Time: 06/14/2018 15:40

Matrix: Groundwater

COC Reference: 111365

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	125ml Plastic	HNO3	Yes	5.0	IR
2	40ml Glass	H2SO4	Yes	5.0	IR
1	250ml Amber	H2SO4	Yes	5.0	IR
1	1L Plastic	None	Yes	5.0	IR
1	125ml Plastic	NaOH	Yes	5.0	IR
3	40ml Glass	HCL	Yes	5.0	IR
1	125ml Amber	H2SO4	Yes	5.0	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	06/18/18 13:00	ADS	
Metal Digestion	Completed	SW3015A	06/18/18 13:00	CCM	
Metal Digestion	Completed	SW3015A	06/18/18 13:00	CCM	

Inorganics

Method: E120.1, Run Date: 06/22/18 11:34, Analyst: JKB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Conductivity	865			umhos/cm	1		

Method: E300.0, Run Date: 06/15/18 11:53, Analyst: JDP

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chloride	43	5	0.08	mg/L	5	16887-00-6	
Sulfate	65	5	0.21	mg/L	5	14808-79-8	

Method: E335.4/SM4500-CN, Run Date: 06/15/18 11:26, Analyst: JDP

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Cyanide, Total	Not detected	0.005	0.002	mg/L	1	57-12-5	

Method: E420.1, Run Date: 06/25/18 17:18, Analyst: JKB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Phenols	Not detected	0.02		mg/L	1.7		

Method: SM5310C, Run Date: 06/18/18 19:24, Analyst: JKB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
TOC	1.3	1		mg/L	1		

Metals

Method: E200.8, Run Date: 06/19/18 15:23, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Sodium	30.1	2.5		mg/L	50	7440-23-5	

Method: E200.8, Run Date: 06/19/18 14:32, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chromium, Dissolved	Not detected	0.005		mg/L	5	7440-47-3	
Copper, Dissolved	Not detected	0.005		mg/L	5	7440-50-8	
Iron, Dissolved	2.32	0.02		mg/L	5	7439-89-6	

Lab Sample ID: S90761.04 (continued)

Sample Tag: B-23Dr

Method: E200.8, Run Date: 06/19/18 14:32, Analyst: CCM (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Manganese, Dissolved	0.053	0.005		mg/L	5	7439-96-5	
Nickel, Dissolved	Not detected	0.005		mg/L	5	7440-02-0	
Zinc, Dissolved	Not detected	0.005		mg/L	5	7440-66-6	

Organics - Volatiles
Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 06/15/18 16:45, Analyst: JML

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Diethyl ether	Not detected	10		ug/L	1	60-29-7	
Acetone	Not detected	50		ug/L	1	67-64-1	
Methyl iodide	Not detected	1		ug/L	1	74-88-4	
Carbon disulfide	Not detected	5		ug/L	1	75-15-0	
tert-Methyl butyl ether (MTBE)	Not detected	5		ug/L	1	1634-04-4	
Acrylonitrile	Not detected	2		ug/L	1	107-13-1	
2-Butanone (MEK)	Not detected	25		ug/L	1	78-93-3	
Dichlorodifluoromethane	Not detected	5		ug/L	1	75-71-8	
Chloromethane	Not detected	5		ug/L	1	74-87-3	
Vinyl chloride	Not detected	1		ug/L	1	75-01-4	
Bromomethane	Not detected	5		ug/L	1	74-83-9	
Chloroethane	Not detected	5		ug/L	1	75-00-3	
Trichlorofluoromethane	Not detected	1		ug/L	1	75-69-4	
1,1-Dichloroethene	Not detected	1		ug/L	1	75-35-4	
Methylene chloride	Not detected	5		ug/L	1	75-09-2	
trans-1,2-Dichloroethene	Not detected	1		ug/L	1	156-60-5	
1,1-Dichloroethane	Not detected	1		ug/L	1	75-34-3	
cis-1,2-Dichloroethene	Not detected	1		ug/L	1	156-59-2	
Tetrahydrofuran*	Not detected	90		ug/L	1	109-99-9	
Chloroform	Not detected	1		ug/L	1	67-66-3	
Bromochloromethane	Not detected	1		ug/L	1	74-97-5	
1,1,1-Trichloroethane	Not detected	1		ug/L	1	71-55-6	
4-Methyl-2-pentanone (MIBK)	Not detected	50		ug/L	1	108-10-1	
2-Hexanone	Not detected	50		ug/L	1	591-78-6	
Carbon tetrachloride	Not detected	1		ug/L	1	56-23-5	
Benzene	Not detected	1		ug/L	1	71-43-2	
1,2-Dichloroethane	Not detected	1		ug/L	1	107-06-2	
Trichloroethene	Not detected	1		ug/L	1	79-01-6	
1,2-Dichloropropane	Not detected	1		ug/L	1	78-87-5	
Bromodichloromethane	Not detected	1		ug/L	1	75-27-4	
Dibromomethane	Not detected	5		ug/L	1	74-95-3	
cis-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-01-5	
Toluene	Not detected	1		ug/L	1	108-88-3	
trans-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-02-6	
1,1,2-Trichloroethane	Not detected	1		ug/L	1	79-00-5	
Tetrachloroethene	Not detected	1		ug/L	1	127-18-4	
trans-1,4-Dichloro-2-butene	Not detected	1		ug/L	1	110-57-6	
Dibromochloromethane	Not detected	5		ug/L	1	124-48-1	
1,2-Dibromoethane	Not detected	1		ug/L	1	106-93-4	
Chlorobenzene	Not detected	1		ug/L	1	108-90-7	
1,1,1,2-Tetrachloroethane	Not detected	1		ug/L	1	630-20-6	
Ethylbenzene	Not detected	1		ug/L	1	100-41-4	
p,m-Xylene*	Not detected	2		ug/L	1		



Lab Sample ID: S90761.04 (continued)

Sample Tag: B-23Dr

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 06/15/18 16:45, Analyst: JML (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
o-Xylene	Not detected	1		ug/L	1	95-47-6	
Styrene	Not detected	1		ug/L	1	100-42-5	
Isopropylbenzene	Not detected	5		ug/L	1	98-82-8	
Bromoform	Not detected	1		ug/L	1	75-25-2	
1,1,2,2-Tetrachloroethane	Not detected	1		ug/L	1	79-34-5	
1,2,3-Trichloropropane	Not detected	1		ug/L	1	96-18-4	
n-Propylbenzene	Not detected	1		ug/L	1	103-65-1	
Bromobenzene	Not detected	1		ug/L	1	108-86-1	
1,3,5-Trimethylbenzene	Not detected	1		ug/L	1	108-67-8	
tert-Butylbenzene	Not detected	1		ug/L	1	98-06-6	
1,2,4-Trimethylbenzene	Not detected	1		ug/L	1	95-63-6	
sec-Butylbenzene	Not detected	1		ug/L	1	135-98-8	
p-Isopropyltoluene	Not detected	5		ug/L	1	99-87-6	
1,3-Dichlorobenzene	Not detected	1		ug/L	1	541-73-1	
1,4-Dichlorobenzene	Not detected	1		ug/L	1	106-46-7	
1,2-Dichlorobenzene	Not detected	1		ug/L	1	95-50-1	
1,2,3-Trimethylbenzene	Not detected	1		ug/L	1	526-73-8	
n-Butylbenzene	Not detected	1		ug/L	1	104-51-8	
Hexachloroethane	Not detected	5		ug/L	1	67-72-1	
1,2-Dibromo-3-chloropropane	Not detected	5		ug/L	1	96-12-8	
1,2,4-Trichlorobenzene	Not detected	5		ug/L	1	120-82-1	
1,2,3-Trichlorobenzene	Not detected	5		ug/L	1	87-61-6	
Naphthalene	Not detected	5		ug/L	1	91-20-3	
2-Methylnaphthalene	Not detected	5		ug/L	1	91-57-6	

Organics

Method: SW9020B, Run Date: 06/20/18 08:06, Analyst: TA

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
TOX*	Not detected	60.0		ug/L	1		O

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



Lab Sample ID: S90761.05

Sample Tag: DUP-1

Collected Date/Time: 06/14/2018 00:01

Matrix: Groundwater

COC Reference: 111365

Sample Containers

Table with 6 columns: #, Type, Preservative(s), Refrigerated?, Arrival Temp. (C), Thermometer #. Rows include 125ml Plastic, 40ml Glass, 250ml Amber, 1L Plastic, 125ml Plastic, 40ml Glass, and 125ml Amber.

Extraction / Prep.

Table with 6 columns: Parameter, Result, Method, Run Date, Analyst, Flags. Rows include pH check for VOCs*, Metal Digestion, and Metal Digestion.

Inorganics

Method: E120.1, Run Date: 06/22/18 11:36, Analyst: JKB

Table with 8 columns: Parameter, Result, RL, MDL, Units, Dilution, CAS#, Flags. Row: Conductivity 892 umhos/cm 1.

Method: E300.0, Run Date: 06/15/18 12:06, Analyst: JDP

Table with 8 columns: Parameter, Result, RL, MDL, Units, Dilution, CAS#, Flags. Row: Chloride Not detected 5 0.08 mg/L 5 16887-00-6.

Method: E300.0, Run Date: 06/15/18 13:23, Analyst: JDP

Table with 8 columns: Parameter, Result, RL, MDL, Units, Dilution, CAS#, Flags. Row: Sulfate 130 5 0.21 mg/L 5 14808-79-8.

Method: E335.4/SM4500-CN, Run Date: 06/15/18 11:28, Analyst: JDP

Table with 8 columns: Parameter, Result, RL, MDL, Units, Dilution, CAS#, Flags. Row: Cyanide, Total Not detected 0.005 0.002 mg/L 1 57-12-5.

Method: E420.1, Run Date: 06/25/18 17:20, Analyst: JKB

Table with 8 columns: Parameter, Result, RL, MDL, Units, Dilution, CAS#, Flags. Row: Phenols Not detected 0.02 mg/L 1.7.

Method: SM5310C, Run Date: 06/25/18 19:21, Analyst: TA

Table with 8 columns: Parameter, Result, RL, MDL, Units, Dilution, CAS#, Flags. Row: TOC 3.0 1 mg/L 1 0.

Metals

Method: E200.8, Run Date: 06/19/18 15:25, Analyst: CCM

Table with 8 columns: Parameter, Result, RL, MDL, Units, Dilution, CAS#, Flags. Row: Sodium 17.3 2.5 mg/L 50 7440-23-5.

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



Analytical Laboratory Report

Supplemental Report

Lab Sample ID: S90761.05 (continued)

Sample Tag: DUP-1

Method: E200.8, Run Date: 06/19/18 14:33, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chromium, Dissolved	Not detected	0.005		mg/L	5	7440-47-3	
Copper, Dissolved	Not detected	0.005		mg/L	5	7440-50-8	
Iron, Dissolved	2.63	0.02		mg/L	5	7439-89-6	
Manganese, Dissolved	0.072	0.005		mg/L	5	7439-96-5	
Nickel, Dissolved	Not detected	0.005		mg/L	5	7440-02-0	
Zinc, Dissolved	0.007	0.005		mg/L	5	7440-66-6	

Organics - Volatiles

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 06/15/18 17:04, Analyst: JML

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Diethyl ether	Not detected	10		ug/L	1	60-29-7	
Acetone	Not detected	50		ug/L	1	67-64-1	
Methyl iodide	Not detected	1		ug/L	1	74-88-4	
Carbon disulfide	Not detected	5		ug/L	1	75-15-0	
tert-Methyl butyl ether (MTBE)	Not detected	5		ug/L	1	1634-04-4	
Acrylonitrile	Not detected	2		ug/L	1	107-13-1	
2-Butanone (MEK)	Not detected	25		ug/L	1	78-93-3	
Dichlorodifluoromethane	Not detected	5		ug/L	1	75-71-8	
Chloromethane	Not detected	5		ug/L	1	74-87-3	
Vinyl chloride	Not detected	1		ug/L	1	75-01-4	
Bromomethane	Not detected	5		ug/L	1	74-83-9	
Chloroethane	Not detected	5		ug/L	1	75-00-3	
Trichlorofluoromethane	Not detected	1		ug/L	1	75-69-4	
1,1-Dichloroethene	Not detected	1		ug/L	1	75-35-4	
Methylene chloride	Not detected	5		ug/L	1	75-09-2	
trans-1,2-Dichloroethene	Not detected	1		ug/L	1	156-60-5	
1,1-Dichloroethane	Not detected	1		ug/L	1	75-34-3	
cis-1,2-Dichloroethene	Not detected	1		ug/L	1	156-59-2	
Tetrahydrofuran*	Not detected	90		ug/L	1	109-99-9	
Chloroform	Not detected	1		ug/L	1	67-66-3	
Bromochloromethane	Not detected	1		ug/L	1	74-97-5	
1,1,1-Trichloroethane	Not detected	1		ug/L	1	71-55-6	
4-Methyl-2-pentanone (MIBK)	Not detected	50		ug/L	1	108-10-1	
2-Hexanone	Not detected	50		ug/L	1	591-78-6	
Carbon tetrachloride	Not detected	1		ug/L	1	56-23-5	
Benzene	Not detected	1		ug/L	1	71-43-2	
1,2-Dichloroethane	Not detected	1		ug/L	1	107-06-2	
Trichloroethene	Not detected	1		ug/L	1	79-01-6	
1,2-Dichloropropane	Not detected	1		ug/L	1	78-87-5	
Bromodichloromethane	Not detected	1		ug/L	1	75-27-4	
Dibromomethane	Not detected	5		ug/L	1	74-95-3	
cis-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-01-5	
Toluene	Not detected	1		ug/L	1	108-88-3	
trans-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-02-6	
1,1,2-Trichloroethane	Not detected	1		ug/L	1	79-00-5	
Tetrachloroethene	Not detected	1		ug/L	1	127-18-4	
trans-1,4-Dichloro-2-butene	Not detected	1		ug/L	1	110-57-6	
Dibromochloromethane	Not detected	5		ug/L	1	124-48-1	
1,2-Dibromoethane	Not detected	1		ug/L	1	106-93-4	
Chlorobenzene	Not detected	1		ug/L	1	108-90-7	



Lab Sample ID: S90761.05 (continued)

Sample Tag: DUP-1

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 06/15/18 17:04, Analyst: JML (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,1,1,2-Tetrachloroethane	Not detected	1		ug/L	1	630-20-6	
Ethylbenzene	Not detected	1		ug/L	1	100-41-4	
p,m-Xylene*	Not detected	2		ug/L	1		
o-Xylene	Not detected	1		ug/L	1	95-47-6	
Styrene	Not detected	1		ug/L	1	100-42-5	
Isopropylbenzene	Not detected	5		ug/L	1	98-82-8	
Bromoform	Not detected	1		ug/L	1	75-25-2	
1,1,2,2-Tetrachloroethane	Not detected	1		ug/L	1	79-34-5	
1,2,3-Trichloropropane	Not detected	1		ug/L	1	96-18-4	
n-Propylbenzene	Not detected	1		ug/L	1	103-65-1	
Bromobenzene	Not detected	1		ug/L	1	108-86-1	
1,3,5-Trimethylbenzene	Not detected	1		ug/L	1	108-67-8	
tert-Butylbenzene	Not detected	1		ug/L	1	98-06-6	
1,2,4-Trimethylbenzene	Not detected	1		ug/L	1	95-63-6	
sec-Butylbenzene	Not detected	1		ug/L	1	135-98-8	
p-Isopropyltoluene	Not detected	5		ug/L	1	99-87-6	
1,3-Dichlorobenzene	Not detected	1		ug/L	1	541-73-1	
1,4-Dichlorobenzene	Not detected	1		ug/L	1	106-46-7	
1,2-Dichlorobenzene	Not detected	1		ug/L	1	95-50-1	
1,2,3-Trimethylbenzene	Not detected	1		ug/L	1	526-73-8	
n-Butylbenzene	Not detected	1		ug/L	1	104-51-8	
Hexachloroethane	Not detected	5		ug/L	1	67-72-1	
1,2-Dibromo-3-chloropropane	Not detected	5		ug/L	1	96-12-8	
1,2,4-Trichlorobenzene	Not detected	5		ug/L	1	120-82-1	
1,2,3-Trichlorobenzene	Not detected	5		ug/L	1	87-61-6	
Naphthalene	Not detected	5		ug/L	1	91-20-3	
2-Methylnaphthalene	Not detected	5		ug/L	1	91-57-6	

Organics

Method: SW9020B, Run Date: 06/20/18 08:06, Analyst: TA

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
TOX*	Not detected	60.0		ug/L	1		O

Other / Misc.

Method: , Run Date: 06/20/18 12:00, Analyst: TG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Subcontracting Shipped (Replicate 01)*	Test America				1		

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



Analytical Laboratory Report

Supplemental Report

Lab Sample ID: S90761.06

Sample Tag: Equipment Blank-1

Collected Date/Time: 06/14/2018 16:25

Matrix: Water

COC Reference: 111365

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	125ml Plastic	HNO3	Yes	5.0	IR
2	40ml Glass	H2SO4	Yes	5.0	IR
1	250ml Amber	H2SO4	Yes	5.0	IR
1	1L Plastic	None	Yes	5.0	IR
1	125ml Plastic	NaOH	Yes	5.0	IR
2	40ml Glass	HCL	Yes	5.0	IR
1	125ml Amber	H2SO4	Yes	5.0	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	06/18/18 13:00	ADS	
Metal Digestion	Completed	SW3015A	06/18/18 13:00	CCM	
Metal Digestion	Completed	SW3015A	06/18/18 13:00	CCM	

Inorganics

Method: E120.1, Run Date: 06/22/18 11:38, Analyst: JKB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Conductivity	28.8			umhos/cm	1		

Method: E300.0, Run Date: 06/15/18 12:19, Analyst: JDP

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chloride	Not detected	2.5	0.04	mg/L	2.5	16887-00-6	
Sulfate	Not detected	2.5	0.10	mg/L	2.5	14808-79-8	

Method: E335.4/SM4500-CN, Run Date: 06/15/18 11:30, Analyst: JDP

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Cyanide, Total	Not detected	0.005	0.002	mg/L	1	57-12-5	

Method: E420.1, Run Date: 06/25/18 17:22, Analyst: JKB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Phenols	Not detected	0.02		mg/L	1.7		

Method: SM5310C, Run Date: 06/25/18 19:40, Analyst: TA

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
TOC	1.2	1		mg/L	1		O

Metals

Method: E200.8, Run Date: 06/19/18 15:17, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Sodium	Not detected	0.25		mg/L	5	7440-23-5	

Method: E200.8, Run Date: 06/19/18 14:25, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chromium, Dissolved	Not detected	0.005		mg/L	2	7440-47-3	
Copper, Dissolved	Not detected	0.005		mg/L	2	7440-50-8	

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

Lab Sample ID: S90761.06 (continued)

Sample Tag: Equipment Blank-1

Method: E200.8, Run Date: 06/19/18 14:25, Analyst: CCM (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Iron, Dissolved	Not detected	0.02		mg/L	2	7439-89-6	
Manganese, Dissolved	Not detected	0.005		mg/L	2	7439-96-5	
Nickel, Dissolved	Not detected	0.005		mg/L	2	7440-02-0	
Zinc, Dissolved	Not detected	0.005		mg/L	2	7440-66-6	

Organics - Volatiles
Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 06/15/18 12:54, Analyst: JML

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Diethyl ether	Not detected	10		ug/L	1	60-29-7	
Acetone	Not detected	50		ug/L	1	67-64-1	
Methyl iodide	Not detected	1		ug/L	1	74-88-4	
Carbon disulfide	Not detected	5		ug/L	1	75-15-0	
tert-Methyl butyl ether (MTBE)	Not detected	5		ug/L	1	1634-04-4	
Acrylonitrile	Not detected	2		ug/L	1	107-13-1	
2-Butanone (MEK)	Not detected	25		ug/L	1	78-93-3	
Dichlorodifluoromethane	Not detected	5		ug/L	1	75-71-8	
Chloromethane	Not detected	5		ug/L	1	74-87-3	
Vinyl chloride	Not detected	1		ug/L	1	75-01-4	
Bromomethane	Not detected	5		ug/L	1	74-83-9	
Chloroethane	Not detected	5		ug/L	1	75-00-3	
Trichlorofluoromethane	Not detected	1		ug/L	1	75-69-4	
1,1-Dichloroethene	Not detected	1		ug/L	1	75-35-4	
Methylene chloride	Not detected	5		ug/L	1	75-09-2	
trans-1,2-Dichloroethene	Not detected	1		ug/L	1	156-60-5	
1,1-Dichloroethane	Not detected	1		ug/L	1	75-34-3	
cis-1,2-Dichloroethene	Not detected	1		ug/L	1	156-59-2	
Tetrahydrofuran*	Not detected	90		ug/L	1	109-99-9	
Chloroform	Not detected	1		ug/L	1	67-66-3	
Bromochloromethane	Not detected	1		ug/L	1	74-97-5	
1,1,1-Trichloroethane	Not detected	1		ug/L	1	71-55-6	
4-Methyl-2-pentanone (MIBK)	Not detected	50		ug/L	1	108-10-1	
2-Hexanone	Not detected	50		ug/L	1	591-78-6	
Carbon tetrachloride	Not detected	1		ug/L	1	56-23-5	
Benzene	Not detected	1		ug/L	1	71-43-2	
1,2-Dichloroethane	Not detected	1		ug/L	1	107-06-2	
Trichloroethene	Not detected	1		ug/L	1	79-01-6	
1,2-Dichloropropane	Not detected	1		ug/L	1	78-87-5	
Bromodichloromethane	Not detected	1		ug/L	1	75-27-4	
Dibromomethane	Not detected	5		ug/L	1	74-95-3	
cis-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-01-5	
Toluene	Not detected	1		ug/L	1	108-88-3	
trans-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-02-6	
1,1,2-Trichloroethane	Not detected	1		ug/L	1	79-00-5	
Tetrachloroethene	Not detected	1		ug/L	1	127-18-4	
trans-1,4-Dichloro-2-butene	Not detected	1		ug/L	1	110-57-6	
Dibromochloromethane	Not detected	5		ug/L	1	124-48-1	
1,2-Dibromoethane	Not detected	1		ug/L	1	106-93-4	
Chlorobenzene	Not detected	1		ug/L	1	108-90-7	
1,1,1,2-Tetrachloroethane	Not detected	1		ug/L	1	630-20-6	
Ethylbenzene	Not detected	1		ug/L	1	100-41-4	



Lab Sample ID: S90761.06 (continued)

Sample Tag: Equipment Blank-1

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 06/15/18 12:54, Analyst: JML (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
p,m-Xylene*	Not detected	2		ug/L	1		
o-Xylene	Not detected	1		ug/L	1	95-47-6	
Styrene	Not detected	1		ug/L	1	100-42-5	
Isopropylbenzene	Not detected	5		ug/L	1	98-82-8	
Bromoform	Not detected	1		ug/L	1	75-25-2	
1,1,2,2-Tetrachloroethane	Not detected	1		ug/L	1	79-34-5	
1,2,3-Trichloropropane	Not detected	1		ug/L	1	96-18-4	
n-Propylbenzene	Not detected	1		ug/L	1	103-65-1	
Bromobenzene	Not detected	1		ug/L	1	108-86-1	
1,3,5-Trimethylbenzene	Not detected	1		ug/L	1	108-67-8	
tert-Butylbenzene	Not detected	1		ug/L	1	98-06-6	
1,2,4-Trimethylbenzene	Not detected	1		ug/L	1	95-63-6	
sec-Butylbenzene	Not detected	1		ug/L	1	135-98-8	
p-Isopropyltoluene	Not detected	5		ug/L	1	99-87-6	
1,3-Dichlorobenzene	Not detected	1		ug/L	1	541-73-1	
1,4-Dichlorobenzene	Not detected	1		ug/L	1	106-46-7	
1,2-Dichlorobenzene	Not detected	1		ug/L	1	95-50-1	
1,2,3-Trimethylbenzene	Not detected	1		ug/L	1	526-73-8	
n-Butylbenzene	Not detected	1		ug/L	1	104-51-8	
Hexachloroethane	Not detected	5		ug/L	1	67-72-1	
1,2-Dibromo-3-chloropropane	Not detected	5		ug/L	1	96-12-8	
1,2,4-Trichlorobenzene	Not detected	5		ug/L	1	120-82-1	
1,2,3-Trichlorobenzene	Not detected	5		ug/L	1	87-61-6	
Naphthalene	Not detected	5		ug/L	1	91-20-3	
2-Methylnaphthalene	Not detected	5		ug/L	1	91-57-6	

Organics

Method: SW9020B, Run Date: 06/20/18 08:06, Analyst: TA

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
TOX*	Not detected	60.0		ug/L	1		O

Other / Misc.

Method: , Run Date: 06/20/18 12:00, Analyst: TG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Subcontracting Shipped (Replicate 01)*	Test America				1		

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



Analytical Laboratory Report

Lab Sample ID: S90761.07

Sample Tag: Trip Blank-2

Collected Date/Time: 06/14/2018 00:01

Matrix: Water

COC Reference: 111365

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	40ml Glass	HCL	Yes	5.0	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	06/18/18 13:00	ADS	

Organics - Volatiles

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 06/15/18 13:14, Analyst: JML

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Diethyl ether	Not detected	10		ug/L	1	60-29-7	
Acetone	Not detected	50		ug/L	1	67-64-1	
Methyl iodide	Not detected	1		ug/L	1	74-88-4	
Carbon disulfide	Not detected	5		ug/L	1	75-15-0	
tert-Methyl butyl ether (MTBE)	Not detected	5		ug/L	1	1634-04-4	
Acrylonitrile	Not detected	2		ug/L	1	107-13-1	
2-Butanone (MEK)	Not detected	25		ug/L	1	78-93-3	
Dichlorodifluoromethane	Not detected	5		ug/L	1	75-71-8	
Chloromethane	Not detected	5		ug/L	1	74-87-3	
Vinyl chloride	Not detected	1		ug/L	1	75-01-4	
Bromomethane	Not detected	5		ug/L	1	74-83-9	
Chloroethane	Not detected	5		ug/L	1	75-00-3	
Trichlorofluoromethane	Not detected	1		ug/L	1	75-69-4	
1,1-Dichloroethene	Not detected	1		ug/L	1	75-35-4	
Methylene chloride	Not detected	5		ug/L	1	75-09-2	
trans-1,2-Dichloroethene	Not detected	1		ug/L	1	156-60-5	
1,1-Dichloroethane	Not detected	1		ug/L	1	75-34-3	
cis-1,2-Dichloroethene	Not detected	1		ug/L	1	156-59-2	
Tetrahydrofuran*	Not detected	90		ug/L	1	109-99-9	
Chloroform	Not detected	1		ug/L	1	67-66-3	
Bromochloromethane	Not detected	1		ug/L	1	74-97-5	
1,1,1-Trichloroethane	Not detected	1		ug/L	1	71-55-6	
4-Methyl-2-pentanone (MIBK)	Not detected	50		ug/L	1	108-10-1	
2-Hexanone	Not detected	50		ug/L	1	591-78-6	
Carbon tetrachloride	Not detected	1		ug/L	1	56-23-5	
Benzene	Not detected	1		ug/L	1	71-43-2	
1,2-Dichloroethane	Not detected	1		ug/L	1	107-06-2	
Trichloroethene	Not detected	1		ug/L	1	79-01-6	
1,2-Dichloropropane	Not detected	1		ug/L	1	78-87-5	
Bromodichloromethane	Not detected	1		ug/L	1	75-27-4	
Dibromomethane	Not detected	5		ug/L	1	74-95-3	
cis-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-01-5	
Toluene	Not detected	1		ug/L	1	108-88-3	
trans-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-02-6	
1,1,2-Trichloroethane	Not detected	1		ug/L	1	79-00-5	
Tetrachloroethene	Not detected	1		ug/L	1	127-18-4	
trans-1,4-Dichloro-2-butene	Not detected	1		ug/L	1	110-57-6	



Lab Sample ID: S90761.07 (continued)

Sample Tag: Trip Blank-2

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 06/15/18 13:14, Analyst: JML (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Dibromochloromethane	Not detected	5		ug/L	1	124-48-1	
1,2-Dibromoethane	Not detected	1		ug/L	1	106-93-4	
Chlorobenzene	Not detected	1		ug/L	1	108-90-7	
1,1,1,2-Tetrachloroethane	Not detected	1		ug/L	1	630-20-6	
Ethylbenzene	Not detected	1		ug/L	1	100-41-4	
p,m-Xylene*	Not detected	2		ug/L	1		
o-Xylene	Not detected	1		ug/L	1	95-47-6	
Styrene	Not detected	1		ug/L	1	100-42-5	
Isopropylbenzene	Not detected	5		ug/L	1	98-82-8	
Bromoform	Not detected	1		ug/L	1	75-25-2	
1,1,2,2-Tetrachloroethane	Not detected	1		ug/L	1	79-34-5	
1,2,3-Trichloropropane	Not detected	1		ug/L	1	96-18-4	
n-Propylbenzene	Not detected	1		ug/L	1	103-65-1	
Bromobenzene	Not detected	1		ug/L	1	108-86-1	
1,3,5-Trimethylbenzene	Not detected	1		ug/L	1	108-67-8	
tert-Butylbenzene	Not detected	1		ug/L	1	98-06-6	
1,2,4-Trimethylbenzene	Not detected	1		ug/L	1	95-63-6	
sec-Butylbenzene	Not detected	1		ug/L	1	135-98-8	
p-Isopropyltoluene	Not detected	5		ug/L	1	99-87-6	
1,3-Dichlorobenzene	Not detected	1		ug/L	1	541-73-1	
1,4-Dichlorobenzene	Not detected	1		ug/L	1	106-46-7	
1,2-Dichlorobenzene	Not detected	1		ug/L	1	95-50-1	
1,2,3-Trimethylbenzene	Not detected	1		ug/L	1	526-73-8	
n-Butylbenzene	Not detected	1		ug/L	1	104-51-8	
Hexachloroethane	Not detected	5		ug/L	1	67-72-1	
1,2-Dibromo-3-chloropropane	Not detected	5		ug/L	1	96-12-8	
1,2,4-Trichlorobenzene	Not detected	5		ug/L	1	120-82-1	
1,2,3-Trichlorobenzene	Not detected	5		ug/L	1	87-61-6	
Naphthalene	Not detected	5		ug/L	1	91-20-3	
2-Methylnaphthalene	Not detected	5		ug/L	1	91-57-6	

Merit Laboratories Login Checklist

Lab Set ID: S90761

Attention: Clifford Yantz
 Address: O'Brien & Gere Engineers, Inc.
 2260 E Saginaw St
 East Lansing, MI 48823

Client: OBG02 (O'Brien & Gere Engineers, Inc.)

Project: RACER Coldwater Rd Landfill

Submitted: 06/15/2018 08:00 Login User: MMC

Phone: 248-477-5701 FAX:
 Email: Clifford.Yantz@obg.com

Selection	Description	Note
01. <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	Samples shipped	
02. <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	Samples left in 24 hr. drop box	
03. <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	Are there custody seals/tape or is the drop box locked	
04. <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Samples are received at 4C +/- 2C Thermometer #	IR 5.0
05. <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Received on ice/ cooling process begun	
06. <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	All bottles intact	
07. <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Appropriate analytical bottles are used	
08. <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Do sample have correct chemical preservation	
09. <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Merit bottles used	
10. <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Sufficient sample volume received	
11. <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	Samples require laboratory filtration	
12. <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Completed pH checks on preserved samples? (no VOAs)	
13. <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	Did any samples need to be preserved in the lab?	
14. <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Samples submitted within holding time	
15. <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	Do water VOC or TOX bottles contain headspace	
16. <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	COC adequately filled out	
17. <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	COC signed and relinquished to the lab	
18. <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Sample tag on bottles match COC	
19. <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Subcontracting needed? Subcontracted to:	Test America

Corrective action for all exceptions is to call the client and to notify the project manager.

Client Review By: _____ Date: _____



2680 East Lansing Dr., East Lansing, MI 48823
 Phone (517) 332-0167 Fax (517) 332-4034
 www.meritlabs.com

C.O.C. PAGE # 1 OF 1

111365

REPORT TO

CHAIN OF CUSTODY RECORD

INVOICE TO

CONTACT NAME: Clifford Yantz
 COMPANY: O'Brien & Gere
 ADDRESS: 2260 E Saginaw St
 CITY: East Lansing STATE: MI ZIP CODE: 48823
 PHONE NO.: 313-333-0211 FAX NO.: P.O. NO.: 11800350
 E-MAIL ADDRESS: clifford.yantz@obg.com QUOTE NO.:

CONTACT NAME: SAME
 COMPANY:
 ADDRESS:
 CITY: STATE: ZIP CODE:
 PHONE NO.: E-MAIL ADDRESS:

ANALYSIS (ATTACH LIST IF MORE SPACE IS REQUIRED)

PROJECT NO./NAME: RACER Coldwater Rd Landfill SAMPLER(S) - PLEASE PRINT/SIGN NAME: Kevin Sumner
 TURNAROUND TIME REQUIRED: 1 DAY 2 DAYS 3 DAYS STANDARD OTHER
 DELIVERABLES REQUIRED: STD LEVEL II LEVEL III LEVEL IV EDD OTHER

MATRIX CODE: GW=GROUNDWATER WW=WASTEWATER S=SOIL L=LIQUID SD=SOLID SL=SLUDGE DW=DRINKING WATER O=OIL WP=WIPE A=AIR W=WASTE

Containers & Preservatives

MERIT LAB NO. <small>FOR LAB USE ONLY</small>	YEAR		SAMPLE TAG IDENTIFICATION-DESCRIPTION	MATRIX	# OF BOTTLES	NONE	HCl	HNO ₃	H ₂ SO ₄	NaOH	MeOH	OTHER	VOCs	TOC	TOX	Phenols	cyanide	Sulfate	specific conductivity	Dissolved Metals	Chlorides	Total Sodium	Certifications			Project Locations		Special Instructions
	DATE	TIME																					<input type="checkbox"/> OHIO VAP	<input type="checkbox"/> Drinking Water	<input type="checkbox"/> DoD	<input type="checkbox"/> NPDES	<input type="checkbox"/> Detroit	
90761.01	6/13/18	1300	B-2D	GW	11	1	3	2	4	1			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Dissolved Metals
.02	6/14/18	1100	B-21D										X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	were field filtered
.03		1305	B-20D										X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
.04		1540	B-23Dr										X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Metals Are:
.05		-	DUP-1										X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Cu, Cr, Ni, Zn, Fe, Mn
.06		1625	Equipment Blank-1	QC	10	1	2	2	4	1			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
.07		-	Trip Blank-2	QC	1	1							X															

RELINQUISHED BY: [Signature] OBG Sampler DATE: 6/14/18 TIME: 1745
 RECEIVED BY: [Signature] DATE: TIME:
 RELINQUISHED BY: DATE: TIME:
 RECEIVED BY: DATE: TIME:

RELINQUISHED BY: Merit Secure Storage Lab DATE: 6/14/18 TIME: 1745
 RECEIVED BY: [Signature] DATE: 6/15/18 TIME: 0800
 SEAL NO. SEAL INTACT YES NO INITIALS: NOTES: TEMP. ON ARRIVAL: 5.0

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Michigan

10448 Citation Drive

Suite 200

Brighton, MI 48116

Tel: (810)229-2763

TestAmerica Job ID: 190-16620-1

Client Project/Site: S90761

For:

Merit Laboratories

2680 E Lansing Drive

East Lansing, Michigan 48823

Attn: John Laverty

Sue Schafer

Authorized for release by:

6/24/2018 7:44:09 PM

Sue Schafer, Project Manager II

(810)229-2763

sue.schafer@testamericainc.com



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

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Sample Summary

Client: Merit Laboratories
Project/Site: S90761

TestAmerica Job ID: 190-16620-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
190-16620-1	90761.01	Ground Water	06/13/18 13:00	06/18/18 15:10
190-16620-2	90761.02	Ground Water	06/14/18 11:00	06/18/18 15:10
190-16620-3	90761.03	Ground Water	06/14/18 13:05	06/18/18 15:10
190-16620-4	90761.04	Ground Water	06/14/18 15:40	06/18/18 15:10
190-16620-5	90761.05	Ground Water	06/14/18 00:01	06/18/18 15:10
190-16620-6	90761.06	Ground Water	06/14/18 16:25	06/18/18 15:10

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Case Narrative

Client: Merit Laboratories
Project/Site: S90761

TestAmerica Job ID: 190-16620-1

Job ID: 190-16620-1

Laboratory: TestAmerica Michigan

Narrative

Job Narrative
190-16620-1

Comments

No additional comments.

Receipt

The samples were received on 6/18/2018 3:10 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 6.0° C.

General Chemistry

Method(s) 9020B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 280-419405 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.(Total Organic Halides)

Method(s) 9020B: The following samples for batch 419405 (Total Organic Halides) were diluted to 2x due to the nature of the sample matrix based on CI pre-screen test: 90761.01 (190-16620-1), 90761.02 (190-16620-2), 90761.03 (190-16620-3), 90761.04 (190-16620-4), 90761.05 (190-16620-5) and 90761.06 (190-16620-6). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Client Sample Results

Client: Merit Laboratories
Project/Site: S90761

TestAmerica Job ID: 190-16620-1

Client Sample ID: 90761.01
Date Collected: 06/13/18 13:00
Date Received: 06/18/18 15:10

Lab Sample ID: 190-16620-1
Matrix: Ground Water

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
TOX Dup	<0.060		0.060	mg/L			06/20/18 08:06	1

Client Sample ID: 90761.02
Date Collected: 06/14/18 11:00
Date Received: 06/18/18 15:10

Lab Sample ID: 190-16620-2
Matrix: Ground Water

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
TOX Dup	<0.060		0.060	mg/L			06/20/18 08:06	1

Client Sample ID: 90761.03
Date Collected: 06/14/18 13:05
Date Received: 06/18/18 15:10

Lab Sample ID: 190-16620-3
Matrix: Ground Water

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
TOX Dup	<0.060		0.060	mg/L			06/20/18 08:06	1

Client Sample ID: 90761.04
Date Collected: 06/14/18 15:40
Date Received: 06/18/18 15:10

Lab Sample ID: 190-16620-4
Matrix: Ground Water

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
TOX Dup	<0.060		0.060	mg/L			06/20/18 08:06	1

Client Sample ID: 90761.05
Date Collected: 06/14/18 00:01
Date Received: 06/18/18 15:10

Lab Sample ID: 190-16620-5
Matrix: Ground Water

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
TOX Dup	<0.060		0.060	mg/L			06/20/18 08:06	1

Client Sample ID: 90761.06
Date Collected: 06/14/18 16:25
Date Received: 06/18/18 15:10

Lab Sample ID: 190-16620-6
Matrix: Ground Water

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
TOX Dup	<0.060		0.060	mg/L			06/20/18 08:06	1

QC Sample Results

Client: Merit Laboratories
Project/Site: S90761

TestAmerica Job ID: 190-16620-1

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

Lab Sample ID: MB 280-419405/2
Matrix: Water
Analysis Batch: 419405

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

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
TOX Dup	<0.030		0.030	mg/L			06/20/18 08:06	1

Lab Sample ID: LCS 280-419405/4
Matrix: Water
Analysis Batch: 419405

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
TOX Result 1	0.100	0.103		mg/L		103	78 - 114
TOX Dup	0.100	0.103		mg/L		103	78 - 114

Lab Sample ID: LCSD 280-419405/5
Matrix: Water
Analysis Batch: 419405

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
TOX Result 1	0.100	0.103		mg/L		103	78 - 114	0	23
TOX Dup	0.100	0.103		mg/L		103	78 - 114	0	23

Definitions/Glossary

Client: Merit Laboratories
Project/Site: S90761

TestAmerica Job ID: 190-16620-1

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

QC Association Summary

Client: Merit Laboratories
Project/Site: S90761

TestAmerica Job ID: 190-16620-1

General Chemistry

Analysis Batch: 419405

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
190-16620-1	90761.01	Total/NA	Ground Water	9020B	
190-16620-2	90761.02	Total/NA	Ground Water	9020B	
190-16620-3	90761.03	Total/NA	Ground Water	9020B	
190-16620-4	90761.04	Total/NA	Ground Water	9020B	
190-16620-5	90761.05	Total/NA	Ground Water	9020B	
190-16620-6	90761.06	Total/NA	Ground Water	9020B	
MB 280-419405/2	Method Blank	Total/NA	Water	9020B	
LCS 280-419405/4	Lab Control Sample	Total/NA	Water	9020B	
LCSD 280-419405/5	Lab Control Sample Dup	Total/NA	Water	9020B	

Lab Chronicle

Client: Merit Laboratories
Project/Site: S90761

TestAmerica Job ID: 190-16620-1

Client Sample ID: 90761.01

Date Collected: 06/13/18 13:00

Date Received: 06/18/18 15:10

Lab Sample ID: 190-16620-1

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9020B		1	419405	06/20/18 08:06	IEU	TAL DEN

Client Sample ID: 90761.02

Date Collected: 06/14/18 11:00

Date Received: 06/18/18 15:10

Lab Sample ID: 190-16620-2

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9020B		1	419405	06/20/18 08:06	IEU	TAL DEN

Client Sample ID: 90761.03

Date Collected: 06/14/18 13:05

Date Received: 06/18/18 15:10

Lab Sample ID: 190-16620-3

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9020B		1	419405	06/20/18 08:06	IEU	TAL DEN

Client Sample ID: 90761.04

Date Collected: 06/14/18 15:40

Date Received: 06/18/18 15:10

Lab Sample ID: 190-16620-4

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9020B		1	419405	06/20/18 08:06	IEU	TAL DEN

Client Sample ID: 90761.05

Date Collected: 06/14/18 00:01

Date Received: 06/18/18 15:10

Lab Sample ID: 190-16620-5

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9020B		1	419405	06/20/18 08:06	IEU	TAL DEN

Client Sample ID: 90761.06

Date Collected: 06/14/18 16:25

Date Received: 06/18/18 15:10

Lab Sample ID: 190-16620-6

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9020B		1	419405	06/20/18 08:06	IEU	TAL DEN

Laboratory References:

TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

TestAmerica Michigan

Lab Chronicle

Client: Merit Laboratories
Project/Site: S90761

TestAmerica Job ID: 190-16620-1

Analyst References:

Lab: TAL DEN

Batch Type: Analysis

IEU = Ikem Uge

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Accreditation/Certification Summary

Client: Merit Laboratories
Project/Site: S90761

TestAmerica Job ID: 190-16620-1

Laboratory: TestAmerica Michigan

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Michigan	State Program	5	57	05-05-20

Laboratory: TestAmerica Denver

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
A2LA	DoD ELAP		2907.01	10-31-19
A2LA	ISO/IEC 17025		2907.01	10-31-19
Alabama	State Program	4	40730	09-30-12 *
Alaska (UST)	State Program	10	UST-30	01-08-19
Arizona	State Program	9	AZ0713	12-20-18
California	State Program	9	2513	01-18-19
Connecticut	State Program	1	PH-0686	09-30-18
Florida	NELAP	4	E87667	06-30-18
Georgia	State Program	4	N/A	01-08-19 *
Illinois	NELAP	5	200017	04-30-18 *
Iowa	State Program	7	370	12-01-18
Kansas	NELAP	7	E-10166	05-31-18 *
Louisiana	NELAP	6	02096	06-30-18
Maine	State Program	1	CO0002	03-03-19
Minnesota	NELAP	5	8-999-405	12-31-18
Nevada	State Program	9	CO0026	07-31-18
New Hampshire	NELAP	1	205310	04-28-19
New Jersey	NELAP	2	CO004	06-30-18
New York	NELAP	2	11964	04-01-19
North Carolina (WW/SW)	State Program	4	358	12-31-18
North Dakota	State Program	8	R-034	01-08-19
Oklahoma	State Program	6	8614	08-31-18
Oregon	NELAP	10	4025	01-08-19
Pennsylvania	NELAP	3	68-00664	07-31-18
South Carolina	State Program	4	72002001	01-08-19
Texas	NELAP	6	T104704183-17-14	09-30-18
USDA	Federal			03-26-21
Utah	NELAP	8	CO00026	07-31-18
Virginia	NELAP	3	460232	06-14-19
Washington	State Program	10	C583	08-03-18
West Virginia DEP	State Program	3	354	12-31-18
Wisconsin	State Program	5	999615430	08-31-18
Wyoming (UST)	A2LA	8	2907.01	10-31-19

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Merit Laboratories
Project/Site: S90761

TestAmerica Job ID: 190-16620-1

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

Protocol References:

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

Laboratory References:

TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

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- MSDS or Known Hazard Information Supplied by Client
 Bottle stickers attached ELEMENT comment attached MSDS/COG scanned attached EMS
- Discrepancies Client ID Merit Labs
- Short Hold Work Order # 190-16620
- Rush 24hr 2day 3day 5day Other
- Report evaluation performed by - Initials: TRH Date: 6/18/10 Time: 1510

Cooler/Sample Receipt

AFTER HOURS: technician complete grab areas
 Page 10 of 11 walk-in procedure is form in Receiving area
 Date/Time read Initials

Method of Shipment:	Shipping Container Type:	Custody Seals Intact:
<input checked="" type="checkbox"/> Walk-in Client <input type="checkbox"/> TestAmerica Field Courier	<input checked="" type="checkbox"/> Cooler <input type="checkbox"/> Box	<input type="checkbox"/> Yes <input type="checkbox"/> No
<input type="checkbox"/> Other Client/3 rd Party Courier	<input checked="" type="checkbox"/> None <input type="checkbox"/> Other	<input checked="" type="checkbox"/> N/A (not used or required)
<input type="checkbox"/> Fed Ex Tracking #	Packing Materials:	Cooling Materials:
<input type="checkbox"/> UPS Tracking #	<input type="checkbox"/> Plastic Bags <input type="checkbox"/> Foam	<input checked="" type="checkbox"/> Ice (solid) <input type="checkbox"/> Ice (Melted)
<input type="checkbox"/> Other	<input checked="" type="checkbox"/> Bubble Wrap <input type="checkbox"/> Paper	<input type="checkbox"/> Blue Ice <input type="checkbox"/> None
	<input type="checkbox"/> Packing Peanuts <input type="checkbox"/> None	<input type="checkbox"/> Other
	<input type="checkbox"/> Other	

Bacteriological Samples	Temp (°C) Corrected		Frozen		Received within 2 hours		Sample Flagged	
	yes	no	yes	no	yes	no	yes	no

Thermometer ID	Observed (°C)	Corrected (°C)	Bank	Temp	Received on same day	Acceptable?	Cooler ID	Note Affected Samples if temperature not acceptable
140252433			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No		
140252496	6.0	6.0	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		

* Receipt temperatures are considered acceptable if the samples are received on the same day they were collected & show signs that the cooling process has started. Temperature acceptance for most tests is ≤6.0°C but not frozen. For additional information please refer to SOP DT-SCA-004 Sample Receipt and Login, Attachment 2 - Holding Times, Preservation and Container Requirements

Receipt Questions**	Y	N	n/a	"No" answers require additional comment
COC present & TA receipt signature, date, & time properly documented?	X			
Containers & labels in good condition? (unbroken, not leaking, appropriately filled, labels legible & attached)	X			
Appropriate containers used & adequate volume provided?	X			Preserved Bottles Checked with pH Strips * <u>Yes</u>
Number of sample containers match COC?	X			
Samples received within hold time?	X			
Samples submitted for GRO and Volatiles analyses (3260, 624, 524) received without headspace?			X	
Was a Trip Blank received with VOA samples?			X	
Were the samples free of any questionable physical conformities? For example, field duplicates or multiple bottles of the same sample do not significantly vary in appearance (color, proportion of solids, etc)	X			
Were the COC, bottle labels, and all other items free of all other discrepancies or issues that would need to be addressed with the Project Manager and/or Client?	X			

** May not be applicable if samples are not for compliance testing * Excludes FOG, Volatiles, TOC Vials

Client Contact Record

Contact via: Phone Email Other _____ Person Contacted: _____ Date/Time: _____

Discrepancy/allowance agreement is on record in the client project file

Discussion/Resolution: _____

Any additional documentation and clarification from client must be noted in the narrative and/or scanned into the COG directory

Reviewed by: Merit Labs Date: 6/18/10 W/ No DT-SCA-774001 TO effective 06/11/12



Chain of Custody Record

(d)10, 229-0000

Client: Merit Laboratories
Address: 303-736-0100(Tel) 303-431-7171(Fax)
Phone: 303-736-0100(Tel) 303-431-7171(Fax)
State/Zip: CO, 80002
Project Name: Merit Laboratories
Site:

Sampler: Lab PM: Schafer, Sue
Phone: E-Mail: sue.schafer@testamericainc.com
Accreditations Required (See note):

Carrier Tracking No(s): 190-19411.1
State of Origin: Michigan
Job #: 190-16620-1

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, B=Toxic, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9028_Cat/ TOX in duplicate	Total Number of Containers	Special Instructions/Note:
90761.01 (190-16620-1)	6/13/18	13:00 Eastern	Water	Water	X	X	1		
90761.02 (190-16620-2)	6/14/18	11:00 Eastern	Water	Water	X	X	1		
90761.03 (190-16620-3)	6/14/18	13:05 Eastern	Water	Water	X	X	1		
90761.04 (190-16620-4)	6/14/18	15:40 Eastern	Water	Water	X	X	1		
90761.05 (190-16620-5)	6/14/18	00:01 Eastern	Water	Water	X	X	1		
90761.06 (190-16620-6)	6/14/18	16:25 Eastern	Water	Water	X	X	1		

Analysis Requested:
 A - HCL, M - Hexane
 B - NaOH, N - None
 C - Zn Acetate, O - AsNaO2
 D - Nitric Acid, P - Na2O4S
 E - NaHSO4, Q - Na2SO3
 F - MeOH, R - Na2S2O3
 G - Amchlor, S - H2SO4
 H - Ascorbic Acid, T - TSP Dodecylhydrate
 I - Ice, U - Acetone
 J - DI Water, V - MCAA
 K - EDTA, W - pH 4.5
 L - EDA, X - other (specify)

Preservation Codes:
 A - HCL, M - Hexane
 B - NaOH, N - None
 C - Zn Acetate, O - AsNaO2
 D - Nitric Acid, P - Na2O4S
 E - NaHSO4, Q - Na2SO3
 F - MeOH, R - Na2S2O3
 G - Amchlor, S - H2SO4
 H - Ascorbic Acid, T - TSP Dodecylhydrate
 I - Ice, U - Acetone
 J - DI Water, V - MCAA
 K - EDTA, W - pH 4.5
 L - EDA, X - other (specify)

Special Instructions/Note:

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to TestAmerica Laboratories, Inc.

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

Special Instructions/QC Requirements:

Received by: _____ Date: _____
 Received by: _____ Date: _____
 Received by: _____ Date: _____

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Michigan

10448 Citation Drive

Suite 200

Brighton, MI 48116

Tel: (810)229-2763

TestAmerica Job ID: 190-16640-1

Client Project/Site: S90761

For:

Merit Laboratories

2680 E Lansing Drive

East Lansing, Michigan 48823

Attn: John Laverty

Sue Schafer

Authorized for release by:

6/26/2018 6:26:27 PM

Sue Schafer, Project Manager II

(810)229-2763

sue.schafer@testamericainc.com

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Results relate only to the items tested and the sample(s) as received by the laboratory.

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Sample Summary

Client: Merit Laboratories
Project/Site: S90761

TestAmerica Job ID: 190-16640-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
190-16640-1	90761.05	Ground Water	06/14/18 00:01	06/20/18 10:41
190-16640-2	90761.06	Water	06/14/18 16:25	06/20/18 10:41

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Case Narrative

Client: Merit Laboratories
Project/Site: S90761

TestAmerica Job ID: 190-16640-1

Job ID: 190-16640-1

Laboratory: TestAmerica Michigan

Narrative

**Job Narrative
190-16640-1**

Comments

No additional comments.

Receipt

The samples were received on 6/20/2018 10:41 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 15.0° C.

HPLC/IC

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

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Client Sample Results

Client: Merit Laboratories
Project/Site: S90761

TestAmerica Job ID: 190-16640-1

Client Sample ID: 90761.05
Date Collected: 06/14/18 00:01
Date Received: 06/20/18 10:41

Lab Sample ID: 190-16640-1
Matrix: Ground Water

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	3.0		1.0	mg/L			06/25/18 19:21	1

Client Sample ID: 90761.06
Date Collected: 06/14/18 16:25
Date Received: 06/20/18 10:41

Lab Sample ID: 190-16640-2
Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	1.2		1.0	mg/L			06/25/18 19:40	1

QC Sample Results

Client: Merit Laboratories
Project/Site: S90761

TestAmerica Job ID: 190-16640-1

Method: 5310 B-2011 - Organic Carbon, Total (TOC)

Lab Sample ID: MB 680-529453/3
Matrix: Water
Analysis Batch: 529453

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

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	<1.0		1.0	mg/L			06/25/18 17:03	1

Lab Sample ID: LCS 680-529453/4
Matrix: Water
Analysis Batch: 529453

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	20.0	20.9		mg/L		104	80 - 120
TOC Result 1	20.0	20.9		mg/L		105	80 - 120
TOC Result 2	20.0	20.6		mg/L		103	80 - 120
TOC Result 3	20.0	21.1		mg/L		106	80 - 120
TOC Result 4	20.0	21.2		mg/L		106	80 - 120

Lab Sample ID: LCSD 680-529453/5
Matrix: Water
Analysis Batch: 529453

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon	20.0	20.8		mg/L		104	80 - 120	0	25
TOC Result 1	20.0	20.7		mg/L		104	80 - 120	1	25
TOC Result 2	20.0	20.6		mg/L		103	80 - 120	0	25
TOC Result 3	20.0	21.3		mg/L		106	80 - 120	1	25
TOC Result 4	20.0	21.3		mg/L		107	80 - 120	1	25

Definitions/Glossary

Client: Merit Laboratories
Project/Site: S90761

TestAmerica Job ID: 190-16640-1

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

QC Association Summary

Client: Merit Laboratories
Project/Site: S90761

TestAmerica Job ID: 190-16640-1

General Chemistry

Analysis Batch: 529453

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
190-16640-1	90761.05	Total/NA	Ground Water	5310 B-2011	
190-16640-2	90761.06	Total/NA	Water	5310 B-2011	
MB 680-529453/3	Method Blank	Total/NA	Water	5310 B-2011	
LCS 680-529453/4	Lab Control Sample	Total/NA	Water	5310 B-2011	
LCSD 680-529453/5	Lab Control Sample Dup	Total/NA	Water	5310 B-2011	

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Lab Chronicle

Client: Merit Laboratories
Project/Site: S90761

TestAmerica Job ID: 190-16640-1

Client Sample ID: 90761.05

Date Collected: 06/14/18 00:01

Date Received: 06/20/18 10:41

Lab Sample ID: 190-16640-1

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	5310 B-2011		1	529453	06/25/18 19:21	KLD	TAL SAV

Client Sample ID: 90761.06

Date Collected: 06/14/18 16:25

Date Received: 06/20/18 10:41

Lab Sample ID: 190-16640-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	5310 B-2011		1	529453	06/25/18 19:40	KLD	TAL SAV

Laboratory References:

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

Analyst References:

Lab: TAL SAV

Batch Type: Analysis

KLD = Kellie Dudley

Accreditation/Certification Summary

Client: Merit Laboratories
Project/Site: S90761

TestAmerica Job ID: 190-16640-1

Laboratory: TestAmerica Michigan

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Michigan	State Program	5	57	05-05-20

Laboratory: TestAmerica Savannah

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
	AFCEE		SAVLAB	
Alabama	State Program	4	41450	06-30-18 *
Alaska	State Program	10		06-30-18 *
Alaska (UST)	State Program	10	UST-104	09-22-19
ANAB	DoD ELAP		L2463	09-22-19
Arizona	State Program	9	AZ0808	12-14-18
Arkansas DEQ	State Program	6	88-0692	02-01-19
California	State Program	9	2939	06-30-18 *
Colorado	State Program	8	N/A	12-31-18
Connecticut	State Program	1	PH-0161	03-31-19
Florida	NELAP	4	E87052	06-30-18 *
GA Dept. of Agriculture	State Program	4	N/A	06-12-19
Georgia	State Program	4	N/A	06-30-18 *
Georgia	State Program	4	803	06-30-18 *
Guam	State Program	9	15-005r	04-17-19
Hawaii	State Program	9	N/A	06-30-18 *
Illinois	NELAP	5	200022	11-30-18
Indiana	State Program	5	N/A	06-30-18 *
Iowa	State Program	7	353	06-30-19
Kentucky (DW)	State Program	4	90084	12-31-18
Kentucky (UST)	State Program	4	18	06-30-18 *
Kentucky (WW)	State Program	4	90084	12-31-18 *
L-A-B	ISO/IEC 17025		L2463.01	09-22-19
Louisiana	NELAP	6	30690	06-30-18 *
Louisiana (DW)	NELAP	6	LA160019	12-31-18
Maine	State Program	1	GA00006	09-24-18
Maryland	State Program	3	250	12-31-18
Massachusetts	State Program	1	M-GA006	06-30-18 *
Michigan	State Program	5	9925	06-30-18 *
Mississippi	State Program	4	N/A	06-30-18 *
Nebraska	State Program	7	TestAmerica-Savannah	06-30-18 *
New Jersey	NELAP	2	GA769	06-30-18 *
New Mexico	State Program	6	N/A	06-30-18 *
New York	NELAP	2	10842	03-31-19
North Carolina (DW)	State Program	4	13701	07-31-18
North Carolina (WW/SW)	State Program	4	269	12-31-18
Oklahoma	State Program	6	9984	08-31-18 *
Pennsylvania	NELAP	3	68-00474	06-30-18 *
Puerto Rico	State Program	2	GA00006	12-31-18
South Carolina	State Program	4	98001	06-30-18 *
Tennessee	State Program	4	TN02961	06-30-18 *
Texas	NELAP	6	T104704185-16-9	11-30-18
Texas (DW)	State Program	1	T104704185	06-30-18 *
US Fish & Wildlife	Federal		LE058448-0	07-31-18

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

TestAmerica Michigan

Accreditation/Certification Summary

Client: Merit Laboratories
Project/Site: S90761

TestAmerica Job ID: 190-16640-1

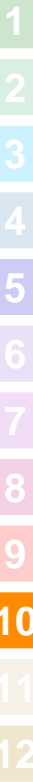
Laboratory: TestAmerica Savannah (Continued)

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
USDA	Federal		P330-17-00213	06-14-20 *
West Virginia (DW)	State Program	3	9950C	12-31-18
West Virginia DEP	State Program	3	094	06-30-18 *
Wisconsin	State Program	5	999819810	08-31-18
Wyoming	State Program	8	8TMS-L	06-30-16 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

TestAmerica Michigan



Method Summary

Client: Merit Laboratories
Project/Site: S90761

TestAmerica Job ID: 190-16640-1

Method	Method Description	Protocol	Laboratory
5310 B-2011	Organic Carbon, Total (TOC)	SM	TAL SAV

Protocol References:

SM = "Standard Methods For The Examination Of Water And Wastewater"

Laboratory References:

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

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2680 East Lansing Dr., East Lansing, MI 48823
 Phone (517) 332-0167 Fax (517) 332-4034
 www.meritlabs.com

C.O.C. PAGE # 1 OF 1

REPORT TO

CHAIN OF CUSTODY RECORD

INVOICE TO

CONTACT NAME: **John Lavery** CONTACT NAME: **Julie Teague** SAME

COMPANY: **Merit Laboratories** COMPANY: **Merit Laboratories**

ADDRESS: **2680 East Lansing Drive** ADDRESS: **2680 East Lansing Drive**

CITY: **East Lansing** CITY: **East Lansing** STATE: **MI** STATE: **MI** ZIP CODE: **48823** ZIP CODE: **48823**

PHONE NO.: **517-332-0167** PHONE NO.: **517-332-0167** E-MAIL ADDRESS: **johnlavery@meritlabs.com** E-MAIL ADDRESS: **juliet@meritlabs.com**

PROJECT NO./NAME: **S90761**

TURNAROUND TIME REQUIRED: 1 DAY 2 DAYS 3 DAYS STANDARD OTHER

DELIVERABLES REQUIRED: STD LEVEL II LEVEL III LEVEL IV EDD OTHER

SAMPLE FRIS: PLEASE PRINT SIGN NAME

MATRIX CODE	GW=GROUNDWATER SL=SLUDGE	WW=WASTEWATER DW=DRINKING WATER	S=SOIL O=OIL	L=LQUID WP=WPIPE	SD=SOLID W=WASTE	A=AIR	# Containers & Preservatives
6/14/18 0001							3510 6/20 SKS
6/14/18 1625							TOC

MERIT LAB NO. FOR LAB USE ONLY	YEAR	DATE	TIME	IDENTIFICATION-DESCRIPTION	MATRIX	# OF BOTTLES	NONE	HO	HN	HS	HOH	HOH	LO	OTHER	
		6/14/18	0001	90761.05	GW	2	2								
		6/14/18	1625	90761.06	L	2	2								



190-16640 Chain of Custody

** Subcontracted to
 TestAmerica

REQUISITIONED BY: **M Chalabala** SIGNATURE/ORGANIZATION: **Sample 6/20/18 9:00** DATE/TIME

RECEIVED BY: **[Signature]** SIGNATURE/ORGANIZATION: **6/20/18 9:00** DATE/TIME

REQUISITIONED BY: **[Signature]** SIGNATURE/ORGANIZATION: **6/20/18 10:40** DATE/TIME

RECEIVED BY: **[Signature]** SIGNATURE/ORGANIZATION: **6/20/18 10:41** DATE/TIME

PLEASE NOTE: SIGNING ACKNOWLEDGES ADHERENCE TO MERIT'S SAMPLE ACCEPTANCE POLICY ON REVERSE SIDE.



Discrepancies Client ID Merit Labs

Short Hold Work Order # 190-16640

Rush 24hr 2day 3day 5day Other

Receipt evaluation performed by - Initials TRH Date 6/20/18 Time 11:50

Cooler/Sample Receipt

AFTER HOURS receipt, complete this areas
 Place cooler in walk-in place in a form in Receipting
 Box Date Time Rec'd Initials

Method of Shipment:

- Walk-In Client TestAmerica Field/Courier
- Other Client/3rd Party Courier _____
- Fed Ex Tracking # _____
- UPS Tracking # _____
- Other _____

Shipping Container Type:

- Cooler Box
- None Other _____

Custody Seals Intact:

- Yes No
- N/A (not used or required)

Packing Materials:

- Plastic Bags Foam
- Bubble Wrap Paper
- Packing Peanuts None
- Other _____

Cooling Materials:

- Ice (solid) Ice (Melted)
- Blue Ice None
- Other _____

Bacteriological / Temp (°C) Corrected Samples	Frozen		Received within 2 hours		Sample Flagged	
	yes	no	yes	no	yes	no

CF
0.0

Receipt Temperatures

Thermometer ID	Observed (°C)	Corrected (°C)	Temp Blank	Sample Temp	Received on same day/sampled?	Acceptable?*	Cooler ID	Note Affected Samples if temperature not acceptable
140252433			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No		
140252496	15.0	15.0	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No		
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No		

* Receipt temperatures are considered acceptable if the samples are received on the same day they were collected & show signs that the cooling process has started. Temperature acceptance for most tests is ≤ 6.0°C, but not frozen. For additional information, please refer to SOP DT-SCA-004 Sample Receipt and Login, Attachment 2 - Holding Times, Preservation and Container Requirements

Receipt Questions**

Receipt Questions**	Y	N	n/a	"No" answers require additional comment
COC present & TA receipt signature, date, & time properly documented?	X			
Containers & labels in good condition? (unbroken, not leaking, appropriately filled, labels legible & attached)	X			
Appropriate containers used & adequate volume provided?	X			Preserved Bottles Checked with pH Strips* Yes No
Number of sample containers match COC?	X			
Samples received within hold time?	X			
Samples submitted for GRO and Volatiles analyses (3250, 624, 524) received without headspace?			X	all four vials received with headspace.
Was a Trip Blank received with VOA samples?			X	
Were the samples free of any questionable physical conformities? For example, field duplicates or multiple bottles of the same sample do not significantly vary in appearance (color, proportion of solids, etc)	X			
Were the COC bottle labels and all other items free of all other discrepancies or issues that would need to be addressed with the Project Manager and/or Client?	X			

** May not be applicable if samples are not for compliance testing * Excludes FOG, Volatiles, TOC Vials

Client Contact Record

Contact via: Phone Email Other _____ Person Contacted: _____ Date/Time: _____
 Discrepancy/allowance agreement is on record in the client project file
 Discussion/Resolution: _____

Any additional documentation and clarification from client must be noted in the narrative and/or scanned into the COC directory

Joni Hunk 6/20/18
 Reviewed by PM Signature Date

WFL Page 1 of 1

WFL No. DT-SCA-WFL-001 TS effective 05/11/12



APPENDIX D

*Groundwater Sampling
Program QA/QC Summary*

APPENDIX D QUALITY ASSURANCE/QUALITY CONTROL SUMMARY

Data verification was independently performed by O'Brien & Gere Engineers, Inc. to assess the groundwater monitoring data quality for samples collected during the 2018 semiannual groundwater sampling event conducted in June 2018. Data verification was utilized to confirm the quality of the field and laboratory (Merit Laboratories, Inc. (Merit) of East Lansing, Michigan) data. The data verification included review of: (1) laboratory documentation, (2) chain-of-custody (COC) documentation, (3) target analyte results, (4) laboratory data qualifiers, if any, (5) laboratory reporting (quantitation) limits, (6) laboratory blank analysis, and (7) quality control samples, including duplicate samples.

The results of the data verification indicated the following:

- Laboratory documentation was complete.
- Chain-of-custody (COC) documentation was complete.
- Target analyte results were reported in accordance with the project requirements.
- Laboratory blank analysis matrix spike / matrix spike duplicate (MS/MSD) recoveries for TOX were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.
- Laboratory quantitation (or reporting) limits (RLs) were within the project required limits for undiluted samples.
- TOX samples were diluted to two times due to the nature of the sample matrix. Elevated RLs were reported due to sample dilution.
- No breakthroughs exceeding 10% for TOX were reported.
- The relative percent difference (RPD) for the duplicate sample results for B-20D and Dup-1 (B-20D) were within acceptable limits; except for TOC which the original sample concentration was 1.5 mg/L and in the duplicate sample the concentration was 3.0 mg/L; therefore, the sample results for B-20D and Dup-1 (B-20D) should be considered as estimated (J).

Furthermore, the instrument utilized for measurement of field parameters calibrated within range (deviation from standard of less than 3 percent) for pH, oxidation reduction potential (ORP), specific conductivity (conductivity), and dissolved oxygen (DO); therefore, operated within manufacturers specifications during sample collection.

The data verification indicates that the overall usability of the groundwater monitoring data is acceptable for the intended use without further qualification or rejection of the data.



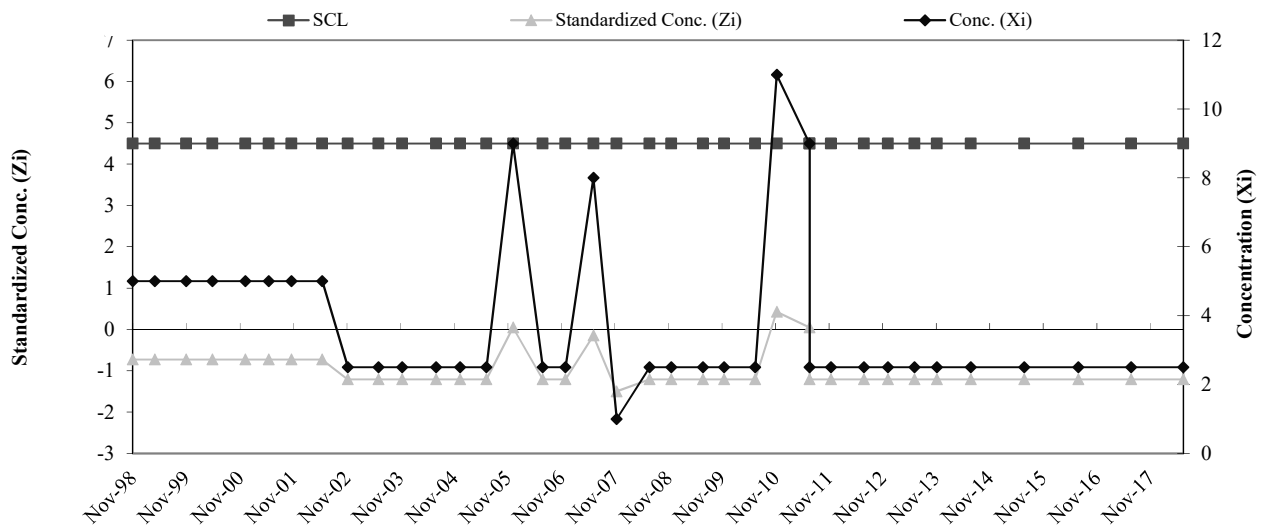
APPENDIX E
*Monitoring Well Control
Charts*

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

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

Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)	Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	Nov-98	4.5	5	-0.73	36	Nov-11	4.50	2.5	-1.21
10	Apr-99	4.5	5	-0.73	37	Jun-12	4.50	2.5	-1.21
11	Nov-99	4.5	5	-0.73	38	Dec-12	4.50	2.5	-1.21
12	Apr-00	4.5	5	-0.73	39	Jun-13	4.50	2.5	-1.21
13	Dec-00	4.5	5	-0.73	40	Nov-13	4.50	2.5	-1.21
14	May-01	4.5	5	-0.73	41	Jun-14	4.50	2.5	-1.21
15	Oct-01	4.5	5	-0.73	42	Jun-15	4.50	2.5	-1.21
16	May-02	4.5	5	-0.73	43	Jun-16	4.50	2.5	-1.21
17	Nov-02	4.5	2.5	-1.21	44	Jun-17	4.50	2.5	-1.21
18	Jun-03	4.5	2.5	-1.21	45	Jun-18	4.50	2.5	-1.21
19	Nov-03	4.5	2.5	-1.21					
20	Jun-04	4.5	2.5	-1.21					
21	Dec-04	4.5	2.5	-1.21					
22	Jun-05	4.5	2.5	-1.21					
23	Dec-05	4.5	9	0.04					
24	Jun-06	4.5	2.5	-1.21					
25	Nov-06	4.5	2.5	-1.21					
26	Jun-07	4.5	8	-0.15					
27	Nov-07	4.5	1	-1.50					
28	Jun-08	4.5	2.5	-1.21					
29	Nov-08	4.5	2.5	-1.21					
30	Jun-09	4.5	2.5	-1.21					
31	Nov-09	4.5	2.5	-1.21					
32	Jun-10	4.5	2.5	-1.21					
33	Nov-10	4.5	11	0.43					
34	Jun-11	4.5	9	0.04					
35	Jun-11	4.5	2.5	-1.21					

h = Decision Value for CUSUM, SCL = Shewart Control Limit, k = Standard Error Shift Detection Parameter, Zi = Standardized Mean

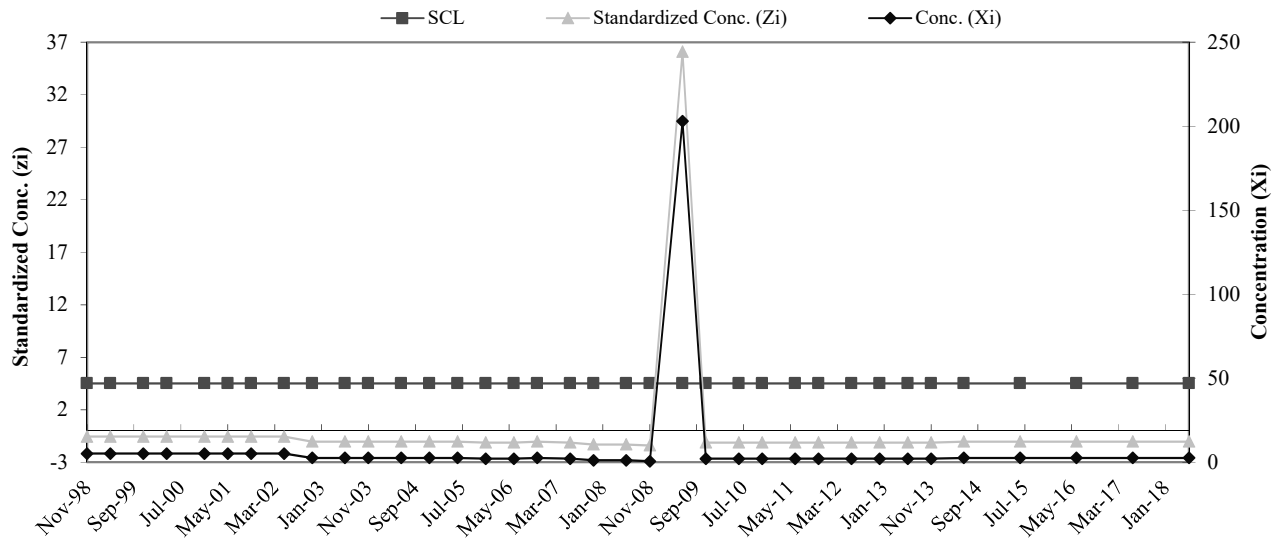


COLDWATER ROAD LANDFILL FACILITY
RCRA GROUND WATER DETECTION MONITORING SYSTEM
SHEWART CONTROL CHART
B-2d Cu

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

Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)	Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	Nov-98	4.5	5	-0.58	35	Nov-11	4.5	2	-1.14
10	Apr-99	4.5	5	-0.58	36	Jun-12	4.5	2	-1.14
11	Nov-99	4.5	5	-0.58	37	Dec-12	4.5	2	-1.14
12	Apr-00	4.5	5	-0.58	38	Jun-13	4.5	2	-1.14
13	Dec-00	4.5	5	-0.58	39	Nov-13	4.5	2	-1.14
14	May-01	4.5	5	-0.58	40	Jun-14	4.5	2.5	-1.04
15	Oct-01	4.5	5	-0.58	41	Jun-15	4.5	2.5	-1.04
16	May-02	4.5	5	-0.58	42	Jun-16	4.5	2.5	-1.04
17	Nov-02	4.5	2.5	-1.04	43	Jun-17	4.5	2.5	-1.04
18	Jun-03	4.5	2.5	-1.04	44	Jun-18	4.5	2.5	-1.04
19	Nov-03	4.5	2.5	-1.04					
20	Jun-04	4.5	2.5	-1.04					
21	Dec-04	4.5	2.5	-1.04					
22	Jun-05	4.5	2.5	-1.04					
23	Dec-05	4.5	2	-1.14					
24	Jun-06	4.5	2	-1.14					
25	Nov-06	4.5	2.5	-1.04					
26	Jun-07	4.5	2	-1.14					
27	Nov-07	4.5	1	-1.32					
28	Jun-08	4.5	1	-1.32					
29	Nov-08	4.5	0.5	-1.41					
30	Jun-09	4.5	203	36.09					
31	Nov-09	4.5	2	-1.14					
32	Jun-10	4.5	2	-1.14					
33	Nov-10	4.5	2	-1.14					
34	Jun-11	4.5	2	-1.14					

h = Decision Value for CUSUM, SCL = Shewart Control Limit, k = Standard Error Shift Detection Parameter, Zi = Standardized Mean

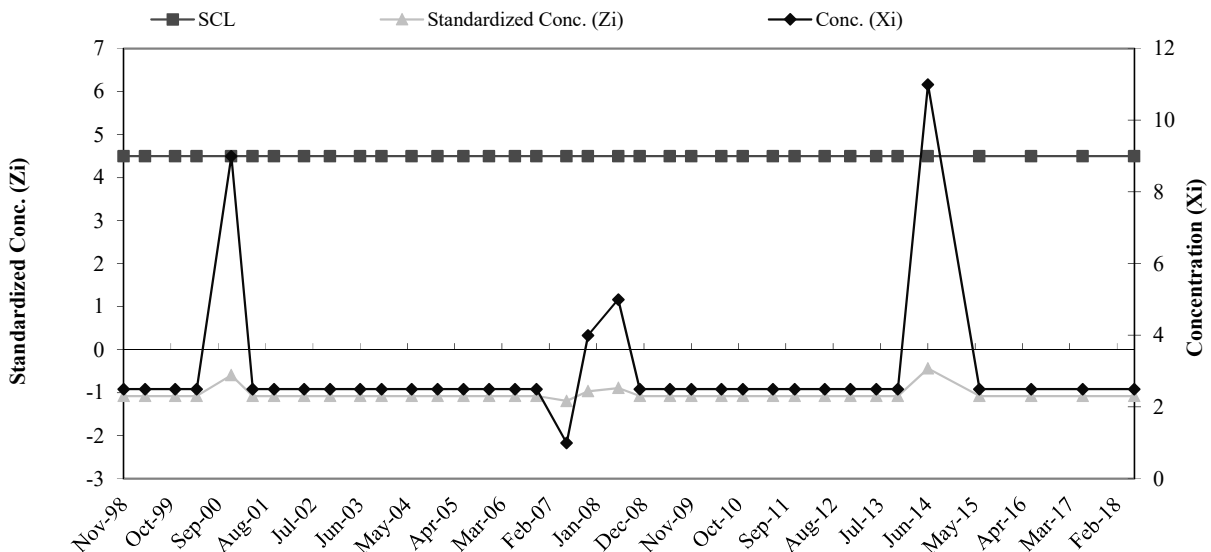


**COLDWATER ROAD LANDFILL FACILITY
RCRA GROUND WATER DETECTION MONITORING SYSTEM
SHEWART CONTROL CHART
B-2d Ni**

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

Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)	Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	Nov-98	4.5	2.5	-1.08	35	Nov-11	4.5	2.5	-1.08
10	Apr-99	4.5	2.5	-1.08	36	Jun-12	4.5	2.5	-1.08
11	Nov-99	4.5	2.5	-1.08	37	Dec-12	4.5	2.5	-1.08
12	Apr-00	4.5	2.5	-1.08	38	Jun-13	4.5	2.5	-1.08
13	Dec-00	4.5	9	-0.59	39	Nov-13	4.5	2.5	-1.08
14	May-01	4.5	2.5	-1.08	40	Jun-14	4.5	11	-0.44
15	Oct-01	4.5	2.5	-1.08	41	Jun-15	4.5	2.5	-1.08
16	May-02	4.5	2.5	-1.08	42	Jun-16	4.5	2.5	-1.08
17	Nov-02	4.5	2.5	-1.08	43	Jun-17	4.5	2.5	-1.08
18	Jun-03	4.5	2.5	-1.08	44	Jun-18	4.5	2.5	-1.08
19	Nov-03	4.5	2.5	-1.08					
20	Jun-04	4.5	2.5	-1.08					
21	Dec-04	4.5	2.5	-1.08					
22	Jun-05	4.5	2.5	-1.08					
23	Dec-05	4.5	2.5	-1.08					
24	Jun-06	4.5	2.5	-1.08					
25	Nov-06	4.5	2.5	-1.08					
26	Jun-07	4.5	1	-1.19					
27	Nov-07	4.5	4	-0.97					
28	Jun-08	4.5	5	-0.89					
29	Nov-08	4.5	2.5	-1.08					
30	Jun-09	4.5	2.5	-1.08					
31	Nov-09	4.5	2.5	-1.08					
32	Jun-10	4.5	2.5	-1.08					
33	Nov-10	4.5	2.5	-1.08					
34	Jun-11	4.5	2.5	-1.08					

h = Decision Value for CUSUM, SCL = Shewart Control Limit, k = Standard Error Shift Detection Parameter, Zi = Standardized Mean

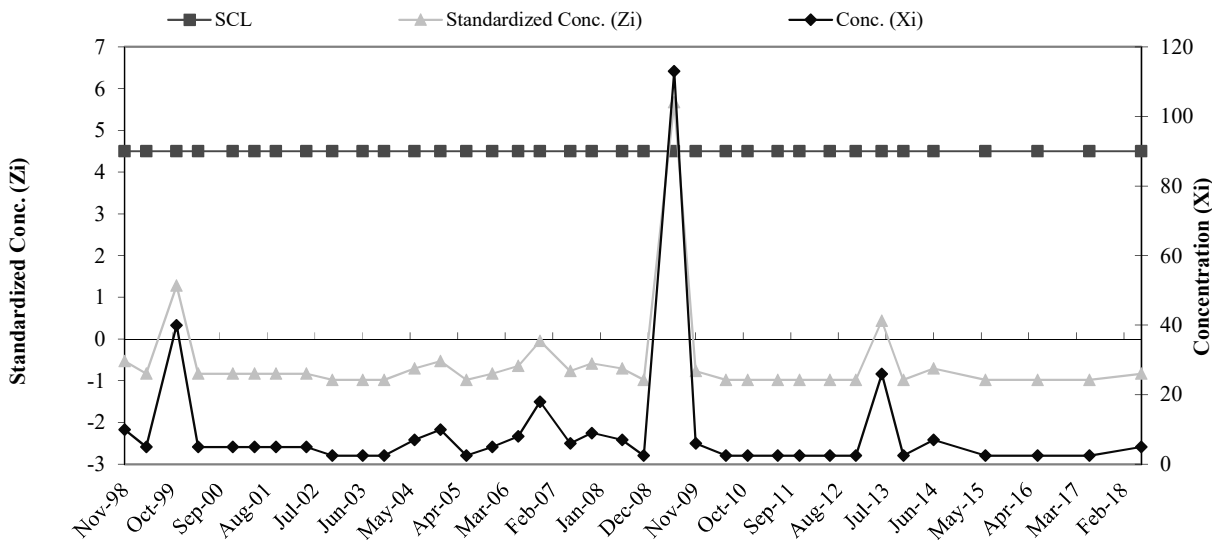


**COLDWATER ROAD LANDFILL FACILITY
RCRA GROUND WATER DETECTION MONITORING SYSTEM
SHEWART CONTROL CHART
B-2d Zn**

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

Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)	Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	Nov-98	4.5	10	-0.53	35	Nov-11	4.5	2.5	-0.98
10	Apr-99	4.5	5	-0.83	36	Jun-12	4.5	2.5	-0.98
11	Nov-99	4.5	40	1.28	37	Dec-12	4.5	2.5	-0.98
12	Apr-00	4.5	5	-0.83	38	Jun-13	4.5	26	0.44
13	Dec-00	4.5	5	-0.83	39	Nov-13	4.5	2.5	-0.98
14	May-01	4.5	5	-0.83	40	Jun-14	4.5	7	-0.71
15	Oct-01	4.5	5	-0.83	41	Jun-15	4.5	2.5	-0.98
16	May-02	4.5	5	-0.83	42	Jun-16	4.5	2.5	-0.98
17	Nov-02	4.5	2.5	-0.98	43	Jun-17	4.5	2.5	-0.98
18	Jun-03	4.5	2.5	-0.98	44	Jun-18	4.5	5	-0.83
19	Nov-03	4.5	2.5	-0.98					
20	Jun-04	4.5	7	-0.71					
21	Dec-04	4.5	10	-0.53					
22	Jun-05	4.5	2.5	-0.98					
23	Dec-05	4.5	5	-0.83					
24	Jun-06	4.5	8	-0.65					
25	Nov-06	4.5	18	-0.05					
26	Jun-07	4.5	6	-0.77					
27	Nov-07	4.5	9	-0.59					
28	Jun-08	4.5	7	-0.71					
29	Nov-08	4.5	2.5	-0.98					
30	Jun-09	4.5	113	5.67					
31	Nov-09	4.5	6	-0.77					
32	Jun-10	4.5	2.5	-0.98					
33	Nov-10	4.5	2.5	-0.98					
34	Jun-11	4.5	2.5	-0.98					

h = Decision Value for CUSUM, SCL = Shewart Control Limit, k = Standard Error Shift Detection Parameter, Zi = Standardized Mean

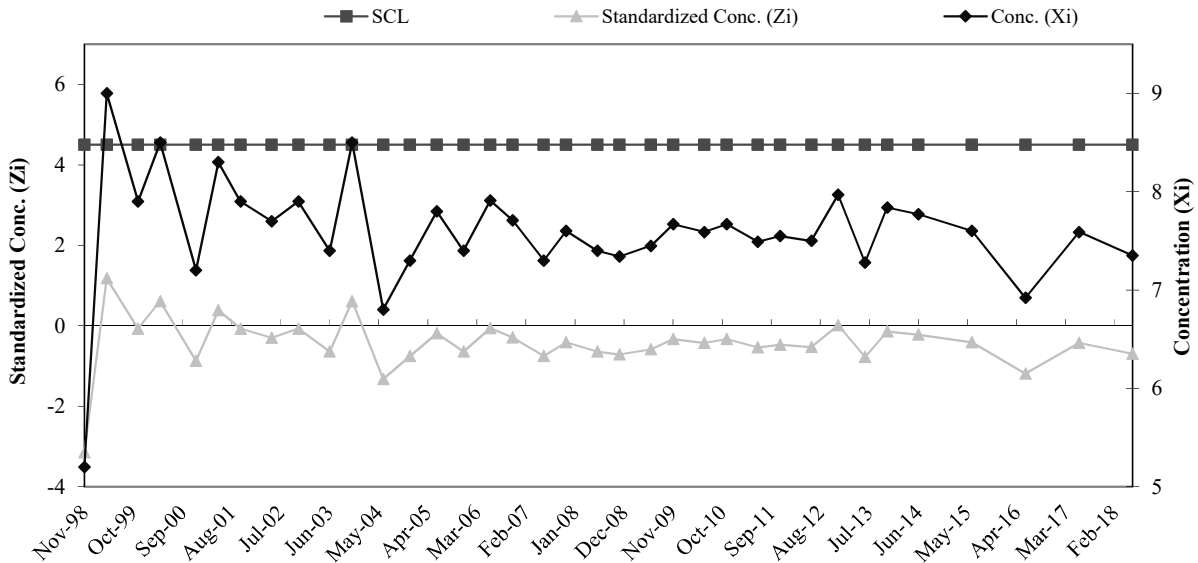


**COLDWATER ROAD LANDFILL FACILITY
RCRA GROUND WATER DETECTION MONITORING SYSTEM
SHEWART CONTROL CHART
B-2d pH**

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

Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)	Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	Nov-98	4.5	4.7	-3.15	35	Nov-11	4.5	7.1	-0.47
10	Apr-99	4.5	8.5	1.18	36	Jun-12	4.5	7.0	-0.53
11	Nov-99	4.5	7.4	-0.07	37	Dec-12	4.5	7.5	0.01
12	Apr-00	4.5	8.0	0.61	38	Jun-13	4.5	6.8	-0.78
13	Dec-00	4.5	6.7	-0.87	39	Nov-13	4.5	7.3	-0.14
14	May-01	4.5	7.8	0.38	40	Jun-14	4.5	7.3	-0.22
15	Oct-01	4.5	7.4	-0.07	41	Jun-15	4.5	7.1	-0.41
16	May-02	4.5	7.2	-0.30	42	Jun-16	4.5	6.4	-1.19
17	Nov-02	4.5	7.4	-0.07	43	Jun-17	4.5	7.1	-0.42
18	Jun-03	4.5	6.9	-0.64	44	Jun-18	4.5	6.9	-0.70
19	Nov-03	4.5	8.0	0.61					
20	Jun-04	4.5	6.3	-1.32					
21	Dec-04	4.5	6.8	-0.75					
22	Jun-05	4.5	7.3	-0.19					
23	Dec-05	4.5	6.9	-0.64					
24	Jun-06	4.5	7.4	-0.06					
25	Nov-06	4.5	7.2	-0.29					
26	Jun-07	4.5	6.8	-0.75					
27	Nov-07	4.5	7.1	-0.41					
28	Jun-08	4.5	6.9	-0.64					
29	Nov-08	4.5	6.8	-0.71					
30	Jun-09	4.5	7.0	-0.58					
31	Nov-09	4.5	7.2	-0.33					
32	Jun-10	4.5	7.1	-0.42					
33	Nov-10	4.5	7.2	-0.33					
34	Jun-11	4.5	7.0	-0.54					

h = Decision Value for CUSUM, SCL = Shewart Control Limit, k = Standard Error Shift Detection Parameter, Zi = Standardized Mean

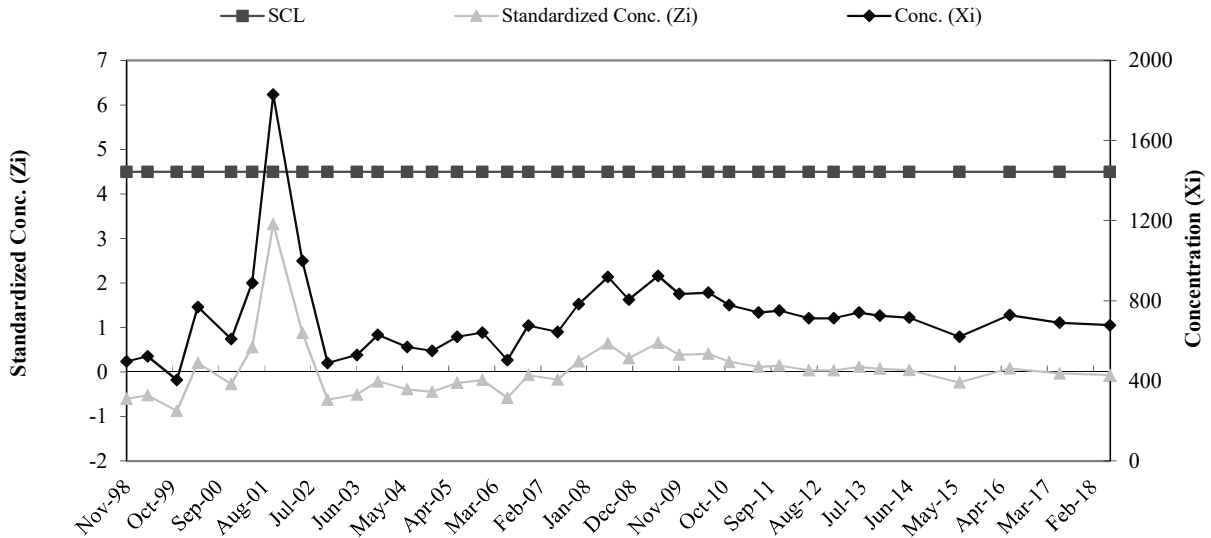


COLDWATER ROAD LANDFILL FACILITY
RCRA GROUND WATER DETECTION MONITORING SYSTEM
SHEWART CONTROL CHART
B-2d SpC

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

Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)	Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	Nov-98	4.5	498.0	-0.60	35	Nov-11	4.5	751.0	0.15
10	Apr-99	4.5	523.0	-0.53	36	Jun-12	4.5	714.0	0.04
11	Nov-99	4.5	405.0	-0.87	37	Dec-12	4.5	714.0	0.04
12	Apr-00	4.5	770.0	0.20	38	Jun-13	4.5	742.0	0.12
13	Dec-00	4.5	610.0	-0.27	39	Nov-13	4.5	726.0	0.07
14	May-01	4.5	890.0	0.56	40	Jun-14	4.5	717.0	0.05
15	Oct-01	4.5	1830.0	3.32	41	Jun-15	4.5	621.0	-0.24
16	May-02	4.5	1000.0	0.88	42	Jun-16	4.5	730.0	0.08
17	Nov-02	4.5	490.0	-0.62	43	Jun-17	4.5	691.0	-0.03
18	Jun-03	4.5	530.0	-0.51	44	Jun-18	4.5	679.0	-0.07
19	Nov-03	4.5	630.0	-0.21					
20	Jun-04	4.5	570.0	-0.39					
21	Dec-04	4.5	550.0	-0.45					
22	Jun-05	4.5	620.0	-0.24					
23	Dec-05	4.5	642.0	-0.18					
24	Jun-06	4.5	504.1	-0.58					
25	Nov-06	4.5	677.0	-0.07					
26	Jun-07	4.5	644.0	-0.17					
27	Nov-07	4.5	783.0	0.24					
28	Jun-08	4.5	920.0	0.64					
29	Nov-08	4.5	806.0	0.31					
30	Jun-09	4.5	924.0	0.66					
31	Nov-09	4.5	835.0	0.39					
32	Jun-10	4.5	841.0	0.41					
33	Nov-10	4.5	779.0	0.23					
34	Jun-11	4.5	742.0	0.12					

h = Decision Value for CUSUM, SCL = Shewart Control Limit, k = Standard Error Shift Detection Parameter, Zi = Standardized Mean



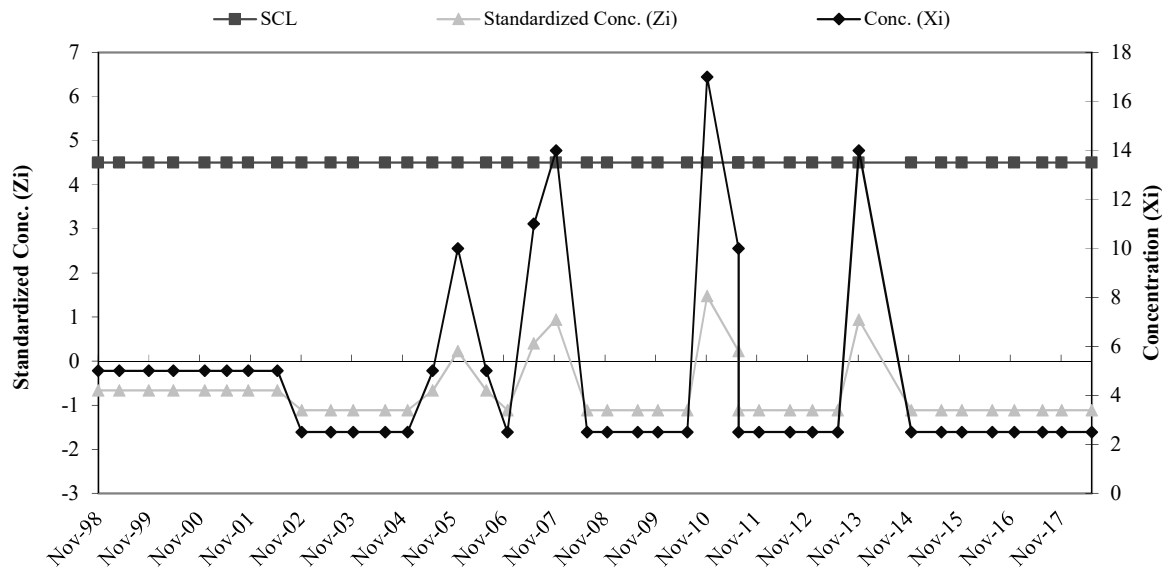
**COLDWATER ROAD LANDFILL FACILITY
RCRA GROUND WATER DETECTION MONITORING SYSTEM
SHEWART CONTROL CHART**

B-7 Cr

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

Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)	Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	Nov-98	4.5	5	-0.67	36	Nov-11	4.5	2.5	-1.12
10	Apr-99	4.5	5	-0.67	37	Jun-12	4.5	2.5	-1.12
11	Nov-99	4.5	5	-0.67	38	Dec-12	4.5	2.5	-1.12
12	Apr-00	4.5	5	-0.67	39	Jun-13	4.5	2.5	-1.12
13	Dec-00	4.5	5	-0.67	40	Nov-13	4.5	14	0.94
14	May-01	4.5	5	-0.67	41	Nov-14	4.5	2.5	-1.12
15	Oct-01	4.5	5	-0.67	42	Jun-15	4.5	2.5	-1.12
16	May-02	4.5	5	-0.67	43	Nov-15	4.5	2.5	-1.12
17	Nov-02	4.5	2.5	-1.12	44	Jun-16	4.5	2.5	-1.12
18	Jun-03	4.5	2.5	-1.12	45	Nov-16	4.5	2.5	-1.12
19	Nov-03	4.5	2.5	-1.12	46	Jun-17	4.5	2.5	-1.12
20	Jun-04	4.5	2.5	-1.12	47	Nov-17	4.5	2.5	-1.12
21	Dec-04	4.5	2.5	-1.12	48	Jun-18	4.5	2.5	-1.12
22	Jun-05	4.5	5	-0.67					
23	Dec-05	4.5	10	0.22					
24	Jun-06	4.5	5	-0.67					
25	Nov-06	4.5	2.5	-1.12					
26	Jun-07	4.5	11	0.40					
27	Nov-07	4.5	14	0.94					
28	Jun-08	4.5	2.5	-1.12					
29	Nov-08	4.5	2.5	-1.12					
30	Jun-09	4.5	2.5	-1.12					
31	Nov-09	4.5	2.5	-1.12					
32	Jun-10	4.5	2.5	-1.12					
33	Nov-10	4.5	17	1.47					
34	Jun-11	4.5	10	0.22					
35	Jun-11	4.5	2.5	-1.12					

h = Decision Value for CUSUM, SCL = Shewart Control Limit, k = Standard Error Shift Detection Parameter, Zi = Standardized Mean



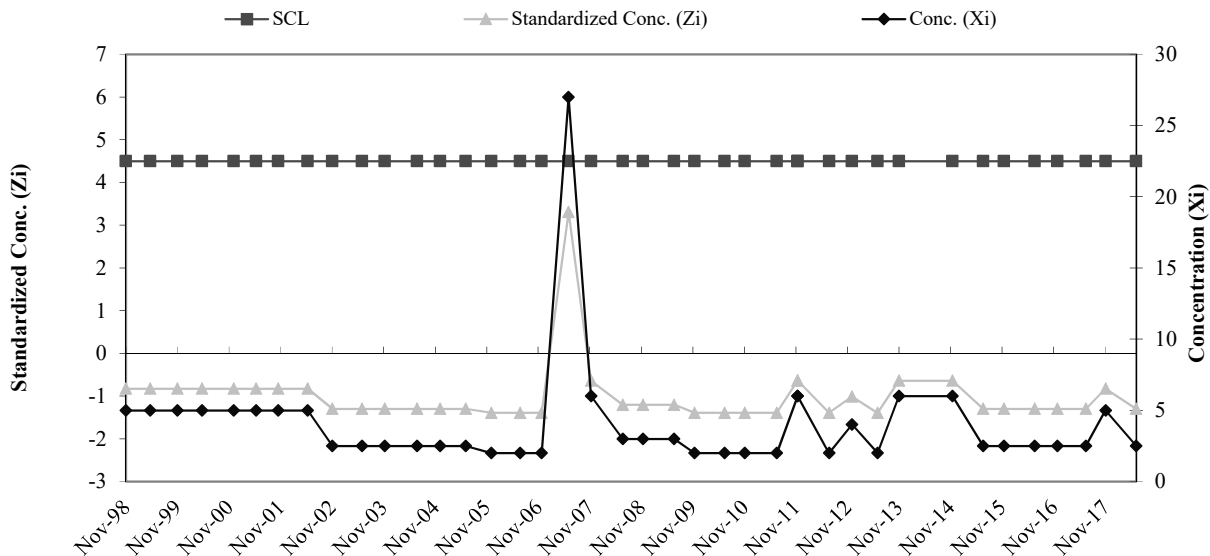
**COLDWATER ROAD LANDFILL FACILITY
RCRA GROUND WATER DETECTION MONITORING SYSTEM
SHEWART CONTROL CHART**

B-7 Cu

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

Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)	Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	Nov-98	4.5	5	-0.83	35	Nov-11	4.5	6	-0.64
10	Apr-99	4.5	5	-0.83	36	Jun-12	4.5	2	-1.39
11	Nov-99	4.5	5	-0.83	37	Dec-12	4.5	4	-1.02
12	Apr-00	4.5	5	-0.83	38	Jun-13	4.5	2	-1.39
13	Dec-00	4.5	5	-0.83	39	Nov-13	4.5	6	-0.64
14	May-01	4.5	5	-0.83	40	Nov-14	4.5	6	-0.64
15	Oct-01	4.5	5	-0.83	41	Jun-15	4.5	2.5	-1.30
16	May-02	4.5	5	-0.83	42	Nov-15	4.5	2.5	-1.30
17	Nov-02	4.5	2.5	-1.30	43	Jun-16	4.5	2.5	-1.30
18	Jun-03	4.5	2.5	-1.30	44	Nov-16	4.5	2.5	-1.30
19	Nov-03	4.5	2.5	-1.30	45	Jun-17	4.5	2.5	-1.30
20	Jun-04	4.5	2.5	-1.30	46	Nov-17	4.5	5	-0.83
21	Dec-04	4.5	2.5	-1.30	47	Jun-18	4.5	2.5	-1.30
22	Jun-05	4.5	2.5	-1.30					
23	Dec-05	4.5	2	-1.39					
24	Jun-06	4.5	2	-1.39					
25	Nov-06	4.5	2	-1.39					
26	Jun-07	4.5	27	3.31					
27	Nov-07	4.5	6	-0.64					
28	Jun-08	4.5	3	-1.20					
29	Nov-08	4.5	3	-1.20					
30	Jun-09	4.5	3	-1.20					
31	Nov-09	4.5	2	-1.39					
32	Jun-10	4.5	2	-1.39					
33	Nov-10	4.5	2	-1.39					
34	Jun-11	4.5	2	-1.39					
35	Nov-11	4.5	6	-0.64					

h = Decision Value for CUSUM, SCL = Shewart Control Limit, k = Standard Error Shift Detection Parameter, Zi = Standardized Mean



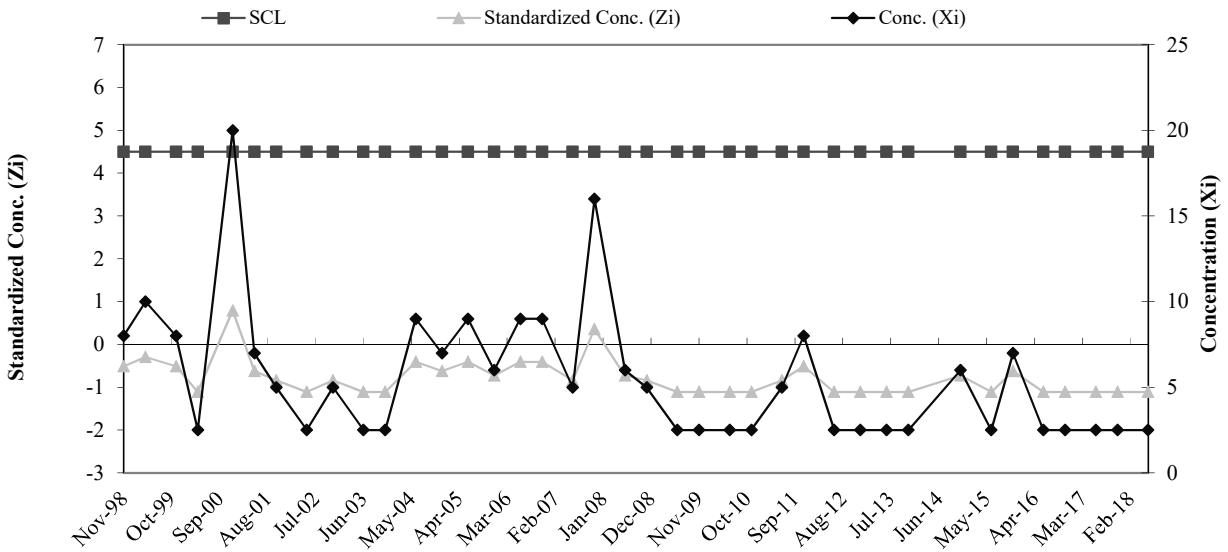
**COLDWATER ROAD LANDFILL FACILITY
RCRA GROUND WATER DETECTION MONITORING SYSTEM
SHEWART CONTROL CHART**

B-7 Ni

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

Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)	Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	Nov-98	4.5	8	-0.51	35	Nov-11	4.5	8	-0.51
10	Apr-99	4.5	10	-0.29	36	Jun-12	4.5	2.5	-1.11
11	Nov-99	4.5	8	-0.51	37	Dec-12	4.5	2.5	-1.11
12	Apr-00	4.5	2.5	-1.11	38	Jun-13	4.5	2.5	-1.11
13	Dec-00	4.5	20	0.79	39	Nov-13	4.5	2.5	-1.11
14	May-01	4.5	7	-0.62	40	Nov-14	4.5	6	-0.73
15	Oct-01	4.5	5	-0.84	41	Jun-15	4.5	2.5	-1.11
16	May-02	4.5	2.5	-1.11	42	Nov-15	4.5	7	-0.62
17	Nov-02	4.5	5	-0.84	43	Jun-16	4.5	2.5	-1.11
18	Jun-03	4.5	2.5	-1.11	44	Nov-16	4.5	2.5	-1.11
19	Nov-03	4.5	2.5	-1.11	45	Jun-17	4.5	2.5	-1.11
20	Jun-04	4.5	9	-0.40	46	Nov-17	4.5	2.5	-1.11
21	Dec-04	4.5	7	-0.62	47	Jun-18	4.5	2.5	-1.11
22	Jun-05	4.5	9	-0.40					
23	Dec-05	4.5	6	-0.73					
24	Jun-06	4.5	9	-0.40					
25	Nov-06	4.5	9	-0.40					
26	Jun-07	4.5	5	-0.84					
27	Nov-07	4.5	16	0.36					
28	Jun-08	4.5	6	-0.73					
29	Nov-08	4.5	5	-0.84					
30	Jun-09	4.5	2.5	-1.11					
31	Nov-09	4.5	2.5	-1.11					
32	Jun-10	4.5	2.5	-1.11					
33	Nov-10	4.5	2.5	-1.11					
34	Jun-11	4.5	5	-0.84					

h = Decision Value for CUSUM, SCL = Shewart Control Limit, k = Standard Error Shift Detection Parameter, Zi = Standardized Mean



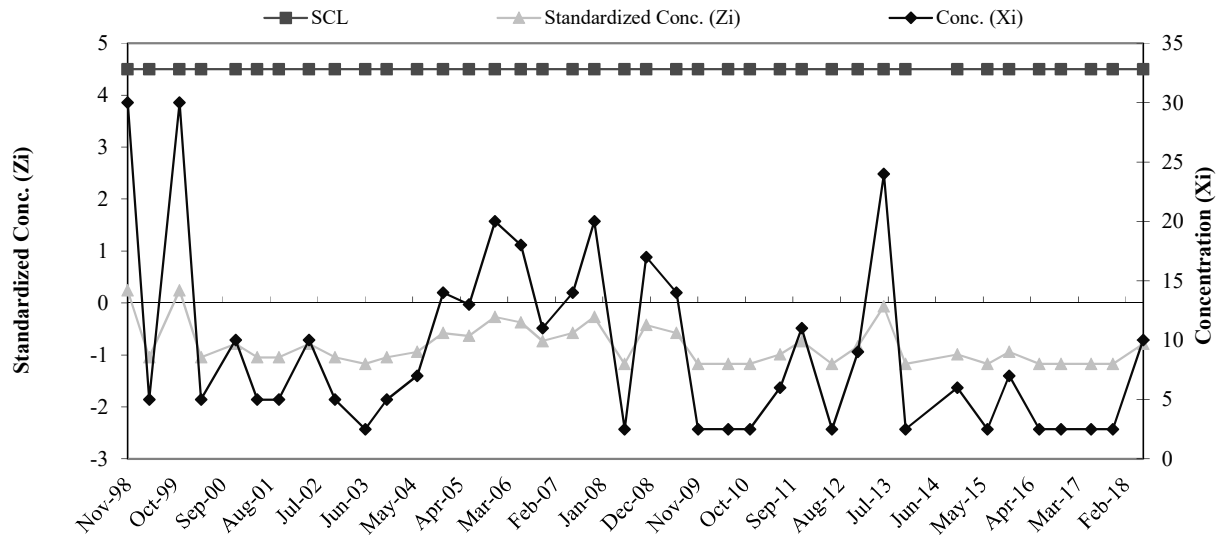
**COLDWATER ROAD LANDFILL FACILITY
RCRA GROUND WATER DETECTION MONITORING SYSTEM
SHEWART CONTROL CHART**

B-7 Zn

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

Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)	Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	Nov-98	4.5	30	0.24	35	Nov-11	4.5	11	-0.73
10	Apr-99	4.5	5	-1.04	36	Jun-12	4.5	2.5	-1.17
11	Nov-99	4.5	30	0.24	37	Dec-12	4.5	9	-0.84
12	Apr-00	4.5	5	-1.04	38	Jun-13	4.5	24	-0.06
13	Dec-00	4.5	10	-0.79	39	Nov-13	4.5	2.5	-1.17
14	May-01	4.5	5	-1.04	40	Nov-14	4.5	6	-0.99
15	Oct-01	4.5	5	-1.04	41	Jun-15	4.5	2.5	-1.17
16	May-02	4.5	10	-0.79	42	Nov-15	4.5	7	-0.94
17	Nov-02	4.5	5	-1.04	43	Jun-16	4.5	2.5	-1.17
18	Jun-03	4.5	2.5	-1.17	44	Nov-16	4.5	2.5	-1.17
19	Nov-03	4.5	5	-1.04	45	Jun-17	4.5	2.5	-1.17
20	Jun-04	4.5	7	-0.94	46	Nov-17	4.5	2.5	-1.17
21	Dec-04	4.5	14	-0.58	47	Jun-18	4.5	10	-0.79
22	Jun-05	4.5	13	-0.63			4.5		
23	Dec-05	4.5	20	-0.27					
24	Jun-06	4.5	18	-0.37					
25	Nov-06	4.5	11	-0.73					
26	Jun-07	4.5	14	-0.58					
27	Nov-07	4.5	20	-0.27					
28	Jun-08	4.5	2.5	-1.17					
29	Nov-08	4.5	17	-0.43					
30	Jun-09	4.5	14	-0.58					
31	Nov-09	4.5	2.5	-1.17					
32	Jun-10	4.5	2.5	-1.17					
33	Nov-10	4.5	2.5	-1.17					
34	Jun-11	4.5	6	-0.99					

h = Decision Value for CUSUM, SCL = Shewart Control Limit, k = Standard Error Shift Detection Parameter, Zi = Standardized Mean

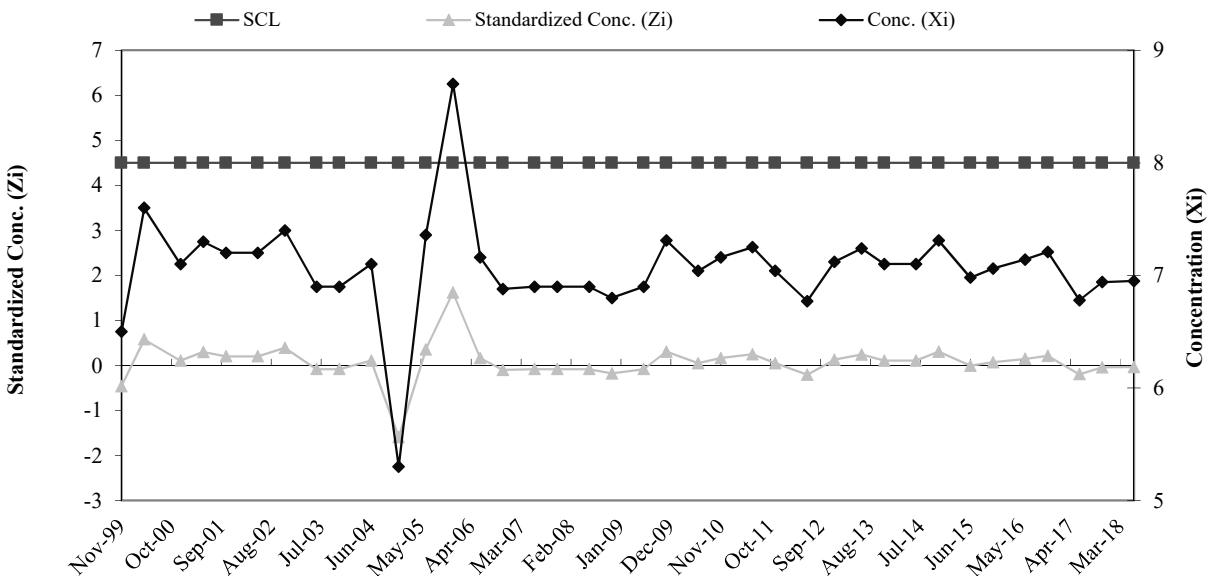


**COLDWATER ROAD LANDFILL FACILITY
RCRA GROUND WATER DETECTION MONITORING SYSTEM
SHEWART CONTROL CHART
B-7 pH**

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

Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)	Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	Nov-99	4.5	6.5	-0.46	33	Nov-11	4.5	7.0	0.05
10	Apr-00	4.5	7.6	0.58	34	Jun-12	4.5	6.8	-0.21
11	Dec-00	4.5	7.1	0.11	35	Dec-12	4.5	7.1	0.13
12	May-01	4.5	7.3	0.30	36	Jun-13	4.5	7.2	0.24
13	Oct-01	4.5	7.2	0.20	37	Nov-13	4.5	7.1	0.11
14	May-02	4.5	7.2	0.20	38	Jun-14	4.5	7.1	0.11
15	Nov-02	4.5	7.4	0.39	39	Nov-14	4.5	7.3	0.30
16	Jun-03	4.5	6.9	-0.08	40	Jun-15	4.5	7.0	-0.01
17	Nov-03	4.5	6.9	-0.08	41	Nov-15	4.5	7.1	0.07
18	Jun-04	4.5	7.1	0.11	42	Jun-16	4.5	7.1	0.14
19	Dec-04	4.5	5.3	-1.60	43	Nov-16	4.5	7.2	0.21
20	Jun-05	4.5	7.4	0.35	44	Jun-17	4.5	6.8	-0.20
21	Dec-05	4.5	8.7	1.62	45	Nov-17	4.5	6.9	-0.04
22	Jun-06	4.5	7.2	0.16	46	Jun-18	4.5	7.0	-0.04
23	Nov-06	4.5	6.9	-0.10					
24	Jun-07	4.5	6.9	-0.08					
25	Nov-07	4.5	6.9	-0.08					
26	Jun-08	4.5	6.9	-0.08					
27	Nov-08	4.5	6.8	-0.18					
28	Jun-09	4.5	6.9	-0.08					
29	Nov-09	4.5	7.3	0.30					
30	Jun-10	4.5	7.0	0.05					
31	Nov-10	4.5	7.2	0.16					
32	Jun-11	4.5	7.3	0.25					

h = Decision Value for CUSUM, SCL = Shewart Control Limit, k = Standard Error Shift Detection Parameter, Zi = Standardized Mean

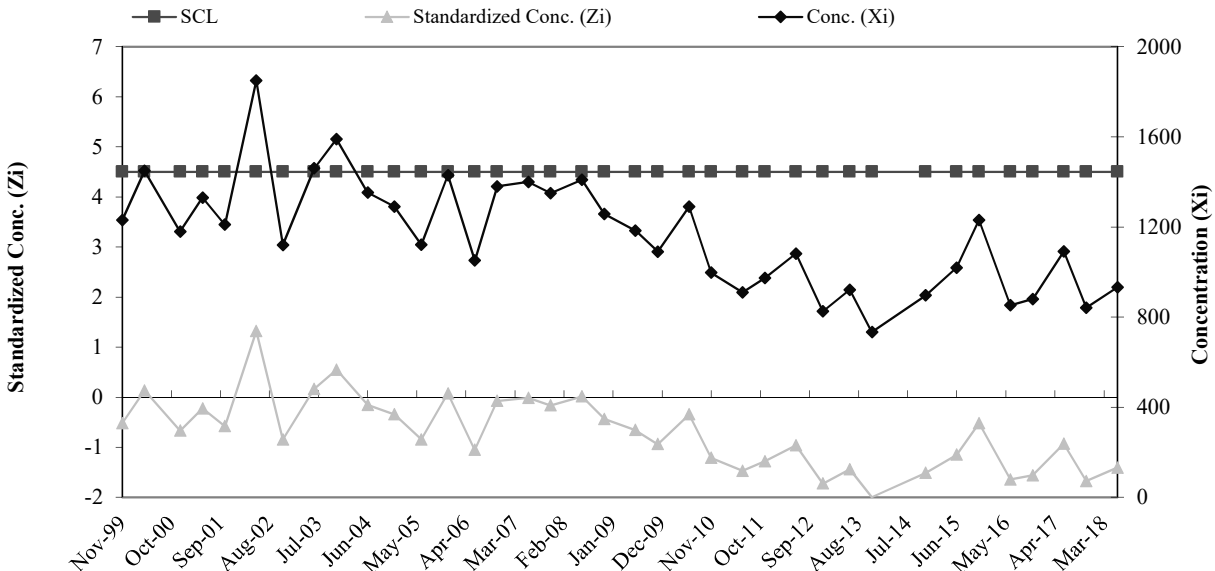


**COLDWATER ROAD LANDFILL FACILITY
RCRA GROUND WATER DETECTION MONITORING SYSTEM
SHEWART CONTROL CHART
B-7 SpC**

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

Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)	Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	Nov-99	4.5	1230.0	-0.52	33	Nov-11	4.5	974.0	-1.28
10	Apr-00	4.5	1450.0	0.13	34	Jun-12	4.5	1082.0	-0.96
11	Dec-00	4.5	1180.0	-0.67	35	Dec-12	4.5	825.0	-1.73
12	May-01	4.5	1330.0	-0.23	36	Jun-13	4.5	921.0	-1.44
13	Oct-01	4.5	1210.0	-0.58	37	Nov-13	4.5	733.0	-2.00
14	May-02	4.5	1850.0	1.32	38	Nov-14	4.5	896.0	-1.52
15	Nov-02	4.5	1120.0	-0.85	39	Jun-15	4.5	1019.0	-1.15
16	Jun-03	4.5	1460.0	0.16	40	Nov-15	4.5	1231.0	-0.52
17	Nov-03	4.5	1590.0	0.55	41	Jun-16	4.5	852.0	-1.65
18	Jun-04	4.5	1353.0	-0.16	42	Nov-16	4.5	880.0	-1.56
19	Dec-04	4.5	1290.0	-0.34	43	Jun-17	4.5	1092.0	-0.93
20	Jun-05	4.5	1121.0	-0.85	44	Nov-17	4.5	841.0	-1.68
21	Dec-05	4.5	1430.0	0.07	45	Jun-18	4.5	932.0	-1.41
22	Jun-06	4.5	1051.0	-1.06			4.5		
23	Nov-06	4.5	1380.0	-0.08					
24	Jun-07	4.5	1400.0	-0.02					
25	Nov-07	4.5	1350.0	-0.17					
26	Jun-08	4.5	1410.0	0.01					
27	Nov-08	4.5	1258.0	-0.44					
28	Jun-09	4.5	1184.0	-0.66					
29	Nov-09	4.5	1090.0	-0.94					
30	Jun-10	4.5	1290.0	-0.34					
31	Nov-10	4.5	997.0	-1.22					
32	Jun-11	4.5	910.0	-1.47					

h = Decision Value for CUSUM, SCL = Shewart Control Limit, k = Standard Error Shift Detection Parameter, Zi = Standardized Mean



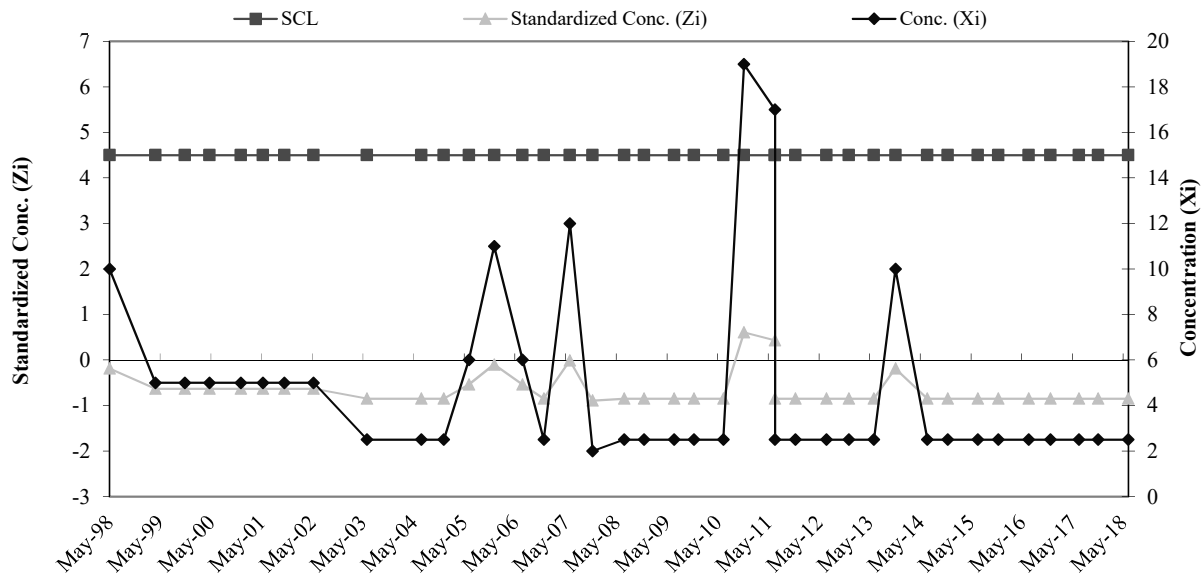
**COLDWATER ROAD LANDFILL FACILITY
RCRA GROUND WATER DETECTION MONITORING SYSTEM
SHEWART CONTROL CHART**

B-9 Cr

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

Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)	Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	May-98	4.5	10	-0.19	34	Nov-11	4.5	2.5	-0.85
10	Apr-99	4.5	5	-0.63	35	Jun-12	4.5	2.5	-0.85
11	Nov-99	4.5	5	-0.63	36	Dec-12	4.5	2.5	-0.85
12	Apr-00	4.5	5	-0.63	37	Jun-13	4.5	2.5	-0.85
13	Dec-00	4.5	5	-0.63	38	Nov-13	4.5	10	-0.19
14	May-01	4.5	5	-0.63	39	Jun-14	4.5	2.5	-0.85
15	Oct-01	4.5	5	-0.63	40	Nov-14	4.5	2.5	-0.85
16	May-02	4.5	5	-0.63	41	Jun-15	4.5	2.5	-0.85
17	Jun-03	4.5	2.5	-0.85	42	Nov-15	4.5	2.5	-0.85
18	Jun-04	4.5	2.5	-0.85	43	Jun-16	4.5	2.5	-0.85
19	Dec-04	4.5	2.5	-0.85	44	Nov-16	4.5	2.5	-0.85
20	Jun-05	4.5	6	-0.54	45	Jun-17	4.5	2.5	-0.85
21	Dec-05	4.5	11	-0.10	46	Nov-17	4.5	2.5	-0.85
22	Jun-06	4.5	6	-0.54	47	Jun-18	4.5	2.5	-0.85
23	Nov-06	4.5	2.5	-0.85					
24	Jun-07	4.5	12	-0.01					
25	Nov-07	4.5	2	-0.89					
26	Jul-08	4.5	2.5	-0.85					
27	Nov-08	4.5	2.5	-0.85					
28	Jun-09	4.5	2.5	-0.85					
29	Nov-09	4.5	2.5	-0.85					
30	Jun-10	4.5	2.5	-0.85					
31	Nov-10	4.5	19	0.61					
32	Jun-11	4.5	17	0.43					
33	Jun-11	4.5	2.5	-0.85					

h = Decision Value for CUSUM, SCL = Shewart Control Limit, k = Standard Error Shift Detection Parameter, Zi = Standardized Mean

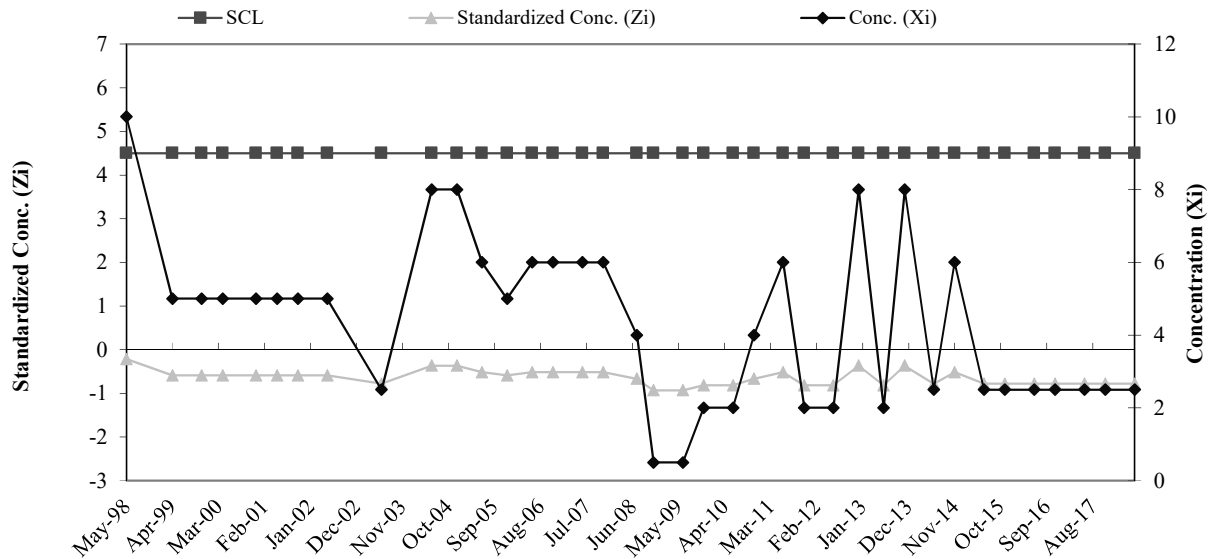


COLDWATER ROAD LANDFILL FACILITY
RCRA GROUND WATER DETECTION MONITORING SYSTEM
SHEWART CONTROL CHART
B-9 Cu

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

Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)	Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	May-98	4.5	10	-0.22	33	Nov-11	4.5	2	-0.82
10	Apr-99	4.5	5	-0.59	34	Jun-12	4.5	2	-0.82
11	Nov-99	4.5	5	-0.59	35	Dec-12	4.5	8	-0.37
12	Apr-00	4.5	5	-0.59	36	Jun-13	4.5	2	-0.82
13	Dec-00	4.5	5	-0.59	37	Nov-13	4.5	8	-0.37
14	May-01	4.5	5	-0.59	38	Jun-14	4.5	2.5	-0.78
15	Oct-01	4.5	5	-0.59	39	Nov-14	4.5	6	-0.52
16	May-02	4.5	5	-0.59	40	Jun-15	4.5	2.5	-0.78
17	Jun-03	4.5	2.5	-0.78	41	Nov-15	4.5	2.5	-0.78
18	Jun-04	4.5	8	-0.37	42	Jun-16	4.5	2.5	-0.78
19	Dec-04	4.5	8	-0.37	43	Nov-16	4.5	2.5	-0.78
20	Jun-05	4.5	6	-0.52	44	Jun-17	4.5	2.5	-0.78
21	Dec-05	4.5	5	-0.59	45	Nov-17	4.5	2.5	-0.78
22	Jun-06	4.5	6	-0.52	46	Jun-18	4.5	2.5	-0.78
23	Nov-06	4.5	6	-0.52					
24	Jun-07	4.5	6	-0.52					
25	Nov-07	4.5	6	-0.52					
26	Jul-08	4.5	4	-0.67					
27	Nov-08	4.5	0.5	-0.93					
28	Jun-09	4.5	0.5	-0.93					
29	Nov-09	4.5	2	-0.82					
30	Jun-10	4.5	2	-0.82					
31	Nov-10	4.5	4	-0.67					
32	Jun-11	4.5	6	-0.52					

h = Decision Value for CUSUM, SCL = Shewart Control Limit, k = Standard Error Shift Detection Parameter, Zi = Standardized Mean

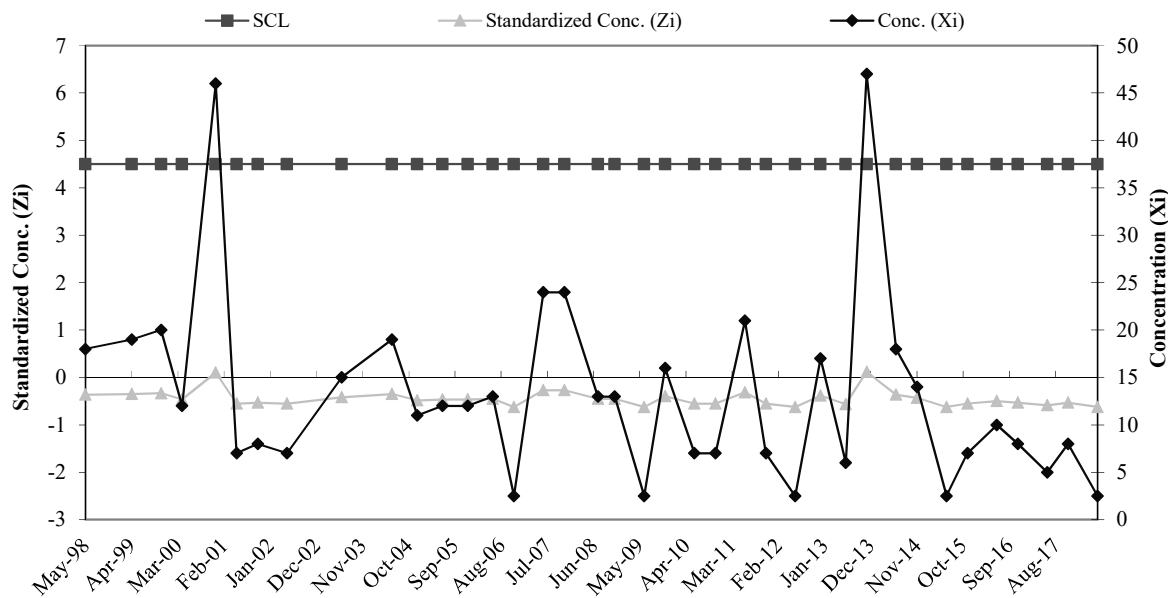


**COLDWATER ROAD LANDFILL FACILITY
RCRA GROUND WATER DETECTION MONITORING SYSTEM
SHEWART CONTROL CHART
B-9 Ni**

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

Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)	Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	May-98	4.5	18	-0.36	33	Nov-11	4.5	7	-0.55
10	Apr-99	4.5	19	-0.35	34	Jun-12	4.5	2.5	-0.62
11	Nov-99	4.5	20	-0.33	35	Dec-12	4.5	17	-0.38
12	Apr-00	4.5	12	-0.46	36	Jun-13	4.5	6	-0.57
13	Dec-00	4.5	46	0.10	37	Nov-13	4.5	47	0.12
14	May-01	4.5	7	-0.55	38	Jun-14	4.5	18	-0.36
15	Oct-01	4.5	8	-0.53	39	Nov-14	4.5	14	-0.43
16	May-02	4.5	7	-0.55	40	Jun-15	4.5	2.5	-0.62
17	Jun-03	4.5	15	-0.41	41	Nov-15	4.5	7	-0.55
18	Jun-04	4.5	19	-0.35	42	Jun-16	4.5	10	-0.50
19	Dec-04	4.5	11	-0.48	43	Nov-16	4.5	8	-0.53
20	Jun-05	4.5	12	-0.46	44	Jun-17	4.5	5	-0.58
21	Dec-05	4.5	12	-0.46	45	Nov-17	4.5	8	-0.53
22	Jun-06	4.5	13	-0.45	46	Jun-18	4.5	2.5	-0.62
23	Nov-06	4.5	2.5	-0.62					
24	Jun-07	4.5	24	-0.26					
25	Nov-07	4.5	24	-0.26					
26	Jul-08	4.5	13	-0.45					
27	Nov-08	4.5	13	-0.45					
28	Jun-09	4.5	2.5	-0.62					
29	Nov-09	4.5	16	-0.40					
30	Jun-10	4.5	7	-0.55					
31	Nov-10	4.5	7	-0.55					
32	Jun-11	4.5	21	-0.31					

h = Decision Value for CUSUM, SCL = Shewart Control Limit, k = Standard Error Shift Detection Parameter, Zi = Standardized Mean

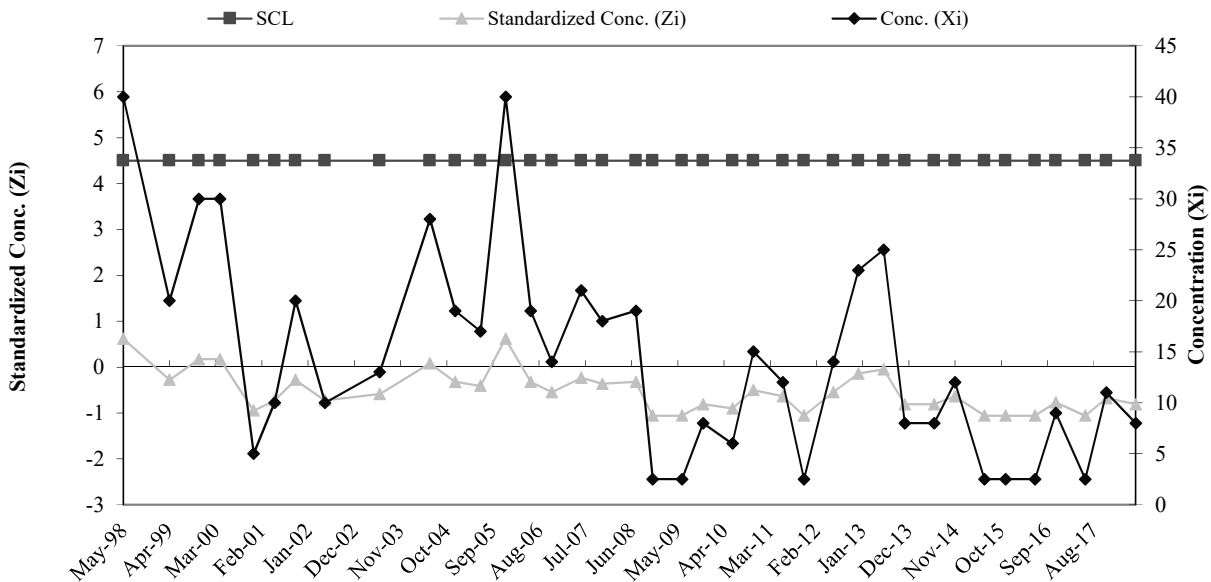


**COLDWATER ROAD LANDFILL FACILITY
RCRA GROUND WATER DETECTION MONITORING SYSTEM
SHEWART CONTROL CHART
B-9 Zn**

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

Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)	Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	May-98	4.5	40	0.62	33	Nov-11	4.5	2.5	-1.06
10	Apr-99	4.5	20	-0.28	34	Jun-12	4.5	14	-0.55
11	Nov-99	4.5	30	0.17	35	Dec-12	4.5	23	-0.14
12	Apr-00	4.5	30	0.17	36	Jun-13	4.5	25	-0.06
13	Dec-00	4.5	5	-0.95	37	Nov-13	4.5	8	-0.82
14	May-01	4.5	10	-0.73	38	Jun-14	4.5	8	-0.82
15	Oct-01	4.5	20	-0.28	39	Nov-14	4.5	12	-0.64
16	May-02	4.5	10	-0.73	40	Jun-15	4.5	2.5	-1.06
17	Jun-03	4.5	13	-0.59	41	Nov-15	4.5	2.5	-1.06
18	Jun-04	4.5	28	0.08	42	Jun-16	4.5	2.5	-1.06
19	Dec-04	4.5	19	-0.32	43	Nov-16	4.5	9	-0.77
20	Jun-05	4.5	17	-0.41	44	Jun-17	4.5	2.5	-1.06
21	Dec-05	4.5	40	0.62	45	Nov-17	4.5	11	-0.68
22	Jun-06	4.5	19	-0.32	46	Jun-18	4.5	8	-0.82
23	Nov-06	4.5	14	-0.55					
24	Jun-07	4.5	21	-0.23					
25	Nov-07	4.5	18	-0.37					
26	Jul-08	4.5	19	-0.32					
27	Nov-08	4.5	2.5	-1.06					
28	Jun-09	4.5	2.5	-1.06					
29	Nov-09	4.5	8	-0.82					
30	Jun-10	4.5	6	-0.90					
31	Nov-10	4.5	15	-0.50					
32	Jun-11	4.5	12	-0.64					

h = Decision Value for CUSUM, SCL = Shewart Control Limit, k = Standard Error Shift Detection Parameter, Zi = Standardized Mean

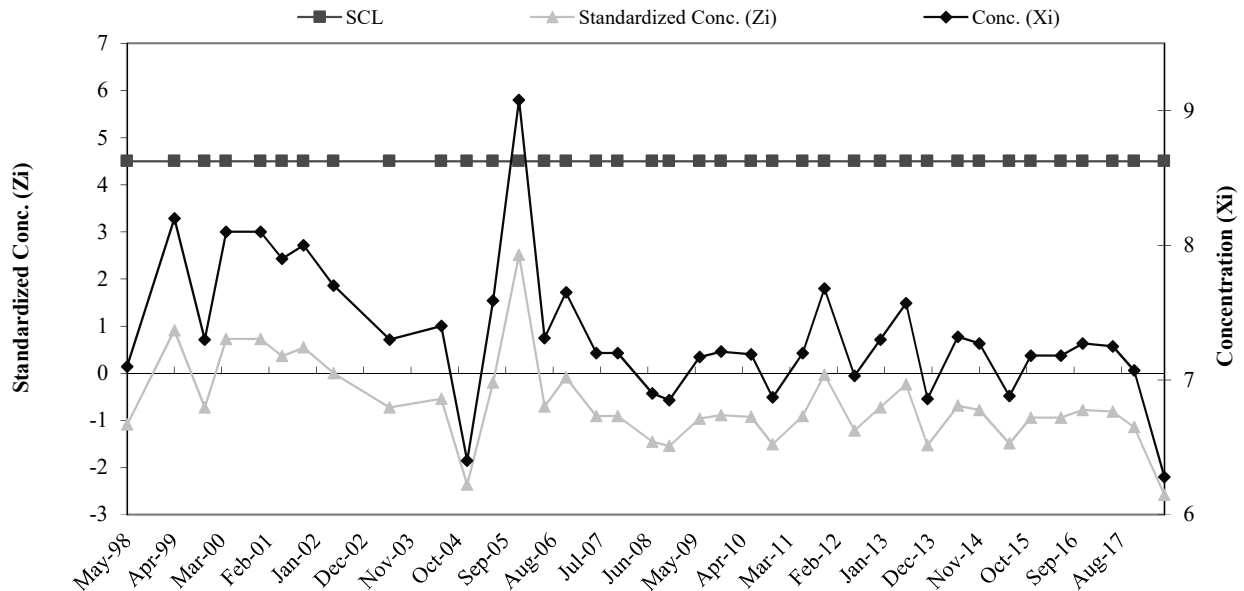


**COLDWATER ROAD LANDFILL FACILITY
RCRA GROUND WATER DETECTION MONITORING SYSTEM
SHEWART CONTROL CHART
B-9 pH**

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

Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)	Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	May-98	4.5	6.6	-1.09	33	Nov-11	4.5	7.2	-0.04
10	Apr-99	4.5	7.7	0.91	34	Jun-12	4.5	6.5	-1.22
11	Nov-99	4.5	6.8	-0.73	35	Dec-12	4.5	6.8	-0.73
12	Apr-00	4.5	7.6	0.73	36	Jun-13	4.5	7.1	-0.24
13	Dec-00	4.5	7.6	0.73	37	Nov-13	4.5	6.4	-1.53
14	May-01	4.5	7.4	0.36	38	Jun-14	4.5	6.8	-0.69
15	Oct-01	4.5	7.5	0.55	39	Nov-14	4.5	6.8	-0.78
16	May-02	4.5	7.2	0.00	40	Jun-15	4.5	6.4	-1.49
17	Jun-03	4.5	6.8	-0.73	41	Nov-15	4.5	6.7	-0.94
18	Jun-04	4.5	6.9	-0.55	42	Jun-16	4.5	6.7	-0.94
19	Dec-04	4.5	5.9	-2.36	43	Nov-16	4.5	6.8	-0.78
20	Jun-05	4.5	7.1	-0.20	44	Jun-17	4.5	6.8	-0.82
21	Dec-05	4.5	8.6	2.51	45	Nov-17	4.5	6.6	-1.14
22	Jun-06	4.5	6.8	-0.71	46	Jun-18	4.5	5.8	-2.58
23	Nov-06	4.5	7.2	-0.09					
24	Jun-07	4.5	6.7	-0.91					
25	Nov-07	4.5	6.7	-0.91					
26	Jul-08	4.5	6.4	-1.45					
27	Nov-08	4.5	6.4	-1.54					
28	Jun-09	4.5	6.7	-0.96					
29	Nov-09	4.5	6.7	-0.89					
30	Jun-10	4.5	6.7	-0.93					
31	Nov-10	4.5	6.4	-1.51					
32	Jun-11	4.5	6.7	-0.91					

h = Decision Value for CUSUM, SCL = Shewart Control Limit, k = Standard Error Shift Detection Parameter, Zi = Standardized Mean

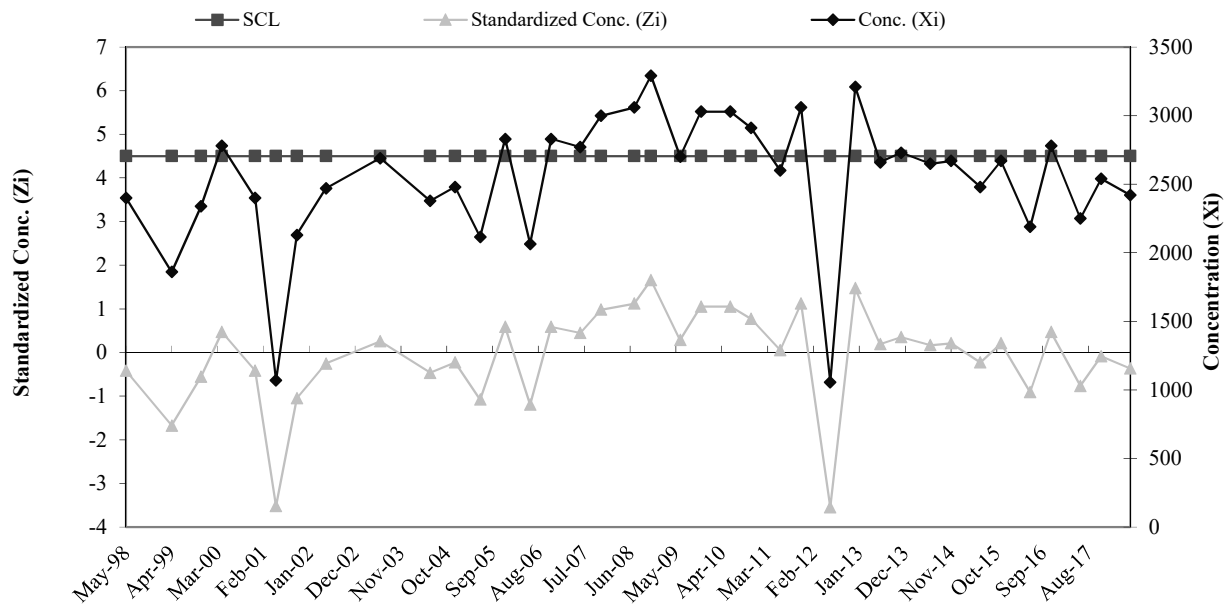


**COLDWATER ROAD LANDFILL FACILITY
RCRA GROUND WATER DETECTION MONITORING SYSTEM
SHEWART CONTROL CHART
B-9 SpC**

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

Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)	Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	May-98	4.5	2400	-0.42	33	Nov-11	4.5	3060	1.12
10	Apr-99	4.5	1860	-1.68	34	Jun-12	4.5	1057	-3.55
11	Nov-99	4.5	2340	-0.56	35	Dec-12	4.5	3210	1.47
12	Apr-00	4.5	2780	0.47	36	Jun-13	4.5	2660	0.19
13	Dec-00	4.5	2400	-0.42	37	Nov-13	4.5	2730	0.35
14	May-01	4.5	1070	-3.52	38	Jun-14	4.5	2650	0.17
15	Oct-01	4.5	2130	-1.05	39	Nov-14	4.5	2670	0.21
16	May-02	4.5	2470	-0.25	40	Jun-15	4.5	2480	-0.23
17	Jun-03	4.5	2690	0.26	41	Nov-15	4.5	2670	0.21
18	Jun-04	4.5	2379	-0.47	42	Jun-16	4.5	2190	-0.91
19	Dec-04	4.5	2480	-0.23	43	Nov-16	4.5	2780	0.47
20	Jun-05	4.5	2116	-1.08	44	Jun-17	4.5	2250	-0.77
21	Dec-05	4.5	2830	0.59	45	Nov-17	4.5	2540	-0.09
22	Jun-06	4.5	2065	-1.20	46	Jun-18	4.5	2420	-0.37
23	Nov-06	4.5	2830	0.59					
24	Jun-07	4.5	2770	0.45					
25	Nov-07	4.5	3000	0.98					
26	Jul-08	4.5	3060	1.12					
27	Nov-08	4.5	3290	1.66					
28	Jun-09	4.5	2700	0.28					
29	Nov-09	4.5	3030	1.05					
30	Jun-10	4.5	3030	1.05					
31	Nov-10	4.5	2910	0.77					
32	Jun-11	4.5	2600	0.05					

h = Decision Value for CUSUM, SCL = Shewart Control Limit, k = Standard Error Shift Detection Parameter, Zi = Standardized Mean

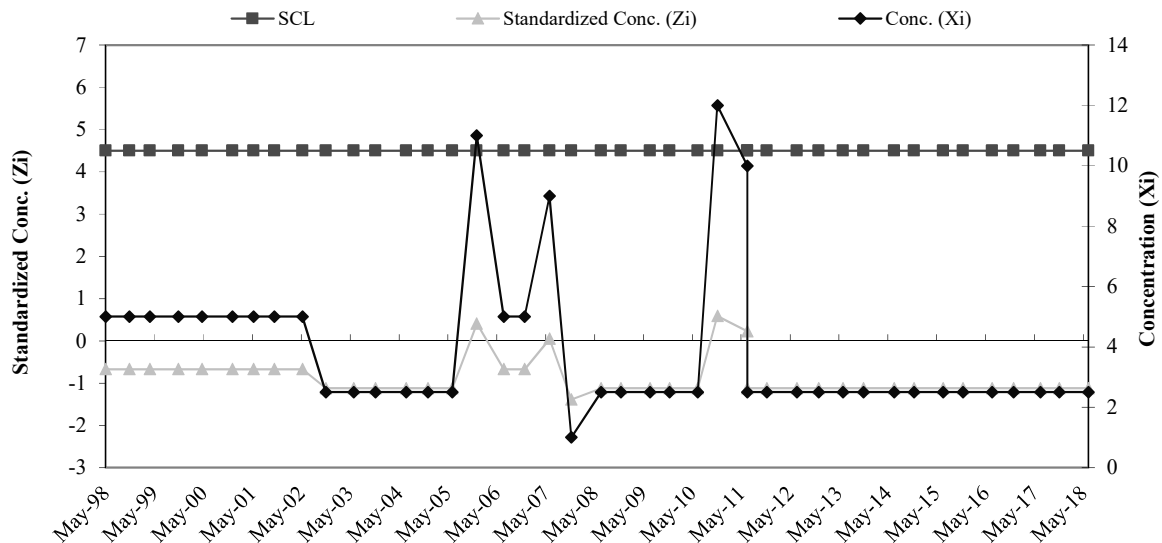


COLDWATER ROAD LANDFILL FACILITY
RCRA GROUND WATER DETECTION MONITORING SYSTEM
SHEWART CONTROL CHART
B-18a Cr

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

Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)	Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	May-98	4.5	5	-0.67	37	Nov-11	4.5	2.5	-1.12
10	Nov-98	4.5	5	-0.67	38	Jun-12	4.5	2.5	-1.12
11	Apr-99	4.5	5	-0.67	39	Dec-12	4.5	2.5	-1.12
12	Nov-99	4.5	5	-0.67	40	Jun-13	4.5	2.5	-1.12
13	Apr-00	4.5	5	-0.67	41	Nov-13	4.5	2.5	-1.12
14	Dec-00	4.5	5	-0.67	42	Jun-14	4.5	2.5	-1.12
15	May-01	4.5	5	-0.67	43	Nov-14	4.5	2.5	-1.12
16	Oct-01	4.5	5	-0.67	44	Jun-15	4.5	2.5	-1.12
17	May-02	4.5	5	-0.67	45	Nov-15	4.5	2.5	-1.12
18	Nov-02	4.5	2.5	-1.12	46	Jun-16	4.5	2.5	-1.12
19	Jun-03	4.5	2.5	-1.12	47	Nov-16	4.5	2.5	-1.12
20	Nov-03	4.5	2.5	-1.12	48	Jun-17	4.5	2.5	-1.12
21	Jun-04	4.5	2.5	-1.12	49	Nov-17	4.5	2.5	-1.12
22	Dec-04	4.5	2.5	-1.12	50	Jun-18	4.5	2.5	-1.12
23	Jun-05	4.5	2.5	-1.12					
24	Dec-05	4.5	11	0.41					
25	Jun-06	4.5	5	-0.67					
26	Nov-06	4.5	5	-0.67					
27	Jun-07	4.5	9	0.05					
28	Nov-07	4.5	1	-1.39					
29	Jun-08	4.5	2.5	-1.12					
30	Nov-08	4.5	2.5	-1.12					
31	Jun-09	4.5	2.5	-1.12					
32	Nov-09	4.5	2.5	-1.12					
33	Jun-10	4.5	2.5	-1.12					
34	Nov-10	4.5	12	0.59					
35	Jun-11	4.5	10	0.23					
36	Jun-11	4.5	2.5	-1.12					

h = Decision Value for CUSUM, SCL = Shewart Control Limit, k = Standard Error Shift Detection Parameter, Zi = Standardized Mean

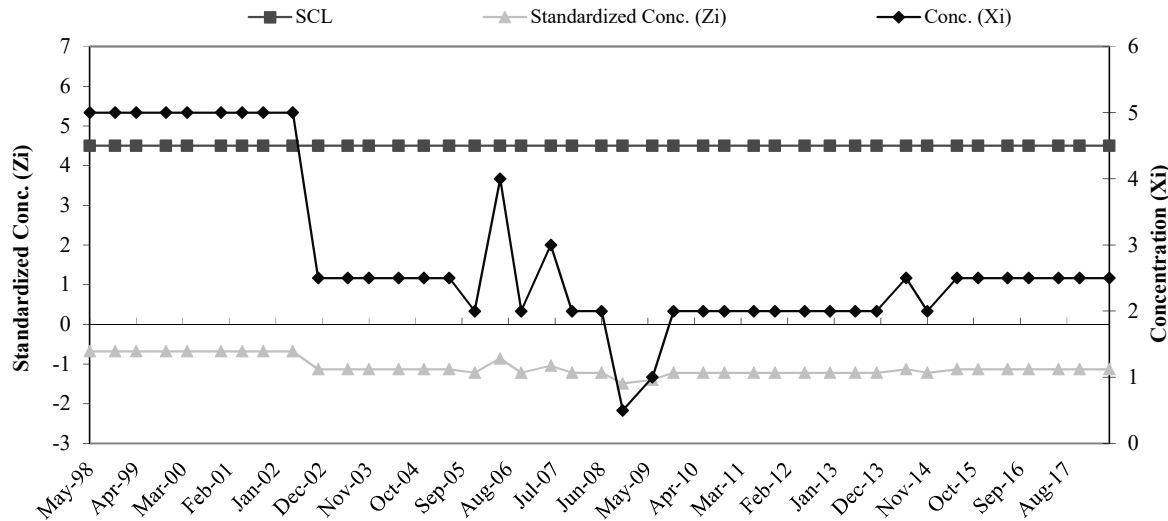


**COLDWATER ROAD LANDFILL FACILITY
RCRA GROUND WATER DETECTION MONITORING SYSTEM
SHEWART CONTROL CHART
B-18a Cu**

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

Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)	Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	May-98	4.5	5	-0.68	36	Nov-11	4.5	2	-1.22
10	Nov-98	4.5	5	-0.68	37	Jun-12	4.5	2	-1.22
11	Apr-99	4.5	5	-0.68	38	Dec-12	4.5	2	-1.22
12	Nov-99	4.5	5	-0.68	39	Jun-13	4.5	2	-1.22
13	Apr-00	4.5	5	-0.68	40	Nov-13	4.5	2	-1.22
14	Dec-00	4.5	5	-0.68	41	Jun-14	4.5	2.5	-1.13
15	May-01	4.5	5	-0.68	42	Nov-14	4.5	2	-1.22
16	Oct-01	4.5	5	-0.68	43	Jun-15	4.5	2.5	-1.13
17	May-02	4.5	5	-0.68	44	Nov-15	4.5	2.5	-1.13
18	Nov-02	4.5	2.5	-1.13	45	Jun-16	4.5	2.5	-1.13
19	Jun-03	4.5	2.5	-1.13	46	Nov-16	4.5	2.5	-1.13
20	Nov-03	4.5	2.5	-1.13	47	Jun-17	4.5	2.5	-1.13
21	Jun-04	4.5	2.5	-1.13	48	Nov-17	4.5	2.5	-1.13
22	Dec-04	4.5	2.5	-1.13	49	Jun-18	4.5	2.5	-1.13
23	Jun-05	4.5	2.5	-1.13					
24	Dec-05	4.5	2	-1.22					
25	Jun-06	4.5	4	-0.86					
26	Nov-06	4.5	2	-1.22					
27	Jun-07	4.5	3	-1.04					
28	Nov-07	4.5	2	-1.22					
29	Jun-08	4.5	2	-1.22					
30	Nov-08	4.5	0.5	-1.49					
31	Jun-09	4.5	1	-1.40					
32	Nov-09	4.5	2	-1.22					
33	Jun-10	4.5	2	-1.22					
34	Nov-10	4.5	2	-1.22					
35	Jun-11	4.5	2	-1.22					

h = Decision Value for CUSUM, SCL = Shewart Control Limit, k = Standard Error Shift Detection Parameter, Zi = Standardized Mean

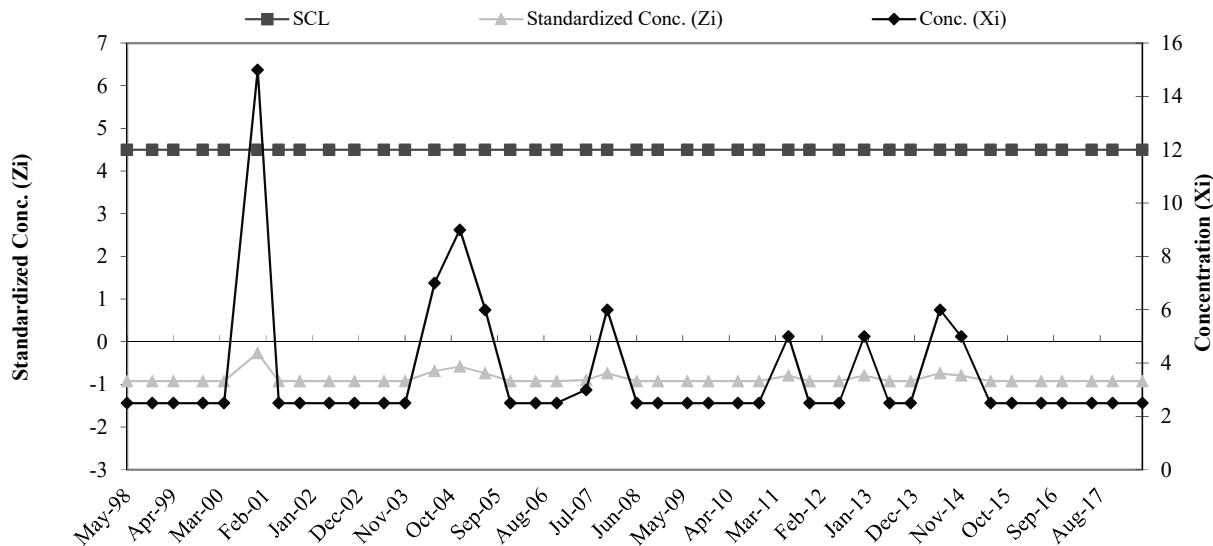


**COLDWATER ROAD LANDFILL FACILITY
RCRA GROUND WATER DETECTION MONITORING SYSTEM
SHEWART CONTROL CHART
B-18a Ni**

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

Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)	Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	May-98	4.5	2.5	-0.92	36	Nov-11	4.5	2.5	-0.92
10	Nov-98	4.5	2.5	-0.92	37	Jun-12	4.5	2.5	-0.92
11	Apr-99	4.5	2.5	-0.92	38	Dec-12	4.5	5	-0.79
12	Nov-99	4.5	2.5	-0.92	39	Jun-13	4.5	2.5	-0.92
13	Apr-00	4.5	2.5	-0.92	40	Nov-13	4.5	2.5	-0.92
14	Dec-00	4.5	15	-0.26	41	Jun-14	4.5	6	-0.74
15	May-01	4.5	2.5	-0.92	42	Nov-14	4.5	5	-0.79
16	Oct-01	4.5	2.5	-0.92	43	Jun-15	4.5	2.5	-0.92
17	May-02	4.5	2.5	-0.92	44	Nov-15	4.5	2.5	-0.92
18	Nov-02	4.5	2.5	-0.92	45	Jun-16	4.5	2.5	-0.92
19	Jun-03	4.5	2.5	-0.92	46	Nov-16	4.5	2.5	-0.92
20	Nov-03	4.5	2.5	-0.92	47	Jun-17	4.5	2.5	-0.92
21	Jun-04	4.5	7	-0.69	48	Nov-17	4.5	2.5	-0.92
22	Dec-04	4.5	9	-0.58	49	Jun-18	4.5	2.5	-0.92
23	Jun-05	4.5	6	-0.74					
24	Dec-05	4.5	2.5	-0.92					
25	Jun-06	4.5	2.5	-0.92					
26	Nov-06	4.5	2.5	-0.92					
27	Jun-07	4.5	3	-0.90					
28	Nov-07	4.5	6	-0.74					
29	Jun-08	4.5	2.5	-0.92					
30	Nov-08	4.5	2.5	-0.92					
31	Jun-09	4.5	2.5	-0.92					
32	Nov-09	4.5	2.5	-0.92					
33	Jun-10	4.5	2.5	-0.92					
34	Nov-10	4.5	2.5	-0.92					
35	Jun-11	4.5	5	-0.79					

h = Decision Value for CUSUM, SCL = Shewart Control Limit, k = Standard Error Shift Detection Parameter, Zi = Standardized Mean

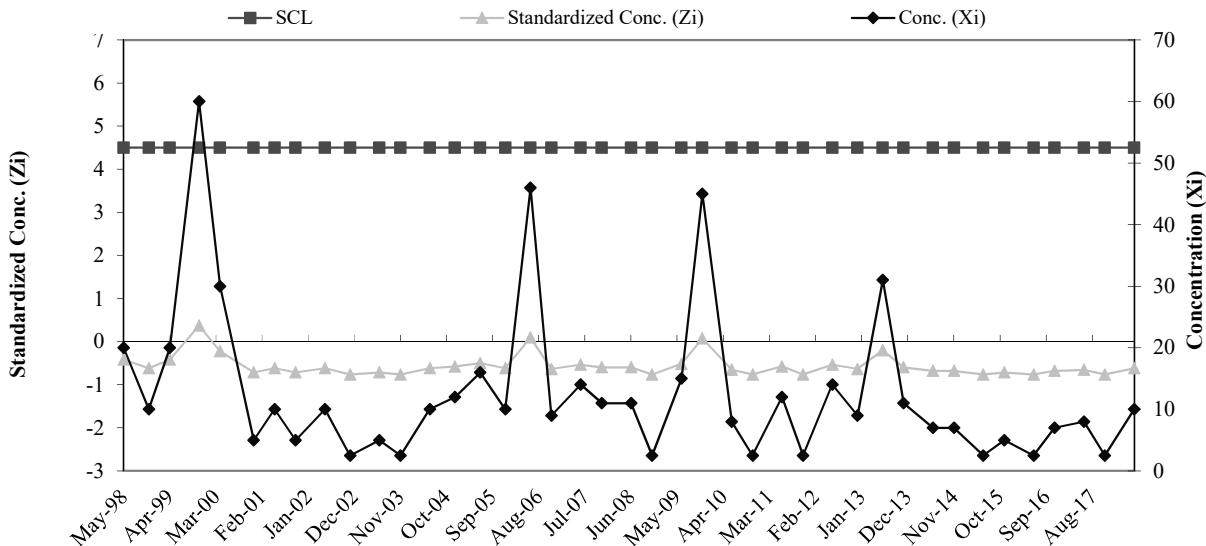


**COLDWATER ROAD LANDFILL FACILITY
RCRA GROUND WATER DETECTION MONITORING SYSTEM
SHEWART CONTROL CHART
B-18a Zn**

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

Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)	Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	May-98	4.5	20	-0.42	36	Nov-11	4.5	2.5	-0.76
10	Nov-98	4.5	10	-0.62	37	Jun-12	4.5	14	-0.54
11	Apr-99	4.5	20	-0.42	38	Dec-12	4.5	9	-0.64
12	Nov-99	4.5	60	0.37	39	Jun-13	4.5	31	-0.20
13	Apr-00	4.5	30	-0.22	40	Nov-13	4.5	11	-0.60
14	Dec-00	4.5	5	-0.72	41	Jun-14	4.5	7	-0.68
15	May-01	4.5	10	-0.62	42	Nov-14	4.5	7	-0.68
16	Oct-01	4.5	5	-0.72	43	Jun-15	4.5	2.5	-0.76
17	May-02	4.5	10	-0.62	44	Nov-15	4.5	5	-0.72
18	Nov-02	4.5	2.5	-0.76	45	Jun-16	4.5	2.5	-0.76
19	Jun-03	4.5	5	-0.72	46	Nov-16	4.5	7	-0.68
20	Nov-03	4.5	2.5	-0.76	47	Jun-17	4.5	8	-0.66
21	Jun-04	4.5	10	-0.62	48	Nov-17	4.5	2.5	-0.76
22	Dec-04	4.5	12	-0.58	49	Jun-18	4.5	10	-0.62
23	Jun-05	4.5	16	-0.50					
24	Dec-05	4.5	10	-0.62					
25	Jun-06	4.5	46	0.09					
26	Nov-06	4.5	9	-0.64					
27	Jun-07	4.5	14	-0.54					
28	Nov-07	4.5	11	-0.60					
29	Jun-08	4.5	11	-0.60					
30	Nov-08	4.5	2.5	-0.76					
31	Jun-09	4.5	15	-0.52					
32	Nov-09	4.5	45	0.07					
33	Jun-10	4.5	8	-0.66					
34	Nov-10	4.5	2.5	-0.76					
35	Jun-11	4.5	12	-0.58					

h = Decision Value for CUSUM, SCL = Shewart Control Limit, k = Standard Error Shift Detection Parameter, Zi = Standardized Mean

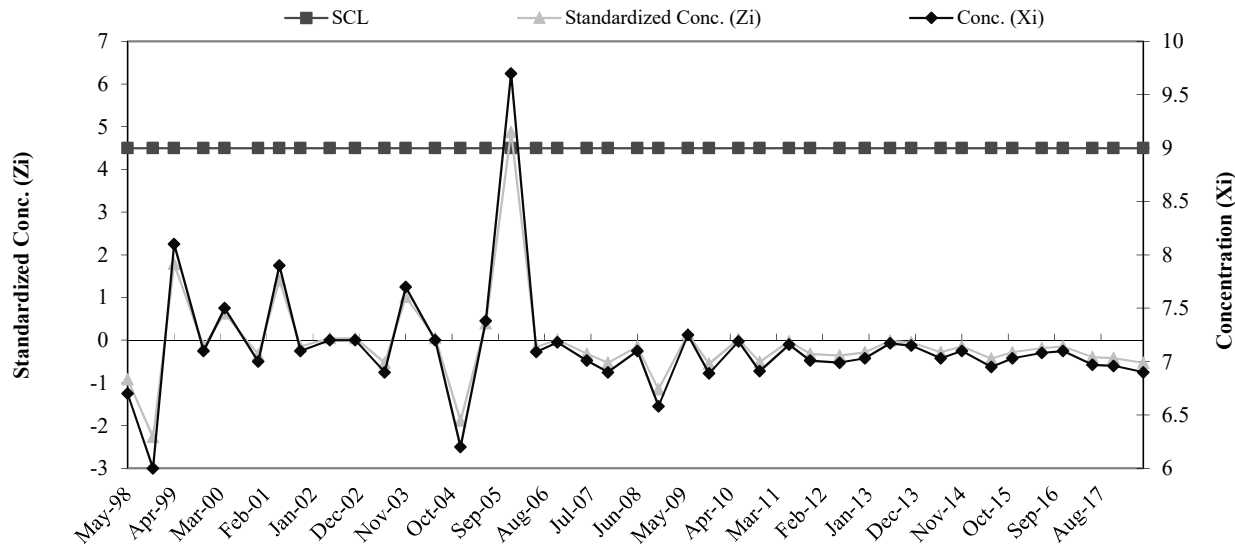


**COLDWATER ROAD LANDFILL FACILITY
RCRA GROUND WATER DETECTION MONITORING SYSTEM
SHEWART CONTROL CHART
B-18a pH**

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

Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)	Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	May-98	4.5	6.7	-0.92	36	Nov-11	4.5	7.0	-0.32
10	Nov-98	4.5	6.0	-2.27	37	Jun-12	4.5	7.0	-0.36
11	Apr-99	4.5	8.1	1.79	38	Dec-12	4.5	7.0	-0.28
12	Nov-99	4.5	7.1	-0.14	39	Jun-13	4.5	7.2	-0.01
13	Apr-00	4.5	7.5	0.63	40	Nov-13	4.5	7.2	-0.05
14	Dec-00	4.5	7.0	-0.34	41	Jun-14	4.5	7.0	-0.28
15	May-01	4.5	7.9	1.40	42	Nov-14	4.5	7.1	-0.14
16	Oct-01	4.5	7.1	-0.14	43	Jun-15	4.5	7.0	-0.43
17	May-02	4.5	7.2	0.05	44	Nov-15	4.5	7.0	-0.28
18	Nov-02	4.5	7.2	0.05	45	Jun-16	4.5	7.1	-0.18
19	Jun-03	4.5	6.9	-0.53	46	Nov-16	4.5	7.1	-0.14
20	Nov-03	4.5	7.7	1.01	47	Jun-17	4.5	7.0	-0.40
21	Jun-04	4.5	7.2	0.05	48	Nov-17	4.5	7.0	-0.42
22	Dec-04	4.5	6.2	-1.88	49	Jun-18	4.5	6.9	-0.53
23	Jun-05	4.5	7.4	0.40					
24	Dec-05	4.5	9.7	4.88					
25	Jun-06	4.5	7.1	-0.16					
26	Nov-06	4.5	7.2	0.01					
27	Jun-07	4.5	7.0	-0.32					
28	Nov-07	4.5	6.9	-0.53					
29	Jun-08	4.5	7.1	-0.14					
30	Nov-08	4.5	6.6	-1.15					
31	Jun-09	4.5	7.3	0.14					
32	Nov-09	4.5	6.9	-0.55					
33	Jun-10	4.5	7.2	0.03					
34	Nov-10	4.5	6.9	-0.51					
35	Jun-11	4.5	7.2	-0.03					

h = Decision Value for CUSUM, SCL = Shewart Control Limit, k = Standard Error Shift Detection Parameter, Zi = Standardized Mean

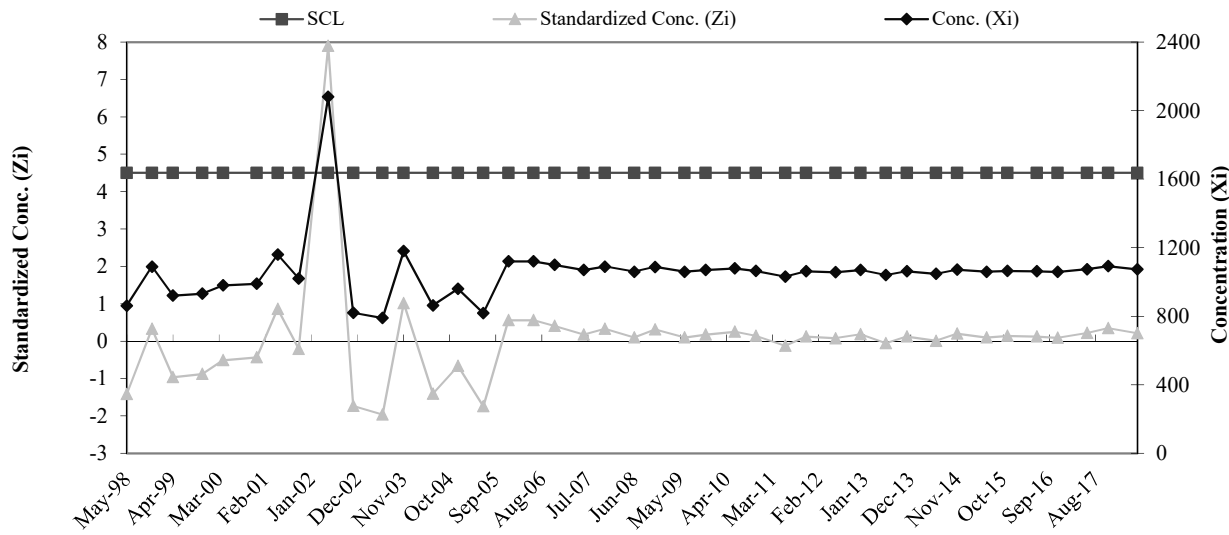


**COLDWATER ROAD LANDFILL FACILITY
RCRA GROUND WATER DETECTION MONITORING SYSTEM
SHEWART CONTROL CHART
B-18a SpC**

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

Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)	Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	May-98	4.5	862	-1.41	36	Nov-11	4.5	1063	0.12
10	Nov-98	4.5	1090.0	0.33	37	Jun-12	4.5	1057	0.08
11	Apr-99	4.5	921	-0.96	38	Dec-12	4.5	1071	0.19
12	Nov-99	4.5	932	-0.88	39	Jun-13	4.5	1040	-0.05
13	Apr-00	4.5	980	-0.51	40	Nov-13	4.5	1063	0.12
14	Dec-00	4.5	990.0	-0.43	41	Jun-14	4.5	1048	0.01
15	May-01	4.5	1160	0.87	42	Nov-14	4.5	1073	0.20
16	Oct-01	4.5	1020	-0.20	43	Jun-15	4.5	1060	0.10
17	May-02	4.5	2080	7.90	44	Nov-15	4.5	1065	0.14
18	Nov-02	4.5	820	-1.73	45	Jun-16	4.5	1063	0.12
19	Jun-03	4.5	790	-1.96	46	Nov-16	4.5	1059	0.09
20	Nov-03	4.5	1180	1.02	47	Jun-17	4.5	1075	0.22
21	Jun-04	4.5	863	-1.40	48	Nov-17	4.5	1092	0.35
22	Dec-04	4.5	960	-0.66	49	Jun-18	4.5	1074	0.21
23	Jun-05	4.5	819	-1.74					
24	Dec-05	4.5	1120	0.56					
25	Jun-06	4.5	1120	0.56					
26	Nov-06	4.5	1100	0.41					
27	Jun-07	4.5	1070	0.18					
28	Nov-07	4.5	1090	0.33					
29	Jun-08	4.5	1060	0.10					
30	Nov-08	4.5	1088	0.32					
31	Jun-09	4.5	1060	0.10					
32	Nov-09	4.5	1070	0.18					
33	Jun-10	4.5	1080	0.25					
34	Nov-10	4.5	1065	0.14					
35	Jun-11	4.5	1031	-0.12					

h = Decision Value for CUSUM, SCL = Shewart Control Limit, k = Standard Error Shift Detection Parameter, Zi = Standardized Mean

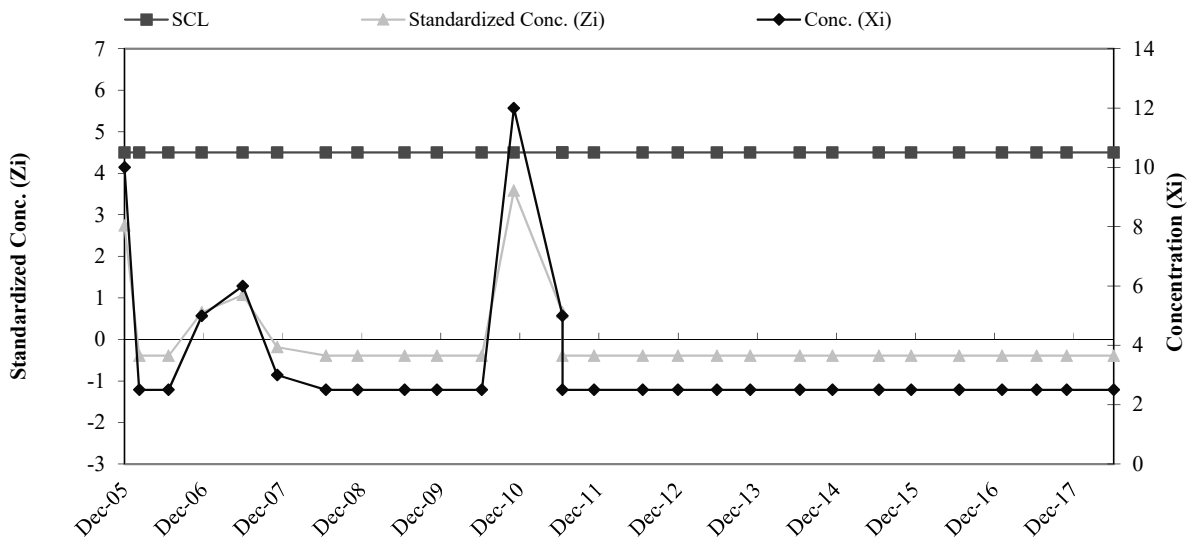


**COLDWATER ROAD LANDFILL FACILITY
RCRA GROUND WATER DETECTION MONITORING SYSTEM
SHEWART CONTROL CHART
B-19a Cr**

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

Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	Dec-05	4.5	10	2.74
10	Feb-06	4.5	2.5	-0.39
11	Jun-06	4.5	2.5	-0.39
12	Nov-06	4.5	5	0.65
13	Jun-07	4.5	6	1.07
14	Nov-07	4.5	3	-0.18
15	Jun-08	4.5	2.5	-0.39
16	Nov-08	4.5	2.5	-0.39
17	Jun-09	4.5	2.5	-0.39
18	Nov-09	4.5	2.5	-0.39
19	Jun-10	4.5	2.5	-0.39
20	Nov-10	4.5	12	3.58
21	Jun-11	4.5	5	0.65
22	Jun-11	4.5	2.5	-0.39
23	Nov-11	4.5	2.5	-0.39
24	Jun-12	4.5	2.5	-0.39
25	Dec-12	4.5	2.5	-0.39
26	Jun-13	4.5	2.5	-0.39
27	Nov-13	4.5	2.5	-0.39
28	Jun-14	4.5	2.5	-0.39
29	Nov-14	4.5	2.5	-0.39
30	Jun-15	4.5	2.5	-0.39
31	Nov-15	4.5	2.5	-0.39
32	Jun-16	4.5	2.5	-0.39
33	Jan-17	4.5	2.5	-0.39
34	Jun-17	4.5	2.5	-0.39
35	Nov-17	4.5	2.5	-0.39
36	Jun-18	4.5	2.5	-0.39

h = Decision Value for CUSUM, SCL = Shewart Control Limit, k = Standard Error Shift Detection Parameter, Zi = Standardized Mean

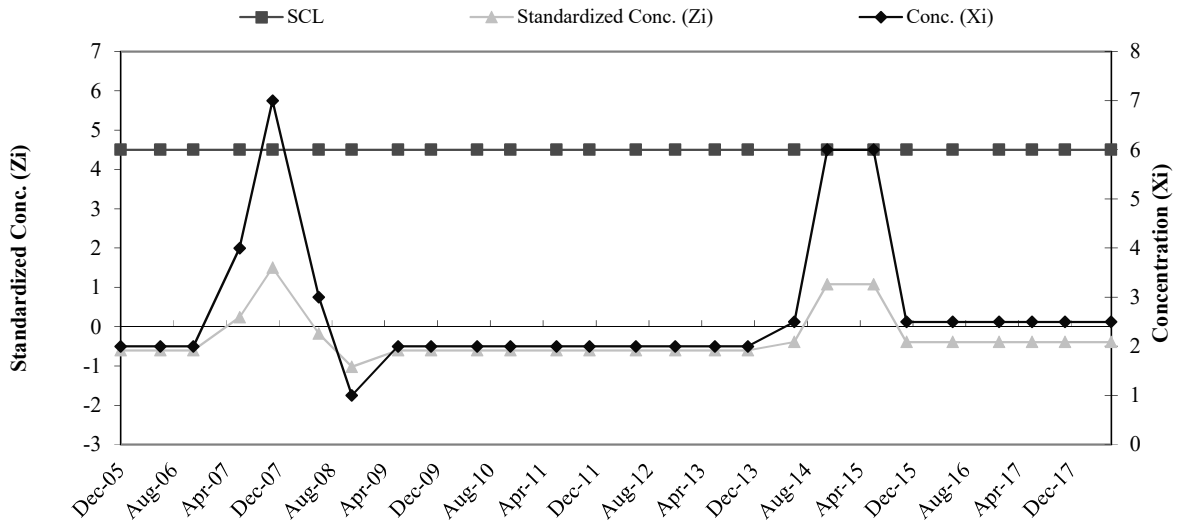


**COLDWATER ROAD LANDFILL FACILITY
RCRA GROUND WATER DETECTION MONITORING SYSTEM
SHEWART CONTROL CHART
B-19a Cu**

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

Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	Dec-05	4.5	2	-0.60
10	Jun-06	4.5	2	-0.60
11	Nov-06	4.5	2	-0.60
12	Jun-07	4.5	4	0.24
13	Nov-07	4.5	7	1.50
14	Jun-08	4.5	3	-0.18
15	Nov-08	4.5	1	-1.02
16	Jun-09	4.5	2	-0.60
17	Nov-09	4.5	2	-0.60
18	Jun-10	4.5	2	-0.60
19	Nov-10	4.5	2	-0.60
20	Jun-11	4.5	2	-0.60
21	Nov-11	4.5	2	-0.60
22	Jun-12	4.5	2	-0.60
23	Dec-12	4.5	2	-0.60
24	Jun-13	4.5	2	-0.60
25	Nov-13	4.5	2	-0.60
26	Jun-14	4.5	2.5	-0.39
27	Nov-14	4.5	6	1.08
28	Jun-15	4.5	6	1.08
29	Nov-15	4.5	2.5	-0.39
30	Jun-16	4.5	2.5	-0.39
31	Jan-17	4.5	2.5	-0.39
32	Jun-17	4.5	2.5	-0.39
33	Nov-17	4.5	2.5	-0.39
34	Jun-18	4.5	2.5	-0.39

h = Decision Value for CUSUM, SCL = Shewart Control Limit, k = Standard Error Shift Detection Parameter, Z_i = Standardized Mean

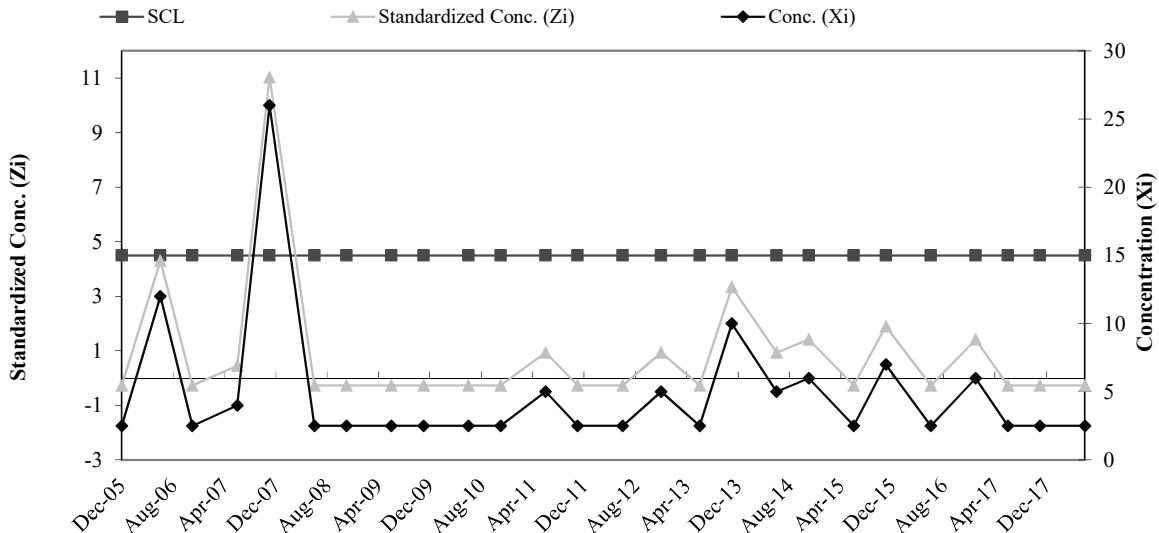


**COLDWATER ROAD LANDFILL FACILITY
RCRA GROUND WATER DETECTION MONITORING SYSTEM
SHEWART CONTROL CHART
B-19a Ni**

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

Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	Dec-05	4.5	2.5	-0.27
10	Jun-06	4.5	12	4.30
11	Nov-06	4.5	2.5	-0.27
12	Jun-07	4.5	4	0.45
13	Nov-07	4.5	26	11.03
14	Jun-08	4.5	2.5	-0.27
15	Nov-08	4.5	2.5	-0.27
16	Jun-09	4.5	2.5	-0.27
17	Nov-09	4.5	2.5	-0.27
19	Jun-10	4.5	2.5	-0.27
20	Nov-10	4.5	2.5	-0.27
21	Jun-11	4.5	5	0.93
22	Nov-11	4.5	2.5	-0.27
23	Jun-12	4.5	2.5	-0.27
24	Dec-12	4.5	5	0.93
25	Jun-13	4.5	2.5	-0.27
26	Nov-13	4.5	10	3.34
27	Jun-14	4.5	5	0.93
28	Nov-14	4.5	6	1.41
29	Jun-15	4.5	2.5	-0.27
30	Nov-15	4.5	7	1.89
31	Jun-16	4.5	2.5	-0.27
32	Jan-17	4.5	6	1.41
33	Jun-17	4.5	2.5	-0.27
34	Nov-17	4.5	2.5	-0.27
35	Jun-18	4.5	2.5	-0.27

h = Decision Value for CUSUM, SCL = Shewart Control Limit, k = Standard Error Shift Detection Parameter, Zi = Standardized Mean



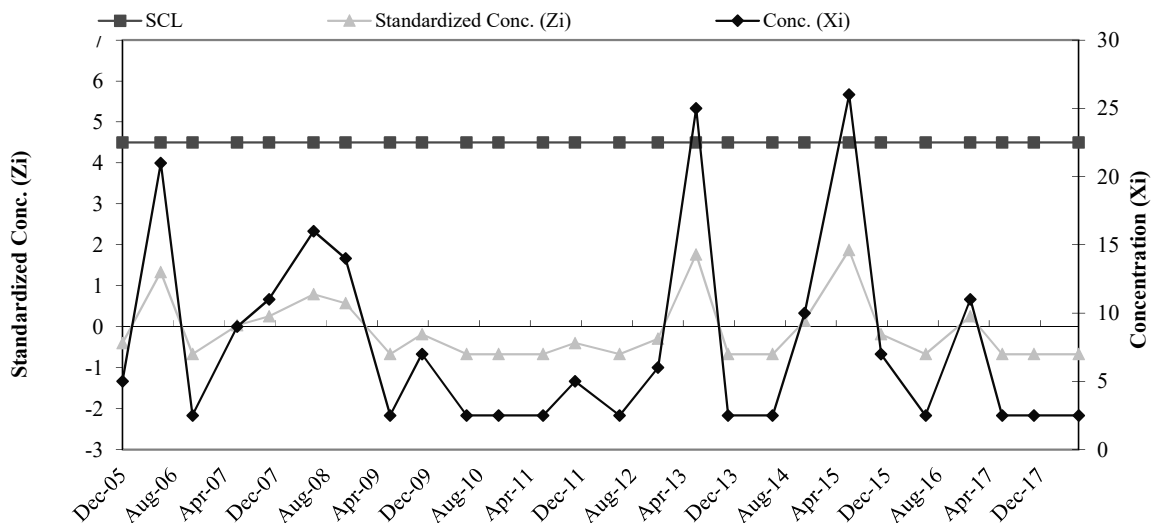
**COLDWATER ROAD LANDFILL FACILITY
RCRA GROUND WATER DETECTION MONITORING SYSTEM
SHEWART CONTROL CHART**

B-19a Zn

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

Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	Dec-05	4.5	5	-0.40
10	Jun-06	4.5	21	1.33
11	Nov-06	4.5	2.5	-0.67
12	Jun-07	4.5	9	0.03
13	Nov-07	4.5	11	0.25
14	Jun-08	4.5	16	0.79
15	Nov-08	4.5	14	0.57
16	Jun-09	4.5	2.5	-0.67
17	Nov-09	4.5	7	-0.18
18	Jun-10	4.5	2.5	-0.67
19	Nov-10	4.5	2.5	-0.67
20	Jun-11	4.5	2.5	-0.67
21	Nov-11	4.5	5	-0.40
22	Jun-12	4.5	2.5	-0.67
23	Dec-12	4.5	6	-0.29
24	Jun-13	4.5	25	1.77
25	Nov-13	4.5	2.5	-0.67
26	Jun-14	4.5	2.5	-0.67
27	Nov-14	4.5	10	0.14
28	Jun-15	4.5	26	1.87
29	Nov-15	4.5	7	-0.18
30	Jun-16	4.5	2.5	-0.67
31	Jan-17	4.5	11	0.25
32	Jun-17	4.5	2.5	-0.67
33	Nov-17	4.5	2.5	-0.67
34	Jun-18	4.5	2.5	-0.67

h = Decision Value for CUSUM, SCL = Shewart Control Limit, k = Standard Error Shift Detection Parameter, Zi = Standardized Mean

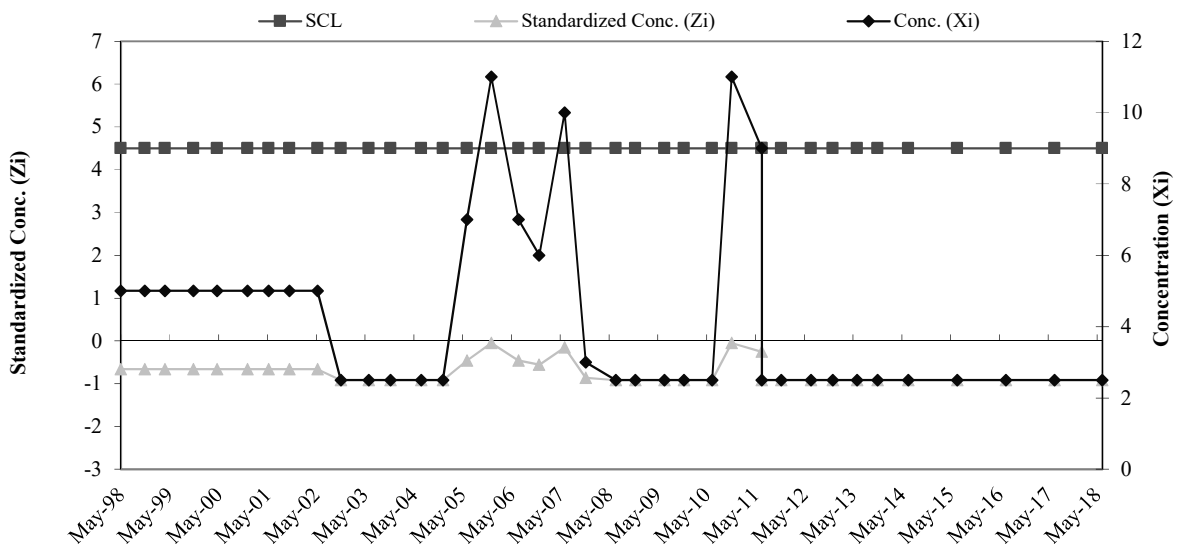


COLDWATER ROAD LANDFILL FACILITY
RCRA GROUND WATER DETECTION MONITORING SYSTEM
SHEWART CONTROL CHART
B-20d Cr

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

Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)	Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	May-98	4.5	5	-0.66	37	Nov-11	4.5	2.5	-0.92
10	Nov-98	4.5	5	-0.66	38	Jun-12	4.5	2.5	-0.92
11	Apr-99	4.5	5	-0.66	39	Dec-12	4.5	2.5	-0.92
12	Nov-99	4.5	5	-0.66	40	Jun-13	4.5	2.5	-0.92
13	Apr-00	4.5	5	-0.66	41	Nov-13	4.5	2.5	-0.92
14	Dec-00	4.5	5	-0.66	42	Jun-14	4.5	2.5	-0.92
15	May-01	4.5	5	-0.66	43	Jun-15	4.5	2.5	-0.92
16	Oct-01	4.5	5	-0.66	44	Jun-16	4.5	2.5	-0.92
17	May-02	4.5	5	-0.66	45	Jun-17	4.5	2.5	-0.92
18	Nov-02	4.5	2.5	-0.92	46	Jun-18	4.5	2.5	-0.92
19	Jun-03	4.5	2.5	-0.92					
20	Nov-03	4.5	2.5	-0.92					
21	Jun-04	4.5	2.5	-0.92					
22	Dec-04	4.5	2.5	-0.92					
23	Jun-05	4.5	7	-0.46					
24	Dec-05	4.5	11	-0.05					
25	Jun-06	4.5	7	-0.46					
26	Nov-06	4.5	6	-0.56					
27	Jun-07	4.5	10	-0.15					
28	Nov-07	4.5	3	-0.87					
29	Jun-08	4.5	2.5	-0.92					
30	Nov-08	4.5	2.5	-0.92					
31	Jun-09	4.5	2.5	-0.92					
32	Nov-09	4.5	2.5	-0.92					
33	Jun-10	4.5	2.5	-0.92					
34	Nov-10	4.5	11	-0.05					
35	Jun-11	4.5	9	-0.26					
36	Jun-11	4.5	2.5	-0.92					

h = Decision Value for CUSUM, SCL = Shewart Control Limit, k = Standard Error Shift Detection Parameter, Zi = Standardized Mean

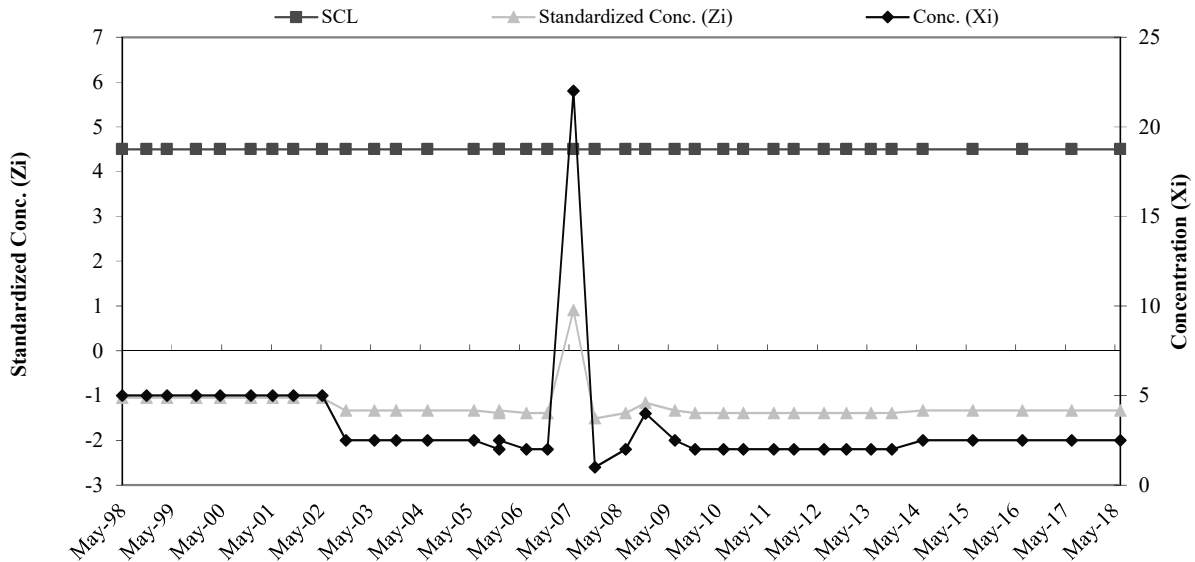


COLDWATER ROAD LANDFILL FACILITY
RCRA GROUND WATER DETECTION MONITORING SYSTEM
SHEWART CONTROL CHART
B-20d Cu

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

Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)	Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	May-98	4.5	5	-1.05	36	Nov-11	4.5	2	-1.39
10	Nov-98	4.5	5	-1.05	37	Jun-12	4.5	2	-1.39
11	Apr-99	4.5	5	-1.05	38	Dec-12	4.5	2	-1.39
12	Nov-99	4.5	5	-1.05	39	Jun-13	4.5	2	-1.39
13	Apr-00	4.5	5	-1.05	40	Nov-13	4.5	2	-1.39
14	Dec-00	4.5	5	-1.05	41	Jun-14	4.5	2.5	-1.34
15	May-01	4.5	5	-1.05	42	Jun-15	4.5	2.5	-1.34
16	Oct-01	4.5	5	-1.05	43	Jun-16	4.5	2.5	-1.34
17	May-02	4.5	5	-1.05	44	Jun-17	4.5	2.5	-1.34
18	Nov-02	4.5	2.5	-1.34	45	Jun-18	4.5	2.5	-1.34
19	Jun-03	4.5	2.5	-1.34					
20	Nov-03	4.5	2.5	-1.34					
21	Jun-04	4.5	2.5	-1.34					
22	Dec-05	4.5	2.5	-1.34					
23	Jun-05	4.5	2.5	-1.34					
24	Dec-05	4.5	2	-1.39					
25	Jun-06	4.5	2	-1.39					
26	Nov-06	4.5	2	-1.39					
27	Jun-07	4.5	22	0.90					
28	Nov-07	4.5	1	-1.51					
29	Jun-08	4.5	2	-1.39					
30	Nov-08	4.5	4	-1.16					
31	Jun-09	4.5	2.5	-1.34					
32	Nov-09	4.5	2	-1.39					
33	Jun-10	4.5	2	-1.39					
34	Nov-10	4.5	2	-1.39					
35	Jun-11	4.5	2	-1.39					

h = Decision Value for CUSUM, SCL = Shewart Control Limit, k = Standard Error Shift Detection Parameter, Zi = Standardized Mean

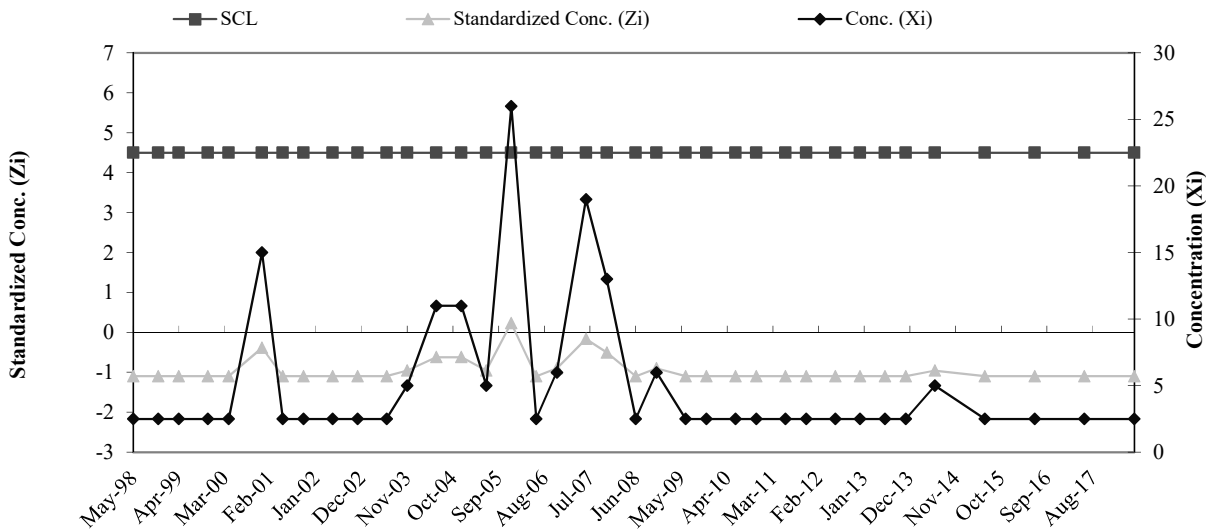


COLDWATER ROAD LANDFILL FACILITY
RCRA GROUND WATER DETECTION MONITORING SYSTEM
SHEWART CONTROL CHART
B-20d Ni

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

Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)	Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	May-98	4.5	2.5	-1.10	36	Nov-11	4.5	2.5	-1.10
10	Nov-98	4.5	2.5	-1.10	37	Jun-12	4.5	2.5	-1.10
11	Apr-99	4.5	2.5	-1.10	38	Dec-12	4.5	2.5	-1.10
12	Nov-99	4.5	2.5	-1.10	39	Jun-13	4.5	2.5	-1.10
13	Apr-00	4.5	2.5	-1.10	40	Nov-13	4.5	2.5	-1.10
14	Dec-00	4.5	15	-0.39	41	Jun-14	4.5	5	-0.96
15	May-01	4.5	2.5	-1.10	42	Jun-15	4.5	2.5	-1.10
16	Oct-01	4.5	2.5	-1.10	43	Jun-16	4.5	2.5	-1.10
17	May-02	4.5	2.5	-1.10	44	Jun-17	4.5	2.5	-1.10
18	Nov-02	4.5	2.5	-1.10	45	Jun-18	4.5	2.5	-1.10
19	Jun-03	4.5	2.5	-1.10					
20	Nov-03	4.5	5	-0.96					
21	Jun-04	4.5	11	-0.62					
22	Dec-04	4.5	11	-0.62					
23	Jun-05	4.5	5	-0.96					
24	Dec-05	4.5	26	0.23					
25	Jun-06	4.5	2.5	-1.10					
26	Nov-06	4.5	6	-0.90					
27	Jun-07	4.5	19	-0.16					
28	Nov-07	4.5	13	-0.50					
29	Jun-08	4.5	2.5	-1.10					
30	Nov-08	4.5	6	-0.90					
31	Jun-09	4.5	2.5	-1.10					
32	Nov-09	4.5	2.5	-1.10					
33	Jun-10	4.5	2.5	-1.10					
34	Nov-10	4.5	2.5	-1.10					
35	Jun-11	4.5	2.5	-1.10					

h = Decision Value for CUSUM, SCL = Shewart Control Limit, k = Standard Error Shift Detection Parameter, Zi = Standardized Mean

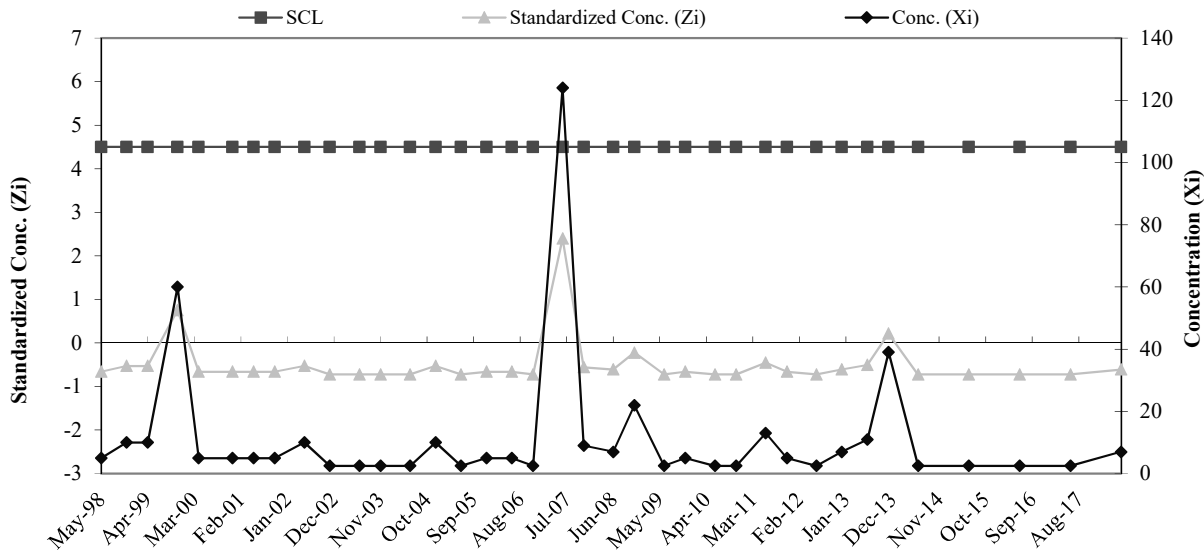


COLDWATER ROAD LANDFILL FACILITY
RCRA GROUND WATER DETECTION MONITORING SYSTEM
SHEWART CONTROL CHART
B-20d Zn

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

Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)	Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	May-98	4.5	5	-0.66	36	Nov-11	4.5	5	-0.66
10	Nov-98	4.5	10	-0.53	37	Jun-12	4.5	2.5	-0.72
11	Apr-99	4.5	10	-0.53	38	Dec-12	4.5	7	-0.61
12	Nov-99	4.5	60	0.75	39	Jun-13	4.5	11	-0.51
13	Apr-00	4.5	5	-0.66	40	Nov-13	4.5	39	0.21
14	Dec-00	4.5	5	-0.66	41	Jun-14	4.5	2.5	-0.72
15	May-01	4.5	5	-0.66	42	Jun-15	4.5	2.5	-0.72
16	Oct-01	4.5	5	-0.66	43	Jun-16	4.5	2.5	-0.72
17	May-02	4.5	10	-0.53	44	Jun-17	4.5	2.5	-0.72
18	Nov-02	4.5	2.5	-0.72	45	Jun-18	4.5	7	-0.61
19	Jun-03	4.5	2.5	-0.72					
20	Nov-03	4.5	2.5	-0.72					
21	Jun-04	4.5	2.5	-0.72					
22	Dec-04	4.5	10	-0.53					
23	Jun-05	4.5	2.5	-0.72					
24	Dec-05	4.5	5	-0.66					
25	Jun-06	4.5	5	-0.66					
26	Nov-06	4.5	2.5	-0.72					
27	Jun-07	4.5	124	2.40					
28	Nov-07	4.5	9	-0.56					
29	Jun-08	4.5	7	-0.61					
30	Nov-08	4.5	22	-0.22					
31	Jun-09	4.5	2.5	-0.72					
32	Nov-09	4.5	5	-0.66					
33	Jun-10	4.5	2.5	-0.72					
34	Nov-10	4.5	2.5	-0.72					
35	Jun-11	4.5	13	-0.45					

h = Decision Value for CUSUM, SCL = Shewart Control Limit, k = Standard Error Shift Detection Parameter, Zi = Standardized Mean

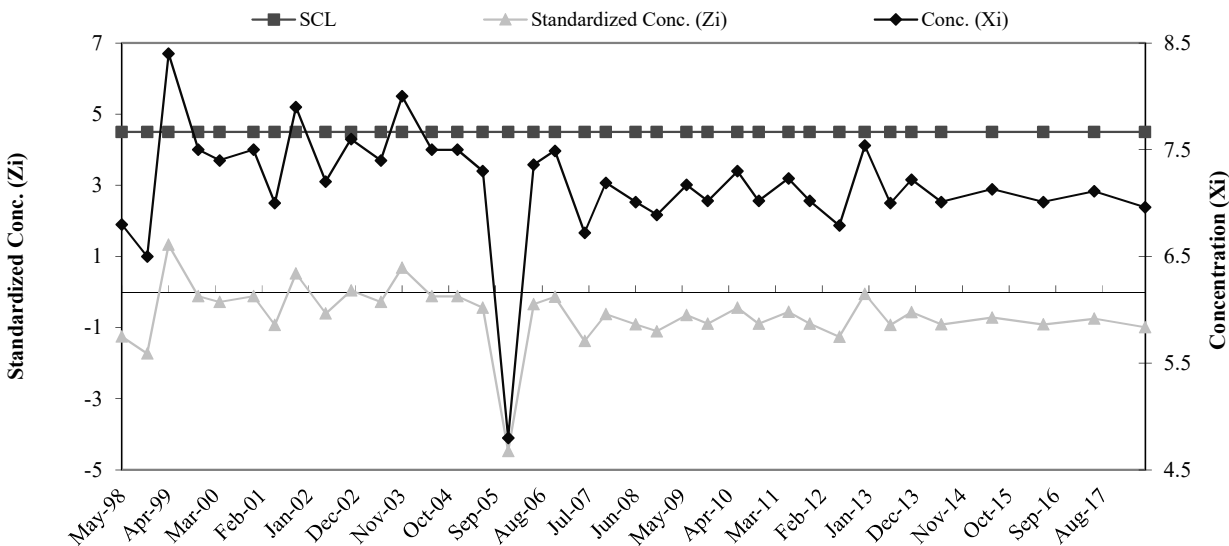


COLDWATER ROAD LANDFILL FACILITY
RCRA GROUND WATER DETECTION MONITORING SYSTEM
SHEWART CONTROL CHART
B-20d pH

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

Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)	Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	May-98	4.5	6.8	-1.25	36	Nov-11	4.5	7.0	-0.89
10	Nov-98	4.5	6.5	-1.73	37	Jun-12	4.5	6.8	-1.27
11	Apr-99	4.5	8.4	1.33	38	Dec-12	4.5	7.5	-0.06
12	Nov-99	4.5	7.5	-0.12	39	Jun-13	4.5	7.0	-0.93
13	Apr-00	4.5	7.4	-0.28	40	Nov-13	4.5	7.2	-0.57
14	Dec-00	4.5	7.5	-0.12	41	Jun-14	4.5	7.0	-0.91
15	May-01	4.5	7.0	-0.93	42	Jun-15	4.5	7.1	-0.72
16	Oct-01	4.5	7.9	0.52	43	Jun-16	4.5	7.0	-0.91
17	May-02	4.5	7.2	-0.60	44	Jun-17	4.5	7.1	-0.75
18	Nov-02	4.5	7.6	0.04	45	Jun-18	4.5	7.0	-0.99
19	Jun-03	4.5	7.4	-0.28					
20	Nov-03	4.5	8.0	0.68					
21	Jun-04	4.5	7.5	-0.12					
22	Dec-04	4.5	7.5	-0.12					
23	Jun-05	4.5	7.3	-0.44					
24	Dec-05	4.5	4.8	-4.47					
25	Jun-06	4.5	7.4	-0.35					
26	Nov-06	4.5	7.5	-0.14					
27	Jun-07	4.5	6.7	-1.38					
28	Nov-07	4.5	7.2	-0.62					
29	Jun-08	4.5	7.0	-0.91					
30	Nov-08	4.5	6.9	-1.10					
31	Jun-09	4.5	7.2	-0.65					
32	Nov-09	4.5	7.0	-0.89					
33	Jun-10	4.5	7.3	-0.44					
34	Nov-10	4.5	7.0	-0.89					
35	Jun-11	4.5	7.2	-0.56					

h = Decision Value for CUSUM, SCL = Shewart Control Limit, k = Standard Error Shift Detection Parameter, Zi = Standardized Mean

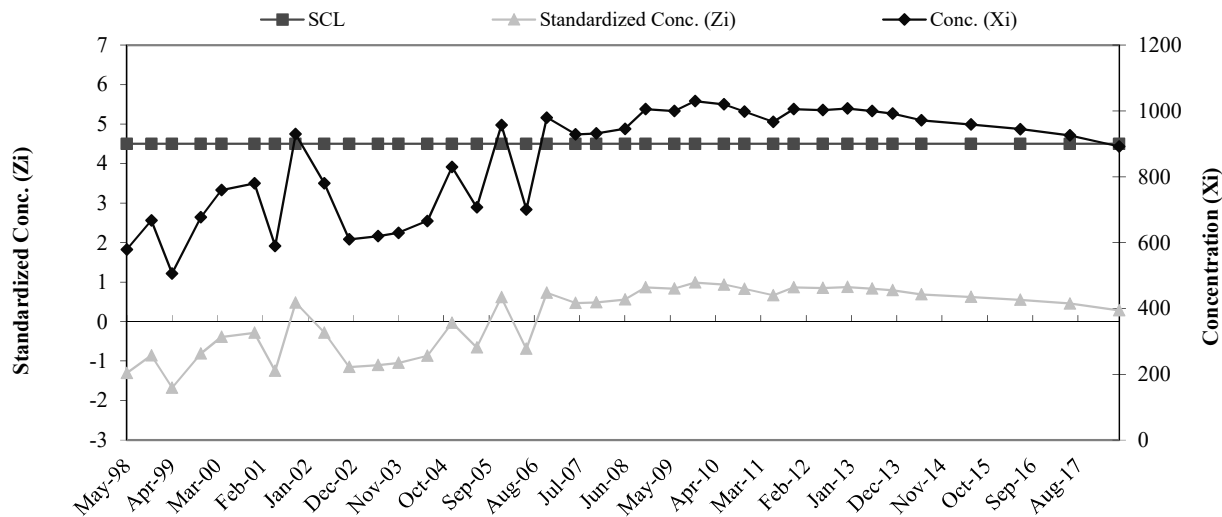


COLDWATER ROAD LANDFILL FACILITY
RCRA GROUND WATER DETECTION MONITORING SYSTEM
SHEWART CONTROL CHART
B-20d SpC

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

Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)	Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	May-98	4.5	579	-1.31	36	Nov-11	4.5	1006	0.87
10	Nov-98	4.5	667	-0.86	37	Jun-12	4.5	1003	0.85
11	Apr-99	4.5	506	-1.68	38	Dec-12	4.5	1008	0.88
12	Nov-99	4.5	677	-0.81	39	Jun-13	4.5	1000	0.84
13	Apr-00	4.5	760	-0.39	40	Nov-13	4.5	992	0.79
14	Dec-00	4.5	780	-0.28	41	Jun-14	4.5	972	0.69
15	May-01	4.5	590	-1.25	42	Jun-15	4.5	959	0.63
16	Oct-01	4.5	930	0.48	43	Jun-16	4.5	945	0.56
17	May-02	4.5	780	-0.28	44	Jun-17	4.5	926	0.46
18	Nov-02	4.5	610	-1.15	45	Jun-18	4.5	892	0.29
19	Jun-03	4.5	620	-1.10					
20	Nov-03	4.5	630	-1.05					
21	Jun-04	4.5	666	-0.86					
22	Dec-04	4.5	830	-0.03					
23	Jun-05	4.5	707	-0.65					
24	Dec-05	4.5	957	0.62					
25	Jun-06	4.5	701	-0.69					
26	Nov-06	4.5	980	0.73					
27	Jun-07	4.5	929	0.47					
28	Nov-07	4.5	932	0.49					
29	Jun-08	4.5	946	0.56					
30	Nov-08	4.5	1006	0.87					
31	Jun-09	4.5	1000	0.84					
32	Nov-09	4.5	1030	0.99					
33	Jun-10	4.5	1020	0.94					
34	Nov-10	4.5	998	0.83					
35	Jun-11	4.5	967	0.67					

h = Decision Value for CUSUM, SCL = Shewart Control Limit, k = Standard Error Shift Detection Parameter, Z_i = Standardized Mean

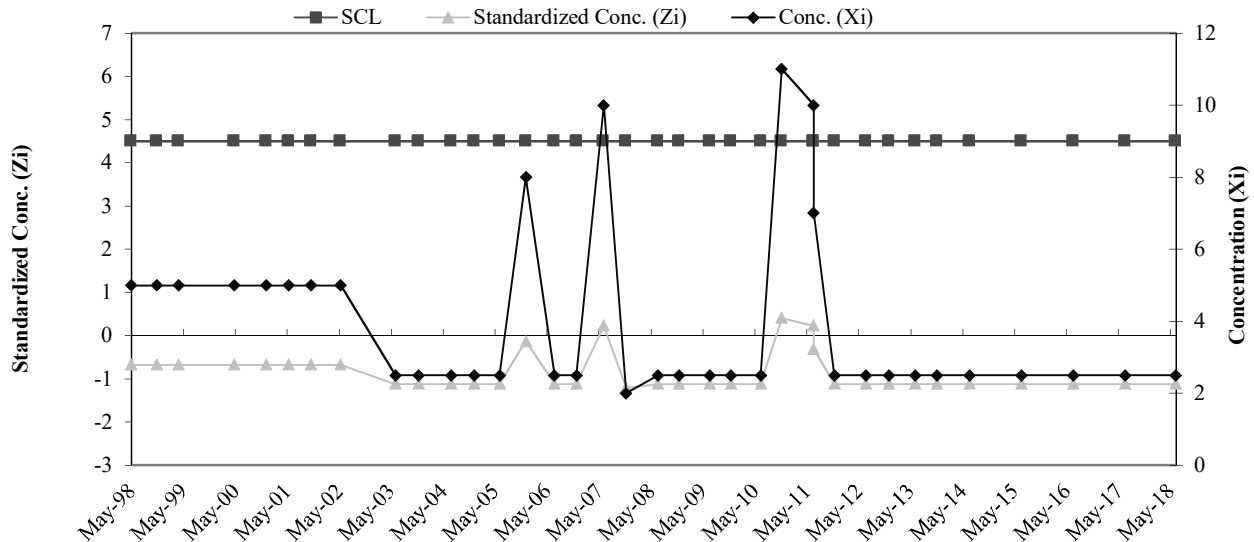


**COLDWATER ROAD LANDFILL FACILITY
RCRA GROUND WATER DETECTION MONITORING SYSTEM
SHEWART CONTROL CHART
B-21d Cr**

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

Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)	Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	May-98	4.5	5	-0.67	36	Nov-11	4.5	2.5	-1.12
10	Nov-98	4.5	5	-0.67	37	Jun-12	4.5	2.5	-1.12
11	Apr-99	4.5	5	-0.67	38	Dec-12	4.5	2.5	-1.12
12	Apr-00	4.5	5	-0.67	39	Jun-13	4.5	2.5	-1.12
13	Dec-00	4.5	5	-0.67	40	Nov-13	4.5	2.5	-1.12
14	May-01	4.5	5	-0.67	41	Jun-14	4.5	2.5	-1.12
15	Oct-01	4.5	5	-0.67	42	Jun-15	4.5	2.5	-1.12
16	May-02	4.5	5	-0.67	43	Jun-16	4.5	2.5	-1.12
18	Jun-03	4.5	2.5	-1.12	44	Jun-17	4.5	2.5	-1.12
19	Nov-03	4.5	2.5	-1.12	45	Jun-18	4.5	2.5	-1.12
20	Jun-04	4.5	2.5	-1.12					
21	Dec-04	4.5	2.5	-1.12					
22	Jun-05	4.5	2.5	-1.12					
23	Dec-05	4.5	8	-0.13					
24	Jun-06	4.5	2.5	-1.12					
25	Nov-06	4.5	2.5	-1.12					
26	Jun-07	4.5	10	0.23					
27	Nov-07	4.5	2	-1.21					
28	Jun-08	4.5	2.5	-1.12					
29	Nov-08	4.5	2.5	-1.12					
30	Jun-09	4.5	2.5	-1.12					
31	Nov-09	4.5	2.5	-1.12					
32	Jun-10	4.5	2.5	-1.12					
33	Nov-10	4.5	11	0.41					
34	Jun-11	4.5	10	0.23					
35	Jun-11	4.5	7	-0.31					

h = Decision Value for CUSUM, SCL = Shewart Control Limit, k = Standard Error Shift Detection Parameter, Zi = Standardized Mean

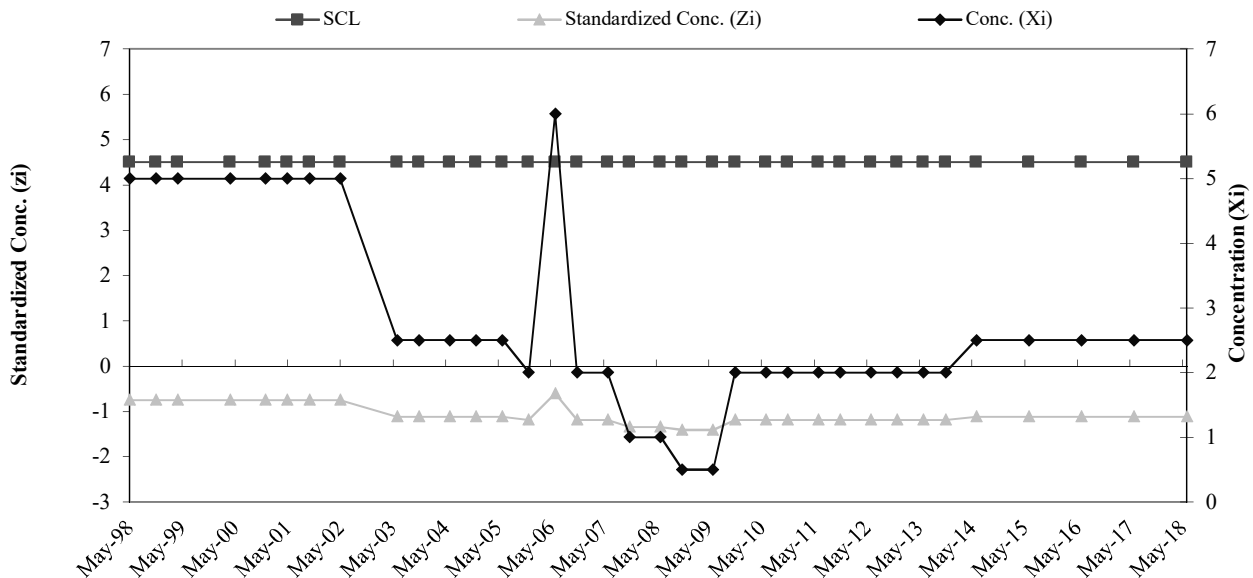


**COLDWATER ROAD LANDFILL FACILITY
RCRA GROUND WATER DETECTION MONITORING SYSTEM
SHEWART CONTROL CHART
B-21d Cu**

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

Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)	Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	May-98	4.5	5	-0.75	35	Nov-11	4.5	2	-1.19
10	Nov-98	4.5	5	-0.75	36	Jun-12	4.5	2	-1.19
11	Apr-99	4.5	5	-0.75	37	Dec-12	4.5	2	-1.19
12	Apr-00	4.5	5	-0.75	38	Jun-13	4.5	2	-1.19
13	Dec-00	4.5	5	-0.75	39	Nov-13	4.5	2	-1.19
14	May-01	4.5	5	-0.75	40	Jun-14	4.5	2.5	-1.12
15	Oct-01	4.5	5	-0.75	41	Jun-15	4.5	2.5	-1.12
16	May-02	4.5	5	-0.75	42	Jun-16	4.5	2.5	-1.12
18	Jun-03	4.5	2.5	-1.12	43	Jun-17	4.5	2.5	-1.12
19	Nov-03	4.5	2.5	-1.12	44	Jun-18	4.5	2.5	-1.12
20	Jun-04	4.5	2.5	-1.12					
21	Dec-04	4.5	2.5	-1.12					
22	Jun-05	4.5	2.5	-1.12					
23	Dec-05	4.5	2	-1.19					
24	Jun-06	4.5	6	-0.60					
25	Nov-06	4.5	2	-1.19					
26	Jun-07	4.5	2	-1.19					
27	Nov-07	4.5	1	-1.34					
28	Jun-08	4.5	1	-1.34					
29	Nov-08	4.5	0.5	-1.41					
30	Jun-09	4.5	0.5	-1.41					
31	Nov-09	4.5	2	-1.19					
32	Jun-10	4.5	2	-1.19					
33	Nov-10	4.5	2	-1.19					
34	Jun-11	4.5	2	-1.19					

h = Decision Value for CUSUM, SCL = Shewart Control Limit, k = Standard Error Shift Detection Parameter, Zi = Standardized Mean

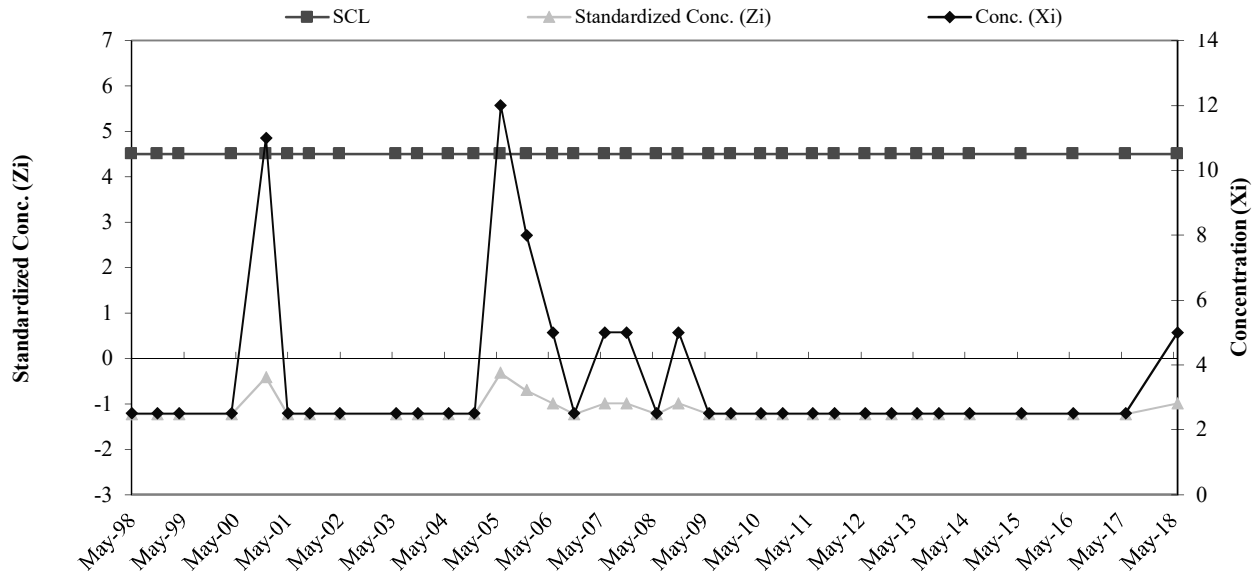


**COLDWATER ROAD LANDFILL FACILITY
RCRA GROUND WATER DETECTION MONITORING SYSTEM
SHEWART CONTROL CHART
B-21d Ni**

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

Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)	Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	May-98	4.5	2.5	-1.23	35	Nov-11	4.5	2.5	-1.23
10	Nov-98	4.5	2.5	-1.23	36	Jun-12	4.5	2.5	-1.23
11	Apr-99	4.5	2.5	-1.23	37	Dec-12	4.5	2.5	-1.23
12	Apr-00	4.5	2.5	-1.23	38	Jun-13	4.5	2.5	-1.23
13	Dec-00	4.5	11	-0.42	39	Nov-13	4.5	2.5	-1.23
14	May-01	4.5	2.5	-1.23	40	Jun-14	4.5	2.5	-1.23
15	Oct-01	4.5	2.5	-1.23	41	Jun-15	4.5	2.5	-1.23
16	May-02	4.5	2.5	-1.23	42	Jun-16	4.5	2.5	-1.23
18	Jun-03	4.5	2.5	-1.23	43	Jun-17	4.5	2.5	-1.23
19	Nov-03	4.5	2.5	-1.23	44	Jun-18	4.5	5	-0.99
20	Jun-04	4.5	2.5	-1.23					
20	Dec-04	4.5	2.5	-1.23					
21	Jun-05	4.5	12	-0.32					
22	Dec-05	4.5	8	-0.71					
23	Jun-06	4.5	5	-0.99					
24	Nov-06	4.5	2.5	-1.23					
25	Jun-07	4.5	5	-0.99					
26	Nov-07	4.5	5	-0.99					
27	Jun-08	4.5	2.5	-1.23					
28	Nov-08	4.5	5	-0.99					
30	Jun-09	4.5	2.5	-1.23					
31	Nov-09	4.5	2.5	-1.23					
32	Jun-10	4.5	2.5	-1.23					
33	Nov-10	4.5	2.5	-1.23					
34	Jun-11	4.5	2.5	-1.23					

h = Decision Value for CUSUM, SCL = Shewart Control Limit, k = Standard Error Shift Detection Parameter, Zi = Standardized Mean

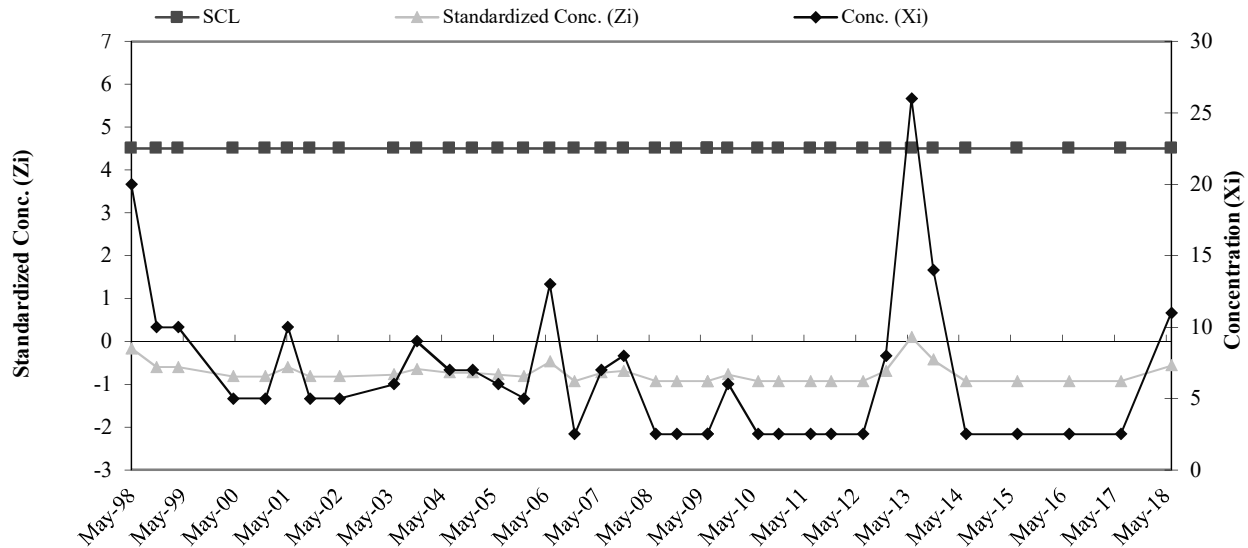


COLDWATER ROAD LANDFILL FACILITY
RCRA GROUND WATER DETECTION MONITORING SYSTEM
SHEWART CONTROL CHART
B-21d Zn

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

Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)	Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	May-98	4.5	20	-0.17	36	Nov-11	4.5	2.5	-0.93
10	Nov-98	4.5	10	-0.60	37	Jun-12	4.5	2.5	-0.93
11	Apr-99	4.5	10	-0.60	38	Dec-12	4.5	8	-0.69
12	Apr-00	4.5	5	-0.82	39	Jun-13	4.5	26	0.09
13	Dec-00	4.5	5	-0.82	40	Nov-13	4.5	14	-0.43
14	May-01	4.5	10	-0.60	41	Jun-14	4.5	2.5	-0.93
15	Oct-01	4.5	5	-0.82	42	Jun-15	4.5	2.5	-0.93
16	May-02	4.5	5	-0.82	43	Jun-16	4.5	2.5	-0.93
18	Jun-03	4.5	6	-0.78	44	Jun-17	4.5	2.5	-0.93
19	Nov-03	4.5	9	-0.65	45	Jun-18	4.5	11	-0.56
20	Jun-04	4.5	7	-0.73					
21	Dec-04	4.5	7	-0.73					
22	Jun-05	4.5	6	-0.78					
23	Dec-05	4.5	5	-0.82					
24	Jun-06	4.5	13	-0.47					
25	Nov-06	4.5	2.5	-0.93					
26	Jun-07	4.5	7	-0.73					
27	Nov-07	4.5	8	-0.69					
28	Jun-08	4.5	2.5	-0.93					
29	Nov-08	4.5	2.5	-0.93					
30	Jun-09	4.5	2.5	-0.93					
31	Jun-09	4.5	2.5	-0.93					
32	Nov-09	4.5	6	-0.78					
33	Jun-10	4.5	2.5	-0.93					
34	Nov-10	4.5	2.5	-0.93					
35	Jun-11	4.5	2.5	-0.93					

h = Decision Value for CUSUM, SCL = Shewart Control Limit, k = Standard Error Shift Detection Parameter, Zi = Standardized Mean

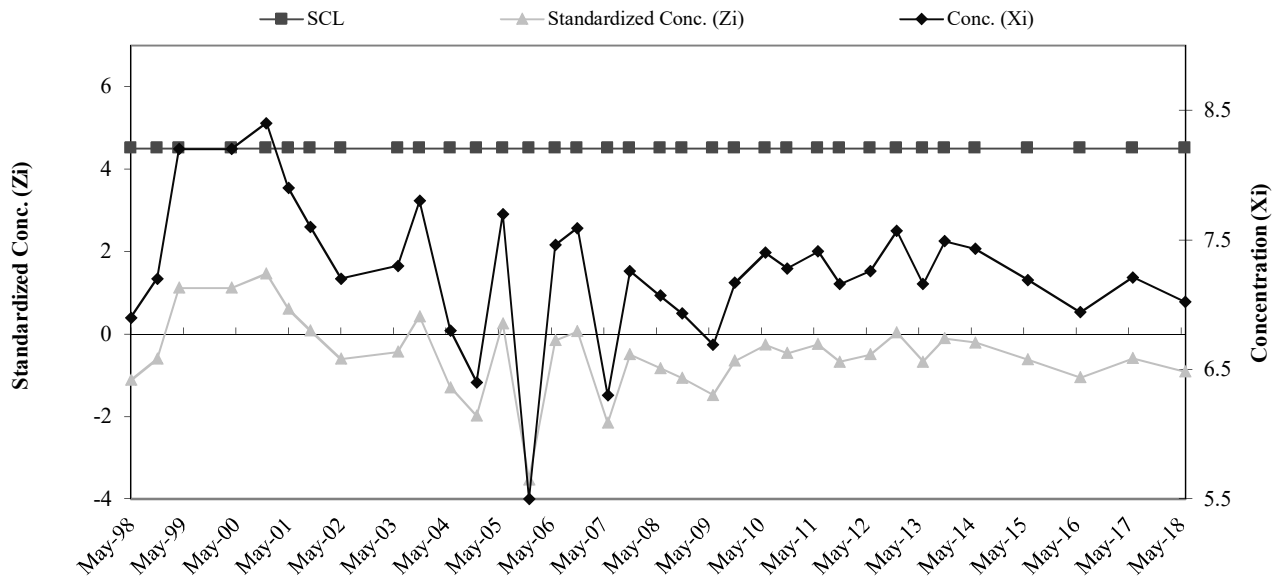


**COLDWATER ROAD LANDFILL FACILITY
RCRA GROUND WATER DETECTION MONITORING SYSTEM
SHEWART CONTROL CHART
B-21d pH**

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

Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)	Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	May-98	4.5	6.9	-1.12	35	Nov-11	4.5	7.2	-0.67
10	Nov-98	4.5	7.2	-0.60	36	Jun-12	4.5	7.3	-0.50
11	Apr-99	4.5	8.2	1.12	37	Dec-12	4.5	7.6	0.03
12	Apr-00	4.5	8.2	1.12	38	Jun-13	4.5	7.2	-0.67
13	Dec-00	4.5	8.4	1.46	39	Nov-13	4.5	7.5	-0.10
14	May-01	4.5	7.9	0.60	40	Jun-14	4.5	7.4	-0.21
15	Oct-01	4.5	7.6	0.09	41	Jun-15	4.5	7.2	-0.62
16	May-02	4.5	7.2	-0.60	42	Jun-16	4.5	6.9	-1.05
18	Jun-03	4.5	7.3	-0.43	43	Jun-17	4.5	7.2	-0.59
19	Nov-03	4.5	7.8	0.43	44	Jun-18	4.5	7.0	-0.91
20	Jun-04	4.5	6.8	-1.29					
21	Dec-04	4.5	6.4	-1.98					
22	Jun-05	4.5	7.7	0.26					
23	Dec-05	4.5	5.5	-3.53					
24	Jun-06	4.5	7.5	-0.16					
25	Nov-06	4.5	7.6	0.07					
26	Jun-07	4.5	6.3	-2.15					
27	Nov-07	4.5	7.3	-0.50					
28	Jun-08	4.5	7.1	-0.83					
29	Nov-08	4.5	6.9	-1.07					
30	Jun-09	4.5	6.7	-1.48					
31	Nov-09	4.5	7.2	-0.65					
32	Jun-10	4.5	7.4	-0.26					
33	Nov-10	4.5	7.3	-0.47					
34	Jun-11	4.5	7.4	-0.24					

h = Decision Value for CUSUM, SCL = Shewart Control Limit, k = Standard Error Shift Detection Parameter, Zi = Standardized Mean

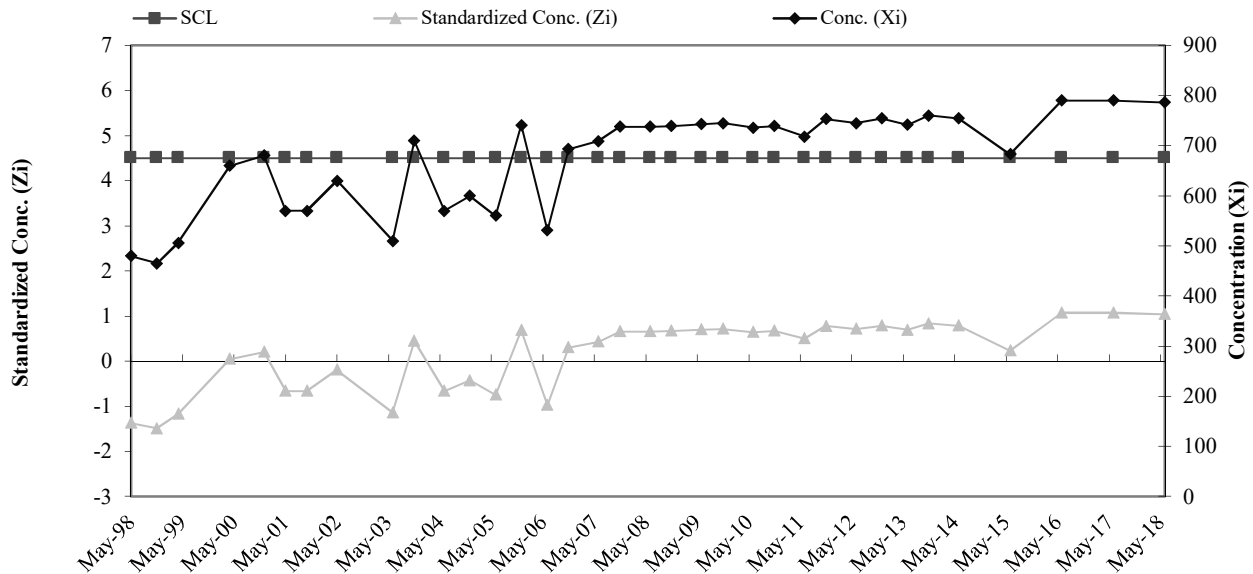


**COLDWATER ROAD LANDFILL FACILITY
RCRA GROUND WATER DETECTION MONITORING SYSTEM
SHEWART CONTROL CHART
B-21d SpC**

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

Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)	Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	May-98	4.5	480	-1.37	35	Nov-11	4.5	753	0.78
10	Nov-98	4.5	465	-1.49	36	Jun-12	4.5	745	0.72
11	Apr-99	4.5	506	-1.17	37	Dec-12	4.5	754	0.79
12	Apr-00	4.5	660	0.05	38	Jun-13	4.5	742	0.69
13	Dec-00	4.5	680	0.20	39	Nov-13	4.5	760	0.84
14	May-01	4.5	570	-0.66	40	Jun-14	4.5	754	0.79
15	Oct-01	4.5	570	-0.66	41	Jun-15	4.5	683	0.23
16	May-02	4.5	630	-0.19	42	Jun-16	4.5	790	1.07
18	Jun-03	4.5	510	-1.14	43	Jun-17	4.5	790	1.07
19	Nov-03	4.5	710	0.44	44	Jun-18	4.5	786	1.04
20	Jun-04	4.5	570	-0.66					
21	Dec-04	4.5	600	-0.43					
22	Jun-05	4.5	560	-0.74					
23	Dec-05	4.5	741	0.69					
24	Jun-06	4.5	531.3	-0.97					
25	Nov-06	4.5	693	0.31					
26	Jun-07	4.5	709	0.43					
27	Nov-07	4.5	738	0.66					
28	Jun-08	4.5	738	0.66					
29	Nov-08	4.5	739	0.67					
30	Jun-09	4.5	743	0.70					
31	Nov-09	4.5	745	0.72					
32	Jun-10	4.5	736	0.65					
33	Nov-10	4.5	739	0.67					
34	Jun-11	4.5	718	0.50					

h = Decision Value for CUSUM, SCL = Shewart Control Limit, k = Standard Error Shift Detection Parameter, Zi = Standardized Mean

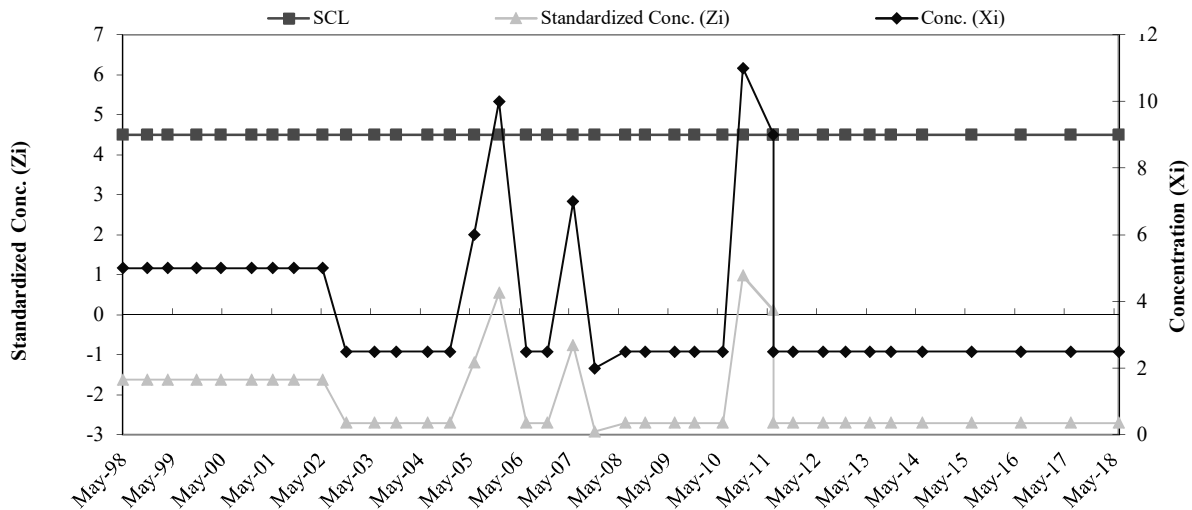


COLDWATER ROAD LANDFILL FACILITY
RCRA GROUND WATER DETECTION MONITORING SYSTEM
SHEWART CONTROL CHART
B-22D Cr

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

Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)	Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	May-98	4.5	5	-1.62	37	Nov-11	4.5	2.5	-2.70
10	Nov-98	4.5	5	-1.62	38	Jun-12	4.5	2.5	-2.70
11	Apr-99	4.5	5	-1.62	39	Dec-12	4.5	2.5	-2.70
12	Nov-99	4.5	5	-1.62	40	Jun-13	4.5	2.5	-2.70
13	Apr-00	4.5	5	-1.62	41	Nov-13	4.5	2.5	-2.70
14	Dec-00	4.5	5	-1.62	42	Jun-14	4.5	2.5	-2.70
15	May-01	4.5	5	-1.62	43	Jun-15	4.5	2.5	-2.70
16	Oct-01	4.5	5	-1.62	44	Jun-16	4.5	2.5	-2.70
17	May-02	4.5	5	-1.62	45	Jun-17	4.5	2.5	-2.70
18	Nov-02	4.5	2.5	-2.70	46	Jun-18	4.5	2.5	-2.70
19	Jun-03	4.5	2.5	-2.70					
20	Nov-03	4.5	2.5	-2.70					
21	Jun-04	4.5	2.5	-2.70					
22	Dec-04	4.5	2.5	-2.70					
23	Jun-05	4.5	6	-1.19					
24	Dec-05	4.5	10	0.54					
25	Jun-06	4.5	2.5	-2.70					
26	Nov-06	4.5	2.5	-2.70					
27	Jun-07	4.5	7	-0.76					
28	Nov-07	4.5	2	-2.92					
29	Jun-08	4.5	2.5	-2.70					
30	Nov-08	4.5	2.5	-2.70					
31	Jun-09	4.5	2.5	-2.70					
32	Nov-09	4.5	2.5	-2.70					
33	Jun-10	4.5	2.5	-2.70					
34	Nov-10	4.5	11	0.97					
35	Jun-11	4.5	9	0.11					
36	Jun-11	4.5	2.5	-2.70					

h = Decision Value for CUSUM, SCL = Shewart Control Limit, k = Standard Error Shift Detection Parameter, Zi = Standardized Mean

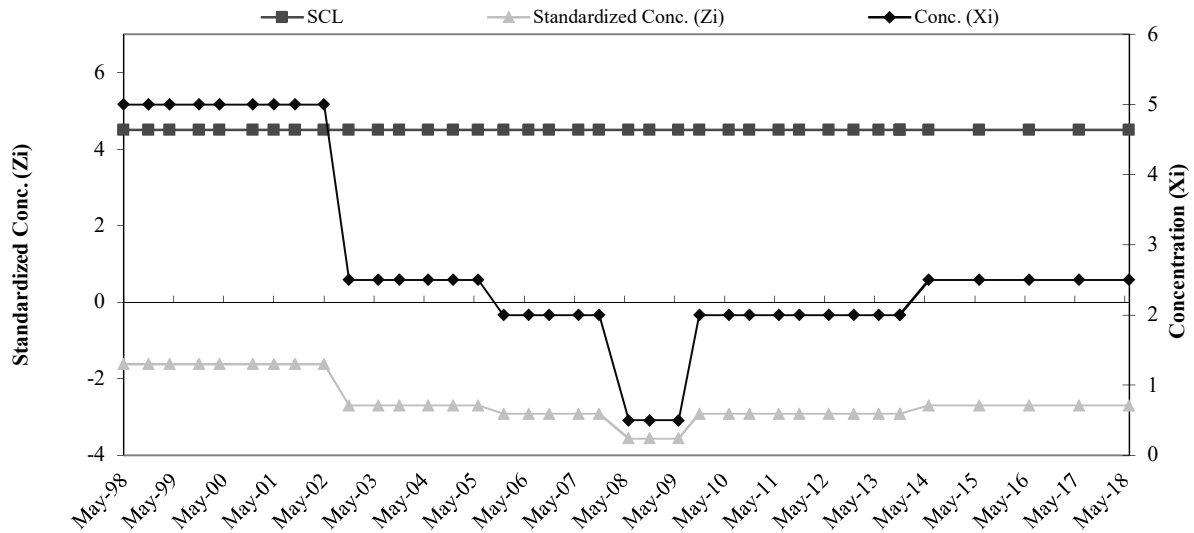


COLDWATER ROAD LANDFILL FACILITY
RCRA GROUND WATER DETECTION MONITORING SYSTEM
SHEWART CONTROL CHART
B-22D Cu

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

Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)	Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	May-98	4.5	5	-1.62	36	Nov-11	4.5	2	-2.92
10	Nov-98	4.5	5	-1.62	37	Jun-12	4.5	2	-2.92
11	Apr-99	4.5	5	-1.62	38	Dec-12	4.5	2	-2.92
12	Nov-99	4.5	5	-1.62	39	Jun-13	4.5	2	-2.92
13	Apr-00	4.5	5	-1.62	40	Nov-13	4.5	2	-2.92
14	Dec-00	4.5	5	-1.62	41	Nov-13	4.5	2	-2.92
15	May-01	4.5	5	-1.62	42	Jun-14	4.5	2.5	-2.70
16	Oct-01	4.5	5	-1.62	43	Jun-15	4.5	2.5	-2.70
17	May-02	4.5	5	-1.62	44	Jun-16	4.5	2.5	-2.70
18	Nov-02	4.5	2.5	-2.70	45	Jun-17	4.5	2.5	-2.70
19	Jun-03	4.5	2.5	-2.70	46	Jun-18	4.5	2.5	-2.70
20	Nov-03	4.5	2.5	-2.70					
21	Jun-04	4.5	2.5	-2.70					
22	Dec-04	4.5	2.5	-2.70					
23	Jun-05	4.5	2.5	-2.70					
24	Dec-05	4.5	2	-2.92					
25	Jun-06	4.5	2	-2.92					
26	Nov-06	4.5	2	-2.92					
27	Jun-07	4.5	2	-2.92					
28	Nov-07	4.5	2	-2.92					
29	Jun-08	4.5	0.5	-3.56					
30	Nov-08	4.5	0.5	-3.56					
31	Jun-09	4.5	0.5	-3.56					
32	Nov-09	4.5	2	-2.92					
33	Jun-10	4.5	2	-2.92					
34	Nov-10	4.5	2	-2.92					
35	Jun-11	4.5	2	-2.92					

h = Decision Value for CUSUM, SCL = Shewart Control Limit, k = Standard Error Shift Detection Parameter, Zi = Standardized Mean

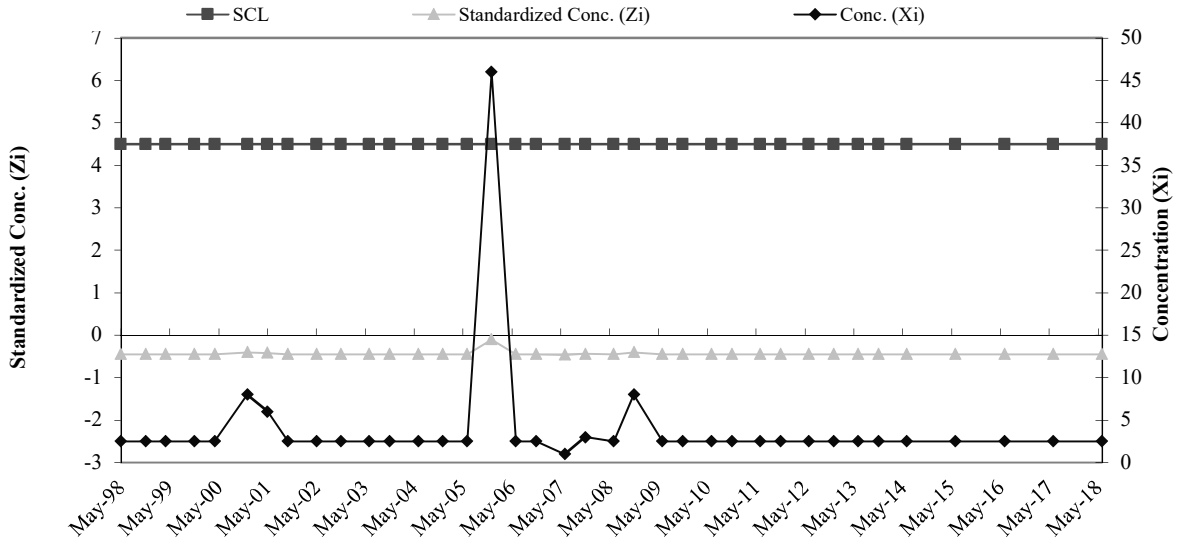


COLDWATER ROAD LANDFILL FACILITY
RCRA GROUND WATER DETECTION MONITORING SYSTEM
SHEWART CONTROL CHART
B-22D Ni

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

Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)	Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	May-98	4.5	2.5	-0.45	36	Nov-11	4.5	2.5	-0.45
10	Nov-98	4.5	2.5	-0.45	37	Jun-12	4.5	2.5	-0.45
11	Apr-99	4.5	2.5	-0.45	38	Dec-12	4.5	2.5	-0.45
12	Nov-99	4.5	2.5	-0.45	39	Jun-13	4.5	2.5	-0.45
13	Apr-00	4.5	2.5	-0.45	40	Nov-13	4.5	2.5	-0.45
14	Dec-00	4.5	8	-0.40	41	Jun-14	4.5	2.5	-0.45
15	May-01	4.5	6	-0.42	42	Jun-15	4.5	2.5	-0.45
16	Oct-01	4.5	2.5	-0.45	43	Jun-16	4.5	2.5	-0.45
17	May-02	4.5	2.5	-0.45	44	Jun-17	4.5	2.5	-0.45
18	Nov-02	4.5	2.5	-0.45	45	Jun-18	4.5	2.5	-0.45
19	Jun-03	4.5	2.5	-0.45					
20	Nov-03	4.5	2.5	-0.45					
21	Jun-04	4.5	2.5	-0.45					
22	Dec-04	4.5	2.5	-0.45					
23	Jun-05	4.5	2.5	-0.45					
24	Dec-05	4.5	46	-0.10					
25	Jun-06	4.5	2.5	-0.45					
26	Nov-06	4.5	2.5	-0.45					
27	Jun-07	4.5	1	-0.46					
28	Nov-07	4.5	3	-0.44					
29	Jun-08	4.5	2.5	-0.45					
30	Nov-08	4.5	8	-0.40					
31	Jun-09	4.5	2.5	-0.45					
32	Nov-09	4.5	2.5	-0.45					
33	Jun-10	4.5	2.5	-0.45					
34	Nov-10	4.5	2.5	-0.45					
35	Jun-11	4.5	2.5	-0.45					

h = Decision Value for CUSUM, SCL = Shewart Control Limit, k = Standard Error Shift Detection Parameter, Zi = Standardized Mean

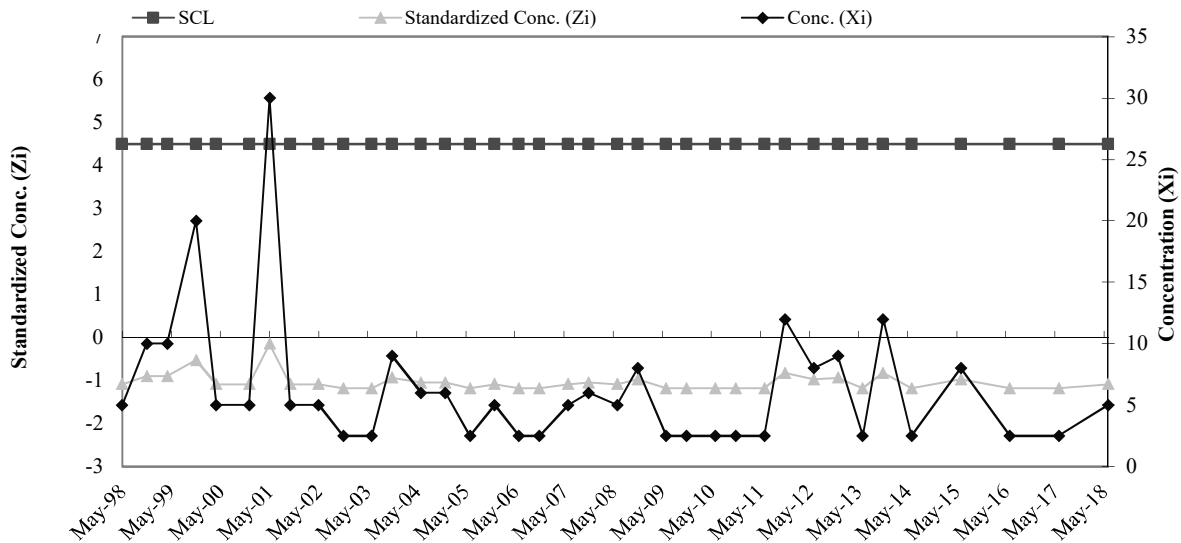


COLDWATER ROAD LANDFILL FACILITY
RCRA GROUND WATER DETECTION MONITORING SYSTEM
SHEWART CONTROL CHART
B-22D Zn

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

Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)	Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	May-98	4.5	5	-1.09	36	Nov-11	4.5	12	-0.82
10	Nov-98	4.5	10	-0.90	37	Jun-12	4.5	8	-0.97
11	Apr-99	4.5	10	-0.90	38	Dec-12	4.5	9	-0.94
12	Nov-99	4.5	20	-0.52	39	Jun-13	4.5	2.5	-1.18
13	Apr-00	4.5	5	-1.09	40	Nov-13	4.5	12	-0.82
14	Dec-00	4.5	5	-1.09	41	Jun-14	4.5	2.5	-1.18
15	May-01	4.5	30	-0.15	42	Jun-15	4.5	8	-0.97
16	Oct-01	4.5	5	-1.09	43	Jun-16	4.5	2.5	-1.18
17	May-02	4.5	5	-1.09	44	Jun-17	4.5	2.5	-1.18
18	Nov-02	4.5	2.5	-1.18	45	Jun-18	4.5	5	-1.09
19	Jun-03	4.5	2.5	-1.18					
20	Nov-03	4.5	9	-0.94					
21	Jun-04	4.5	6	-1.05					
22	Dec-04	4.5	6	-1.05					
23	Jun-05	4.5	2.5	-1.18					
24	Dec-05	4.5	5	-1.09					
25	Jun-06	4.5	2.5	-1.18					
26	Nov-06	4.5	2.5	-1.18					
27	Jun-07	4.5	5	-1.09					
28	Nov-07	4.5	6	-1.05					
29	Jun-08	4.5	5	-1.09					
30	Nov-08	4.5	8	-0.97					
31	Jun-09	4.5	2.5	-1.18					
32	Nov-09	4.5	2.5	-1.18					
33	Jun-10	4.5	2.5	-1.18					
34	Nov-10	4.5	2.5	-1.18					
35	Jun-11	4.5	2.5	-1.18					

h = Decision Value for CUSUM, SCL = Shewart Control Limit, k = Standard Error Shift Detection Parameter, Zi = Standardized Mean

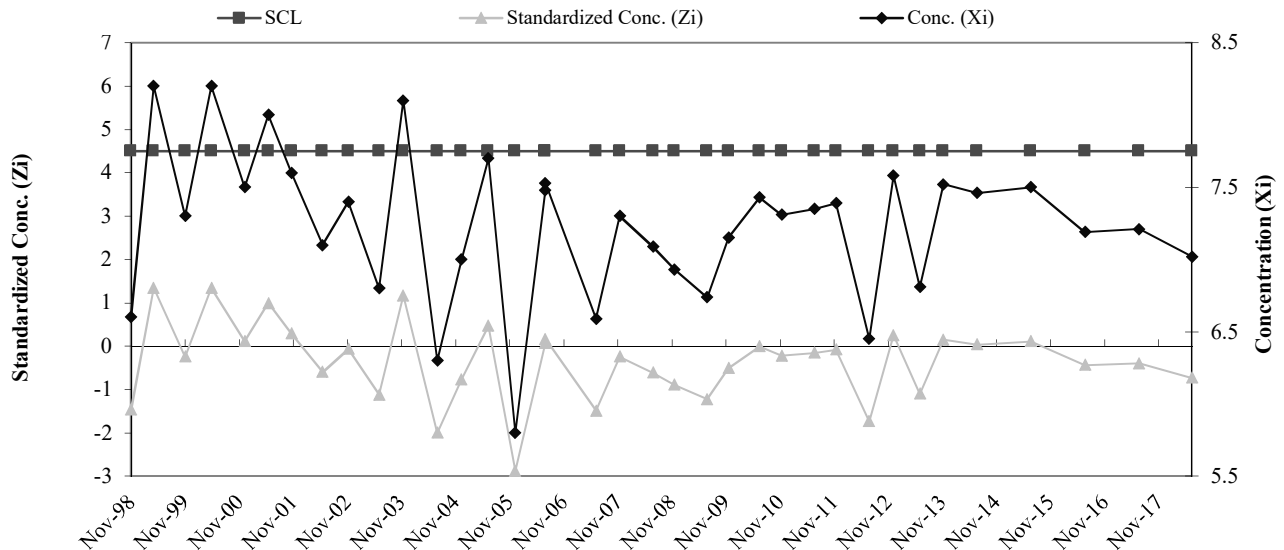


**COLDWATER ROAD LANDFILL FACILITY
RCRA GROUND WATER DETECTION MONITORING SYSTEM
SHEWART CONTROL CHART
B-22D pH**

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

Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)	Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	Nov-98	4.5	6.6	-1.47	35	Nov-11	4.5	7.4	-0.08
10	Apr-99	4.5	8.2	1.34	36	Jun-12	4.5	6.5	-1.74
11	Nov-99	4.5	7.3	-0.24	37	Dec-12	4.5	7.6	0.25
12	Apr-00	4.5	8.2	1.34	38	Jun-13	4.5	6.8	-1.10
13	Dec-00	4.5	7.5	0.11	39	Nov-13	4.5	7.5	0.15
14	May-01	4.5	8	0.99	40	Jun-14	4.5	7.5	0.04
15	Oct-01	4.5	7.6	0.29	41	Jun-15	4.5	7.5	0.11
16	May-02	4.5	7.1	-0.59	42	Jun-16	4.5	7.2	-0.44
17	Nov-02	4.5	7.4	-0.07	43	Jun-17	4.5	7.2	-0.40
18	Jun-03	4.5	6.8	-1.12	44	Jun-18	4.5	7.0	-0.73
19	Nov-03	4.5	8.1	1.17					
20	Jun-04	4.5	6.3	-2.00					
21	Dec-04	4.5	7	-0.77					
22	Jun-05	4.5	7.7	0.46					
23	Dec-05	4.5	5.8	-2.88					
24	Jun-06	4.5	7.5	0.07					
25	Jun-06	4.5	7.5	0.16					
26	Jun-07	4.5	6.6	-1.49					
27	Nov-07	4.5	7.3	-0.24					
28	Jun-08	4.5	7.1	-0.61					
29	Nov-08	4.5	6.9	-0.89					
30	Jun-09	4.5	6.7	-1.23					
31	Nov-09	4.5	7.2	-0.51					
32	Jun-10	4.5	7.4	-0.01					
33	Nov-10	4.5	7.3	-0.22					
34	Jun-11	4.5	7.4	-0.15					

h = Decision Value for CUSUM, SCL = Shewart Control Limit, k = Standard Error Shift Detection Parameter, Zi = Standardized Mean

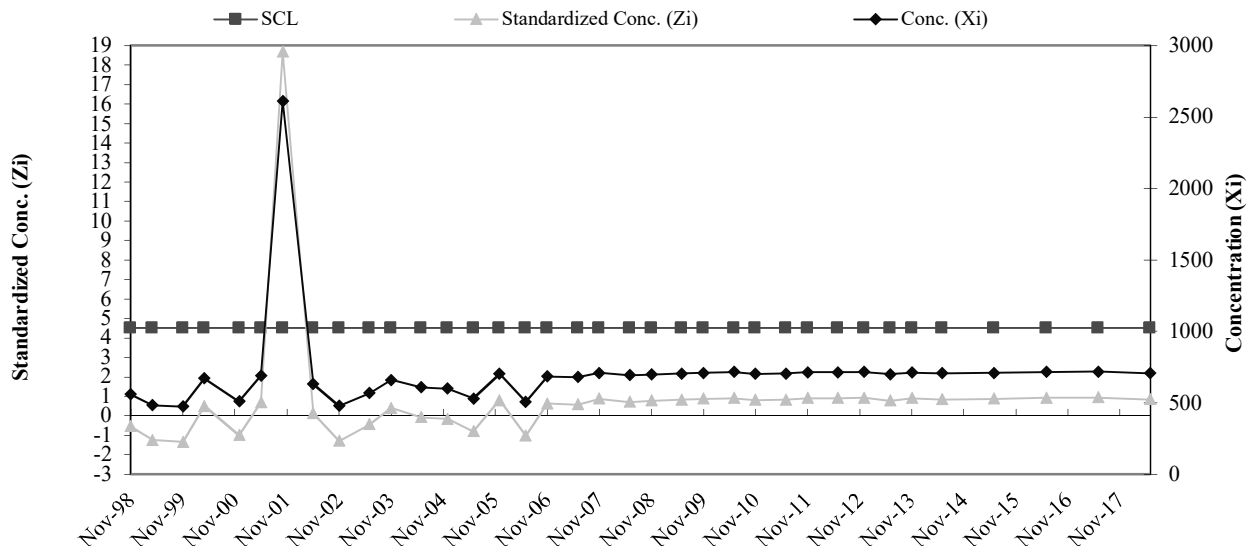


**COLDWATER ROAD LANDFILL FACILITY
RCRA GROUND WATER DETECTION MONITORING SYSTEM
SHEWART CONTROL CHART
B-22D SpC**

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

Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)	Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	Nov-98	4.5	559	-0.55	35	Nov-11	4.5	714	0.91
10	Apr-99	4.5	485	-1.24	36	Jun-12	4.5	714	0.91
11	Nov-99	4.5	474	-1.34	37	Dec-12	4.5	716	0.93
12	Apr-00	4.5	670	0.49	38	Jun-13	4.5	701	0.79
13	Dec-00	4.5	510	-1.01	39	Nov-13	4.5	713	0.90
14	May-01	4.5	690	0.68	40	Jun-14	4.5	707	0.84
15	Oct-01	4.5	2610	18.68	41	Jun-15	4.5	710	0.87
16	May-02	4.5	630	0.12	42	Jun-16	4.5	716	0.93
17	Nov-02	4.5	480	-1.29	43	Jun-17	4.5	718	0.94
18	Jun-03	4.5	570	-0.44	44	Jun-18	4.5	707	0.84
19	Nov-03	4.5	660	0.40					
20	Jun-04	4.5	610	-0.07					
21	Dec-04	4.5	600	-0.16					
22	Jun-05	4.5	531	-0.81					
23	Dec-05	4.5	702	0.79					
24	Jun-06	4.5	507	-1.04					
25	Nov-06	4.5	684	0.63					
26	Jun-07	4.5	680	0.59					
27	Nov-07	4.5	710	0.87					
28	Jun-08	4.5	694	0.72					
29	Nov-08	4.5	699	0.77					
30	Jun-09	4.5	705	0.82					
31	Nov-09	4.5	710	0.87					
32	Jun-10	4.5	715	0.92					
33	Nov-10	4.5	704	0.81					
34	Jun-11	4.5	705	0.82					

h = Decision Value for CUSUM, SCL = Shewart Control Limit, k = Standard Error Shift Detection Parameter, Zi = Standardized Mean

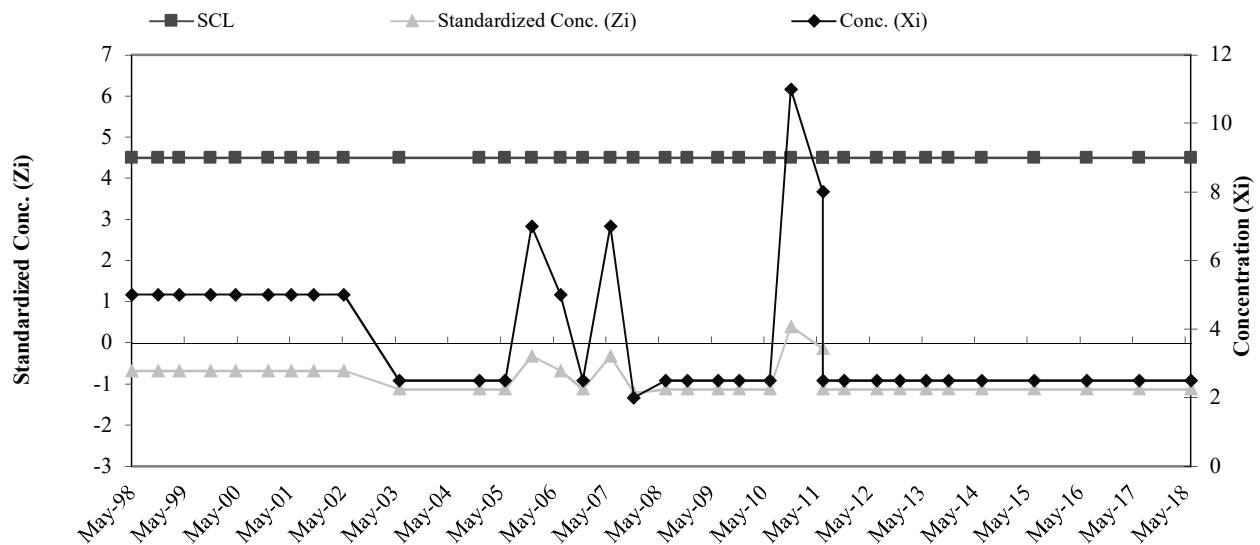


**COLDWATER ROAD LANDFILL FACILITY
RCRA GROUND WATER DETECTION MONITORING SYSTEM
SHEWART CONTROL CHART
B-23d Cr**

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

Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)	Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	May-98	4.5	5	-0.68	34	Nov-11	4.5	2.5	-1.12
10	Nov-98	4.5	5	-0.68	35	Jun-12	4.5	2.5	-1.12
11	Apr-99	4.5	5	-0.68	36	Dec-12	4.5	2.5	-1.12
12	Nov-99	4.5	5	-0.68	37	Jun-13	4.5	2.5	-1.12
13	Apr-00	4.5	5	-0.68	38	Nov-13	4.5	2.5	-1.12
14	Dec-00	4.5	5	-0.68	39	Jun-14	4.5	2.5	-1.12
15	May-01	4.5	5	-0.68	40	Jun-15	4.5	2.5	-1.12
16	Oct-01	4.5	5	-0.68	41	Jun-16	4.5	2.5	-1.12
17	May-02	4.5	5	-0.68	42	Jun-17	4.5	2.5	-1.12
18	Jun-03	4.5	2.5	-1.12	43	Jun-18	4.5	2.5	-1.12
19	Dec-04	4.5	2.5	-1.12					
20	Jun-05	4.5	2.5	-1.12					
21	Dec-05	4.5	7.0	-0.32					
22	Jun-06	4.5	5.0	-0.68					
23	Nov-06	4.5	2.5	-1.12					
24	Jun-07	4.5	7	-0.32					
25	Nov-07	4.5	2	-1.21					
26	Jun-08	4.5	2.5	-1.12					
27	Nov-08	4.5	2.5	-1.12					
28	Jun-09	4.5	2.5	-1.12					
29	Nov-09	4.5	2.5	-1.12					
30	Jun-10	4.5	2.5	-1.12					
31	Nov-10	4.5	11	0.39					
32	Jun-11	4.5	8	-0.14					
33	Jun-11	4.5	2.5	-1.12					

h = Decision Value for CUSUM, SCL = Shewart Control Limit, k = Standard Error Shift Detection Parameter, Zi = Standardized Mean

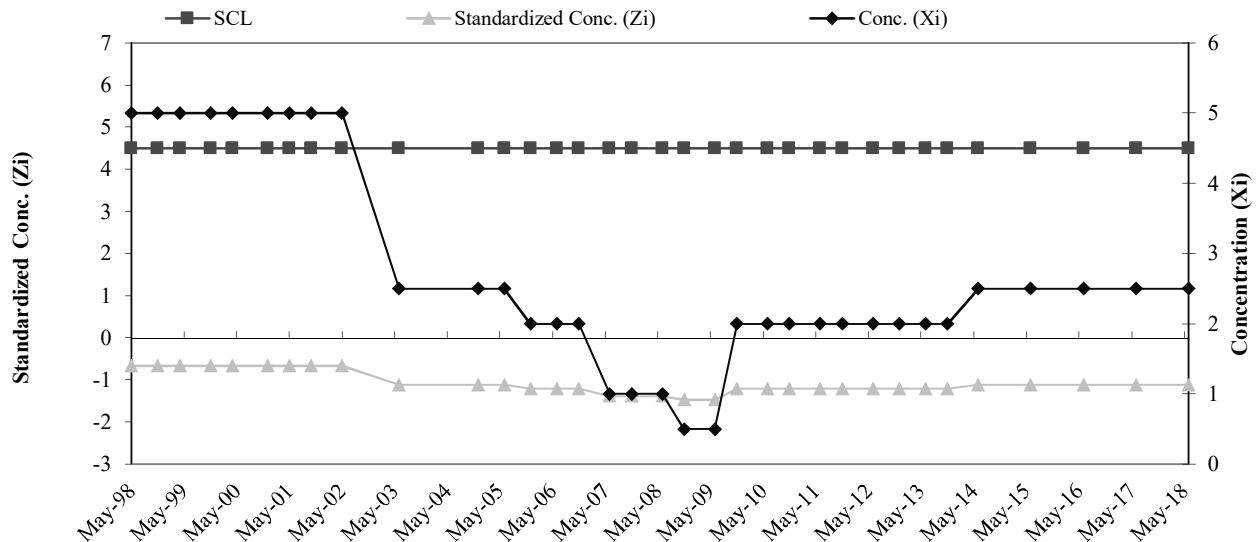


**COLDWATER ROAD LANDFILL FACILITY
RCRA GROUND WATER DETECTION MONITORING SYSTEM
SHEWART CONTROL CHART
B-23d Cu**

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

Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)	Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	May-98	4.5	5	-0.67	33	Nov-11	4.5	2	-1.21
10	Nov-98	4.5	5	-0.67	34	Jun-12	4.5	2	-1.21
11	Apr-99	4.5	5	-0.67	35	Dec-12	4.5	2	-1.21
12	Nov-99	4.5	5	-0.67	36	Jun-13	4.5	2	-1.21
13	Apr-00	4.5	5	-0.67	37	Nov-13	4.5	2	-1.21
14	Dec-00	4.5	5	-0.67	38	Jun-14	4.5	2.5	-1.12
15	May-01	4.5	5	-0.67	39	Jun-15	4.5	2.5	-1.12
16	Oct-01	4.5	5	-0.67	40	Jun-16	4.5	2.5	-1.12
17	May-02	4.5	5	-0.67	41	Jun-17	4.5	2.5	-1.12
18	Jun-03	4.5	2.5	-1.12	42	Jun-18	4.5	2.5	-1.12
19	Dec-04	4.5	2.5	-1.12					
20	Jun-05	4.5	2.5	-1.12					
21	Dec-05	4.5	2.0	-1.21					
22	Jun-06	4.5	2.0	-1.21					
23	Nov-06	4.5	2.0	-1.21					
24	Jun-07	4.5	1	-1.39					
25	Nov-07	4.5	1	-1.39					
26	Jun-08	4.5	1	-1.39					
27	Nov-08	4.5	0.5	-1.48					
28	Jun-09	4.5	0.5	-1.48					
29	Nov-09	4.5	2	-1.21					
30	Jun-10	4.5	2	-1.21					
31	Nov-10	4.5	2	-1.21					
32	Jun-11	4.5	2	-1.21					

h = Decision Value for CUSUM, SCL = Shewart Control Limit, k = Standard Error Shift Detection Parameter, Zi = Standardized Mean

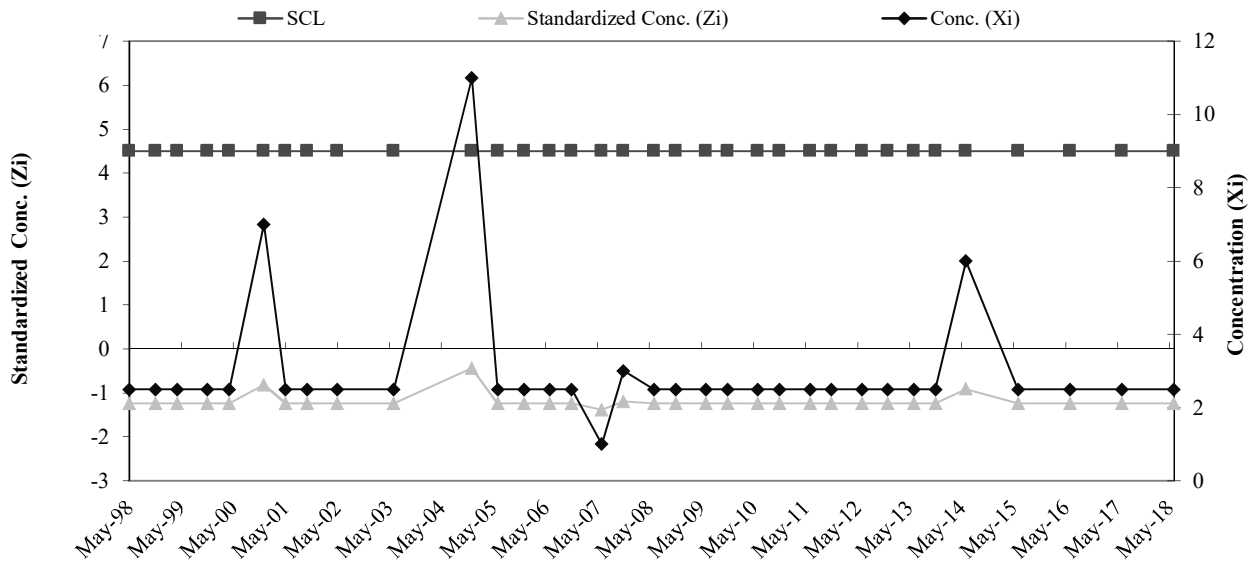


COLDWATER ROAD LANDFILL FACILITY
RCRA GROUND WATER DETECTION MONITORING SYSTEM
SHEWART CONTROL CHART
B-23d Ni

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

Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)	Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	May-98	4.5	2.5	-1.24	33	Nov-11	4.5	2.5	-1.24
10	Nov-98	4.5	2.5	-1.24	34	Jun-12	4.5	2.5	-1.24
11	Apr-99	4.5	2.5	-1.24	35	Dec-12	4.5	2.5	-1.24
12	Nov-99	4.5	2.5	-1.24	36	Jun-13	4.5	2.5	-1.24
13	Apr-00	4.5	2.5	-1.24	37	Nov-13	4.5	2.5	-1.24
14	Dec-00	4.5	7.0	-0.81	38	Jun-14	4.5	6	-0.91
15	May-01	4.5	2.5	-1.24	39	Jun-15	4.5	2.5	-1.24
16	Oct-01	4.5	2.5	-1.24	40	Jun-16	4.5	2.5	-1.24
17	May-02	4.5	2.5	-1.24	41	Jun-17	4.5	2.5	-1.24
18	Jun-03	4.5	2.5	-1.24	42	Jun-18	4.5	2.5	-1.24
19	Dec-04	4.5	11.0	-0.44					
20	Jun-05	4.5	2.5	-1.24					
21	Dec-05	4.5	2.5	-1.24					
22	Jun-06	4.5	2.5	-1.24					
23	Nov-06	4.5	2.5	-1.24					
24	Jun-07	4.5	1	-1.38					
25	Nov-07	4.5	3	-1.19					
26	Jun-08	4.5	2.5	-1.24					
27	Nov-08	4.5	2.5	-1.24					
28	Jun-09	4.5	2.5	-1.24					
29	Nov-09	4.5	2.5	-1.24					
30	Jun-10	4.5	2.5	-1.24					
31	Nov-10	4.5	2.5	-1.24					
32	Jun-11	4.5	2.5	-1.24					

h = Decision Value for CUSUM, SCL = Shewart Control Limit, k = Standard Error Shift Detection Parameter, Zi = Standardized Mean

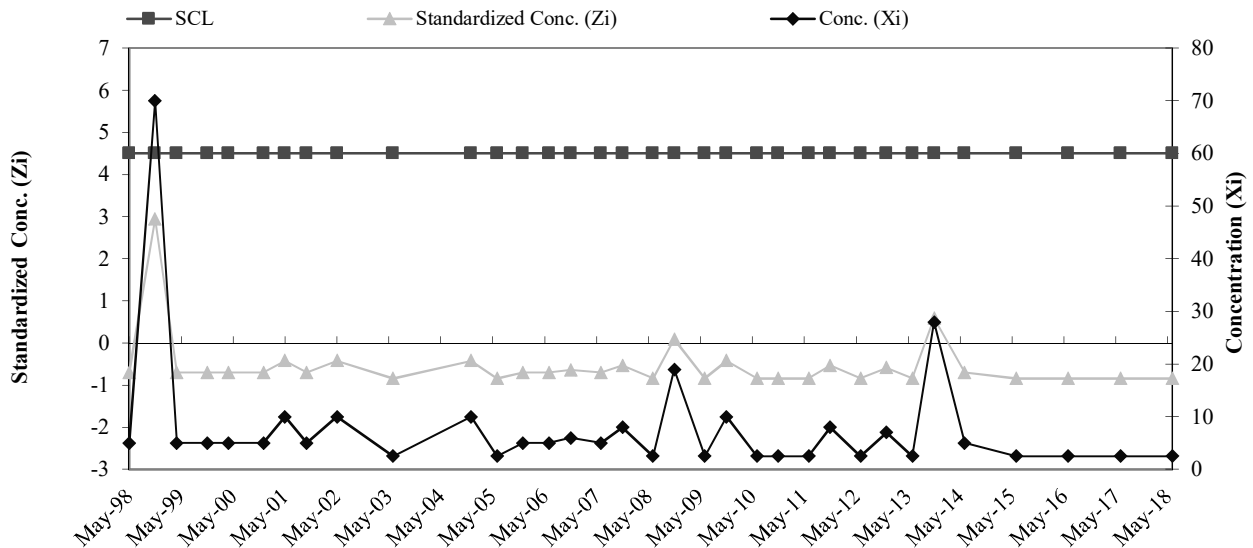


COLDWATER ROAD LANDFILL FACILITY
RCRA GROUND WATER DETECTION MONITORING SYSTEM
SHEWART CONTROL CHART
B-23d Zn

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

Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)	Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	May-98	4.5	5.0	-0.70	33	Nov-11	4.5	8	-0.53
10	Nov-98	4.5	70.0	2.94	34	Jun-12	4.5	2.5	-0.84
11	Apr-99	4.5	5.0	-0.70	35	Dec-12	4.5	7	-0.59
12	Nov-99	4.5	5.0	-0.70	36	Jun-13	4.5	2.5	-0.84
13	Apr-00	4.5	5.0	-0.70	37	Nov-13	4.5	28	0.59
14	Dec-00	4.5	5.0	-0.70	38	Jun-14	4.5	5	-0.70
15	May-01	4.5	10.0	-0.42	39	Jun-15	4.5	2.5	-0.84
16	Oct-01	4.5	5.0	-0.70	40	Jun-16	4.5	2.5	-0.84
17	May-02	4.5	10.0	-0.42	41	Jun-17	4.5	2.5	-0.84
18	Jun-03	4.5	2.5	-0.84	42	Jun-18	4.5	2.5	-0.84
19	Dec-04	4.5	10.0	-0.42					
20	Jun-05	4.5	2.5	-0.84					
21	Dec-05	4.5	5.0	-0.70					
22	Jun-06	4.5	5.0	-0.70					
23	Nov-06	4.5	6.0	-0.64					
24	Jun-07	4.5	5	-0.70					
25	Nov-07	4.5	8	-0.53					
26	Jun-08	4.5	2.5	-0.84					
27	Nov-08	4.5	19	0.08					
28	Jun-09	4.5	2.5	-0.84					
29	Nov-09	4.5	10	-0.42					
30	Jun-10	4.5	2.5	-0.84					
31	Nov-10	4.5	2.5	-0.84					
32	Jun-11	4.5	2.5	-0.84					

h = Decision Value for CUSUM, SCL = Shewart Control Limit, k = Standard Error Shift Detection Parameter, Zi = Standardized Mean

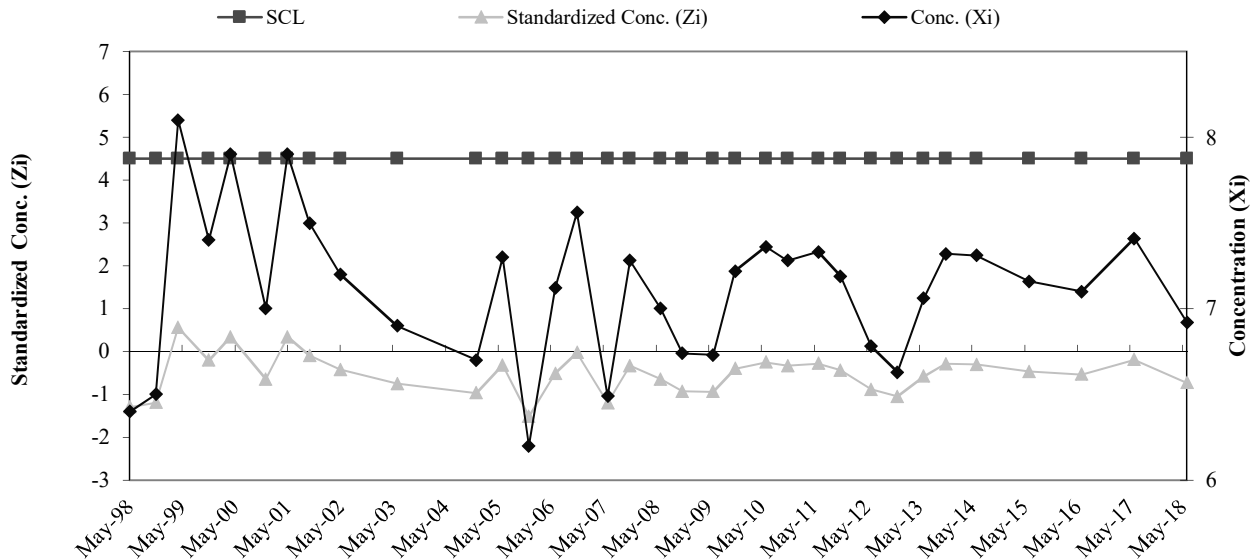


**COLDWATER ROAD LANDFILL FACILITY
RCRA GROUND WATER DETECTION MONITORING SYSTEM
SHEWART CONTROL CHART
B-23d pH**

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

Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)	Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	May-98	4.5	6.4	-1.30	33	Nov-11	4.5	7.2	-0.43
10	Nov-98	4.5	6.5	-1.19	34	Jun-12	4.5	6.8	-0.88
11	Apr-99	4.5	8.1	0.56	35	Dec-12	4.5	6.6	-1.05
12	Nov-99	4.5	7.4	-0.21	36	Jun-13	4.5	7.1	-0.58
13	Apr-00	4.5	7.9	0.34	37	Nov-13	4.5	7.3	-0.29
14	Dec-00	4.5	7.0	-0.64	38	Jun-14	4.5	7.3	-0.30
15	May-01	4.5	7.9	0.34	39	Jun-15	4.5	7.2	-0.47
16	Oct-01	4.5	7.5	-0.10	40	Jun-16	4.5	7.1	-0.53
17	May-02	4.5	7.2	-0.42	41	Jun-17	4.5	7.4	-0.19
18	Jun-03	4.5	6.9	-0.75	42	Jun-18	4.5	6.9	-0.73
19	Dec-04	4.5	6.7	-0.97					
20	Jun-05	4.5	7.3	-0.31					
21	Dec-05	4.5	6.2	-1.52					
22	Jun-06	4.5	7.1	-0.51					
23	Nov-06	4.5	7.6	-0.03					
24	Jun-07	4.5	6.5	-1.20					
25	Nov-07	4.5	7.3	-0.34					
26	Jun-08	4.5	7.0	-0.64					
27	Nov-08	4.5	6.7	-0.93					
28	Jun-09	4.5	6.7	-0.94					
29	Nov-09	4.5	7.2	-0.40					
30	Jun-10	4.5	7.4	-0.25					
31	Nov-10	4.5	7.3	-0.34					
32	Jun-11	4.5	7.3	-0.28					

h = Decision Value for CUSUM, SCL = Shewart Control Limit, k = Standard Error Shift Detection Parameter, Zi = Standardized Mean

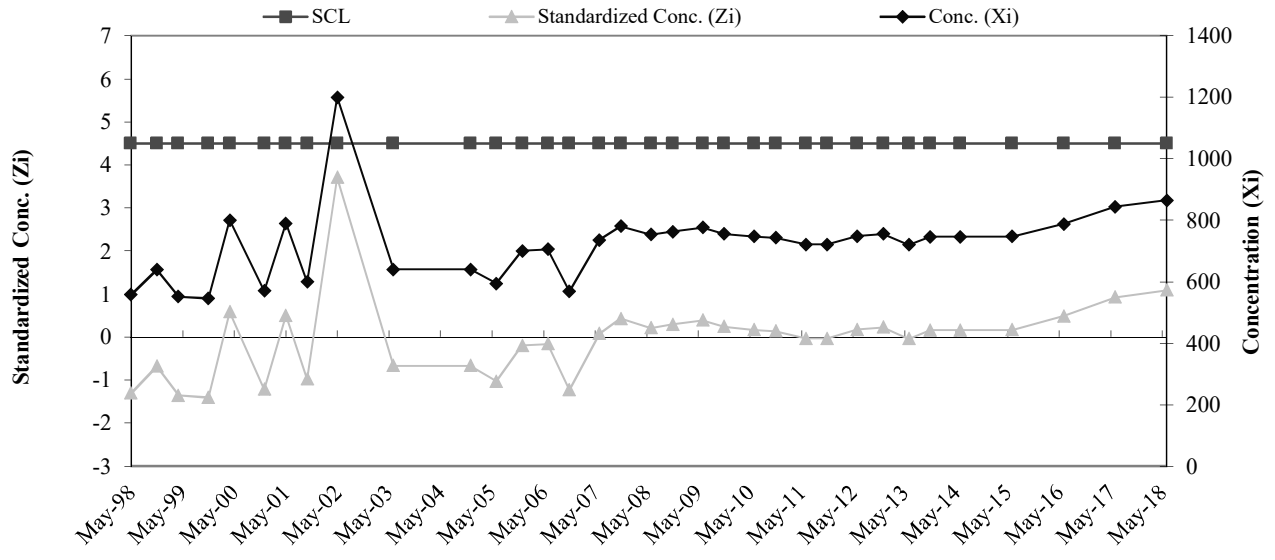


COLDWATER ROAD LANDFILL FACILITY
RCRA GROUND WATER DETECTION MONITORING SYSTEM
SHEWART CONTROL CHART
B-23d SpC

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

Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)	Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	May-98	4.5	558	-1.31	33	Nov-11	4.5	721	-0.04
10	Nov-98	4.5	639	-0.68	34	Jun-12	4.5	748	0.17
11	Apr-99	4.5	552	-1.36	35	Dec-12	4.5	755	0.23
12	Nov-99	4.5	546	-1.40	36	Jun-13	4.5	720	-0.04
13	Apr-00	4.5	800	0.58	37	Nov-13	4.5	746	0.16
14	Dec-00	4.5	570	-1.22	38	Jun-14	4.5	746	0.16
15	May-01	4.5	790	0.50	39	Jun-15	4.5	747	0.17
16	Oct-01	4.5	600	-0.98	40	Jun-16	4.5	788	0.49
17	May-02	4.5	1200	3.71	41	Jun-17	4.5	844	0.92
18	Jun-03	4.5	640	-0.67	42	Jun-18	4.5	865	1.09
19	Dec-04	4.5	640	-0.67					
20	Jun-05	4.5	594	-1.03					
21	Dec-05	4.5	700	-0.20					
22	Jun-06	4.5	705	-0.16					
23	Nov-06	4.5	568	-1.23					
24	Jun-07	4.5	736	0.08					
25	Nov-07	4.5	780	0.42					
26	Jun-08	4.5	753	0.21					
27	Nov-08	4.5	763	0.29					
28	Jun-09	4.5	776	0.39					
29	Nov-09	4.5	756	0.24					
30	Jun-10	4.5	747	0.17					
31	Nov-10	4.5	743	0.13					
32	Jun-11	4.5	721	-0.04					

h = Decision Value for CUSUM, SCL = Shewart Control Limit, k = Standard Error Shift Detection Parameter, Zi = Standardized Mean

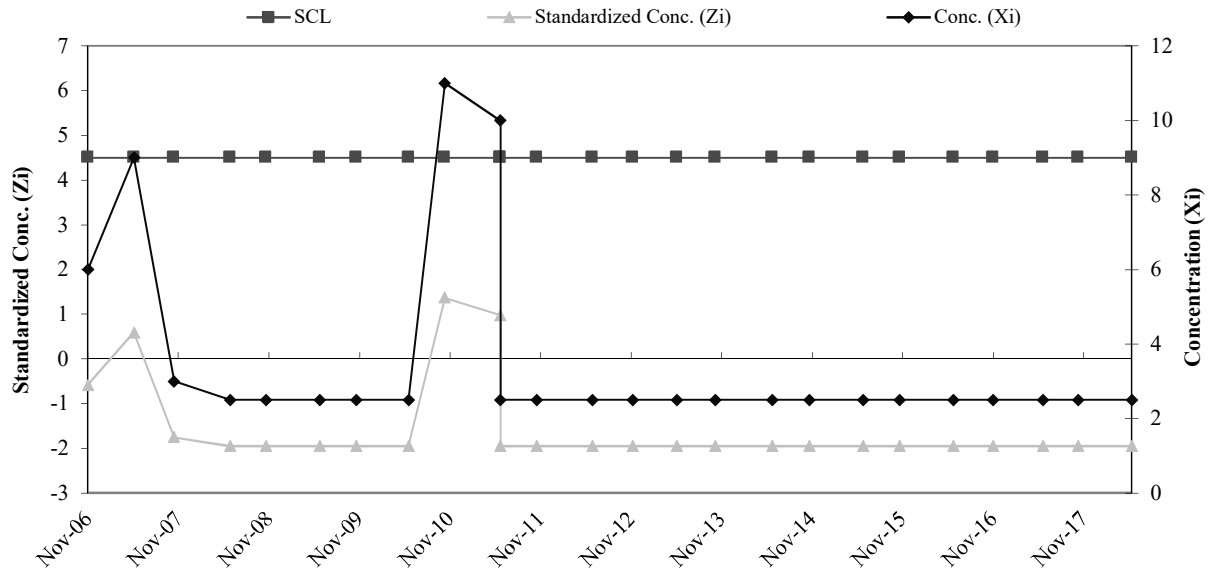


**COLDWATER ROAD LANDFILL FACILITY
RCRA GROUND WATER DETECTION MONITORING SYSTEM
SHEWART CONTROL CHART
B-24 Cr**

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

Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	Nov-06	4.5	6	-0.59
10	Jun-07	4.5	9	0.59
11	Nov-07	4.5	3	-1.76
12	Jun-08	4.5	2.5	-1.95
13	Nov-08	4.5	2.5	-1.95
14	Jun-09	4.5	2.5	-1.95
15	Nov-09	4.5	2.5	-1.95
16	Jun-10	4.5	2.5	-1.95
17	Nov-10	4.5	11	1.37
18	Jun-11	4.5	10	0.98
19	Jun-11	4.5	2.5	-1.95
20	Nov-11	4.5	2.5	-1.95
21	Jun-12	4.5	2.5	-1.95
22	Dec-12	4.5	2.5	-1.95
23	Jun-13	4.5	2.5	-1.95
24	Nov-13	4.5	2.5	-1.95
25	Jun-14	4.5	2.5	-1.95
26	Nov-14	4.5	2.5	-1.95
27	Jun-15	4.5	2.5	-1.95
28	Nov-15	4.5	2.5	-1.95
29	Jun-16	4.5	2.5	-1.95
30	Nov-16	4.5	2.5	-1.95
31	Jun-17	4.5	2.5	-1.95
32	Nov-17	4.5	2.5	-1.95
33	Jun-18	4.5	2.5	-1.95

h = Decision Value for CUSUM, SCL = Shewart Control Limit, k = Standard Error Shift Detection Parameter, Zi = Standardized Mean



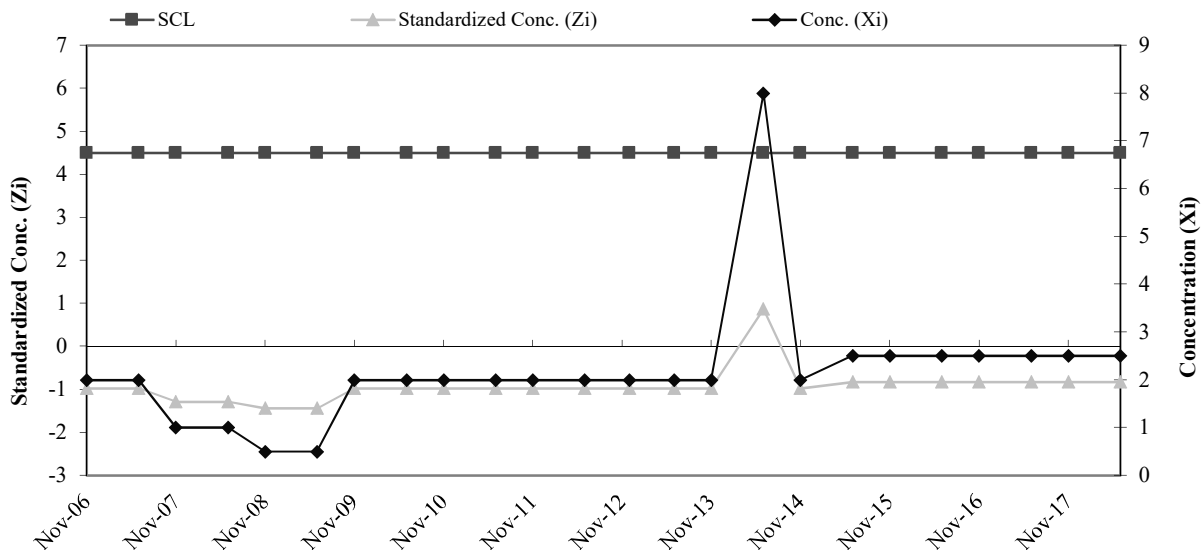
**COLDWATER ROAD LANDFILL FACILITY
RCRA GROUND WATER DETECTION MONITORING SYSTEM
SHEWART CONTROL CHART**

B-24 Cu

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

Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	Nov-06	4.5	2	-0.98
10	Jun-07	4.5	2	-0.98
11	Nov-07	4.5	1	-1.29
12	Jun-08	4.5	1	-1.29
13	Nov-08	4.5	0.5	-1.44
14	Jun-09	4.5	0.5	-1.44
15	Nov-09	4.5	2	-0.98
16	Jun-10	4.5	2	-0.98
17	Nov-10	4.5	2	-0.98
18	Jun-11	4.5	2	-0.98
19	Nov-11	4.5	2	-0.98
20	Jun-12	4.5	2	-0.98
21	Dec-12	4.5	2	-0.98
22	Jun-13	4.5	2	-0.98
23	Nov-13	4.5	2	-0.98
24	Jun-14	4.5	8	0.87
25	Nov-14	4.5	2	-0.98
26	Jun-15	4.5	2.5	-0.83
27	Nov-15	4.5	2.5	-0.83
28	Jun-16	4.5	2.5	-0.83
29	Nov-16	4.5	2.5	-0.83
30	Jun-17	4.5	2.5	-0.83
31	Nov-17	4.5	2.5	-0.83
32	Jun-18	4.5	2.5	-0.83

h = Decision Value for CUSUM, SCL = Shewart Control Limit, k = Standard Error Shift Detection Parameter, Zi = Standardized Mean

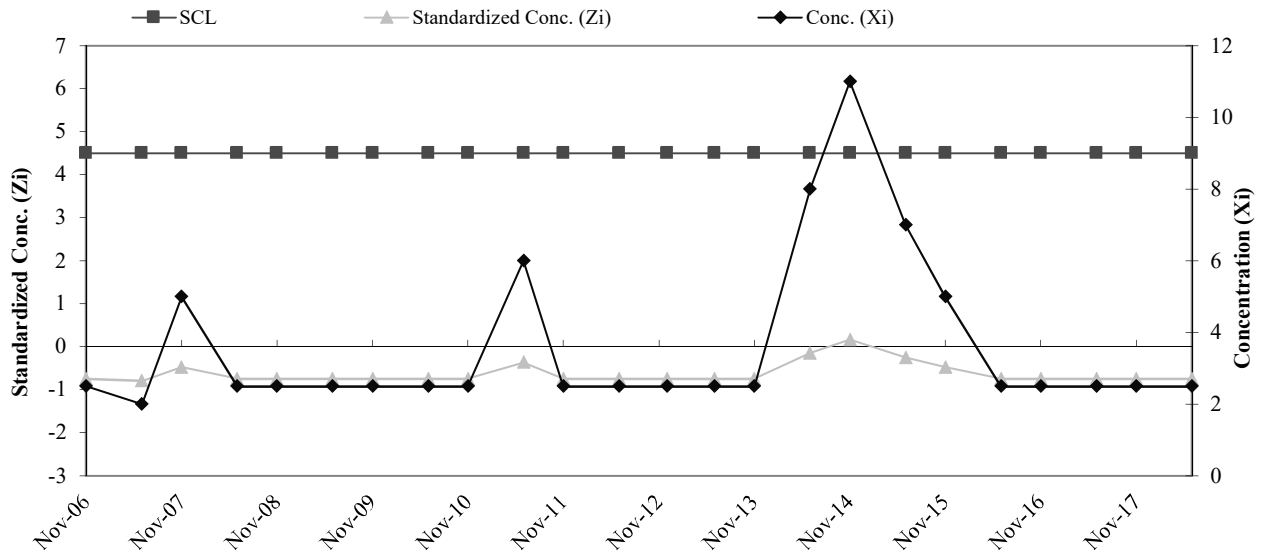


**COLDWATER ROAD LANDFILL FACILITY
RCRA GROUND WATER DETECTION MONITORING SYSTEM
SHEWART CONTROL CHART
B-24 Ni**

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

Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	Nov-06	4.5	2.5	-0.74
10	Jun-07	4.5	2	-0.80
11	Nov-07	4.5	5	-0.47
12	Jun-08	4.5	2.5	-0.74
13	Nov-08	4.5	2.5	-0.74
14	Jun-09	4.5	2.5	-0.74
15	Nov-09	4.5	2.5	-0.74
16	Jun-10	4.5	2.5	-0.74
17	Nov-10	4.5	2.5	-0.74
18	Jun-11	4.5	6	-0.37
19	Nov-11	4.5	2.5	-0.74
20	Jun-12	4.5	2.5	-0.74
21	Dec-12	4.5	2.5	-0.74
22	Jun-13	4.5	2.5	-0.74
23	Nov-13	4.5	2.5	-0.74
24	Jun-14	4.5	8	-0.15
25	Nov-14	4.5	11	0.17
26	Jun-15	4.5	7	-0.26
27	Nov-15	4.5	5	-0.47
28	Jun-16	4.5	2.5	-0.74
29	Nov-16	4.5	2.5	-0.74
30	Jun-17	4.5	2.5	-0.74
31	Nov-17	4.5	2.5	-0.74
32	Jun-18	4.5	2.5	-0.74

h = Decision Value for CUSUM, SCL = Shewart Control Limit, k = Standard Error Shift Detection Parameter, Zi = Standardized Mean

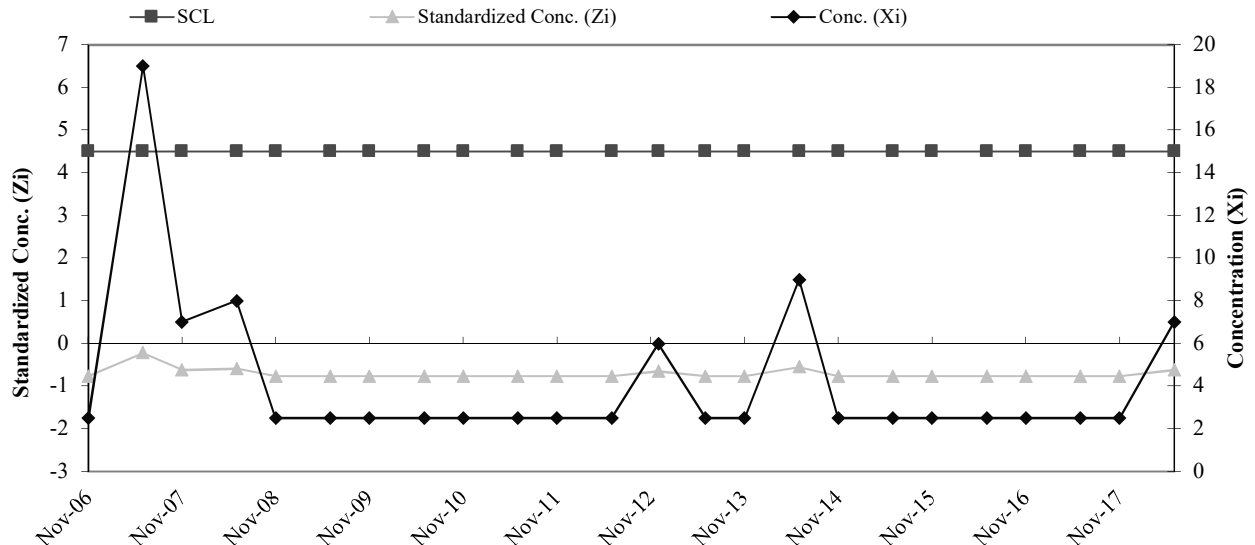


COLDWATER ROAD LANDFILL FACILITY
RCRA GROUND WATER DETECTION MONITORING SYSTEM
SHEWART CONTROL CHART
B-24 Zn

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

Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	Nov-06	4.5	2.5	-0.77
10	Jun-07	4.5	19	-0.22
11	Nov-07	4.5	7	-0.62
12	Jun-08	4.5	8	-0.58
13	Nov-08	4.5	2.5	-0.77
14	Jun-09	4.5	2.5	-0.77
15	Nov-09	4.5	2.5	-0.77
16	Jun-10	4.5	2.5	-0.77
17	Nov-10	4.5	2.5	-0.77
18	Jun-11	4.5	2.5	-0.77
19	Nov-11	4.5	2.5	-0.77
20	Jun-12	4.5	2.5	-0.77
21	Dec-12	4.5	6	-0.65
22	Jun-13	4.5	2.5	-0.77
23	Nov-13	4.5	2.5	-0.77
24	Jun-14	4.5	9	-0.55
25	Nov-14	4.5	2.5	-0.77
26	Jun-15	4.5	2.5	-0.77
27	Nov-15	4.5	2.5	-0.77
28	Jun-16	4.5	2.5	-0.77
29	Nov-16	4.5	2.5	-0.77
30	Jun-17	4.5	2.5	-0.77
31	Nov-17	4.5	2.5	-0.77
32	Jun-18	4.5	7	-0.62

h = Decision Value for CUSUM, SCL = Shewart Control Limit, k = Standard Error Shift Detection Parameter, Zi = Standardized Mean

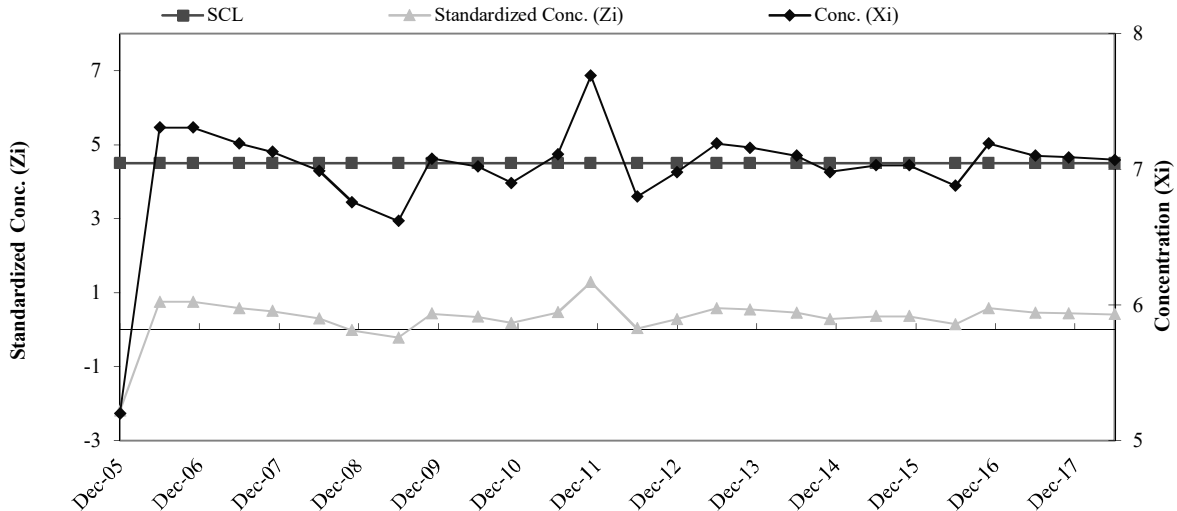


**COLDWATER ROAD LANDFILL FACILITY
RCRA GROUND WATER DETECTION MONITORING SYSTEM
SHEWART CONTROL CHART
B-24 pH**

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

Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	Dec-05	4.5	5.2	-2.20
10	Jun-06	4.5	7.3	0.75
11	Nov-06	4.5	7.3	0.75
12	Jun-07	4.5	7.2	0.58
13	Nov-07	4.5	7.1	0.50
14	Jun-08	4.5	7.0	0.30
15	Nov-08	4.5	6.8	-0.02
14	Jun-09	4.5	6.6	-0.22
15	Nov-09	4.5	7.1	0.43
16	Jun-10	4.5	7.0	0.34
17	Nov-10	4.5	6.9	0.17
18	Jun-11	4.5	7.1	0.47
19	Nov-11	4.5	7.7	1.28
20	Jun-12	4.5	6.8	0.03
21	Dec-12	4.5	7.0	0.29
22	Jun-13	4.5	7.2	0.58
23	Nov-13	4.5	7.2	0.54
24	Jun-14	4.5	7.1	0.45
25	Nov-14	4.5	7.0	0.29
26	Jun-15	4.5	7.0	0.36
27	Nov-15	4.5	7.0	0.36
28	Jun-16	4.5	6.9	0.15
29	Nov-16	4.5	7.2	0.58
30	Jun-17	4.5	7.1	0.45
31	Nov-17	4.5	7.1	0.44
32	Jun-18	4.5	7.1	0.41

h = Decision Value for CUSUM, SCL = Shewart Control Limit, k = Standard Error Shift Detection Parameter, Zi = Standardized Mean

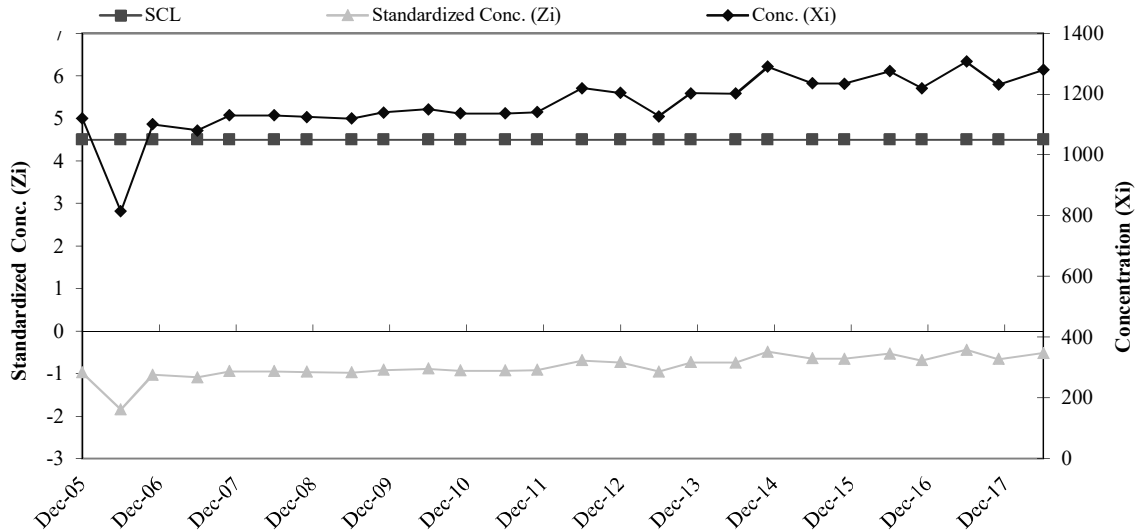


**COLDWATER ROAD LANDFILL FACILITY
RCRA GROUND WATER DETECTION MONITORING SYSTEM
SHEWART CONTROL CHART
B-24 SpC**

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

Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	Dec-05	4.5	1120	-0.97
10	Jun-06	4.5	814	-1.84
11	Nov-06	4.5	1100	-1.03
12	Jun-07	4.5	1080	-1.09
13	Nov-07	4.5	1130	-0.95
14	Jun-08	4.5	1130	-0.95
15	Nov-08	4.5	1125	-0.96
16	Jun-09	4.5	1120	-0.97
17	Nov-09	4.5	1140	-0.92
18	Jun-10	4.5	1150	-0.89
19	Nov-10	4.5	1136	-0.93
20	Jun-11	4.5	1136	-0.93
21	Nov-11	4.5	1141	-0.91
22	Jun-12	4.5	1219	-0.69
23	Dec-12	4.5	1204	-0.73
24	Jun-13	4.5	1127	-0.95
25	Nov-13	4.5	1203	-0.74
26	Jun-14	4.5	1202	-0.74
27	Nov-14	4.5	1290	-0.49
28	Jun-15	4.5	1235	-0.65
29	Nov-15	4.5	1234	-0.65
30	Jun-16	4.5	1275	-0.53
31	Nov-16	4.5	1220	-0.69
32	Jun-17	4.5	1307	-0.44
33	Nov-17	4.5	1231	-0.66
34	Jun-18	4.5	1280	-0.52

h = Decision Value for CUSUM, SCL = Shewart Control Limit, k = Standard Error Shift Detection Parameter, Zi = Standardized Mean



OBG

THERE'S A WAY

