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NC DENR

# Environmental Monitoring Reporting Form

Division of Waste Management - Solid Waste

Notice: This form and any information attached to it are "Public Records" as defined in NC General Statute 132-1. As such, these documents are available for inspection and examination by any person upon request (NC General Statute 132-6).

### Instructions:

- Prepare one form for each individually monitored unit.
- Please type or print legibly.
- Attach a notification table with values that attain or exceed NC 2L groundwater standards or NC 2B surface water standards. The notification must include a preliminary analysis of the cause and significance of each value. (e.g. naturally occurring, off-site source, pre-existing condition, etc.).
- Attach a notification table of any groundwater or surface water values that equal or exceed the reporting limits.
- Attach a notification table of any methane gas values that attain or exceed explosive gas levels. This includes any structures on or nearby the facility (NCAC 13B .1629 (4)(a)(i)).
- Send the original signed and sealed form, any tables, and Electronic Data Deliverable to: Compliance Unit, NC DENR-DWM, Solid Waste Section, 1646 Mail Service Center, Raleigh, NC 27699-1646.

### Solid Waste Monitoring Data Submittal Information

Name of entity submitting data (laboratory, consultant, facility owner):

Richardson Smith Gardner and Associates, Inc.

Contact for questions about data formatting. Include data preparer's name, telephone number and E-mail address:

Name: Joan A. Smyth, P.G.

Phone: 919-828-0577 x 221

E-mail: joan@rsgengineers.com

Facility name:	Facility Address:	Facility Permit #	NC Landfill Rule: (.0500 or .1600)	Actual sampling dates (e.g., October 20-24, 2006)
Halifax County Closed MSW Landfill	921 Liles Rd Aurelian Springs, NC	42-04	.0500	August 23-25, 2010

### Environmental Status: (Check all that apply)

- Initial/Background Monitoring   
 Detection Monitoring   
 Assessment Monitoring   
 Corrective Action

### Type of data submitted: (Check all that apply)

- Groundwater monitoring data from monitoring wells   
 Methane gas monitoring data  
 Groundwater monitoring data from private water supply wells   
 Corrective action data (specify) MNA Parameters  
 Leachate monitoring data   
 Other(specify) \_\_\_\_\_  
 Surface water monitoring data

### Notification attached?

- No. No groundwater or surface water standards were exceeded.  
 Yes, a notification of values exceeding a groundwater or surface water standard is attached. It includes a list of groundwater and surface water monitoring points, dates, analytical values, NC 2L groundwater standard, NC 2B surface water standard or NC Solid Waste GWPS and preliminary analysis of the cause and significance of any concentration.  
 Yes, a notification of values exceeding an explosive methane gas limit is attached. It includes the methane monitoring points, dates, sample values and explosive methane gas limits.

### Certification

To the best of my knowledge, the information reported and statements made on this data submittal and attachments are true and correct. Furthermore, I have attached complete notification of any sampling values meeting or exceeding groundwater standards or explosive gas levels, and a preliminary analysis of the cause and significance of concentrations exceeding groundwater standards. I am aware that there are significant penalties for making any false statement, representation, or certification including the possibility of a fine and imprisonment.

Joan A. Smyth, P.G.

Senior Hydrogeologist

919-828-0577 x 221

Facility Representative Name (Print)

Title

(Area Code) Telephone Number

Signature

Date

Affix NC Licensed/ Professional Geologist Seal

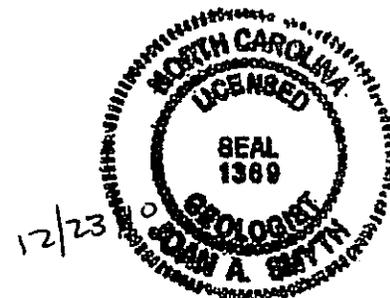
14 N. Boylan Avenue Raleigh, NC 27603

Facility Representative Address

C0828

NC PE Firm License Number (if applicable effective May 1, 2009)

Revised 6/2009



**Halifax County Landfill**

**Ground Water Monitoring Report**

**Fall 2010 Semi-annual  
Monitoring Event**

**Halifax County Landfill  
Halifax County, North Carolina  
NC Solid Waste Permit # 42-04**

Prepared for:  
**Halifax County Solid Waste Department**  
P. O. Box 70  
Halifax, North Carolina 27839

**December 2010**



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# Ground Water Monitoring Report Halifax County Landfill

## Fall 2010 Semi - Annual Report

Prepared for:

**Halifax County Solid Waste Department  
P.O. Box 327  
Halifax, North Carolina 27839**

RSG Project No. **Halifax - 8**



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Joan A. Smyth, P.G.  
Senior Hydrogeologist



**December 2010**



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**Halifax County Landfill**

**Semi-annual Ground Water Monitoring Report  
Fall 2010 Monitoring Event**

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## 1.0 Introduction

The Halifax County Landfill, operating under Solid Waste Permit #42-04, is required to submit semi-annual ground water monitoring reports for assessment monitoring. This report presents the results of the second semi-annual monitoring event for 2010, conducted on August 23-25, 2010. This event was performed to comply with the semi-annual monitoring schedule required by NC Solid Waste Regulations.

The Halifax County Landfill is currently accepting C&D waste over the closed MSW landfill. All MSW is being transferred off-site to a lined landfill. The old landfill has been closed per Solid Waste Regulations and the certification report was submitted to the SWS in September 1998. The ground water monitoring network consists of 12 wells located around the perimeter of the landfill (**Figure 1**). Also included in the monitoring network are three surface water sampling points up and downstream of the landfill (**Figure 1**).

This report includes summaries of the field procedures, laboratory analyses, statistical analyses, and ground water characterization. Also included are summary tables of the results, graphs of the data, laboratory analytical reports, and statistical results.

## 2.0 Site Hydrogeology

A review of the 1985 *North Carolina Geological Map* as well as *Ground Water in the Halifax Area, North Carolina* (Dept. of Conservation and Development Bulletin #51, 1946) indicates that the landfill site is situated on the eastern edge of the Eastern Piedmont Physiographic Province. The site is just west of the Coastal Plain overlap. Western Halifax County is underlain by an assemblage of felsic to intermediate crystalline igneous and metamorphic rocks of early to late Paleozoic age. The rocks of the eastern piedmont exhibit a northeast strike and locally dip gently eastward as a result of regional metamorphism and folding which produced a broad plunging anticline. The area was simultaneously intruded by a number of felsic (granite) plutons. The rock formation underlying the subject site is a granitic pluton identified as the Butterwood Creek intrusive.

Depths to ground water generally range from near surface in lowland areas along Brewer's Creek and its tributary to up to 45 ft. below grade along the ridge east of the landfill. Ground water at the site is flowing generally to the west towards Brewer's Creek and its tributary. There are minor seasonal variations in the flow pattern, but overall the direction of flow is the same.

Water levels are collected from piezometers upgradient of MW-15r to evaluate ground water direction in this area. This data indicates ground water flow is consistently to the west and there is no ground water reversal in the area of MW-15r. Boring logs for the groundwater monitoring wells are included in **Appendix A**.

## 3.0 Sampling Procedures

The sampling event, performed by Environment 1, Inc., consisted of collecting samples from 13 ground water wells (MW-1, MW-2a, MW-2ad, MW-3a, MW-3d, MW-6d, MW-7d, MW-13, MW-13d, MW-15r, & MW-16a, MW-17, MW-18s), shown in **Figure 1**, in accordance with the

approved site Water Quality Monitoring Plan<sup>1</sup>. Well G-13 had been damaged in the past and has been replaced by MW-13 and MW-13d (sampled for the first time during this event). Also included in the analysis were trip and field blanks for quality control. Surface water samples were collected from three locations (SW-1 through SW-3) up and downstream from the landfill.

Sampling methods followed the protocol outlined in the North Carolina Water Quality Monitoring Guidance Document for Solid Waste Facilities (DENR, DWM). The depth to water in each well was gauged prior to purging and sampling. Field measurements of pH, specific conductivity, and temperature were obtained from each well. Water table elevations and field parameter results are included in **Tables 1 and 2**, respectively.

All samples were collected by Environment 1 personnel in laboratory prepared containers for the specified analytical procedures. Sampling equipment (bailers) were cleaned in the laboratory and transported to the site in aluminum foil. Ground water samples were properly preserved, placed on ice, and transported to the laboratory facility within the specified holding times for each analysis.

## 4.0 Field & Laboratory Results

### 4.1 Laboratory Analysis

The ground and surface water samples were transported to Environment 1, Inc., a North Carolina certified laboratory (NC Wastewater ID #10). Laboratory analysis consisted of the full suite of RCRA Subtitle D Appendix II constituents for most of the compliance wells (MW-2a, MW-2ad, MW-3a, MW-3d, MW-6d, MW-7d, MW-13, MW-13d, MW-15r, MW-16a, MW-17, and MW-18s). Appendix I constituents were analyzed for the background well (MW-1), and surface water points. Parameters were reported at Solid Waste Practical Quantitation Limits (SWSLs). The laboratory analytical report is included as **Appendix B**, and a copy of the recent most lab data for the site is included on the attached CD as a text file (attached to the back cover).

### 4.2 Field and Laboratory Results

The field parameter results (**Table 2**) have remained consistent with previous sampling events. Detected constituents are presented in **Tables 3 & 4**.

Four (4) inorganic constituents (barium, beryllium, mercury and zinc), shown in **Table 3** were detected in nine (9) monitoring wells above the SWSL standard, but below their 2L / groundwater protection (GWP) standards. One (1) inorganic constituent (beryllium) was detected in surface water sample, SW-3 above the SWSL. The locations of these samples are shown on **Figure 1**.

Ten (10) organic constituents, shown in **Table 4**, were detected in nine of the monitoring wells (MW-2a, MW-2ad, MW-3a, MW-3d, MW-6d, MW-15r, MW-16a, and MW-17). Six (6) constituents were found at concentrations above their respective 2L standards.

- Benzene (MW-3a, MW-6d & MW-16a);

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<sup>1</sup> Water Quality Monitoring Plan, Halifax County Landfill, Richardson Smith Gardner & Associates, May 2009.

- 1,1-Dichloroethane (MW-2, MW-3d, MW-15r, MW-16a);
- Methylene Chloride (MW-15r)
- Tetrachloroethene (MW-3d, MW-15r, MW-16a & MW-17)
- Trichloroethene (MW-2ad, MW-3d, MW-15r, MW-16a & MW-17); and
- Vinyl Chloride (MW-2a, MW-2ad, MW-3)

Constituents detected below the SWSL are denoted as “J” values and are also included in **Tables 3 & 4**.

## 5.0 Statistical Analysis and Results

### 5.1 Statistical Analysis

The laboratory data from the sampling event was reviewed and analyzed in order to evaluate trends and changes in the results as well as statistically significant differences between up and down gradient wells. Data entry and analysis was performed using the Chempoint/ Chemstat statistical software package developed specifically for RCRA Subtitle D sites (Starpoint Software, Cincinnati, OH). Chemstat follows EPA and DWM protocols for approved statistical analysis methods for groundwater data.

The data from the Fall 2010 sampling event were added to our existing database for this site. The data were reviewed to evaluate the most appropriate analysis methods. Initial analysis consisted of a basic review of the data and of time-concentration graphs (included in **Appendix C**) to determine any major changes or trends in the data. Non-parametric testing methods were used due to the high percentage of non-detects, and the lack of normality, in the data.

Statistical analysis was performed using MW-1 as the upgradient or background well and MW-2a, MW-2ad, MW-3a, MW-3d, MW-6d, MW-7d, MW-15r, MW-16a, MW-17 and MW-18s as the down gradient or compliance wells. The statistical analysis reports are summarized in **Table 5**.

### 5.2 Statistical Results

Statistically significant differences from background concentrations (**Table 5**) were found for, 1,1-dichloroethane (MW-2a, MW-2ad & MW-3d), 1,4-dichlorobenzene (MW-15r), barium (MW-6d), cadmium (MW-18s), chlorobenzene (MW-3a & MW-6d), cis-1,2-dichloromethane (MW-2ad, MW-15r & MW-16a), tetrachloroethene (MW-15r & MW-16a), trichloroethene (MW-16a & MW-17), and zinc (MW-2A & MW-17).

### 5.3 2L/MCL Statistical Analysis

For wells that showed statistically significant differences from background concentrations, additional analysis was performed. This analysis is required as part of ongoing Assessment monitoring for landfills in North Carolina. To perform the analysis, the respective 2L standard or MCL was determined for each parameter with statistically significant results. Each compliance well with statistical significance was re-analyzed against the 2L ground water standard or MCL if no 2L standard was available as a Ground Water Protection Standard (GWPS).

The statistical results for this additional analysis are presented in **Table 5**. An upper tolerance limit higher than the GWPS standard was considered to be a statistically significant result. This analysis indicated statistically significant results for 1,1-dichloroethane (MW-2a), 1,4-dichlorobenzene (MW-15r), barium (MW-6d), cadmium (MW-18s), tetrachloroethene (MW-15r & MW-16a), trichloroethene (MW-16a & MW-17), and zinc (MW-2A & MW-17)..

## 6.0 Ground Water Characterization

A potentiometric surface map was prepared from ground water elevation data collected during this sampling event. The data indicates that ground water is flowing generally to the west towards Brewer's Creek. This is consistent with ground water flow patterns previously detected for the site. The potentiometric surface map is attached as **Figure 1**.

Ground water flow velocities during the sampling event were calculated for several monitoring wells using the equation:  $V = KI/n$

where: K = hydraulic conductivity  
I = ground water gradient  
n = porosity

Ground water flow velocities ranged from 0.011 ft/day (MW-16a) to 0.367 ft/day (MW-2a). These calculated flow velocities are included in **Table 1**.

## 7.0 Corrective Actions

A Corrective Action Plan<sup>2</sup> has been approved by NCDENR and has been implemented. Analytical parameters for Monitored Natural Attenuation (MNA) have been added to the analytic list for certain wells at the site. This is the first analysis of these parameters conducted to date. A summary of these analytical data is provided in **Table 6**. Implementation of the landfill gas portion of the CAP is planned for this fall.

## 8.0 Conclusions

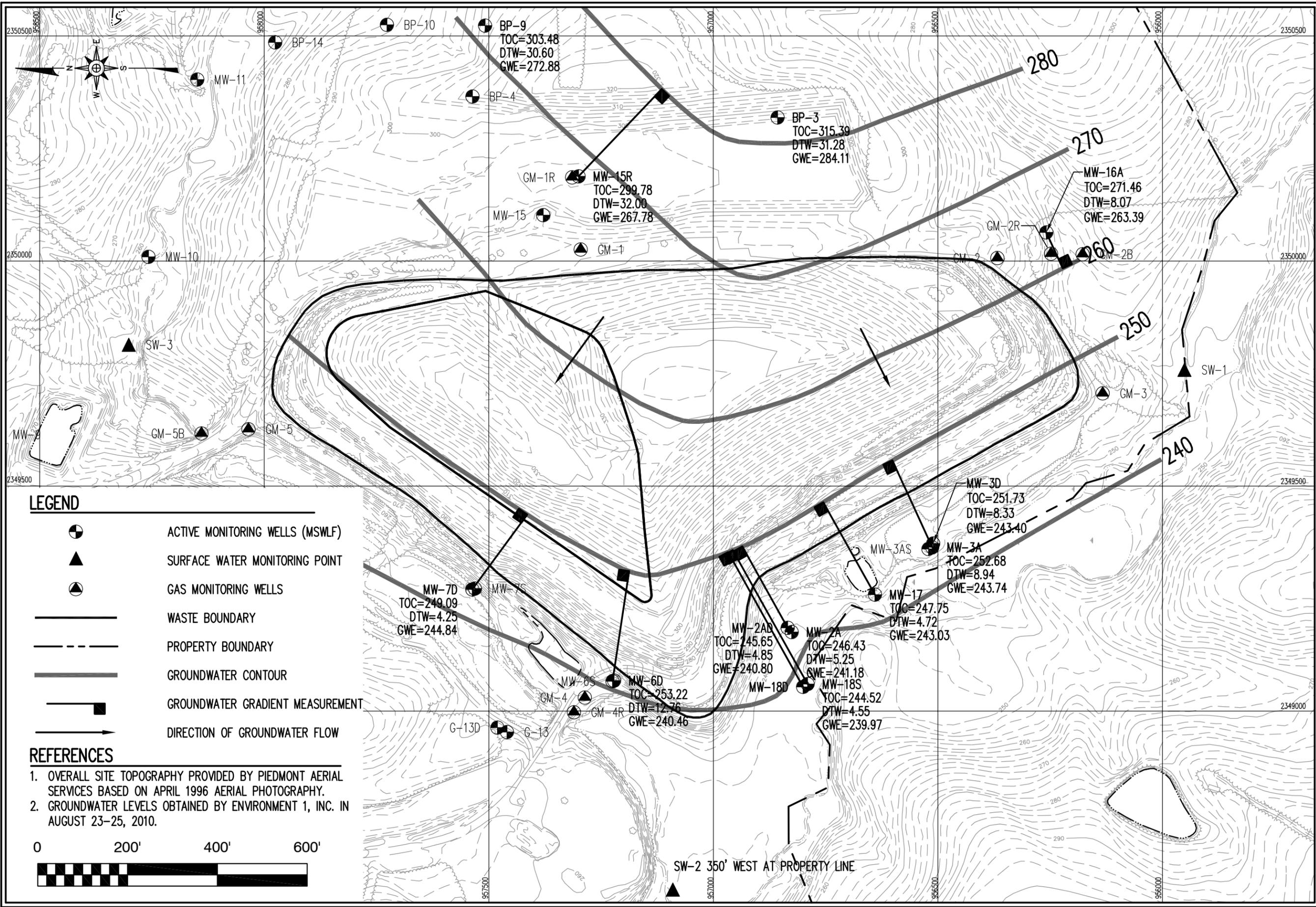
In general, concentrations of detected constituents in groundwater has remained stable. Previous reductions of tetrachloroethene and trichloroethene in MW-16a have returned to previous levels. This may indicate the beginning of a reducing trend, but there is insufficient data at this time to determine if that is the case. The next groundwater monitoring event is scheduled for April 2011. A groundwater monitoring report will be submitted to NCDENR upon receipt of analytical data and completion of statistical analyses.

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<sup>2</sup> Corrective Action Plan Halifax County Landfill, Richardson Smith Gardner & Associates, May 2009.

Figures

G:\CAD\Halifax\Halifax-8\sheets\HALI-B0143.dwg - 12/22/2010 11:31 AM



**LEGEND**

- ACTIVE MONITORING WELLS (MSWLF)
- SURFACE WATER MONITORING POINT
- GAS MONITORING WELLS
- WASTE BOUNDARY
- PROPERTY BOUNDARY
- GROUNDWATER CONTOUR
- GROUNDWATER GRADIENT MEASUREMENT
- DIRECTION OF GROUNDWATER FLOW

**REFERENCES**

1. OVERALL SITE TOPOGRAPHY PROVIDED BY PIEDMONT AERIAL SERVICES BASED ON APRIL 1996 AERIAL PHOTOGRAPHY.
2. GROUNDWATER LEVELS OBTAINED BY ENVIRONMENT 1, INC. IN AUGUST 23-25, 2010.



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FIGURE NO.	1	FILE NAME	HALI-B0143
SCALE:	AS SHOWN	PROJECT NO.	HALIFAX 8
CHECKED BY:	D.M.M.	DATE:	Dec. 2010
DRAWN BY:	C.T.J.		

**HALIFAX COUNTY LANDFILL  
GROUND WATER  
POTENTIOMETRIC SURFACE MAP  
FALL 2010**

Tables

**Table 1**  
**Halifax County Closed Landfill**  
**Ground Water Elevations & Velocities**  
**8/23-25/2010**

Monitoring Location	TOC Elevation (ft)	Depth to Water (ft)	Water Table Elevation (ft)	Hydraulic Conductivity (ft/day)	Assumed Porosity	Hydraulic Gradient (ft/ft)	Ground Water Velocity (ft/day)
MW-1	--	32.39	--	--	--	--	--
MW-2a	246.43	5.25	241.18	1.835	0.2	0.040	0.367
MW-2ad	245.65	4.85	240.8	--	--	--	--
MW-3a	252.68	8.94	243.74	0.311	0.2	0.031	0.048
MW-3d	251.73	8.33	243.4	--	--	--	--
MW-6d	253.22	12.76	240.46	--	--	--	--
MW-7d	249.09	4.25	244.84	--	--	--	--
MW-13	--	12.54	--	--	--	--	--
MW-13D	--	12.6	--	--	--	--	--
MW-15r	299.78	32	267.78	--	0.2	--	--
MW-16a	271.46	8.07	263.39	0.057	0.2	0.038	0.011
MW-17	247.75	4.72	243.03	--	--	--	--
MW-18s	244.52	4.55	239.97	--	--	--	--
BP-3	315.39	31.28	284.11	--	--	--	--
BP-9	303.48	30.60	272.88	--	--	--	--

MW-1 is not used in the ground water characterization calculations due to its remote location from the landfill  
Hydraulic Conductivity data from slug testing

Porosity values assumed from Groundwater & Wells (Driscoll)

Velocity Calculated from  $V=K*I/n$

V = velocity

K = Hydraulic Conductivity

I = Gradient

n = Porosity

Deep wells not used in velocity calculations

**Table 2**  
**Halifax County Closed Landfill**  
**Field Parameters**  
**8/23-25/2010**

Monitoring Location	pH (std units)	Specific Conductivity (umhos/cm)	Temperature (degrees C)	static water (feet)
MW-1	5.1	31	16	32.39
MW-2a	6.05	268	20.24	5.25
MW-2ad	6.27	547	15.98	4.85
MW-3a	6.2	713	17.33	8.94
MW-3d	5.59	155	16.69	8.33
MW-6d	5.95	589	15.99	12.76
MW-7d	6.2	44	20	4.25
MW-13	6.05	224	18	12.54
MW-13D	6.2	97	19	12.6
MW-15r	4.9	81	17	32
MW-16a	5.7	158	18	8.07
MW-17	5.88	142	17.12	4.72
MW-18s	6.6	248	18.20	4.55
SW-1	6.7	125	24	---
SW-2	6.7	354	24	---
SW-3	6.5	815	23	---

Note: Field data collected by Environment 1 Personnel.

**Table 3**  
**Halifax County Closed Landfill**  
**Detected Inorganic Constituents**  
**8/23-25/2010**

Monitoring Location	SWSL	2L or GWP Standard	MW-1	MW-2a	MW-2ad	MW-3a	MW-3d	MW-6d	MW-7d	MW-13	MW-13D	MW-15r	MW-16a	MW-17	MW-18S	SW-1	SW-2	SW-3
Arsenic	10	50	ND	1.3J	1.1J	2.5J	ND	0.3J	ND	1.2J	0.6J	ND	ND	0.2J	3J	0.6J	2J	2.2J
Barium	100	2000	31.7J	<b>158</b>	<b>114</b>	59.1J	57.9J	<b>564</b>	31.2J	41.4J	50.5J	77.8J	95.5J	51.3J	76J	32.1J	54.7J	24.7J
Beryllium	1	4	0.1J	0.5J	0.1J	0.4J	0.2J	0.5J	0.1J	<b>1.1</b>	0.3J	0.2J	0.5J	0.5J	0.1J	0.1J	0.1J	<b>1</b>
Cadmium	1	1.75	0.3J	0.1J	0.2J	0.2J	0.4J	0.5J	0.1J	0.1J	0.1J	0.2J	0.2J	0.7J	<b>1.1</b>	ND	ND	0.5J
Cobalt	10	1	0.6J	4.2J	4.8J	4.3J	ND	2.9J	0.1J	1.6J	0.6J	0.7J	0.7J	1J	6.6J	0.6J	0.9J	1.2J
Copper	10	1000	1.3J	1.3J	1.1J	1.7J	1.3J	1.4J	1.2J	1.5J	4.5J	6.3J	0.6J	2.8J	1.4J	0.5J	0.1J	1J
Chromium, total	10	10	0.3J	1.2J	ND	0.3J	ND	ND	ND	0.1J	ND	ND	ND	ND	ND	ND	ND	ND
Lead	10	15	0.6J	1.4J	0.5J	2J	0.2J	0.3J	0.6J	1.8J	0.8J	0.8J	0.2J	2.2J	0.8J	0.3J	0.4J	0.2J
Mercury	0.2	1	NM	ND	ND	ND	ND	ND	ND	NM	NM	<b>0.47</b>	<b>0.23</b>	0.19J	ND	NM	NM	NM
Nickel	50	100	0.6J	0.9J	1.8J	0.9J	0.2J	2J	ND	0.8J	0.3J	ND	0.3J	1.4J	1.3J	0.5J	0.6J	1.9J
Selenium	10	20	0.5J	ND	0.4J	0.6J	ND	1.5J	ND	0.4J	ND	ND	ND	0.7J	ND	ND	3.1J	8.5J
Silver	10	20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.1J	0.1J	ND	ND	0.1J	ND
Thallium	5.5	0.28	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.1J	ND	ND	ND	ND	ND	ND
Tin	100	2000	NM	0.4J	0.3J	0.7J	0.3J	0.3J	0.5J	NM	NM	0.6J	0.6J	0.5J	0.3J	NM	NM	NM
Vanadium	25	0.3	0.6J	3.9J	1.3J	4.6J	0.5J	0.8J	0.5J	3.8J	0.8J	ND	0.7J	2.8J	1J	2.9J	2J	2.5J
Zinc	10	1000	4J	<b>10</b>	7.6J	8.7J	4.3J	8J	4J	8.5J	<b>28</b>	3.2J	5.6J	<b>21</b>	5.8J	2.8J	2.8J	<b>20</b>

- ND - Not detected at or above SWSL
  - NA - Not analyzed
  - Shading - Concentrations above 2L standard or no 2L standard
  - Bold Letters - Concentrations below 2L standard
  - SWSL - Solid Waste Section Quantitation Limits
  - J - Detected constituents below the SWSL limit.
- All results in ug/L  
Sampling and analysis performed by Environment 1, Inc.

**Table 4**  
**Halifax County Closed Landfill**  
**Detected Organic Constituents**  
**8/23-25/2010**

Monitoring Location	SWSL	2L or GWP Standard	MW-1	MW-2a	MW-2ad	MW-3a	MW-3d	MW-6d	MW-7d	MW-13	MW-13D	MW-15r	MW-16a	MW-17	MW-18S	SW-1	SW-2	SW-3
Benzene	1	1	ND	0.3J	0.9J	1.7	0.4J	1.9	ND	ND	ND	ND	2.5	0.3J	ND	ND	ND	ND
1,1-Dichloroethane	5	6	ND	5.1	25.1	3.4J	7.5	0.3J	ND	ND	ND	7.9	11.3	4.8J	0.8J	ND	ND	ND
1,1-Dichloroethene	5	7	ND	ND	0.5J	ND	0.3J	ND	ND	ND	ND	ND	0.5J	0.3J	ND	ND	ND	ND
1,2-Dichlorobenzene	5	20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.9J	ND	ND	ND	ND	ND
1,2-Dichloroethane	1	0.4	ND	ND	0.3J	ND	ND	ND	ND	ND	ND	0.7J	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	1	0.6	ND	ND	0.3J	0.5J	ND	ND	ND	ND	ND	ND	0.5J	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	1	6	ND	ND	1.4	1.8	ND	2.5	ND	ND	ND	4.2	1.5	ND	ND	ND	ND	ND
2-Butanone	100	4000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.4J	2.4J	ND
Bis (2-Ethylhexyl) Phthalate	15	3	NM	ND	ND	ND	ND	ND	ND	NM	NM	ND	ND	ND	10.3J	NM	NM	NM
Dichlorodifluoromethane	5	1000	NM	ND	ND	ND	1.1J	ND	ND	NM	NM	ND	5.3	2J	ND	NM	NM	NM
Cis-1,2-Dichloroethene	5	70	ND	1.9J	23.8	2.6J	4.8J	0.5J	ND	ND	ND	6.6	29.6	2.9J	ND	ND	ND	ND
Chlorobenzene	3	50	ND	1J	2.2J	3.8	ND	10.3	ND	ND	ND	ND	1J	ND	ND	ND	ND	ND
Chloroethane	10	3000	ND	0.6J	2.3J	1.2J	ND	1.2J	ND	ND	ND	ND	0.9J	ND	ND	ND	ND	ND
Methylene chloride	1	3	ND	ND	ND	ND	ND	ND	ND	ND	ND	7.7	1.4	ND	ND	ND	ND	ND
Tetrachloroethene	1	0.7	ND	ND	ND	ND	1.5	ND	ND	ND	ND	2.5	52.2	1.8	ND	ND	ND	ND
Trichlorofluoromethane	1	2000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.7J	ND	ND	ND	ND	ND
Trichloroethene	1	3	ND	0.6J	4.1	0.6J	1.2	ND	ND	ND	ND	2.8	20.2	2.1	ND	ND	ND	ND
Toluene	1	600	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.3J	ND	ND
Vinyl Chloride	1	0.03	ND	5.4	5.0	1.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

- ND - Not detected at or above SWSL  
 Shading - Concentrations above 2L standard  
 Bold Letters - Concentrations below 2L standard  
 SWSL - Solid Waste Section Quantitation Limits  
 J - Detected constituents below the SWSL limit.  
 \* - All results in ug/L

Sampling and Analysis performed by Environment 1, Inc.

**Table 5**  
**Halifax County Landfill**  
**Statistical Analysis Summary**  
**8/23-25/2010**

Monitoring Well	Parameters	Detected level	Detection Limit	%ND	CL (%)	Test	Statistically Significant?	2L/MCL statistical analysis	Method for MCL analysis
MW-2a	Barium	158	100	68.8	97.4	NPPL	N		
MW-2ad	Barium	114	100	56.5	97.4	NPPL	N		
MW-6d	Barium	564	100	47.8	99	WILCOXON	Y	Y	MCL PTI (1992)
MW-13	Beryllium	1.1	1						
MW-18s	Cadmium	1.1	1	14.3	99	WILCOXON	Y	Y	MCL PTI (1992)
MW-15r	Mercury	0.47	0.2	69.6	90.9	NPPL	N		
MW-16a	Mercury	0.23	0.2	58.3	90.9	NPPL	N		
MW-2a	Zinc	10	10	46.8	99	WILCOXON	Y	Y	MCL PTI (1992)
MW-13d	Zinc	28	10						
MW-17	Zinc	21	10	0	99	WILCOXON	Y	Y	MCL PTI (1992)
MW-3a	Benezene	1.7	1	65.6	97.4	NPPL	N		
MW-6d	Benezene	1.9	1	69.6	97.4	NPPL	N		
MW-16a	Benezene	2.5	1	78.1	97.4	NPPL	N		
MW-2a	1,1-Dichloroethane	5.1	5	31.3	99	WILCOXON	Y	Y	MCL PTI (1992)
MW-2ad	1,1-Dichloroethane	25.1	5	4.2	99	PPL	Y	N	MCL PTI (1992)
MW-3a	1,1-Dichloroethane	7.5	5	21.9	99	PPL	N		
MW-3d	1,1-Dichloroethane	7.9	5	68	97.4	NPPL	Y	N	MCL PTI (1992)
MW-6d	1,1-Dichloroethane	11.3	5	78.3	97.4	NPPL	N		
MW-2ad	1,4-Dichlorobenzene	1.4	1	70.8	97.4	NPPL	N		
MW-3a	1,4-Dichlorobenzene	1.8	1	78.1	97.4	NPPL	N		
MW-6d	1,4-Dichlorobenzene	2.5	1	69.6	97.4	NPPL	N		
MW-15r	1,4-Dichlorobenzene	4.2	1	45.8	99	WILCOXON	Y	Y	MCL PTI (1992)
MW-16a	1,4-Dichlorobenzene	1.5	1	78.1	97.4	NPPL	N		
MW-16a	Dichlorodifluoromethane	5.3	5	47.36	99	WILCOXON	N		
MW-2ad	Cis-1,2-Dichlorethene	23.8	5	45.8	99	WILCOXON	Y	N	MCL PTI (1992)
MW-15r	Cis-1,2-Dichlorethene	6.6	5	29.2	99	WILCOXON	Y	N	MCL PTI (1992)
MW-16a	Cis-1,2-Dichlorethene	29.6	5	56.3	97.4	NPPL	Y	N	MCL PTI (1992)
MW-3a	Chlorobenzene	3.8	5	46.9	99	WILCOXON	Y	N	MCL PTI (1992)
MW-6d	Chlorobenzene	10.3	5	26.1	99	WILCOXON	Y	N	MCL PTI (1992)
MW-15r	Methylene chloride	7.7	1	37.5	99	PPL	N		
MW-16a	Methylene chloride	1.4	1	56.3	97.4	NPPL	N		
MW-3d	Tetrachloroethene	1.5	1	72	97.4	NPPL	N		
MW-15r	Tetrachloroethene	2.5	1	45.8	99	WILCOXON	Y	Y	MCL PTI (1992)
MW-16a	Tetrachloroethene	52.2	1	46.9	99	WILCOXON	Y	Y	MCL PTI (1992)
MW-17	Tetrachloroethene	1.8	1	0	99	PPL	N		
MW-2ad	Trichloroethene	4.1	1	66.7	97.4	NPPL	N		
MW-3d	Trichloroethene	1.2	1	72	97.4	NPPL	N		
MW-15r	Trichloroethene	2.8	1	20.8	99	PPL	N		
MW-16a	Trichloroethene	20.2	1	53.1	97.4	NPPL	Y	Y	MCL PTI (1992)
MW-17	Trichloroethene	2.1	1	0	99	PPL	Y	Y	MCL PTI (1992)
MW-2a	Vinyl Chloride	5.4	1	78.1	97.4	NPPL	N		
MW-2ad	Vinyl Chloride	5	1	66.7	97.4	NPPL	N		
MW-3a	Vinyl Chloride	1.6	1	59.4	97.4	NPPL	N		

NPTL Non-parametric Tolerance Limit (Inter-well comparison)  
 NPPL Non-parametric Prediction Limit (Inter-well comparison)  
 PPL Poisson Prediction Limit with 1/2 Detection Limit

**Notes:**

Yellow highlighting indicates no historical data (statistical analysis not performed)

Gray highlighting indicates statistical significance

MW-1 used as background well

**Table 6**  
**Halifax County Closed Landfill**  
**MNA Parameter Summary**  
**8/23-25/2010**

Monitoring Location	SWSL or PQL	MW-2a	MW-2ad	MW-3a	MW-3d	MW-6d	MW-13	MW-17	MW-18S
BOD, mg/l	2	7	ND	9.2	ND	2	ND	ND	11
COD, mg/l	10	44	17	44	16	17	ND	ND	38
Nitrate Nitrogen as N, mg/l	10	0.08J	ND	0.05J	0.08J	ND	0.25J	0.06J	0.08J
Total Organic Carbon, mg/l	1	6.54	1.17	6.37	1.02	2.08	1.93	ND	8.77
Total Alkalinity, mg/l	1	124	289	313	66	259	72	64	81
Chloride, mg/l	5	6	5	8	8	16	14	6	8
Sulfate, mg/l	250	ND	13.6J	ND	8.4J	20.4	18.8J	ND	N
Turbidity, NTU	1	500	20	700	3.2	18	14	160	950
Dissolved Oxygen, mg/l	---	2.94	0.58	2.06	0.86	1.62	0.59	0.6	8.21
Carbon Dioxide, mg/l	---	72	171	427	84	314	79	122	75
ORP, mv	---	-26.7	77.9	67.3	585.3	92.9	-12.4	324.5	10.2
N Ethane, ug/l	0.010	0.043	0.12	0.57	ND	0.33	ND	ND	0.26
N Ethene, ug/l	0.010	0.13	0.36	0.042	ND	0.049	0.015	0.013	0.054
N Hydrogen, nM	0.600	1.2	1.3	1.1	1.1	1	1.3	1.4	1.1
N Methane, ug/l	0.015	5900	340	800	3400	200	1000	1300	4700
N Butyric Acid, mg/l	0.050	ND	0.054	ND	ND	ND	ND	ND	N
N Lactic Acid, mg/l	0.100	0.17	0.14	0.16	0.15	0.14	ND	0.13	0.21

ND - Not detected at or above SWSL  
 SWSL - Solid Waste Section Quantitation Limits  
 J - Detected constituents below the SWSL limit.  
 All results in ug/L

Analysis provided by Environment 1, Inc and Microseeps Laboratories.

Appendix A

Boring Logs



# FIELD BOREHOLE LOG

BOREHOLE NUMBER:  
MW-20a

PROJECT NUMBER: HALIFAX-19  
 PROJECT NAME: Halifax County Landfill  
 LOCATION: Aurelian Springs, North Carolina  
 DRILLING COMPANY: Engineering Technicos, P.A.  
 RIG TYPE & NUMBER: MOBILE B-80  
 DRILLING METHOD: Hollow Stem Auger  
 WEATHER: Cloudy, 70 degrees  
 FIELD PARTY: David Barron  
 GEOLOGIST: Phillip May  
 DATE BEGUN: 9/1/99

TOP OF CASING ELEVATION: TBD  
 TOTAL DEPTH: 40.0 FT  
 GROUND SURFACE ELEVATION: TBD  
 SHEET 1 OF 1

STATIC WATER LEVEL (BLS)		
WD-While Drilling AB-After Boring		
Depth(ft)	6.0'	5.25'
Time	12:00	9:00
Date	9/1/99	9/2/99

DATE COMPLETED: 9/1/99

DEPTH	BLH	SOILS	SAMPLE METHOD	SAMPLE NUMBER	MOISTURE	CONSISTENCY	SAMPLE RECOVERY	SPLIT METHOD	LITHOLOGY DESCRIPTION	DEPTH	LITHOLOGY	INSTALLATION
2.0									See MW-2a boring log.	2.0		
1.0										1.0		
0.0										0.0		
1.0										1.0		
2.0										2.0		
3.0										3.0		
4.0										4.0		
5.0										5.0		
6.0										6.0		
7.0										7.0		
8.0									8.0			
9.0									9.0			
10.0		5	5s	61	H		10"		CLAYEY SILTY SAND: Grey clayey silty sand, wet, Fe staining and quartz gravel.	10.0		
11.0		6								11.0		
12.0										12.0		
13.0										13.0		
14.0										14.0		
15.0		15	5s	62	H		12"		SILTY SAND: Mottled white, tan-pink, grey & rust M-C slightly silty sand, moist, relict rock, quartz, some mica.	15.0		
16.0		29								16.0		
17.0		31								17.0		
18.0										18.0		
19.0										19.0		
20.0		50/45s	5s	63	H		2"		PHR: Wet C sand, partially weathered rock, tan-pink gravel w/ white, brown, & grey mottling micaceous;	20.0		
21.0										21.0		
22.0										22.0		
23.0										23.0		
24.0										24.0		
25.0		50/35s	5s	64	H		1"		25.0' same as above;	25.0		
26.0										26.0		
27.0										27.0		
28.0										28.0		
29.0										29.0		
30.0		50/45s	5s	65	H		2"		30.0' same as above;	30.0		
31.0										31.0		
32.0										32.0		
33.0										33.0		
34.0										34.0		
35.0		50/25s	5s	66	H		0"		35.0' same as above;	35.0		
36.0										36.0		
37.0										37.0		
38.0										38.0		
39.0									40.0' Boring terminated at 40'.	39.0		
40.0										40.0		



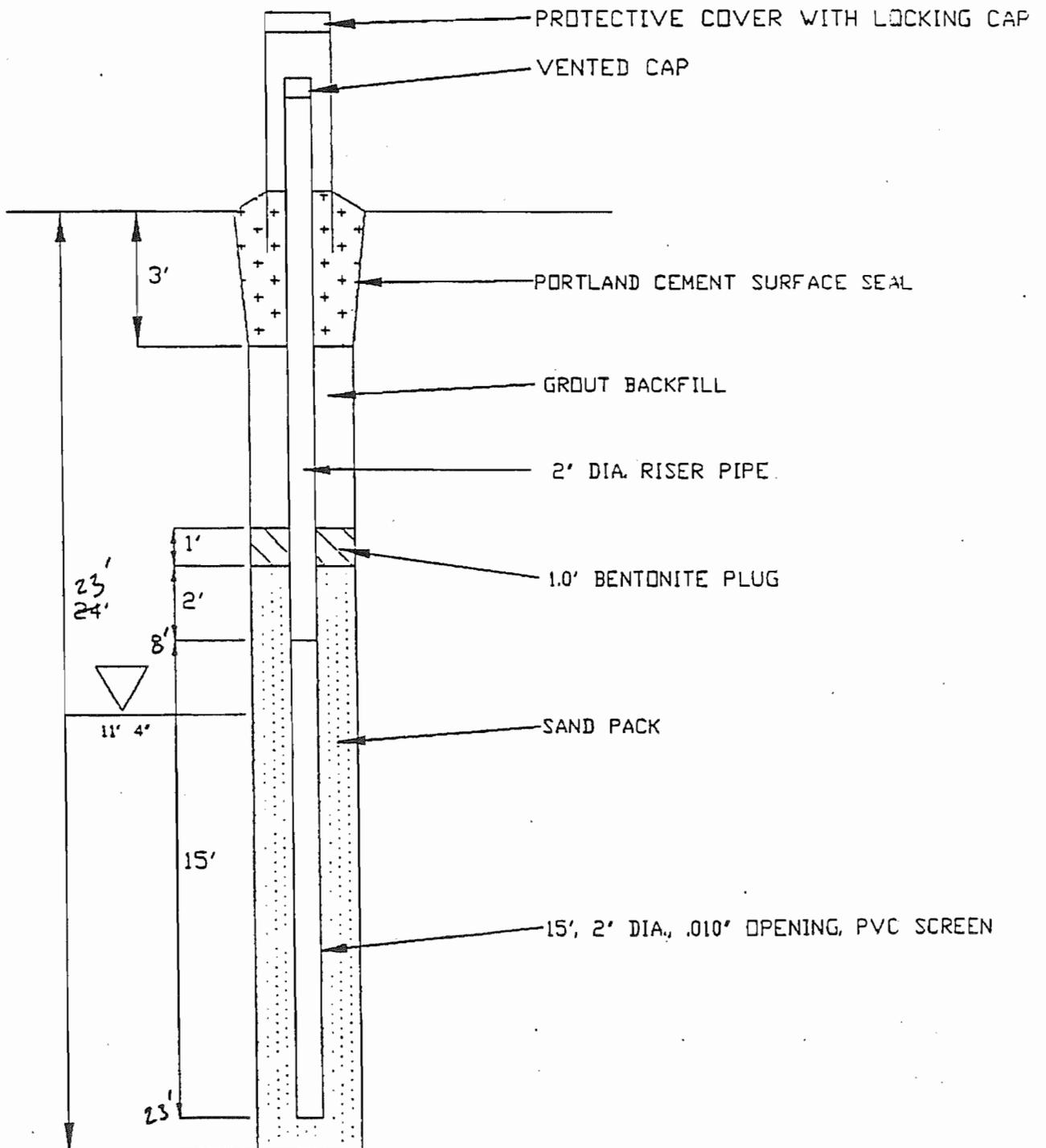






# TYPICAL MONITORING WELL SCHEMATIC

PROJECT HALIFAX COUNTY LANDFILL VERTICAL EXPANSION  
WELL NUMBER MW-60(5)



WELL COMPLETION RECORD

MW-6A MW-6d

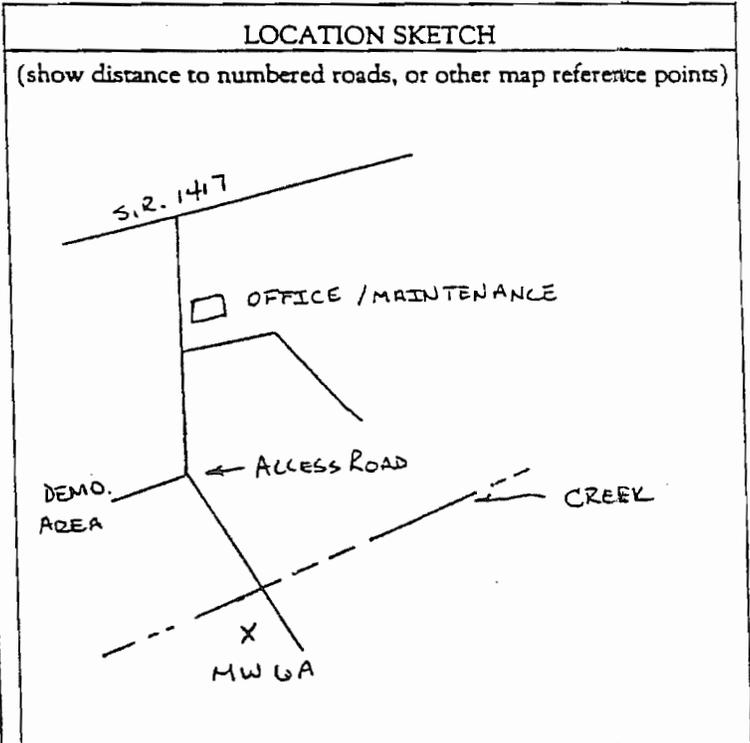
COMPLETE ALL INFORMATION REQUESTED BELOW FOR EACH WELL INSTALLED, AND RETURN FORM TO THE N.C. DEPARTMENT OF HUMAN RESOURCES, SOLID AND HAZARDOUS WASTE MANAGEMENT BRANCH, 191, RALEIGH, N.C. 27602

LOCATION OF SITE: Halifax County Sanitary Landfill	PERMIT NO.: 41-0176-WM-0033
ADDRESS: R. 1417 Aurelian Springs, N.C.	OWNER (print): Halifax County
DRILLING CONTRACTOR: Core & Core, Inc.	REGISTRATION NO.: 763

Casing Type: PVC dia. 2 in. Grout Depth: from 0' to -21' ft. - dia. 4 in.  
 Depth: from 2' to -25 ft. - dia. 2 in. Bentonite Seal: from -21' to -23' ft. - dia. 4 in.  
 Type: slotted .010 dia. 2 in. Sand/Gravel PK: from -23 to -40 ft. - dia. 4 in.  
 Screen Depth: from -25 to -40 ft. - dia. 2 in. Total Well Depth: from 2' to -41 ft. - dia. 4 in.  
 Water Level: 11' 7" Below ground surface Date Measured 11 / 26 / 91

Method of Testing: \_\_\_\_\_ Casing is \_\_\_\_\_ feet above land surface

DRILLING LOG		
DEPTH		
FROM	TO	FORMATION DESCRIPTION
	2.8	Brown fine sandy silt
	10.6	Brown medium to fine silt
10.6	22.4	Damp DrkBr.Med. sandy silt
22.4	40.0	Wet Br. fine sandy silt



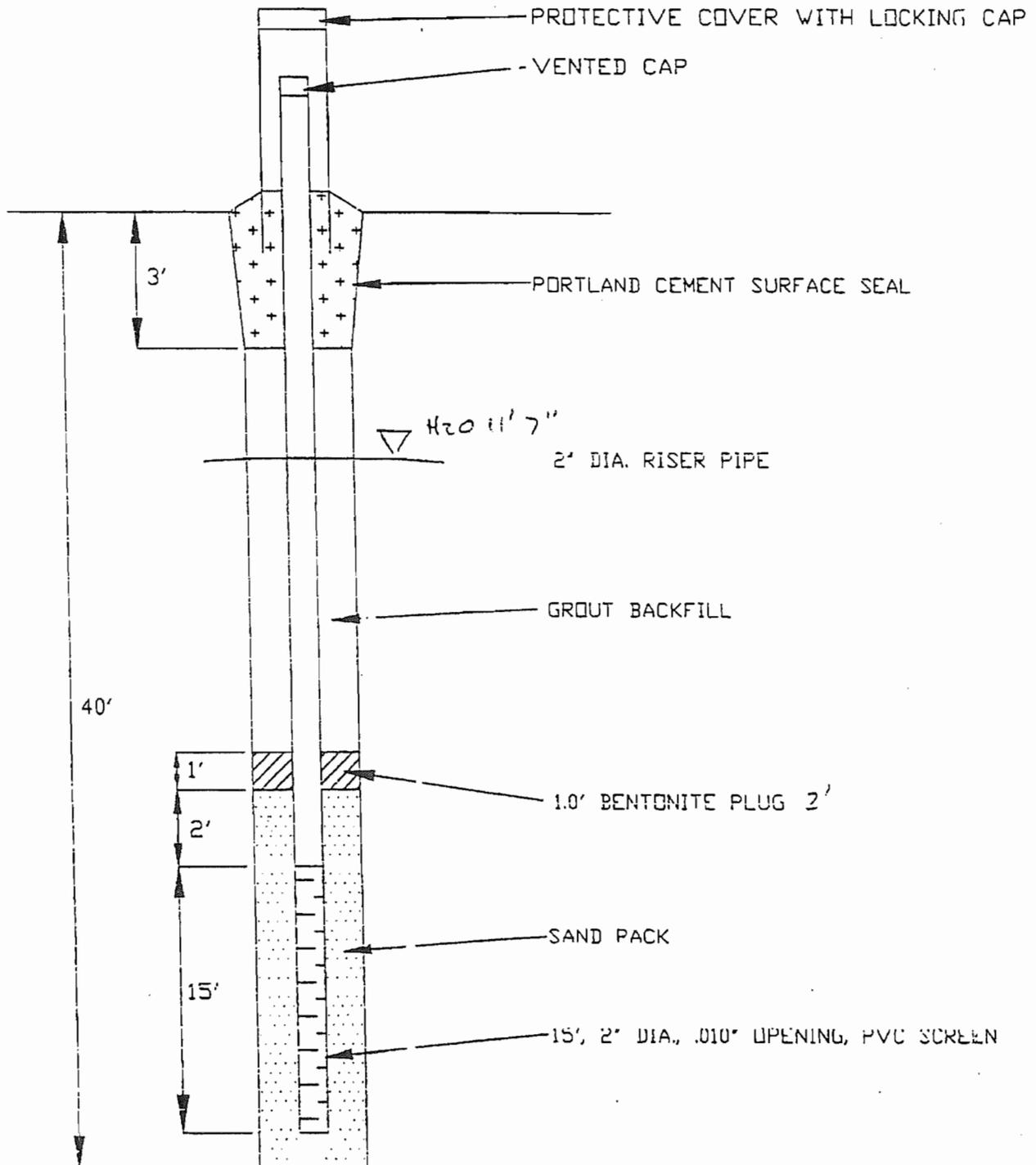
REMARKS: Well screened too deep.  
 Static water level is above the screen.

SIGNATURE: \_\_\_\_\_

# TYPICAL MONITORING WELL SCHEMATIC

PROJECT HALIFAX COUNTY LANDFILL VERTICAL EXPANSION  
WELL NUMBER MW-6A

6d





N. C. Department of Human Resources  
 Division of Health Services  
**WELL COMPLETION RECORD**

MW 75

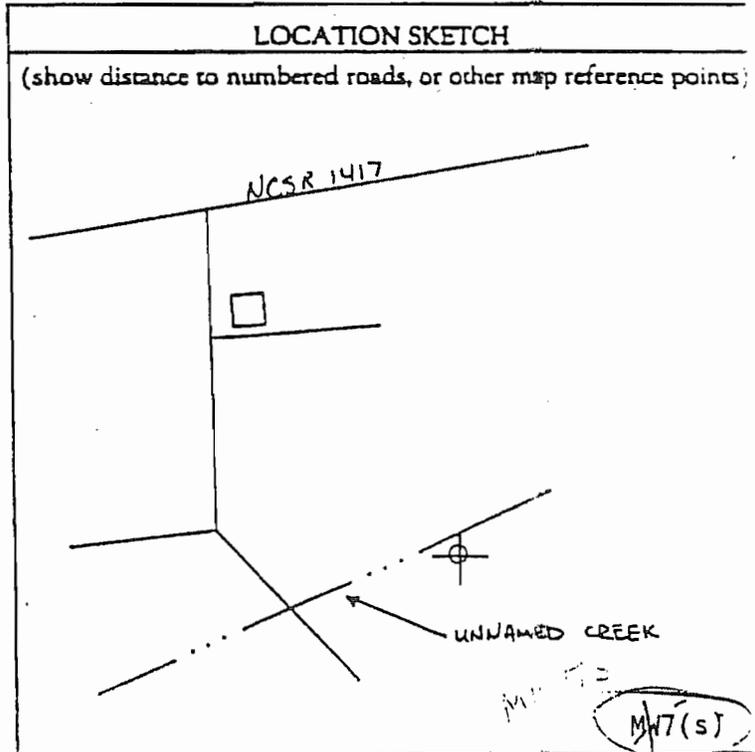
COMPLETE ALL INFORMATION REQUESTED BELOW FOR EACH WELL INSTALLED, AND RETURN FORM TO THE N.C. DEPARTMENT OF HUMAN RESOURCES, SOLID AND HAZARDOUS WASTE MANAGEMENT BRANCH, P. O. BOX 2091, RALEIGH, N.C. 27602

NAME OF SITE: Halifax County Landfill		PERMIT NO.: 41-0176-WW-0033	
ADDRESS: S.R. 141/ Aurelian Springs, NC		OWNER (print): Halifax County	
INSTALLING CONTRACTOR: Bore and Core, Inc.		REGISTRATION NO.: 763	

Casing Type: PVC dia. 2 in. Grout Depth: from 0 to -1 ft. - dia. 7 in.  
 Casing Depth: from 2.5 to -2.5 ft. - dia. 2 in. Bentonite Seal: from -1 to -2 ft. - dia. 7 in.  
 Screen Type: .010 slotted PVC dia. 2 in. Sand/Gravel PK: from -2 to -17 ft. - dia. 7 in.  
 Screen Depth: from -2.5 to -17.5 ft. - dia. 2 in. Total Well Depth: from 2.5 to -17.5 ft. - dia. 7 in.  
 Static Water Level: 3'2" below ground surface Date Measured 1 / 7 / 92  
 Yield (gpm): \_\_\_\_\_ Method of Testing: \_\_\_\_\_ Casing is \_\_\_\_\_ feet above land surface

*Thin sand pack between bentonite + screen.*

DRILLING LOG		
DEPTH		FORMATION DESCRIPTION
FROM	TO	
.0	3.4	Brown fine to medium sandy silt
.4	17.0	Damp brown fine to medium sand/gravel



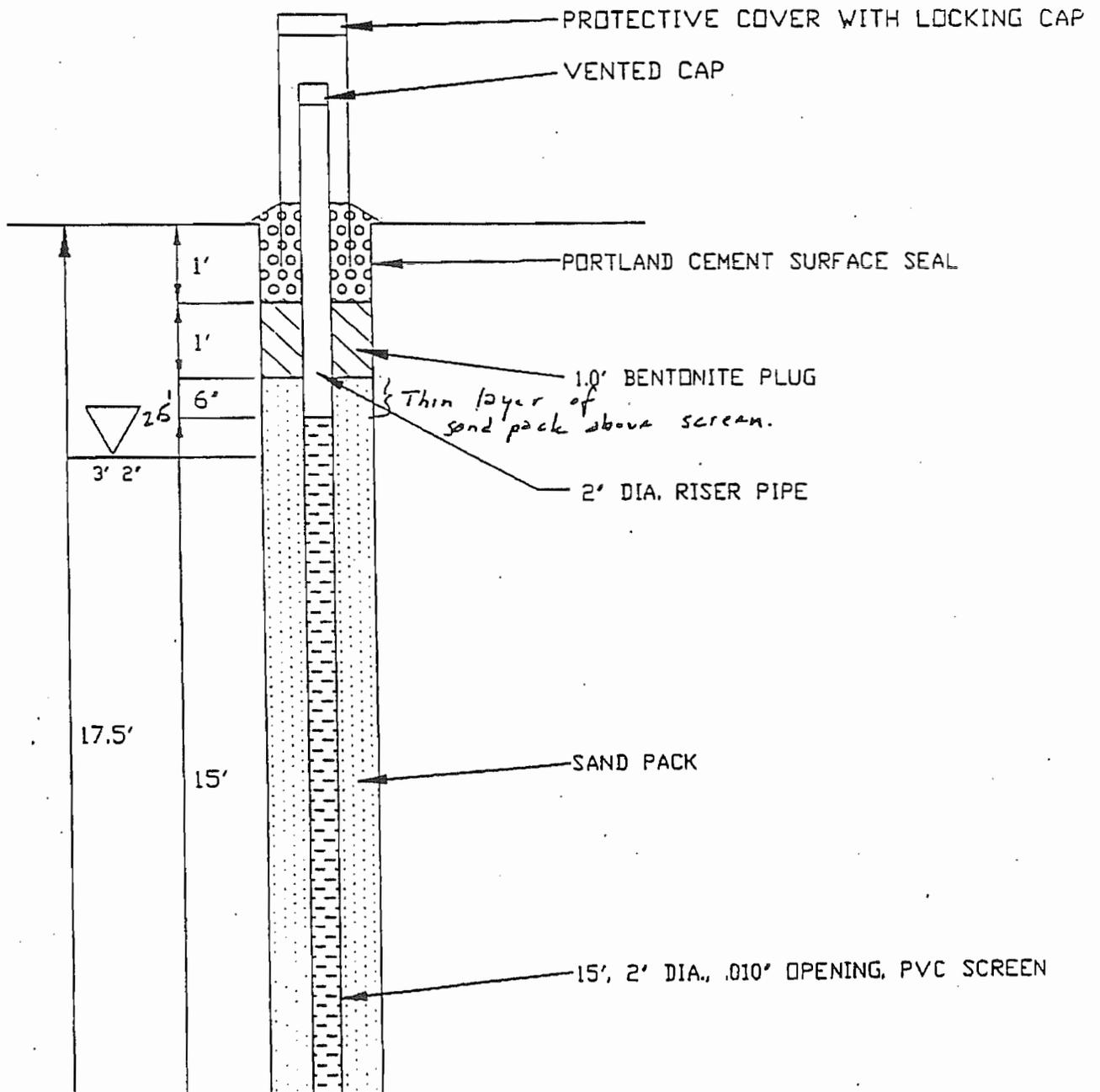
REMARKS: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

DATE: 1-7-92 SIGNATURE: John D. Barwood



# TYPICAL MONITORING WELL SCHEMATIC

PROJECT HALIFAX COUNTY LANDFILL VERTICAL EXPANSION  
WELL NUMBER MW-7(s)



WELL COMPLETION RECORD

MW-7 MW-7d

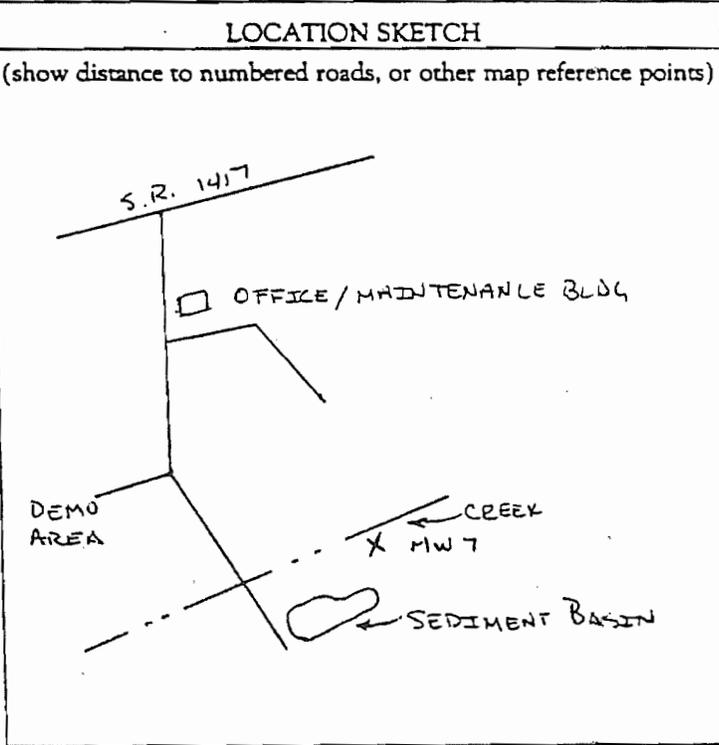
NOTE ALL INFORMATION REQUESTED BELOW FOR EACH WELL INSTALLED, AND RETURN FORM TO THE N.C. DEPARTMENT OF HUMAN RESOURCES, SOLID AND HAZARDOUS WASTE MANAGEMENT BRANCH, 1901, RALEIGH, N.C. 27602

LOCATION OF SITE: Halifax County Sanitary Landfill	PERMIT NO.: 41-0176-WM-0033
ADDRESS: 1417 Aurelian Springs, N.C.	OWNER (print): Halifax County
DRILLING CONTRACTOR: [Name] & Core, Inc.	REGISTRATION NO.: 763

Pipe: PVC dia. 2 in. Grout Depth: from 0 to -21' ft. - dia. 4" in.  
 Depth: from 2 to -25 ft. - dia. 2 in. Bentonite Seal: from -21' to -23' ft. - dia. 4" in.  
 Type: slotted PVC .010 dia. 2 in. Sand/Gravel PK: from -23' to 40' ft. - dia. 4" in.  
 Depth: from -25 to -40 ft. - dia. 2 in. Total Well Depth: from 2' to -40' ft. - dia. 4" in.  
 Water Level: 3' 11" Below ground surface Date Measured 11/26/91

(g m): \_\_\_\_\_ Method of Testing: \_\_\_\_\_ Casing is \_\_\_\_\_ feet above land surface

DRILLING LOG		
DEPTH	FORMATION DESCRIPTION	
0M TO 1.4	Brown fine sandy silt	
4 TO 6.7	Brown fine sandy silt	
7 TO 14.3	Damp DrkBr. fine very sandy silt.	
17 TO 40.0	Wet Brown medium sandy silt/gravel	

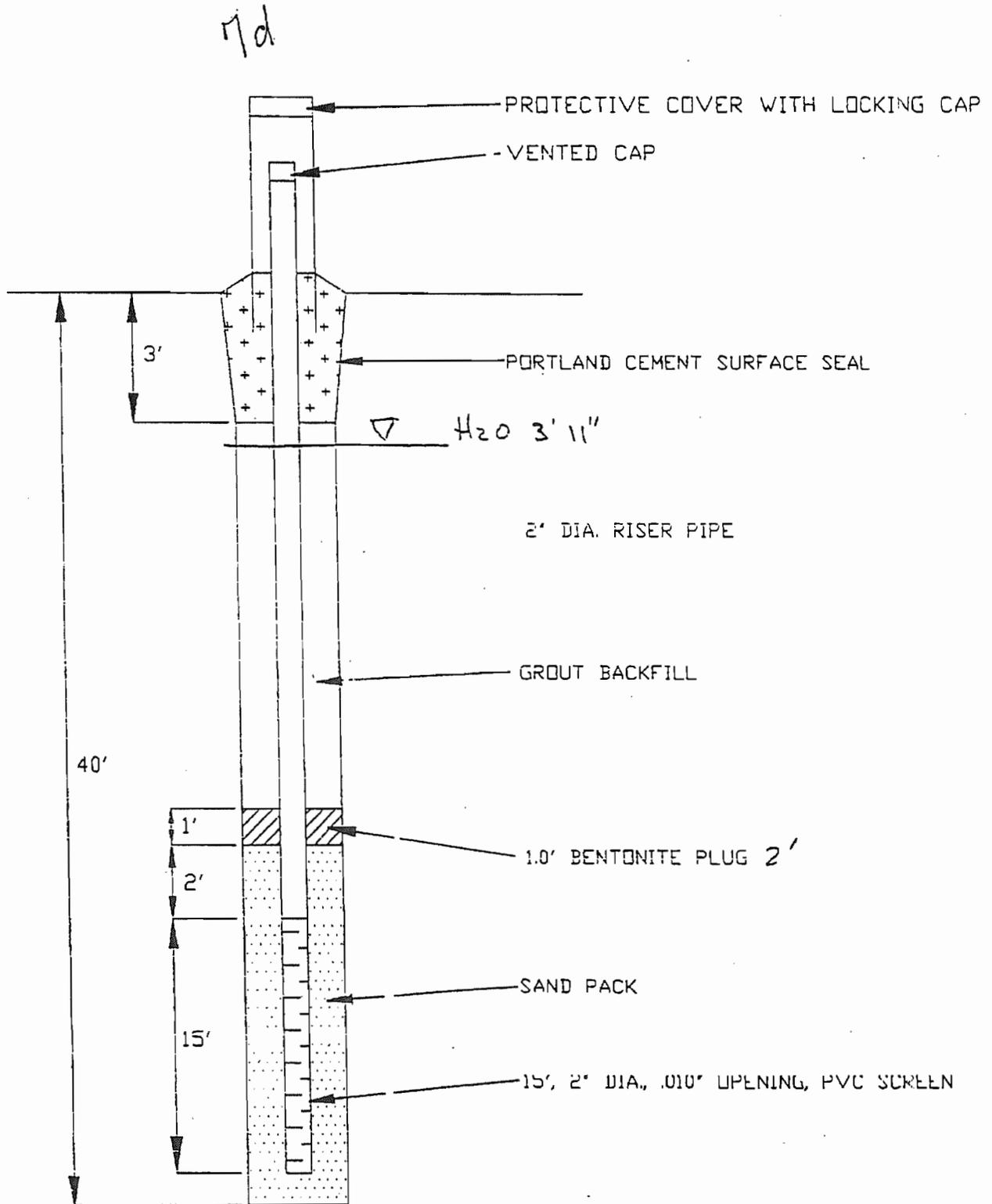


REMARKS: Well screened too deep.  
Static water table is above the screen.

SIGNATURE: \_\_\_\_\_

# TYPICAL MONITORING WELL SCHEMATIC

PROJECT HALIFAX COUNTY LANDFILL VERTICAL EXPANSION  
WELL NUMBER MW-7





FIELD BOREHOLE LOG

BOREHOLE NUMBER:  
MW-15R

PROJECT NUMBER: HALIFAX-14  
 PROJECT NAME: Halifax County Landfill  
 LOCATION: Aurelian Springs, North Carolina  
 DRILLING COMPANY: Engineering Tectonics, P.A.  
 RIG TYPE & NUMBER: MOBILE B-60  
 DRILLING METHOD: Hollow Stem Auger  
 WEATHER: Cloudy, 70 degrees  
 FIELD PARTY: David Barron  
 GEOLOGIST: Philip May  
 DATE BEGUN: 8/31/99

TOP OF CASING ELEVATION: TBD  
 TOTAL DEPTH: 43.0 FT  
 GROUND SURFACE ELEVATION: TBD  
 SHEET: 1 OF 1

STATIC WATER LEVEL (BLG)		
ND=While Drilling AB=After Boring		
Depth(ft)	31.5"	31.55"
Time	2:00	12:00
Date	8/31/99	9/1/99

DATE COMPLETED: 8/31/99

DEPTH	BLG	BOUNDS	SAMPLING METHOD	SAMPLE NUMBER	MOISTURE	CONSISTENCY	SAMPLE RECOVERY	DRILL METHOD	LITHOLOGY DESCRIPTION	DEPTH	LITHOLOGY	BELL INSTALLATION
0.0										0.0		
1.0										1.0		
2.0									SANDY CLAYEY SILT: Slightly moist rust-brown F sandy clayey silt, mottled (20%) w/ grey clay & some gravel, lower 1" moist white F sandy silt w/ rust mottling, some Mn & quartz throughout.	2.0		
3.0										3.0		
4.0										4.0		
5.0		5	Ss	81	SM		8"			5.0		
6.0										6.0		
7.0										7.0		
8.0										8.0		
9.0										9.0		
10.0		6	Ss	82	SM		12"			10.0		
11.0		1.0							CLAYEY SILTY SAND: Slightly moist tan-pink clayey silty F sand w/ grey, white, yellow, & rust mottles (50%);	11.0		
12.0		1.5								12.0		
13.0										13.0		
14.0										14.0		
15.0		9	Ss	83	SM		12"		15.0' same as above, grading into rust orange matrix w/ other mottles, some mica & quartz.	15.0		
16.0		1.2								16.0		
17.0		1.3								17.0		
18.0										18.0		
19.0										19.0		
20.0		1.0	Ss	84	M		12"			20.0		
21.0		1.4							SANDY CLAYEY SILT: Moist M-C sandy clayey silt, mottled tan-pink, grey-black, white, & rust, quartz gravel;	21.0		
22.0		1.7								22.0		
23.0										23.0		
24.0										24.0		
25.0		8	Ss	85	M		6"		25.0' Moist M-C sandy clayey silt, grey-tan-pink, brown-black, grey-tan, & white mottles, quartz, Feldspar, Mn, Mica;	25.0		
26.0		1.1								26.0		
27.0		1.5								27.0		
28.0										28.0		
29.0										29.0		
30.0		8	Ss	86	M		6"		30.0' same as above;	30.0		
31.0		1.7								31.0		
32.0		2.5								32.0		
33.0										33.0		
34.0										34.0		
35.0		2.0							35.0' same as above, very moist;	35.0		
36.0		2.9	Ss	87	H		12"			36.0		
37.0		1.1								37.0		
38.0										38.0		
39.0										39.0		
40.0									43.0' same as above, wet, boring terminated at 43.0'.	40.0		
41.0										41.0		
42.0										42.0		
43.0		1.1	Ss	88	H		14"			43.0		
44.0		2.0								44.0		
45.0		3.3								45.0		







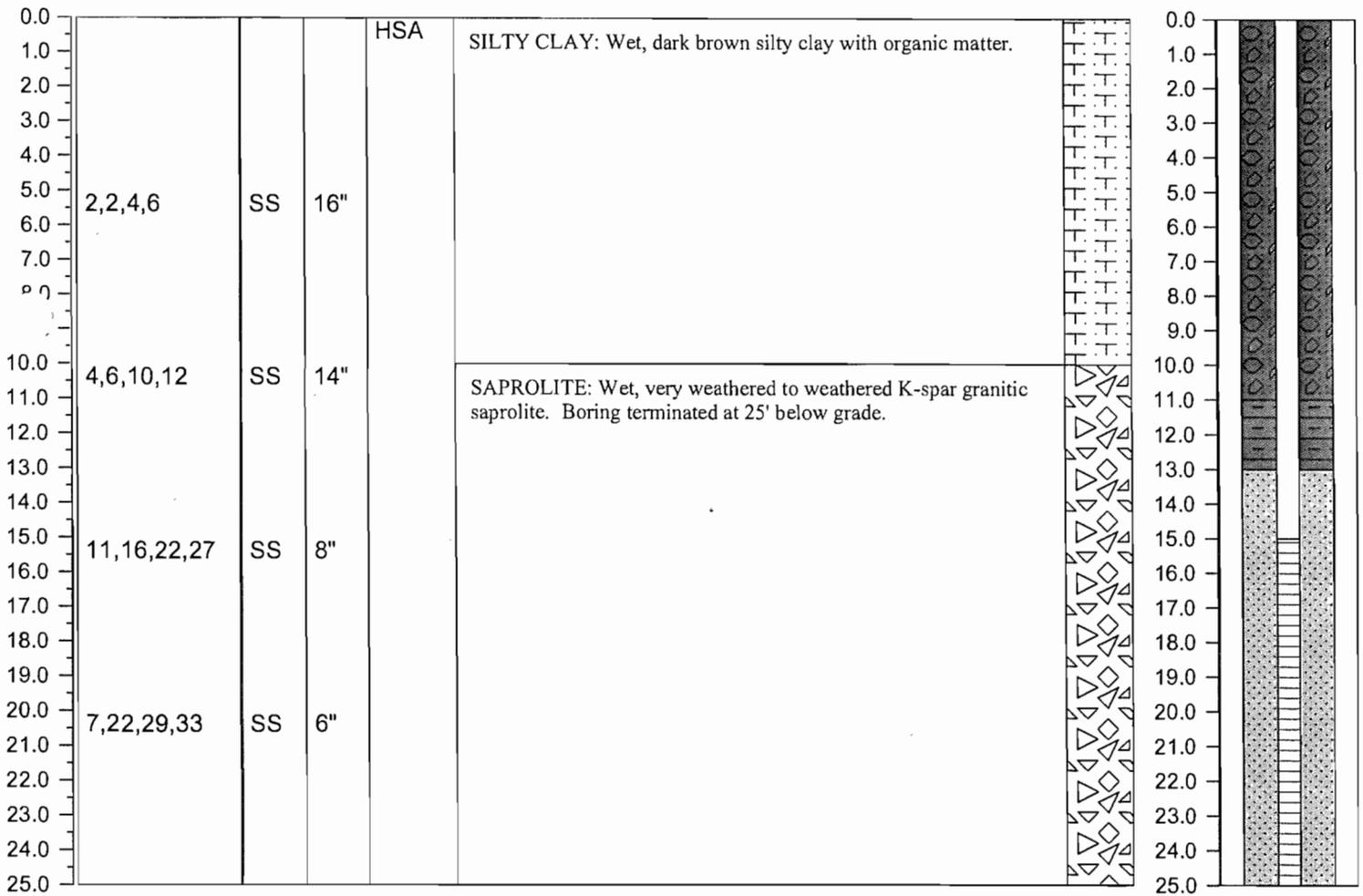
**FIELD BOREHOLE LOG**

PROJECT NAME: **Halifax Landfill**  
 LOCATION: **Halifax Co.**  
 DRILLING CO: **McCall Bros.**  
 DRILLING METHOD: **HSA**  
 FIELD PARTY: **Ken McDonald**  
 GEOLOGIST: **J. Smyth**  
 DATE BEGUN: **10/03/07** DATE COMPLETED: **10/03/07**

TOTAL DEPTH: **25**  
 GROUND SURFACE ELEVATION:  
 TOP OF CASING ELEVATION:

STATIC WATER LEVEL (TOC)		
Depth (ft)		
Time		
Date		

DEPTH	BLOW COUNT	SAMPLING METHOD	RECOVERY	DRILL METHOD	DESCRIPTION	LITHOLOGY	DEPTH	WELL	INSTALLATION
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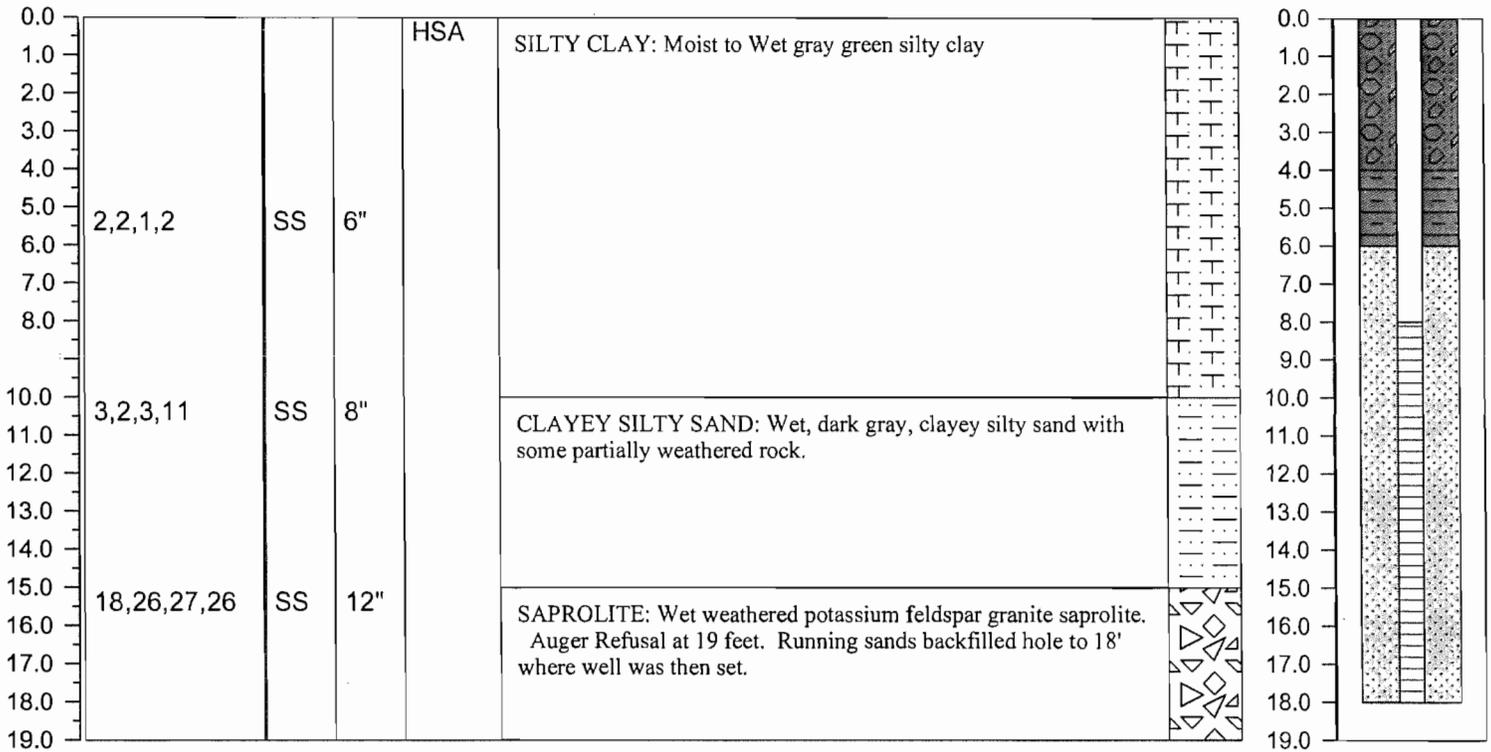


PROJECT NAME: **Halifax Landfill**  
 LOCATION: **Halifax Co.**  
 DRILLING CO: **McCall Bros.**  
 DRILLING METHOD: **HSA**  
 FIELD PARTY: **Ken McDonald**  
 GEOLOGIST: **J. Smyth**  
 DATE BEGUN: **10/16/07** DATE COMPLETED: **10/16/07**

TOTAL DEPTH: **19**  
 GROUND SURFACE ELEVATION:  
 TOP OF CASING ELEVATION:

STATIC WATER LEVEL (TOC)		
Depth (ft)		
Time		
Date		

DEPTH	BLOW COUNT	SAMPLING METHOD	RECOVERY	DRILL METHOD	DESCRIPTION	LITHOLOGY	DEPTH	WELL	INSTALLATION
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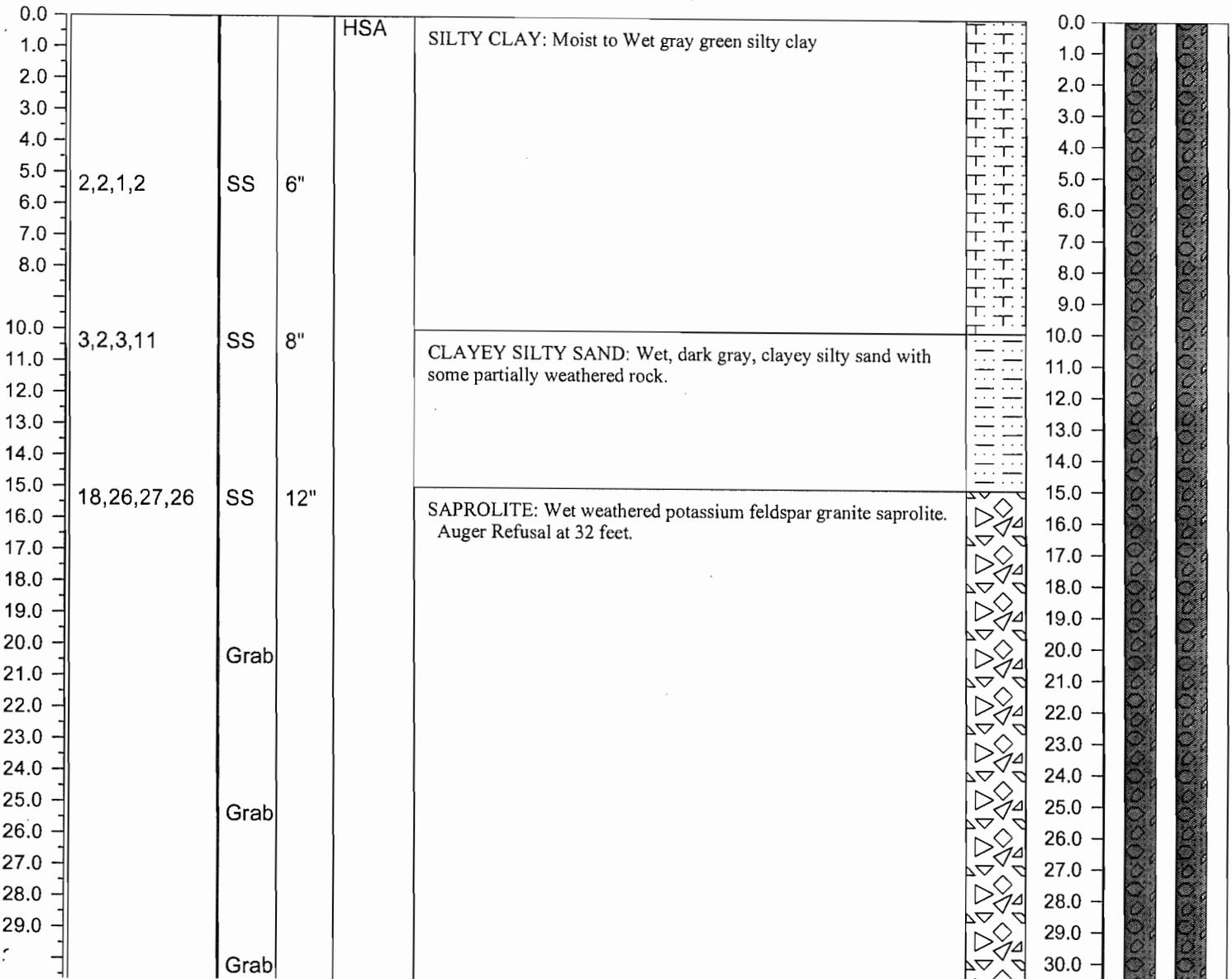
**FIELD BOREHOLE LOG**

PROJECT NAME: **Halifax Landfill**  
 LOCATION: **Halifax Co.**  
 DRILLING CO: **McCall Bros.**  
 DRILLING METHOD: **HSA**  
 FIELD PARTY: **Ken McDonald**  
 GEOLOGIST: **J. Smyth**  
 DATE BEGUN: **10/16/07** DATE COMPLETED: **10/17/07**

TOTAL DEPTH: **52**  
 GROUND SURFACE ELEVATION:  
 TOP OF CASING ELEVATION:

STATIC WATER LEVEL (TOC)		
Depth (ft)		
Time		
Date		

DEPTH	BLOW COUNT	SAMPLING METHOD	RECOVERY	DRILL METHOD	DESCRIPTION	LITHOLOGY	DEPTH	WELL INSTALLATION
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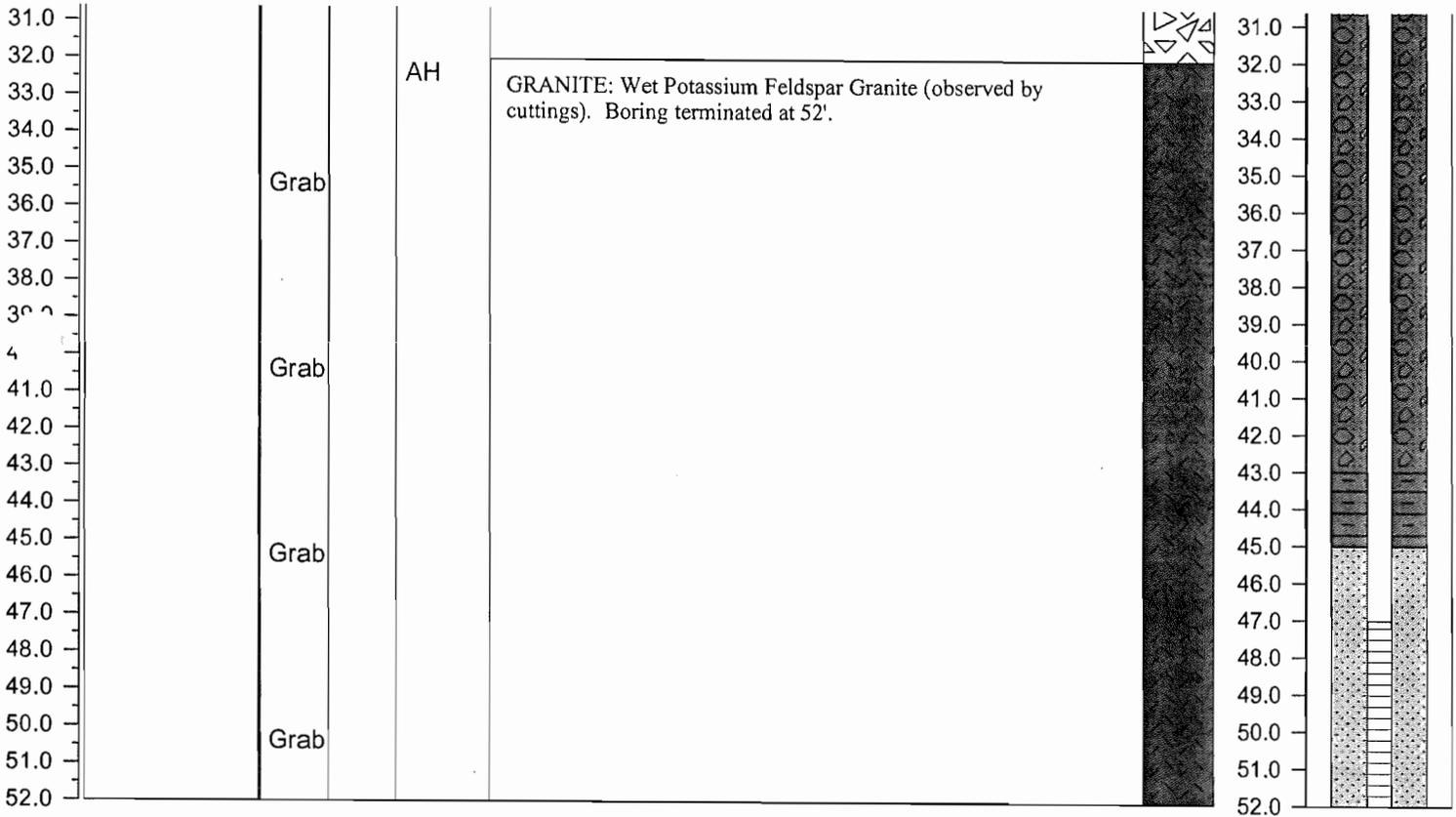


PROJECT NAME: **Halifax Landfill**  
 LOCATION: **Halifax Co.**  
 DRILLING CO: **McCall Bros.**  
 DRILLING METHOD: **HSA**  
 FIELD PARTY: **Ken McDonald**  
 GEOLOGIST: **J. Smyth**  
 DATE BEGUN: **10/16/07** DATE COMPLETED: **10/17/07**

TOTAL DEPTH: **52**  
 GROUND SURFACE ELEVATION:  
 TOP OF CASING ELEVATION:

STATIC WATER LEVEL (TOC)		
Depth (ft)		
Time		
Date		

DEPTH	BLOW COUNT	SAMPLING METHOD	RECOVERY	DRILL METHOD	DESCRIPTION	LITHOLOGY	DEPTH	WELL	INSTALLATION
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Appendix B

Laboratory Analytical Report

# Environment 1, Incorporated

REC'D SEP 28 2010

Drinking Water ID: 37715  
Wastewater ID: 10

P.O. BOX 7085, 114 OAKMONT DRIVE  
GREENVILLE, N.C. 27835-7085

PHONE (252) 756-6208  
FAX (252) 756-0633

ID#: 6015

HALIFAX CO. LANDFILL (CLOSED MSW)  
MS. GWEN MATTHEWS  
P.O. BOX 70  
HALIFAX ,NC 27839

DATE COLLECTED: 08/24/10  
DATE REPORTED : 09/13/10

REVIEWED BY: 

PARAMETERS	MDL	SWSL	MW-1	MW-7D	MW-15R	MW-16A	Analysis		Method Code
							Date	Analyst	
PH (field measurement), Units			5.1	6.2	4.9	5.7	08/24/10	RJH	SM4500HB
Antimony, ug/l	0.22	6.0	--- U	--- U	0.3 J	--- U	09/03/10	LFPJ	EPA200.8
Arsenic, ug/l	0.04	10.0	--- U	--- U	--- U	--- U	09/03/10	LFPJ	EPA200.8
Barium, ug/l	0.03	100.0	31.7 J	31.2 J	77.8 J	95.5 J	09/03/10	LFPJ	EPA200.8
Beryllium, ug/l	0.02	1.0	0.1 J	0.1 J	0.2 J	0.5 J	09/03/10	LFPJ	EPA200.8
Cadmium, ug/l	0.02	1.0	0.3 J	0.1 J	0.2 J	0.2 J	09/03/10	LFPJ	EPA200.8
Cobalt, ug/l	0.10	10.0	0.6 J	0.1 J	0.7 J	0.7 J	09/03/10	LFPJ	EPA200.8
Copper, ug/l	0.03	10.0	1.3 J	1.2 J	6.3 J	0.6 J	09/03/10	LFPJ	EPA200.8
Total Chromium, ug/l	0.03	10.0	0.3 J	--- U	--- U	--- U	09/03/10	LFPJ	EPA200.8
Lead, ug/l	0.01	10.0	0.6 J	0.6 J	0.8 J	0.2 J	09/03/10	LFPJ	EPA200.8
Mercury, ug/l	0.08	0.20	--- U	--- U	0.47	0.23	09/03/10	LFPJ	EPA200.8
Nickel, ug/l	0.05	50.0	0.6 J	--- U	--- U	0.3 J	09/03/10	LFPJ	EPA200.8
Selenium, ug/l	0.32	10.0	0.5 J	--- U	--- U	--- U	09/03/10	LFPJ	EPA200.8
Silver, ug/l	0.03	10.0	--- U	--- U	--- U	0.1 J	09/03/10	LFPJ	EPA200.8
Thallium, ug/l	0.05	5.5	--- U	--- U	0.1 J	--- U	09/03/10	LFPJ	EPA200.8
Tin, ug/l	0.11	100.0	--- U	0.5 J	0.6 J	0.6 J	09/03/10	LFPJ	EPA200.8
Vanadium, ug/l	0.03	25.0	0.6 J	0.5 J	--- U	0.7 J	09/03/10	LFPJ	EPA200.8
Zinc, ug/l	0.08	10.0	4 J	4 J	3.2 J	5.6 J	09/03/10	LFPJ	EPA200.8
Conductivity (at 25c), uMhos	1.0	1.0	31	44	81	158	08/24/10	RJH	SM2510B
Temperature, °C			16	20	17	18	08/24/10	RJH	SM2550B
Static Water Level, feet			32.39	4.25	32.00	8.07	08/24/10	RJH	
Well Depth, feet			42.36	39.57	46.41	22.73	08/24/10	RJH	

J = Between MDL and SWSL, U = Below ALL Quantitation Limits.

# Environment 1, Incorporated

Drinking Water ID: 37715  
Wastewater ID: 10

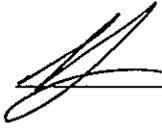
P.O. BOX 7085, 114 OAKMONT DRIVE  
GREENVILLE, N.C. 27835-7085

PHONE (252) 756-6208  
FAX (252) 756-0633

CLIENT: HALIFAX CO. LANDFILL (CLOSED MSW)  
MS. GWEN MATTHEWS  
P.O. BOX 70  
HALIFAX, NC 27839

CLIENT ID: 6015

ANALYST: CHS  
DATE COLLECTED: 08/24/10  
DATE EXTRACTED: 08/27/10  
DATE ANALYZED: 08/27/10  
DATE REPORTED: 09/13/10

REVIEWED BY: 

PESTICIDES AND PCB'S  
EPA METHOD 8081B

PARAMETERS, ug/l	MDL	SWSL	MW-7D	MW-15R	MW-16A	
1. Aldrin	0.029	0.05	---	U	---	U
2. Alpha-BHC	0.032	0.05	---	U	---	U
3. Beta-BHC	0.031	0.05	---	U	---	U
4. Delta-BHC	0.030	0.05	---	U	---	U
5. Gamma-BHC (Lindane)	0.032	0.05	---	U	---	U
6. Chlordane	0.320	0.50	---	U	---	U
7. 4,4-DDD	0.051	0.10	---	U	---	U
8. 4,4-DDE	0.049	0.10	---	U	---	U
9. 4,4-DDT	0.052	0.10	---	U	---	U
10. Dieldrin	0.042	0.075	---	U	---	U
11. Endosulfan I	0.056	0.10	---	U	---	U
12. Endosulfan II	0.046	0.10	---	U	---	U
13. Endosulfan Sulfate	0.072	0.10	---	U	---	U
14. Endrin	0.053	0.10	---	U	---	U
15. Endrin Aldehyde	0.068	0.10	---	U	---	U
16. Heptachlor	0.039	0.05	---	U	---	U
17. Heptachlor Epoxide	0.042	0.075	---	U	---	U
18. Methoxychlor	0.530	1.00	---	U	---	U
19. Pcb's (Aroclors)	0.500	2.00	---	U	---	U
20. Toxaphene	0.690	1.50	---	U	---	U

# Environment 1, Incorporated

Drinking Water ID: 37715  
Wastewater ID: 10

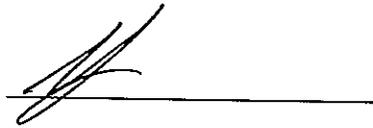
P.O. BOX 7085, 114 OAKMONT DRIVE  
GREENVILLE, N.C. 27835-7085

PHONE (252) 756-6208  
FAX (252) 756-0633

CLIENT: HALIFAX CO. LANDFILL (CLOSED MSW)  
MS. GWEN MATTHEWS  
P.O. BOX 70  
HALIFAX, NC 27839

CLIENT ID: 6015

ANALYST: CHS  
DATE COLLECTED: 08/24/10  
DATE EXTRACTED: 08/31/10  
DATE ANALYZED: 08/31/10  
DATE REPORTED: 09/13/10

REVIEWED BY: 

## LANDFILL APPENDIX II EPA METHOD 8151A

PARAMETERS, ug/l	MDL	SWSL	MW-7D	MW-15R	MW-16A
1. 2,4-D	0.36	2.0	--- U	--- U	--- U
2. Dinoseb	0.54	1.0	--- U	--- U	--- U
3. 2,4,5-TP	0.42	2.0	--- U	--- U	--- U
4. 2,4,5-T	0.47	2.0	--- U	--- U	--- U

J = Between MDL and SWSL, U = Below ALL Quantitation Limits.

# Environment 1, Incorporated

Drinking Water ID: 37715

Wastewater ID: 10

P.O. BOX 7085, 114 OAKMONT DRIVE  
GREENVILLE, N.C. 27835-7085

PHONE (252) 756-6208  
FAX (252) 756-0633

CLIENT: HALIFAX CO. LANDFILL (CLOSED MSW)  
MS. GWEN MATTHEWS  
P.O. BOX 70  
HALIFAX, NC 27839

CLIENT ID: 6015

ANALYST: MAO  
DATE COLLECTED: 08/24/10  
DATE ANALYZED: 09/02/10  
DATE REPORTED: 09/13/10

Page: 1

REVIEWED BY: 

## VOLATILE ORGANICS EPA METHOD 8260B

PARAMETERS, ug/l	MDL	SWSL	MW-1
1. Chloromethane	0.77	1.0	--- U
2. Vinyl Chloride	0.63	1.0	--- U
3. Bromomethane	0.67	10.0	--- U
4. Chloroethane	0.48	10.0	--- U
5. Trichlorofluoromethane	0.24	1.0	--- U
6. 1,1-Dichloroethene	0.17	5.0	--- U
7. Acetone	9.06	100.0	--- U
8. Iodomethane	0.26	10.0	--- U
9. Carbon Disulfide	0.23	100.0	--- U
10. Methylene Chloride	0.64	1.0	--- U
11. trans-1,2-Dichloroethene	0.23	5.0	--- U
12. 1,1-Dichloroethane	0.20	5.0	--- U
13. Vinyl Acetate	0.20	50.0	--- U
14. Cis-1,2-Dichloroethene	0.25	5.0	--- U
15. 2-Butanone	2.21	100.0	--- U
16. Bromochloromethane	0.27	3.0	--- U
17. Chloroform	0.25	5.0	--- U
18. 1,1,1-Trichloroethane	0.19	1.0	--- U
19. Carbon Tetrachloride	0.22	1.0	--- U
20. Benzene	0.24	1.0	--- U
21. 1,2-Dichloroethane	0.27	1.0	--- U
22. Trichloroethene	0.23	1.0	--- U
23. 1,2-Dichloropropane	0.21	1.0	--- U
24. Bromodichloromethane	0.21	1.0	--- U
25. Cis-1,3-Dichloropropene	0.24	1.0	--- U
26. 4-Methyl-2-Pentanone	1.19	100.0	--- U
27. Toluene	0.23	1.0	--- U
28. trans-1,3-Dichloropropene	0.28	1.0	--- U
29. 1,1,2-Trichloroethane	0.25	1.0	--- U
30. Tetrachloroethene	0.17	1.0	--- U
31. 2-Hexanone	1.57	50.0	--- U
32. Dibromochloromethane	0.24	3.0	--- U
33. 1,2-Dibromoethane	0.26	1.0	--- U
34. Chlorobenzene	0.30	3.0	--- U
35. 1,1,1,2-Tetrachloroethane	0.22	5.0	--- U
36. Ethylbenzene	0.21	1.0	--- U
37. Xylenes	0.68	5.0	--- U
38. Dibromomethane	0.28	10.0	--- U
39. Styrene	0.19	1.0	--- U
40. Bromoform	0.20	3.0	--- U
41. 1,1,2,2-Tetrachloroethane	0.26	3.0	--- U
42. 1,2,3-Trichloropropane	0.43	1.0	--- U
43. 1,4-Dichlorobenzene	0.39	1.0	--- U
44. 1,2-Dichlorobenzene	0.32	5.0	--- U
45. 1,2-Dibromo-3-Chloropropane	0.34	13.0	--- U
46. Acrylonitrile	2.72	200.0	--- U
47. trans-1,4-Dichloro-2-Butene	0.42	100.0	--- U

J = Between MDL and SWSL, U = Below ALL Quantitation Limits.

# Environment 1, Incorporated

Drinking Water ID: 37715  
Wastewater ID: 10

P.O. BOX 7085, 114 OAKMONT DRIVE  
GREENVILLE, N.C. 27835-7085

PHONE (252) 756-6208  
FAX (252) 756-0633

CLIENT: HALIFAX CO. LANDFILL (CLOSED MSW)  
MS. GWEN MATTHEWS  
P.O. BOX 70  
HALIFAX, NC 27839

CLIENT ID: 6015  
ANALYST: CHS  
DATE COLLECTED: 08/24/10  
DATE EXTRACTED: 08/25/10  
DATE ANALYZED: 08/30/10  
DATE REPORTED: 09/13/10

Page: 1

REVIEWED BY: 

## SEMI-VOLATILE ORGANICS EPA METHOD 8270C

PARAMETERS, ug/l	MDL	SWSL	MW-7D	MW-15R	MW-16A	
1. Acenaphthene	2.66	10.0	---	U	---	U
2. Acenaphthylene	2.60	10.0	---	U	---	U
3. Anthracene	2.97	10.0	---	U	---	U
4. Benzo[a]anthracene	4.16	10.0	---	U	---	U
5. Benzo[b]fluoranthene	3.32	10.0	---	U	---	U
6. Benzo[k]fluoranthene	4.23	10.0	---	U	---	U
7. Benzo[g,h,i]perylene	2.61	10.0	---	U	---	U
8. Benzo[a]pyrene	3.27	10.0	---	U	---	U
9. 4-Bromophenyl Phenyl Ether	2.63	10.0	---	U	---	U
10. Butyl Benzyl Phthalate	5.78	10.0	---	U	---	U
11. Bis-(2-Chloroethoxy) Methane	3.14	10.0	---	U	---	U
12. Bis-(2-Chloroethyl) Ether	2.58	10.0	---	U	---	U
13. Bis-(2-Chloroisopropyl) Ether	2.58	10.0	---	U	---	U
14. 2-Chloronaphthalene	2.17	10.0	---	U	---	U
15. 4-Chlorophenyl Phenyl Ether	2.42	10.0	---	U	---	U
16. Chrysene	4.04	10.0	---	U	---	U
17. Dibenzo[a,h]anthracene	2.78	10.0	---	U	---	U
18. Di-N-Butyl Phthalate	3.09	10.0	---	U	---	U
19. Dimethyl Phthalate	3.78	10.0	---	U	---	U
20. Diethyl Phthalate	3.92	6000	---	U	---	U
21. 2,4-Dinitrotoluene	3.95	10.0	---	U	---	U
22. 2,6-Dinitrotoluene	3.88	10.0	---	U	---	U
23. Di-N-Octyl Phthalate	2.81	10.0	---	U	---	U
24. Bis-(2-Ethylhexyl) Phthalate	9.97	15.0	---	U	---	U
25. Fluoranthene	3.92	10.0	---	U	---	U
26. Fluorene	2.95	10.0	---	U	---	U
27. Hexachlorobenzene	2.61	10.0	---	U	---	U
28. Hexachlorocyclopentadiene	4.16	10.0	---	U	---	U
29. Indeno[1,2,3-cd]pyrene	2.91	10.0	---	U	---	U
30. Isophorone	3.74	10.0	---	U	---	U
31. Nitrobenzene	2.85	10.0	---	U	---	U
32. N-Nitrosodimethylamine	4.25	10.0	---	U	---	U
33. N-Nitrosodiphenylamine	3.95	10.0	---	U	---	U
34. N-Nitrosodi-N-Propylamine	4.06	10.0	---	U	---	U
35. Phenanthrene	3.24	10.0	---	U	---	U
36. Pyrene	3.63	10.0	---	U	---	U
37. 4-Chloro-3-Methylphenol	3.79	20.0	---	U	---	U
38. 2-Chlorophenol	2.75	10.0	---	U	---	U
39. O-Cresol	3.68	10.0	---	U	---	U
40. P-Cresol	4.12	10.0	---	U	---	U
41. 2,4-Dichlorophenol	5.19	10.0	---	U	---	U
42. 2,6-Dichlorophenol	4.89	10.0	---	U	---	U
43. 2,4-Dimethylphenol	3.21	10.0	---	U	---	U
44. 4,6-Dinitro-2-Methylphenol	4.77	50.0	---	U	---	U
45. 2,4-Dinitrophenol	4.37	50.0	---	U	---	U
46. Ethyl Methanesulfonate	5.26	20.0	---	U	---	U
47. Methyl Methanesulfonate	4.92	10.0	---	U	---	U
48. 2-Nitrophenol	3.64	10.0	---	U	---	U

J = Between MDL and SWSL, U = Below ALL Quantitation Limits.

# Environment 1, Incorporated

Drinking Water ID: 37715  
Wastewater ID: 10

P.O. BOX 7085, 114 OAKMONT DRIVE  
GREENVILLE, N.C. 27835-7085

PHONE (252) 756-6208  
FAX (252) 756-0633

CLIENT: HALIFAX CO. LANDFILL (CLOSED MSW)  
MS. GWEN MATTHEWS  
P.O. BOX 70  
HALIFAX, NC 27839

CLIENT ID: 6015

ANALYST: CHS  
DATE COLLECTED: 08/24/10  
DATE EXTRACTED: 08/25/10  
DATE ANALYZED: 08/30/10  
DATE REPORTED: 09/13/10

Page: 2

REVIEWED BY: 

## SEMI-VOLATILE ORGANICS EPA METHOD 8270C

PARAMETERS, ug/l	MDL	SWSL	MW-7D	MW-15R	MW-16A
49. 4-Nitrophenol	3.17	50.0	---	U	---
50. Pentachlorophenol	5.33	25.0	---	U	---
51. Phenol	1.86	10.0	---	U	---
52. 2,3,4,6-Tetrachlorophenol	3.12	10.0	---	U	---
53. 2,4,5-Trichlorophenol	4.17	10.0	---	U	---
54. 2,4,6-Trichlorophenol	3.84	10.0	---	U	---
55. Acetophenone	2.89	10.0	---	U	---
56. 2-Acetylaminofluorene	3.98	20.0	---	U	---
57. 4-Aminobiphenyl	4.12	20.0	---	U	---
58. Benzyl Alcohol	4.47	20.0	---	U	---
59. 4-Chloroaniline	3.36	20.0	---	U	---
60. Chlorobenzilate	5.12	10.0	---	U	---
61. Diallate	2.98	10.0	---	U	---
62. Dibenzofuran	4.28	10.0	---	U	---
63. 3,3-Dichlorobenzidine	4.22	20.0	---	U	---
64. Dimethoate	3.98	20.0	---	U	---
65. P-Dimethylaminoazobenzene	2.89	10.0	---	U	---
66. 7,12-Dimethylbenz[alanthracene	5.26	10.0	---	U	---
67. 3,3-Dimethylbenzadine	3.21	10.0	---	U	---
68. 1,3-Dinitrobenzene	2.89	20.0	---	U	---
69. Diphenylamine	5.10	10.0	---	U	---
70. Disulfoton	4.28	10.0	---	U	---
71. Famphur	3.98	20.0	---	U	---
72. Hexachloropropene	4.31	10.0	---	U	---
73. Isosafrole	2.88	10.0	---	U	---
74. Kepone	2.78	20.0	---	U	---
75. Methapyrilene	3.54	100.0	---	U	---
76. 3-Methylchloroanthrene	4.21	10.0	---	U	---
77. 2-Methylnaphthalene	3.79	10.0	---	U	---
78. Methyl Parathion	4.32	10.0	---	U	---
79. m-Cresol	3.81	10.0	---	U	---
80. 1,4-Naphthoquinone	4.00	10.0	---	U	---
81. 1-Naphthylamine	5.61	10.0	---	U	---
82. 2-Naphthylamine	4.62	10.0	---	U	---
83. 2-Nitroaniline	3.61	50.0	---	U	---
84. 3-Nitroaniline	4.81	50.0	---	U	---
85. 4-Nitroaniline	4.22	20.0	---	U	---
86. 5-Nitro-O-Toluidine	4.01	10.0	---	U	---
87. N-Nitrosodi-n-butylamine	3.63	10.0	---	U	---
88. N-Nitrosodiethylamine	3.83	20.0	---	U	---
89. N-Nitrosomethylethylamine	3.83	10.0	---	U	---
90. N-Nitrosopiperidine	5.19	20.0	---	U	---
91. N-Nitrosopyrrolidine	2.89	10.0	---	U	---
92. Parathion	3.12	10.0	---	U	---
93. Pentachlorobenzene	3.92	10.0	---	U	---
94. Pentachloronitrobenzene	3.71	20.0	---	U	---
95. Phenacetin	4.41	20.0	---	U	---
96. 1,4 Benzenediamine	2.99	10.0	---	U	---

J = Between MDL and SWSL, U = Below ALL Quantitation Limits.

# Environment 1, Incorporated

Drinking Water ID: 37715  
Wastewater ID: 10

P.O. BOX 7085, 114 OAKMONT DRIVE  
GREENVILLE, N.C. 27835-7085

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CLIENT: HALIFAX CO. LANDFILL (CLOSED MSW)  
MS. GWEN MATTHEWS  
P.O. BOX 70  
HALIFAX, NC 27839

CLIENT ID: 6015

ANALYST: CHS  
DATE COLLECTED: 08/24/10  
DATE EXTRACTED: 08/25/10  
DATE ANALYZED: 08/30/10  
DATE REPORTED: 09/13/10

Page: 3

REVIEWED BY: 

## SEMI-VOLATILE ORGANICS EPA METHOD 8270C

PARAMETERS, ug/l	MDL	SWSL	MW-7D	MW-15R	MW-16A
97. Phorate	3.86	10.0	--- U	--- U	--- U
98. Pronamide	3.69	10.0	--- U	--- U	--- U
99. Safrole	4.12	10.0	--- U	--- U	--- U
100. 1,2,4,5-Tetrachlorobenzene	5.01	10.0	--- U	--- U	--- U
101. Thionazin	4.62	20.0	--- U	--- U	--- U
102. O-Toluidine	4.11	10.0	--- U	--- U	--- U
103. 1,3,5-Trinitrobenzene	3.98	10.0	--- U	--- U	--- U
104. O,O,O-Triethyl Phosphorothioate	3.61	10.0	--- U	--- U	--- U
105. Hexachloroethane	1.49	10.0	--- U	--- U	--- U
106. Isodrin	3.11	20.0	--- U	--- U	--- U

# Environment 1, Incorporated

Drinking Water ID: 37715  
Wastewater ID: 10

P.O. BOX 7085, 114 OAKMONT DRIVE  
GREENVILLE, N.C. 27835-7085

PHONE (252) 756-6208  
FAX (252) 756-0633

CLIENT: HALIFAX CO. LANDFILL (CLOSED MSW)  
MS. GWEN MATTHEWS  
P.O. BOX 70  
HALIFAX, NC 27839

CLIENT ID: 6015

ANALYST: MAO  
DATE COLLECTED: 08/24/10  
DATE ANALYZED: 09/07/10  
DATE REPORTED: 09/13/10

Page: 1

REVIEWED BY: 

## LANDFILL APPENDIX II EPA METHOD 8260B

PARAMETERS, ug/l	MDL	SWSL	MW-7D	MW-15R	MW-16A	Equipment Blank	Trip Blank		
1. Chloromethane	0.77	1.0	---	U	---	U	---	U	
2. Vinyl Chloride	0.63	1.0	---	U	---	U	---	U	
3. Bromomethane	0.67	10.0	---	U	---	U	---	U	
4. Chloroethane	0.48	10.0	---	U	0.90	J	---	U	
5. Trichlorofluoromethane	0.24	1.0	---	U	0.70	J	---	U	
6. 1,1-Dichloroethene	0.17	5.0	---	U	0.50	J	---	U	
7. Acetone	9.06	100.0	---	U	---	U	---	U	
8. Iodomethane	0.26	10.0	---	U	---	U	---	U	
9. Carbon Disulfide	0.23	100.0	---	U	---	U	---	U	
10. Methylene Chloride	0.64	1.0	---	U	7.70	1.40	---	U	
11. trans-1,2-Dichloroethene	0.23	5.0	---	U	---	U	---	U	
12. 1,1-Dichloroethane	0.20	5.0	---	U	7.90	11.30	---	U	
13. Vinyl Acetate	0.20	50.0	---	U	---	U	---	U	
14. Cis-1,2-Dichloroethene	0.25	5.0	---	U	6.60	29.60	---	U	
15. 2-Butanone	2.21	100.0	---	U	---	U	---	U	
16. Bromochloromethane	0.27	3.0	---	U	---	U	---	U	
17. Chloroform	0.25	5.0	---	U	---	U	---	U	
18. 1,1,1-Trichloroethane	0.19	1.0	---	U	---	U	---	U	
19. Carbon Tetrachloride	0.22	1.0	---	U	---	U	---	U	
20. Benzene	0.24	1.0	---	U	---	2.50	---	U	
21. 1,2-Dichloroethane	0.21	1.0	---	U	0.70	J	---	U	
22. Trichloroethene	0.23	1.0	---	U	2.80	20.20	---	U	
23. 1,2-Dichloropropane	0.21	1.0	---	U	---	0.50	J	---	U
24. Bromodichloromethane	0.21	1.0	---	U	---	U	---	U	
25. Cis-1,3-Dichloropropene	0.24	1.0	---	U	---	U	---	U	
26. 4-Methyl-2-Pentanone	1.19	100.0	---	U	---	U	---	U	
27. Toluene	0.23	1.0	---	U	---	U	---	U	
28. trans-1,3-Dichloropropene	0.28	1.0	---	U	---	U	---	U	
29. 1,1,2-Trichloroethane	0.25	1.0	---	U	---	U	---	U	
30. Tetrachloroethene	0.17	1.0	---	U	2.50	52.20	---	U	
31. 2-Hexanone	1.57	50.0	---	U	---	U	---	U	
32. Dibromochloromethane	0.24	3.0	---	U	---	U	---	U	
33. 1,2-Dibromoethane	0.26	1.0	---	U	---	U	---	U	
34. Chlorobenzene	0.30	3.0	---	U	---	1.00	J	---	U
35. 1,1,1,2-Tetrachloroethane	0.22	5.0	---	U	---	U	---	U	
36. Ethylbenzene	0.21	1.0	---	U	---	U	---	U	
37. Xylenes	0.68	5.0	---	U	---	U	---	U	
38. Dibromomethane	0.28	10.0	---	U	---	U	---	U	
39. Styrene	0.19	1.0	---	U	---	U	---	U	
40. Bromoform	0.20	3.0	---	U	---	U	---	U	
41. 1,1,2,2-Tetrachloroethane	0.26	3.0	---	U	---	U	---	U	
42. 1,2,3-Trichloropropane	0.43	1.0	---	U	---	U	---	U	
43. 1,4-Dichlorobenzene	0.39	1.0	---	U	4.20	1.50	---	U	
44. 1,2-Dichlorobenzene	0.32	5.0	---	U	---	0.90	J	---	U
45. 1,2-Dibromo-3-Chloropropane	0.34	13.0	---	U	---	U	---	U	
46. Acrylonitrile	2.72	200.0	---	U	---	U	---	U	
47. trans-1,4-Dichloro-2-Butene	0.42	100.0	---	U	---	U	---	U	
48. Acrolein	40.57	53.0	---	U	---	U	---	U	

J = Between MDL and SWSL, U = Below ALL Quantitation Limits.

# Environment 1, Incorporated

Drinking Water ID: 37715  
Wastewater ID: 10

P.O. BOX 7085, 114 OAKMONT DRIVE  
GREENVILLE, N.C. 27835-7085

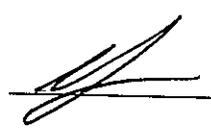
PHONE (252) 756-6208  
FAX (252) 756-0633

CLIENT: HALIFAX CO. LANDFILL (CLOSED MSW)  
MS. GWEN MATTHEWS  
P.O. BOX 70  
HALIFAX, NC 27839

CLIENT ID: 6015

ANALYST: MAO  
DATE COLLECTED: 08/24/10  
DATE ANALYZED: 09/07/10  
DATE REPORTED: 09/13/10

Page: 2

REVIEWED BY: 

## LANDFILL APPENDIX II EPA METHOD 8260B

PARAMETERS, ug/l	MDL	SWSL	MW-7D	MW-15R	MW-16A	Equipment Blank	Trip Blank
49. Allyl Chloride	0.20	10.0	--- U	--- U	---	---	---
50. Chloroprene	0.21	20.0	--- U	--- U	---	---	---
51. 1,3-Dichlorobenzene	0.41	5.0	--- U	--- U	---	---	---
52. Dichlorodifluoromethane	0.51	5.0	--- U	--- U	---	---	---
53. 1,3-Dichloropropane	0.28	1.0	--- U	--- U	5.30	---	---
54. 2,2-Dichloropropane	0.17	15.0	--- U	--- U	---	---	---
55. 1,1-Dichloropropene	0.22	5.0	--- U	--- U	---	---	---
56. Ethyl Methacrylate	0.16	10.0	--- U	--- U	---	---	---
57. Hexachlorobutadiene	0.57	10.0	--- U	--- U	---	---	---
58. Isobutyl Alcohol	12.80	100.0	--- U	--- U	---	---	---
59. Methacrylonitrile	1.93	100.0	--- U	--- U	---	---	---
60. Methyl Methacrylate	0.25	30.0	--- U	--- U	---	---	---
61. Naphthalene	0.47	10.0	--- U	--- U	---	---	---
62. Propionitrile	3.26	150.0	--- U	--- U	---	---	---
63. 1,2,4-Trichlorobenzene	0.50	10.0	--- U	--- U	---	---	---
64. Acetonitrile	36.29	55.0	--- U	--- U	---	---	52.30 J

NOTE: Tetrachloroethene concentration for MW-16A exceeded instrument calibration range

J = Between MDL and SWSL, U = Below ALL Quantitation Limits.

CHAIN OF CUSTODY RECORD

Phone (252) 756-6208 • Fax (252) 756-0633

CLIENT: 6015 Week: 33

HALIFAX CO. LANDFILL (CLOSED MSW)  
 MS. GWEN MATTHEWS  
 P.O. BOX 70  
 HALIFAX NC 27839

(252) 583-1807

SAMPLE LOCATION	COLLECTION		TOTAL CHLORINE, mg/l AT COLLECTION	TEMPERATURE, °C AT COLLECTION	# OF CONTAINERS	DISINFECTION		Field pH	Metals	Conductivity	Temperature	Field Parameter	EPA 8260B	8260 Dup. 1	EPA 8270C	8270C Dup. 1	EPA 8081B	8260B App. II	8260 App. II 1	8260 App. II 2	8151A Landfill	PH CHECK (LAB)	CHLORINE NEUTRALIZED AT COLLECTION
	DATE	TIME				CHLORINE	UV																
MMW-1	08/24/10	1035	16		4	<input type="checkbox"/>	<input type="checkbox"/>	A	A	A	A												
<del>MMW-2A</del>					8	<input type="checkbox"/>	<input type="checkbox"/>																
<del>MMW-3D</del>					9	<input type="checkbox"/>	<input type="checkbox"/>																
MMW-7D	08/24/10	0852	20		8	<input type="checkbox"/>	<input type="checkbox"/>																
<del>MMW-2AD</del>					8	<input type="checkbox"/>	<input type="checkbox"/>																
<del>MMW-6D</del>					8	<input type="checkbox"/>	<input type="checkbox"/>																
MMW-15R	08/24/10	0915	17		8	<input type="checkbox"/>	<input type="checkbox"/>																
<del>MMW-9AS</del>					9	<input type="checkbox"/>	<input type="checkbox"/>																
MMW-16A	08/24/10	0920	18		8	<input type="checkbox"/>	<input type="checkbox"/>																
Equipment Blank	08/24/10				2	<input type="checkbox"/>	<input type="checkbox"/>																
Trip Blank					2	<input type="checkbox"/>	<input type="checkbox"/>																
RELINQUISHED BY (SIG.) Boh Dese	DATE/TIME 08/24/10 11:45 AM	RECEIVED BY (SIG.) [Signature]	DATE/TIME 08/24/10 11:45 AM	RECEIVED BY (SIG.) [Signature]	DATE/TIME 08/24/10 11:45 AM	COMMENTS: MMW 2A MW 3D MW 2AD MW 6D MW 3AS WILL BE DONE Aug 25	SAMPLES COLLECTED BY: (Please Print) M Dese / Fot	CHAIN OF CUSTODY MAINTAINED DURING SHIPMENT/DELIVERY N	SAMPLES RECEIVED IN LAB AT 22 °C														

FORM 1/5

PLEASE READ Instructions for completing this form on the reverse side.

Sampler must place a "C" for composite sample or a "G" for Grab sample in the blocks above for each parameter requested. No 210829

# Environment 1, Incorporated

Drinking Water ID: 37715  
Wastewater ID: 10

REC'D SEP 28 2010

P.O. BOX 7085, 114 OAKMONT DRIVE  
GREENVILLE, N.C. 27835-7085

PHONE (252) 756-6208  
FAX (252) 756-0633

ID#: 6015

HALIFAX CO. LANDFILL (CLOSED MSW)  
MS. GWEN MATTHEWS  
P.O. BOX 70  
HALIFAX ,NC 27839

DATE COLLECTED: 08/25/10  
DATE REPORTED : 09/24/10

REVIEWED BY: 

PARAMETERS	MDL	SWSL	MW-2A	MW-3D	MW-2AD	MW-6D	MW-3AS	Analysis		Method Code				
								Date	Analyst					
PH (field measurement), Units			6.05	5.59	6.27	5.95	6.20	08/25/10	RJH	SM4500H8				
Antimony, ug/l	0.22	6.0	---	U	---	U	---	U	09/03/10	LFJ EPA200.8				
Arsenic, ug/l	0.04	10.0	1.3	J	---	U	1.1	J	0.3	J	2.5	J	09/03/10	LFJ EPA200.8
Barium, ug/l	0.03	100.0	158		57.9	J	114		564		59.1	J	09/03/10	LFJ EPA200.8
Beryllium, ug/l	0.02	1.0	0.5	J	0.2	J	0.1	J	0.5	J	0.4	J	09/03/10	LFJ EPA200.8
Cadmium, ug/l	0.02	1.0	0.1	J	0.4	J	0.2	J	0.5	J	0.2	J	09/03/10	LFJ EPA200.8
Cobalt, ug/l	0.10	10.0	4.2	J	---	U	4.8	J	2.9	J	4.3	J	09/03/10	LFJ EPA200.8
Copper, ug/l	0.03	10.0	1.3	J	1.3	J	1.1	J	1.4	J	1.7	J	09/03/10	LFJ EPA200.8
Total Chromium, ug/l	0.03	10.0	1.2	J	---	U	---	U	---	U	0.3	J	09/03/10	LFJ EPA200.8
Iron, ug/l	13.8	300.0	19130		69	J	2565		589		127200		09/24/10	LFJ SM3111B
Lead, ug/l	0.01	10.0	1.4	J	0.2	J	0.5	J	0.3	J	2	J	09/03/10	LFJ EPA200.8
Mercury, ug/l	0.08	0.20	---	U	---	U	---	U	---	U	---	U	09/03/10	LFJ EPA200.8
Nickel, ug/l	0.05	50.0	0.9	J	0.2	J	1.8	J	2	J	0.9	J	09/03/10	LFJ EPA200.8
Selenium, ug/l	0.32	10.0	---	U	---	U	0.4	J	1.5	J	0.6	J	09/03/10	LFJ EPA200.8
Silver, ug/l	0.03	10.0	---	U	---	U	---	U	---	U	---	U	09/03/10	LFJ EPA200.8
Thallium, ug/l	0.05	5.5	---	U	---	U	---	U	---	U	---	U	09/03/10	LFJ EPA200.8
Tin, ug/l	0.11	100.0	0.4	J	0.3	J	0.3	J	0.3	J	0.7	J	09/03/10	LFJ EPA200.8
Vanadium, ug/l	0.03	25.0	3.9	J	0.5	J	1.3	J	0.8	J	4.6	J	09/03/10	LFJ EPA200.8
Zinc, ug/l	0.08	10.0	10		4.3	J	7.6	J	8	J	8.7	J	09/03/10	LFJ EPA200.8
Conductivity (at 25c), uMhos	1.0	1.0	268		155		547		589		713		08/25/10	RJH SM2510B
Temperature, °C			20.24		16.69		15.98		15.99		17.33		08/25/10	RJH SM2550B
Static Water Level, feet			5.25		8.33		4.85		12.76		8.94		08/25/10	RJH
Well Depth, feet			17.21		52.07		41.75		43.55		22.89		08/25/10	RJH

J = Between MDL and SWSL, U = Below ALL Quantitation Limits.

# Environment 1, Incorporated

Drinking Water ID: 37715  
Wastewater ID: 10

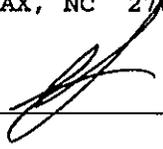
P.O. BOX 7085, 114 OAKMONT DRIVE  
GREENVILLE, N.C. 27835-7085

PHONE (252) 756-6208  
FAX (252) 756-0633

CLIENT: HALIFAX CO. LANDFILL (CLOSED MSW)  
MS. GWEN MATTHEWS  
P.O. BOX 70  
HALIFAX, NC 27839

CLIENT ID: 6015

ANALYST: CHS  
DATE COLLECTED: 08/25/10  
DATE EXTRACTED: 08/27/10  
DATE ANALYZED: 08/27/10  
DATE REPORTED: 09/24/10

REVIEWED BY: 

PESTICIDES AND PCB'S  
EPA METHOD 8081B

PARAMETERS, ug/l	MDL	SWSL	MW-2A	MW-3D	MW-2AD	MW-6D	MW-3AS	
1. Aldrin	0.029	0.05	---	U	---	U	---	U
2. Alpha-BHC	0.032	0.05	---	U	---	U	---	U
3. Beta-BHC	0.031	0.05	---	U	---	U	---	U
4. Delta-BHC	0.030	0.05	---	U	---	U	---	U
5. Gamma-BHC (Lindane)	0.032	0.05	---	U	---	U	---	U
6. Chlordane	0.320	0.50	---	U	---	U	---	U
7. 4,4-DDD	0.051	0.10	---	U	---	U	---	U
8. 4,4-DDE	0.049	0.10	---	U	---	U	---	U
9. 4,4-DDT	0.052	0.10	---	U	---	U	---	U
10. Dieldrin	0.042	0.075	---	U	---	U	---	U
11. Endosulfan I	0.056	0.10	---	U	---	U	---	U
12. Endosulfan II	0.046	0.10	---	U	---	U	---	U
13. Endosulfan Sulfate	0.072	0.10	---	U	---	U	---	U
14. Endrin	0.053	0.10	---	U	---	U	---	U
15. Endrin Aldehyde	0.068	0.10	---	U	---	U	---	U
16. Heptachlor	0.039	0.05	---	U	---	U	---	U
17. Heptachlor Epoxide	0.042	0.075	---	U	---	U	---	U
18. Methoxychlor	0.530	1.00	---	U	---	U	---	U
19. Pcb's (Aroclors)	0.500	2.00	---	U	---	U	---	U
20. Toxaphene	0.690	1.50	---	U	---	U	---	U

J = Between MDL and SWSL, U = Below ALL Quantitation Limits.

# Environment 1, Incorporated

Drinking Water ID: 37715  
Wastewater ID: 10

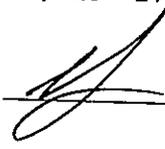
P.O. BOX 7085, 114 OAKMONT DRIVE  
GREENVILLE, N.C. 27835-7085

PHONE (252) 756-6208  
FAX (252) 756-0633

CLIENT: HALIFAX CO. LANDFILL (CLOSED MSW)  
MS. GWEN MATTHEWS  
P.O. BOX 70  
HALIFAX, NC 27839

CLIENT ID: 6015

ANALYST: CHS  
DATE COLLECTED: 08/25/10  
DATE EXTRACTED: 08/31/10  
DATE ANALYZED: 08/31/10  
DATE REPORTED: 09/24/10

REVIEWED BY: 

LANDFILL APPENDIX II  
EPA METHOD 8151A

PARAMETERS, ug/l	MDL	SWSL	MW-2A	MW-3D	MW-2AD	MW-6D	MW-3AS	
1. 2,4-D	0.36	2.0	---	U	---	U	---	U
2. Dinoseb	0.54	1.0	---	U	---	U	---	U
3. 2,4,5-TP	0.42	2.0	---	U	---	U	---	U
4. 2,4,5-T	0.47	2.0	---	U	---	U	---	U

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# Environment 1, Incorporated

Drinking Water ID: 37715  
Wastewater ID: 10

P.O. BOX 7085, 114 OAKMONT DRIVE  
GREENVILLE, N.C. 27835-7085

PHONE (252) 756-6208  
FAX (252) 756-0633

CLIENT: HALIFAX CO. LANDFILL (CLOSED MSW)  
MS. GWEN MATTHEWS  
P.O. BOX 70  
HALIFAX, NC 27839

CLIENT ID: 6015

ANALYST: CHS  
DATE COLLECTED: 08/25/10  
DATE EXTRACTED: 08/30/10  
DATE ANALYZED: 08/30/10  
DATE REPORTED: 09/24/10

Page: 1

REVIEWED BY: 

## SEMI-VOLATILE ORGANICS EPA METHOD 8270C

PARAMETERS, ug/l	MDL	SWSL	MW-2A	MW-3D	MW-2AD	MW-6D	MW-3AS	
1. Acenaphthene	2.66	10.0	---	U	---	U	---	U
2. Acenaphthylene	2.60	10.0	---	U	---	U	---	U
3. Anthracene	2.97	10.0	---	U	---	U	---	U
4. Benzo[a]anthracene	4.16	10.0	---	U	---	U	---	U
5. Benzo[b]fluoranthene	3.32	10.0	---	U	---	U	---	U
6. Benzo[k]fluoranthene	4.23	10.0	---	U	---	U	---	U
7. Benzo[g,h,i]perylene	2.61	10.0	---	U	---	U	---	U
8. Benzo[a]pyrene	3.27	10.0	---	U	---	U	---	U
9. 4-Bromophenyl Phenyl Ether	2.63	10.0	---	U	---	U	---	U
10. Butyl Benzyl Phthalate	5.78	10.0	---	U	---	U	---	U
11. Bis-(2-Chloroethoxy) Methane	3.14	10.0	---	U	---	U	---	U
12. Bis-(2-Chloroethyl) Ether	2.58	10.0	---	U	---	U	---	U
13. Bis-(2-Chloroisopropyl) Ether	2.58	10.0	---	U	---	U	---	U
14. 2-Chloronaphthalene	2.17	10.0	---	U	---	U	---	U
15. 4-Chlorophenyl Phenyl Ether	2.42	10.0	---	U	---	U	---	U
16. Chrysene	4.04	10.0	---	U	---	U	---	U
17. Dibenzo[a,h]anthracene	2.78	10.0	---	U	---	U	---	U
18. Di-N-Butyl Phthalate	3.09	10.0	---	U	---	U	---	U
19. Dimethyl Phthalate	3.78	10.0	---	U	---	U	---	U
20. Diethyl Phthalate	3.92	6000	---	U	---	U	---	U
21. 2,4-Dinitrotoluene	3.95	10.0	---	U	---	U	---	U
22. 2,6-Dinitrotoluene	3.88	10.0	---	U	---	U	---	U
23. Di-N-Octyl Phthalate	2.81	10.0	---	U	---	U	---	U
24. Bis-(2-Ethylhexyl) Phthalate	9.97	15.0	---	U	---	U	---	U
25. Fluoranthene	3.92	10.0	---	U	---	U	---	U
26. Fluorene	2.95	10.0	---	U	---	U	---	U
27. Hexachlorobenzene	2.61	10.0	---	U	---	U	---	U
28. Hexachlorocyclopentadiene	4.16	10.0	---	U	---	U	---	U
29. Indeno[1,2,3-Cd]pyrene	2.91	10.0	---	U	---	U	---	U
30. Isophorone	3.74	10.0	---	U	---	U	---	U
31. Nitrobenzene	2.85	10.0	---	U	---	U	---	U
32. N-Nitrosodimethylamine	4.25	10.0	---	U	---	U	---	U
33. N-Nitrosodiphenylamine	3.95	10.0	---	U	---	U	---	U
34. N-Nitrosodi-N-Propylamine	4.06	10.0	---	U	---	U	---	U
35. Phenanthrene	3.24	10.0	---	U	---	U	---	U
36. Pyrene	3.63	10.0	---	U	---	U	---	U
37. 4-Chloro-3-Methylphenol	3.79	20.0	---	U	---	U	---	U
38. 2-Chlorophenol	2.75	10.0	---	U	---	U	---	U
39. O-Cresol	3.68	10.0	---	U	---	U	---	U
40. P-Cresol	4.12	10.0	---	U	---	U	---	U
41. 2,4-Dichlorophenol	5.19	10.0	---	U	---	U	---	U
42. 2,6-Dichlorophenol	4.89	10.0	---	U	---	U	---	U
43. 2,4-Dimethylphenol	3.21	10.0	---	U	---	U	---	U
44. 4,6-Dinitro-2-Methylphenol	4.77	50.0	---	U	---	U	---	U
45. 2,4-Dinitrophenol	4.37	50.0	---	U	---	U	---	U
46. Ethyl Methanesulfonate	5.26	20.0	---	U	---	U	---	U
47. Methyl Methanesulfonate	4.92	10.0	---	U	---	U	---	U
48. 2-Nitrophenol	3.64	10.0	---	U	---	U	---	U

J = Between MDL and SWSL, U = Below ALL Quantitation Limits.

# Environment 1, Incorporated

Drinking Water ID: 37715  
Wastewater ID: 10

P.O. BOX 7085, 114 OAKMONT DRIVE  
GREENVILLE, N.C. 27835-7085

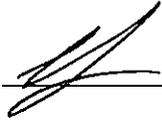
PHONE (252) 756-6208  
FAX (252) 756-0633

CLIENT: HALIFAX CO. LANDFILL (CLOSED MSW)  
MS. GWEN MATTHEWS  
P.O. BOX 70  
HALIFAX, NC 27839

CLIENT ID: 6015

ANALYST: CHS  
DATE COLLECTED: 08/25/10  
DATE EXTRACTED: 08/30/10  
DATE ANALYZED: 08/30/10  
DATE REPORTED: 09/24/10

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## SEMI-VOLATILE ORGANICS EPA METHOD 8270C

PARAMETERS, ug/l	MDL	SWSL	MW-2A	MW-3D	MW-2AD	MW-6D	MW-3AS	
49. 4-Nitrophenol	3.17	50.0	---	U	---	U	---	U
50. Pentachlorophenol	5.33	25.0	---	U	---	U	---	U
51. Phenol	1.86	10.0	---	U	---	U	---	U
52. 2,3,4,6-Tetrachlorophenol	3.12	10.0	---	U	---	U	---	U
53. 2,4,5-Trichlorophenol	4.17	10.0	---	U	---	U	---	U
54. 2,4,6-Trichlorophenol	3.84	10.0	---	U	---	U	---	U
55. Acetophenone	2.89	10.0	---	U	---	U	---	U
56. 2-Acetylaminofluorene	3.98	20.0	---	U	---	U	---	U
57. 4-Aminobiphenyl	4.12	20.0	---	U	---	U	---	U
58. Benzyl Alcohol	4.47	20.0	---	U	---	U	---	U
59. 4-Chloroaniline	3.36	20.0	---	U	---	U	---	U
60. Chlorobenzilate	5.12	10.0	---	U	---	U	---	U
61. Diallylate	2.98	10.0	---	U	---	U	---	U
62. Dibenzofuran	4.28	10.0	---	U	---	U	---	U
63. 3,3-Dichlorobenzidine	4.22	20.0	---	U	---	U	---	U
64. Dimethoate	3.98	20.0	---	U	---	U	---	U
65. P-Dimethylaminoazobenzene	2.89	10.0	---	U	---	U	---	U
66. 7,12-Dimethylbenz[a]anthracene	5.26	10.0	---	U	---	U	---	U
67. 3,3-Dimethylbenzadine	3.21	10.0	---	U	---	U	---	U
68. 1,3-Dinitrobenzene	2.89	20.0	---	U	---	U	---	U
69. Diphenylamine	5.10	10.0	---	U	---	U	---	U
70. Disulfoton	4.28	10.0	---	U	---	U	---	U
71. Pamphur	3.98	20.0	---	U	---	U	---	U
72. Hexachloropropene	4.31	10.0	---	U	---	U	---	U
73. Isosafrole	2.88	10.0	---	U	---	U	---	U
74. Kepone	2.78	20.0	---	U	---	U	---	U
75. Methapyrilene	3.54	100.0	---	U	---	U	---	U
76. 3-Methylchloroanthrene	4.21	10.0	---	U	---	U	---	U
77. 2-Methylnaphthalene	3.79	10.0	---	U	---	U	---	U
78. Methyl Parathion	4.32	10.0	---	U	---	U	---	U
79. m-Cresol	3.81	10.0	---	U	---	U	---	U
80. 1,4-Naphthoquinone	4.00	10.0	---	U	---	U	---	U
81. 1-Naphthylamine	5.61	10.0	---	U	---	U	---	U
82. 2-Naphthylamine	4.62	10.0	---	U	---	U	---	U
83. 2-Nitroaniline	3.61	50.0	---	U	---	U	---	U
84. 3-Nitroaniline	4.81	50.0	---	U	---	U	---	U
85. 4-Nitroaniline	4.22	20.0	---	U	---	U	---	U
86. 5-Nitro-O-Toluidine	4.01	10.0	---	U	---	U	---	U
87. N-Nitrosodi-n-butylamine	3.63	10.0	---	U	---	U	---	U
88. N-Nitrosodiethylamine	3.83	20.0	---	U	---	U	---	U
89. N-Nitrosomethylethylamine	3.83	10.0	---	U	---	U	---	U
90. N-Nitrosopiperidine	5.19	20.0	---	U	---	U	---	U
91. N-Nitrosopyrrolidine	2.89	10.0	---	U	---	U	---	U
92. Parathion	3.12	10.0	---	U	---	U	---	U
93. Pentachlorobenzene	3.92	10.0	---	U	---	U	---	U
94. Pentachloronitrobenzene	3.71	20.0	---	U	---	U	---	U
95. Phenacetin	4.41	20.0	---	U	---	U	---	U
96. 1,4 Benzenediamine	2.99	10.0	---	U	---	U	---	U

J = Between MDL and SWSL, U = Below ALL Quantitation Limits.

# Environment 1, Incorporated

Drinking Water ID: 37715  
Wastewater ID: 10

P.O. BOX 7085, 114 OAKMONT DRIVE  
GREENVILLE, N.C. 27835-7085

PHONE (252) 756-6208  
FAX (252) 756-0633

CLIENT: HALIFAX CO. LANDFILL (CLOSED MSW)  
MS. GWEN MATTHEWS  
P.O. BOX 70  
HALIFAX, NC 27839

CLIENT ID: 6015

ANALYST: CHS  
DATE COLLECTED: 08/25/10  
DATE EXTRACTED: 08/30/10  
DATE ANALYZED: 08/30/10  
DATE REPORTED: 09/24/10

Page: 3

REVIEWED BY: 

SEMI-VOLATILE ORGANICS  
EPA METHOD 8270C

PARAMETERS, ug/l	MDL	SWSL	MW-2A	MW-3D	MW-2AD	MW-6D	MW-3AS
97. Phorate	3.86	10.0	--- U	--- U	--- U	--- U	--- U
98. Pronamide	3.69	10.0	--- U	--- U	--- U	--- U	--- U
99. Safrole	4.12	10.0	--- U	--- U	--- U	--- U	--- U
100. 1,2,4,5-Tetrachlorobenzene	5.01	10.0	--- U	--- U	--- U	--- U	--- U
101. Thionazin	4.62	20.0	--- U	--- U	--- U	--- U	--- U
102. O-Toluidine	4.11	10.0	--- U	--- U	--- U	--- U	--- U
103. 1,3,5-Trinitrobenzene	3.98	10.0	--- U	--- U	--- U	--- U	--- U
104. 0,0,0-Triethyl Phosphorothioate	3.61	10.0	--- U	--- U	--- U	--- U	--- U
105. Hexachloroethane	1.49	10.0	--- U	--- U	--- U	--- U	--- U
106. Isodrin	3.11	20.0	--- U	--- U	--- U	--- U	--- U

J = Between MDL and SWSL, U = Below ALL Quantitation Limits.

# Environment 1, Incorporated

Drinking Water ID: 37715  
Wastewater ID: 10

P.O. BOX 7085, 114 OAKMONT DRIVE  
GREENVILLE, N.C. 27835-7085

PHONE (252) 756-6208  
FAX (252) 756-0633

CLIENT: HALIFAX CO. LANDFILL (CLOSED MSW)  
MS. GWEN MATTHEWS  
P.O. BOX 70  
HALIFAX, NC 27839

CLIENT ID: 6015

ANALYST: MAO  
DATE COLLECTED: 08/25/10  
DATE REPORTED: 09/24/10

Page: 1

REVIEWED BY: 

## LANDFILL APPENDIX II EPA METHOD 8260B

PARAMETERS, ug/l	Date Analyzed:		09/07/10	09/07/10	09/07/10	09/07/10	09/07/10				
	MDL	SWSL	MW-2A	MW-3D	MW-2AD	MW-6D	MW-3AS				
1. Chloromethane	0.77	1.0	---	U	---	U	---	U			
2. Vinyl Chloride	0.63	1.0	5.40	---	U	---	U	1.60			
3. Bromomethane	0.67	10.0	---	U	---	U	---	U			
4. Chloroethane	0.48	10.0	0.60 J	---	U	2.30 J	1.20 J	1.20 J			
5. Trichlorofluoromethane	0.24	1.0	---	U	---	U	---	U			
6. 1,1-Dichloroethene	0.17	5.0	---	U	0.30 J	0.50 J	---	U			
7. Acetone	9.06	100.0	---	U	---	U	---	U			
8. Iodomethane	0.26	10.0	---	U	---	U	---	U			
9. Carbon Disulfide	0.23	100.0	---	U	---	U	---	U			
10. Methylene Chloride	0.64	1.0	---	U	---	U	---	U			
11. trans-1,2-Dichloroethene	0.23	5.0	---	U	---	U	---	U			
12. 1,1-Dichloroethane	0.20	5.0	5.10	---	U	25.10	0.30 J	3.40 J			
13. Vinyl Acetate	0.20	50.0	---	U	---	U	---	U			
14. Cis-1,2-Dichloroethene	0.25	5.0	1.90 J	---	U	23.80	0.50 J	2.60 J			
15. 2-Butanone	2.21	100.0	---	U	---	U	---	U			
16. Bromochloromethane	0.27	3.0	---	U	---	U	---	U			
17. Chloroform	0.25	5.0	---	U	---	U	---	U			
18. 1,1,1-Trichloroethane	0.19	1.0	---	U	---	U	---	U			
19. Carbon Tetrachloride	0.22	1.0	---	U	---	U	---	U			
20. Benzene	0.24	1.0	0.30 J	---	U	0.40 J	0.90 J	1.90			
21. 1,2-Dichloroethane	0.21	1.0	---	U	---	U	0.30 J	---	U		
22. Trichloroethene	0.23	1.0	0.60 J	---	U	1.20	4.10	---	U	0.60 J	
23. 1,2-Dichloropropane	0.21	1.0	---	U	---	U	0.30 J	---	U	0.50 J	
24. Bromodichloromethane	0.21	1.0	---	U	---	U	---	U	---	U	
25. Cis-1,3-Dichloropropane	0.24	1.0	---	U	---	U	---	U	---	U	
26. 4-Methyl-2-Pentanone	1.19	100.0	---	U	---	U	---	U	---	U	
27. Toluene	0.23	1.0	---	U	---	U	---	U	---	U	
28. trans-1,3-Dichloropropane	0.28	1.0	---	U	---	U	---	U	---	U	
29. 1,1,2-Trichloroethane	0.25	1.0	---	U	---	U	---	U	---	U	
30. Tetrachloroethene	0.17	1.0	---	U	---	U	1.50	---	U	---	U
31. 2-Hexanone	1.57	50.0	---	U	---	U	---	U	---	U	
32. Dibromochloromethane	0.24	3.0	---	U	---	U	---	U	---	U	
33. 1,2-Dibromoethane	0.26	1.0	---	U	---	U	---	U	---	U	
34. Chlorobenzene	0.30	3.0	1.00 J	---	U	---	2.20 J	---	U	10.30	3.80
35. 1,1,1,2-Tetrachloroethane	0.22	5.0	---	U	---	U	---	U	---	U	
36. Ethylbenzene	0.21	1.0	---	U	---	U	---	U	---	U	
37. Xylenes	0.68	5.0	---	U	---	U	---	U	---	U	
38. Dibromomethane	0.28	10.0	---	U	---	U	---	U	---	U	
39. Styrene	0.19	1.0	---	U	---	U	---	U	---	U	
40. Bromoform	0.20	3.0	---	U	---	U	---	U	---	U	
41. 1,1,2,2-Tetrachloroethane	0.26	3.0	---	U	---	U	---	U	---	U	
42. 1,2,3-Trichloropropane	0.43	1.0	---	U	---	U	---	U	---	U	
43. 1,4-Dichlorobenzene	0.39	1.0	---	U	---	U	1.40	---	U	2.50	1.80
44. 1,2-Dichlorobenzene	0.32	5.0	---	U	---	U	---	U	---	U	
45. 1,2-Dibromo-3-Chloropropane	0.34	13.0	---	U	---	U	---	U	---	U	
46. Acrylonitrile	2.72	200.0	---	U	---	U	---	U	---	U	
47. trans-1,4-Dichloro-2-Butene	0.42	100.0	---	U	---	U	---	U	---	U	

J = Between MDL and SWSL, U = Below ALL Quantitation Limits.

# Environment 1, Incorporated

Drinking Water ID: 37715

Wastewater ID: 10

P.O. BOX 7085, 114 OAKMONT DRIVE  
GREENVILLE, N.C. 27835-7085

PHONE (252) 756-6208  
FAX (252) 756-0633

CLIENT: HALIFAX CO. LANDFILL (CLOSED MSW)  
MS. GWEN MATTHEWS  
P.O. BOX 70  
HALIFAX, NC 27839

CLIENT ID: 6015

ANALYST: MAO

DATE COLLECTED: 08/25/10

Page: 2

DATE REPORTED: 09/24/10

REVIEWED BY: 

## LANDFILL APPENDIX II EPA METHOD 8260B

PARAMETERS, ug/l	Date Analyzed:		09/07/10	09/07/10	09/07/10	09/07/10	09/07/10
	MDL	SWSL	MW-2A	MW-3D	MW-2AD	MW-6D	MW-3AS
48. Acrolein	40.57	53.0	--- U				
49. Allyl Chloride	0.20	10.0	--- U				
50. Chloroprene	0.21	20.0	--- U				
51. 1,3-Dichlorobenzene	0.41	5.0	--- U				
52. Dichlorodifluoromethane	0.51	5.0	--- U	1.10 J	--- U	--- U	--- U
53. 1,3-Dichloropropane	0.28	1.0	--- U				
54. 2,2-Dichloropropane	0.17	15.0	--- U				
55. 1,1-Dichloropropene	0.22	5.0	--- U				
56. Ethyl Methacrylate	0.16	10.0	--- U				
57. Hexachlorobutadiene	0.57	10.0	--- U				
58. Isobutyl Alcohol	12.80	100.0	--- U				
59. Methacrylonitrile	1.93	100.0	--- U				
60. Methyl Methacrylate	0.25	30.0	--- U				
61. Naphthalene	0.47	10.0	--- U				
62. Propionitrile	3.26	150.0	--- U				
63. 1,2,4-Trichlorobenzene	0.50	10.0	--- U				
64. Acetonitrile	36.29	55.0	--- U				

J = Between MDL and SWSL, U = Below ALL Quantitation Limits.

# Environment 1, Incorporated

Drinking Water ID: 37715  
Wastewater ID: 10

P.O. BOX 7085, 114 OAKMONT DRIVE  
GREENVILLE, N.C. 27835-7085

PHONE (252) 756-6208  
FAX (252) 756-0633

CLIENT: HALIFAX CO. LANDFILL (CLOSED MSW)  
MS. GWEN MATTHEWS  
P.O. BOX 70  
HALIFAX, NC 27839

CLIENT ID: 6015  
ANALYST: MAO  
DATE COLLECTED: 08/25/10  
DATE REPORTED: 09/24/10

Page: 3

REVIEWED BY: 

## LANDFILL APPENDIX II EPA METHOD 8260B

PARAMETERS, ug/l	Date Analyzed		09/08/10 Trip Blank
	MDL	SWSL	
1. Chloromethane	0.77	1.0	--- U
2. Vinyl Chloride	0.63	1.0	--- U
3. Bromomethane	0.67	10.0	--- U
4. Chloroethane	0.48	10.0	--- U
5. Trichlorofluoromethane	0.24	1.0	--- U
6. 1,1-Dichloroethene	0.17	5.0	--- U
7. Acetone	9.06	100.0	--- U
8. Iodomethane	0.26	10.0	--- U
9. Carbon Disulfide	0.23	100.0	--- U
10. Methylene Chloride	0.64	1.0	--- U
11. trans-1,2-Dichloroethene	0.23	5.0	--- U
12. 1,1-Dichloroethane	0.20	5.0	--- U
13. Vinyl Acetate	0.20	50.0	--- U
14. Cis-1,2-Dichloroethene	0.25	5.0	--- U
15. 2-Butanone	2.21	100.0	--- U
16. Bromochloromethane	0.27	3.0	--- U
17. Chloroform	0.25	5.0	--- U
18. 1,1,1-Trichloroethane	0.19	1.0	--- U
19. Carbon Tetrachloride	0.22	1.0	--- U
20. Benzene	0.24	1.0	--- U
21. 1,2-Dichloroethane	0.21	1.0	--- U
22. Trichloroethene	0.23	1.0	--- U
23. 1,2-Dichloropropane	0.21	1.0	--- U
24. Bromodichloromethane	0.21	1.0	--- U
25. Cis-1,3-Dichloropropene	0.24	1.0	--- U
26. 4-Methyl-2-Pentanone	1.19	100.0	--- U
27. Toluene	0.23	1.0	--- U
28. trans-1,3-Dichloropropene	0.28	1.0	--- U
29. 1,1,2-Trichloroethane	0.25	1.0	--- U
30. Tetrachloroethene	0.17	1.0	--- U
31. 2-Hexanone	1.57	50.0	--- U
32. Dibromochloromethane	0.24	3.0	--- U
33. 1,2-Dibromoethane	0.26	1.0	--- U
34. Chlorobenzene	0.30	3.0	--- U
35. 1,1,1,2-Tetrachloroethane	0.22	5.0	--- U
36. Ethylbenzene	0.21	1.0	--- U
37. Xylenes	0.68	5.0	--- U
38. Dibromomethane	0.28	10.0	--- U
39. Styrene	0.19	1.0	--- U
40. Bromoform	0.20	3.0	--- U
41. 1,1,2,2-Tetrachloroethane	0.26	3.0	--- U
42. 1,2,3-Trichloropropane	0.43	1.0	--- U
43. 1,4-Dichlorobenzene	0.39	1.0	--- U
44. 1,2-Dichlorobenzene	0.32	5.0	--- U
45. 1,2-Dibromo-3-Chloropropane	0.34	13.0	--- U
46. Acrylonitrile	2.72	200.0	--- U
47. trans-1,4-Dichloro-2-Butene	0.42	100.0	--- U

J = Between MDL and SWSL, U = Below ALL Quantitation Limits.

# Environment 1, Incorporated

Drinking Water ID: 37715  
Wastewater ID: 10

P.O. BOX 7085, 114 OAKMONT DRIVE  
GREENVILLE, N.C. 27835-7085

PHONE (252) 756-6208  
FAX (252) 756-0633

CLIENT: HALIFAX CO. LANDFILL (CLOSED MSW)  
MS. GWEN MATTHEWS  
P.O. BOX 70  
HALIFAX, NC 27839

CLIENT ID: 6015  
ANALYST: MAO  
DATE COLLECTED: 08/25/10  
DATE REPORTED: 09/24/10

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REVIEWED BY: 

LANDFILL APPENDIX II  
EPA METHOD 8260B

PARAMETERS, ug/l	Date Analyzed:		09/08/10 Trip Blank
	MDL	SWSL	
48. Acrolein	40.57	53.0	--- U
49. Allyl Chloride	0.20	10.0	--- U
50. Chloroprene	0.21	20.0	--- U
51. 1,3-Dichlorobenzene	0.41	5.0	--- U
52. Dichlorodifluoromethane	0.51	5.0	--- U
53. 1,3-Dichloropropane	0.28	1.0	--- U
54. 2,2-Dichloropropane	0.17	15.0	--- U
55. 1,1-Dichloropropene	0.22	5.0	--- U
56. Ethyl Methacrylate	0.16	10.0	--- U
57. Hexachlorobutadiene	0.57	10.0	--- U
58. Isobutyl Alcohol	12.80	100.0	--- U
59. Methacrylonitrile	1.93	100.0	--- U
60. Methyl Methacrylate	0.25	30.0	--- U
61. Naphthalene	0.47	10.0	--- U
62. Propionitrile	3.26	150.0	--- U
63. 1,2,4-Trichlorobenzene	0.50	10.0	--- U
64. Acetonitrile	36.29	55.0	--- U



# Environment 1, Incorporated

REC'D SEP 28 2010  
 Drinking Water ID: 37715  
 Wastewater ID: 10

P.O. BOX 7085, 114 OAKMONT DRIVE  
 GREENVILLE, N.C. 27835-7085

PHONE (252) 756-6208  
 FAX (252) 756-0633

ID#: 6015 A

HALIFAX CO. LANDFILL (CLOSED MSW)  
 MS. GWEN MATTHEWS  
 P.O. BOX 70  
 HALIFAX ,NC 27839

DATE COLLECTED: 08/23/10  
 DATE REPORTED : 09/21/10

REVIEWED BY: 

PARAMETERS	MDL	SWSL	SW-1	SW-2	SW-3	Analysis	Method
						Date	Analyst
PH (field measurement), Units			6.7	6.7	6.5	08/23/10 RJH	SM4500HB
Antimony, ug/l	0.22	6.0	---	U		08/31/10 LPJ	EPA200.8
Antimony, ug/l	0.22	6.0		---	U	09/03/10 LPJ	EPA200.8
Arsenic, ug/l	0.04	10.0	0.6 J			08/31/10 LPJ	EPA200.8
Arsenic, ug/l	0.04	10.0		2 J	2.2 J	09/03/10 LPJ	EPA200.8
Barium, ug/l	0.03	100.0	32.1 J			08/31/10 LPJ	EPA200.8
Barium, ug/l	0.03	100.0		54.7 J	24.7 J	09/03/10 LPJ	EPA200.8
Beryllium, ug/l	0.02	1.0	0.1 J			08/31/10 LPJ	EPA200.8
Beryllium, ug/l	0.02	1.0		0.1 J	1	09/03/10 LPJ	EPA200.8
Cadmium, ug/l	0.02	1.0	---	U		08/31/10 LPJ	EPA200.8
Cadmium, ug/l	0.02	1.0		---	U	09/03/10 LPJ	EPA200.8
Cobalt, ug/l	0.10	10.0	0.6 J			08/31/10 LPJ	EPA200.8
Cobalt, ug/l	0.10	10.0		0.9 J	1.2 J	09/03/10 LPJ	EPA200.8
Copper, ug/l	0.03	10.0	0.5 J			08/31/10 LPJ	EPA200.8
Copper, ug/l	0.03	10.0		0.1 J	1 J	09/03/10 LPJ	EPA200.8
Total Chromium, ug/l	0.03	10.0	---	U		08/31/10 LPJ	EPA200.8
Total Chromium, ug/l	0.03	10.0		---	U	09/03/10 LPJ	EPA200.8
Lead, ug/l	0.01	10.0	0.3 J			08/31/10 LPJ	EPA200.8
Lead, ug/l	0.01	10.0		0.4 J	0.2 J	09/03/10 LPJ	EPA200.8
Nickel, ug/l	0.05	50.0	0.5 J			08/31/10 LPJ	EPA200.8
Nickel, ug/l	0.05	50.0		0.6 J	1.9 J	09/03/10 LPJ	EPA200.8
Selenium, ug/l	0.32	10.0	---	U		08/31/10 LPJ	EPA200.8
Selenium, ug/l	0.32	10.0		3.1 J	8.5 J	09/03/10 LPJ	EPA200.8
Silver, ug/l	0.03	10.0	---	U		09/01/10 LPJ	EPA200.8
Silver, ug/l	0.03	10.0		0.1 J	---	09/03/10 LPJ	EPA200.8
Thallium, ug/l	0.05	5.5	---	U		08/31/10 LPJ	EPA200.8
Thallium, ug/l	0.05	5.5		---	U	09/03/10 LPJ	EPA200.8
Vanadium, ug/l	0.03	25.0	2.9 J			08/31/10 LPJ	EPA200.8
Vanadium, ug/l	0.03	25.0		2 J	2.5 J	09/03/10 LPJ	EPA200.8
Zinc, ug/l	0.08	10.0	2.8 J			08/31/10 LPJ	EPA200.8
Zinc, ug/l	0.08	10.0		2.8 J	20	09/03/10 LPJ	EPA200.8
Conductivity (at 25c), uMhos	1.0	1.0	125	354	815	08/23/10 RJH	SM2510B
Temperature, °C			24	24	23	08/23/10 RJH	SM2550B

J = Between MDL and SWSL, U = Below ALL Quantitation Limits.

# Environment 1, Incorporated

Drinking Water ID: 37715  
Wastewater ID: 10

P.O. BOX 7085, 114 OAKMONT DRIVE  
GREENVILLE, N.C. 27835-7085

PHONE (252) 756-6208  
FAX (252) 756-0633

CLIENT: HALIFAX CO. LANDFILL (CLOSED MSW)  
MS. GWEN MATTHEWS  
P.O. BOX 70  
HALIFAX, NC 27839

CLIENT ID: 6015 A

ANALYST: MAO  
DATE COLLECTED: 08/23/10  
DATE ANALYZED: 09/02/10  
DATE REPORTED: 09/21/10

Page: 1

REVIEWED BY: 

## VOLATILE ORGANICS EPA METHOD 8260B

PARAMETERS, ug/l	MDL	SWSL	SW-1	SW-2	SW-3	
1. Chloromethane	0.77	1.0	---	U	---	U
2. Vinyl Chloride	0.63	1.0	---	U	---	U
3. Bromomethane	0.67	10.0	---	U	---	U
4. Chloroethane	0.48	10.0	---	U	---	U
5. Trichlorofluoromethane	0.24	1.0	---	U	---	U
6. 1,1-Dichloroethene	0.17	5.0	---	U	---	U
7. Acetone	9.06	100.0	---	U	---	U
8. Iodomethane	0.26	10.0	---	U	---	U
9. Carbon Disulfide	0.23	100.0	---	U	---	U
10. Methylene Chloride	0.64	1.0	---	U	---	U
11. trans-1,2-Dichloroethene	0.23	5.0	---	U	---	U
12. 1,1-Dichloroethane	0.20	5.0	---	U	---	U
13. Vinyl Acetate	0.20	50.0	---	U	---	U
14. Cis-1,2-Dichloroethene	0.25	5.0	---	U	---	U
15. 2-Butanone	2.21	100.0	2.40	J	2.40	J
16. Bromochloromethane	0.27	3.0	---	U	---	U
17. Chloroform	0.25	5.0	---	U	---	U
18. 1,1,1-Trichloroethane	0.19	1.0	---	U	---	U
19. Carbon Tetrachloride	0.22	1.0	---	U	---	U
20. Benzene	0.24	1.0	---	U	---	U
21. 1,2-Dichloroethane	0.27	1.0	---	U	---	U
22. Trichloroethene	0.23	1.0	---	U	---	U
23. 1,2-Dichloropropane	0.21	1.0	---	U	---	U
24. Bromodichloromethane	0.21	1.0	---	U	---	U
25. Cis-1,3-Dichloropropene	0.24	1.0	---	U	---	U
26. 4-Methyl-2-Pentanone	1.19	100.0	---	U	---	U
27. Toluene	0.23	1.0	0.30	J	---	U
28. trans-1,3-Dichloropropene	0.28	1.0	---	U	---	U
29. 1,1,2-Trichloroethane	0.25	1.0	---	U	---	U
30. Tetrachloroethene	0.17	1.0	---	U	---	U
31. 2-Hexanone	1.57	50.0	---	U	---	U
32. Dibromochloromethane	0.24	3.0	---	U	---	U
33. 1,2-Dibromoethane	0.26	1.0	---	U	---	U
34. Chlorobenzene	0.30	3.0	---	U	---	U
35. 1,1,1,2-Tetrachloroethane	0.22	5.0	---	U	---	U
36. Ethylbenzene	0.21	1.0	---	U	---	U
37. Xylenes	0.68	5.0	---	U	---	U
38. Dibromomethane	0.28	10.0	---	U	---	U
39. Styrene	0.19	1.0	---	U	---	U
40. Bromoform	0.20	3.0	---	U	---	U
41. 1,1,2,2-Tetrachloroethane	0.26	3.0	---	U	---	U
42. 1,2,3-Trichloropropane	0.43	1.0	---	U	---	U
43. 1,4-Dichlorobenzene	0.39	1.0	---	U	---	U
44. 1,2-Dichlorobenzene	0.32	5.0	---	U	---	U
45. 1,2-Dibromo-3-Chloropropane	0.34	13.0	---	U	---	U
46. Acrylonitrile	2.72	200.0	---	U	---	U
47. trans-1,4-Dichloro-2-Butene	0.42	100.0	---	U	---	U

J = Between MDL and SWSL, U = Below ALL Quantitation Limits.

Environment 1, Inc.  
 P.O. Box 7085, 714 Dalkmont Dr.  
 Greenville, NC 27858

Phone (252) 756-6208 • Fax (252) 756-0633

CLIENT: 6015 A Week: 33

HALIFAX CO. LANDFILL (CLOSED MSW)  
 MS. GWEN MATTHEWS  
 P.O. BOX 70  
 HALIFAX NC 27839

(252) 583-1807

CHAIN OF CUSTODY RECORD

SAMPLE LOCATION	COLLECTION		TOTAL CHLORINE, mg/l AT COLLECTION	TEMPERATURE, °C AT COLLECTION	# OF CONTAINERS	DISINFECTION		Field pH	Metals	Conductivity	Temperature	EPA 8260B	8260 Dup. 1	CHLORINE NEUTRALIZED AT COLLECTION	pH CHECK (LAB)	CONTAINER TYPE, PG	CHEMICAL PRESERVATION
	DATE	TIME				CHLORINE	UV										
SW-1	08/23/10	10:30		24	4	<input type="checkbox"/>	<input type="checkbox"/>	A	C	A	A	C	C				
SW-2	08/23/10	08:30		24	4	<input type="checkbox"/>	<input type="checkbox"/>	A	C	A	A	C	C				
SW-3	08/23/10	11:25		23	4	<input type="checkbox"/>	<input type="checkbox"/>	A	C	A	A	C	C				
RECEIVED BY (SIG.) <i>[Signature]</i> DATE/TIME <i>08/23/10 2:55 PM</i> COMMENTS:																	
RELINQUISHED BY (SIG.) <i>[Signature]</i> DATE/TIME <i>08/23/10 2:55 PM</i> RECEIVED BY (SIG.) <i>[Signature]</i> DATE/TIME <i>08/23/10 2:55 PM</i> COMMENTS:																	
RELINQUISHED BY (SIG.) DATE/TIME RECEIVED BY (SIG.) DATE/TIME																	

PLEASE READ Instructions for completing this form on the reverse side.

Sampler must place a "C" for composite sample or a "G" for Grab sample in the blocks above for each parameter requested.

No 210828

CLASSIFICATION:  
 WASTEWATER (NPDES)  
 DRINKING WATER  
 DWQGW  
 SOLID WASTE SECTION

SAMPLES COLLECTED BY: *Hogge*  
 (Please Print)  
 CHAIN OF CUSTODY MAINTAINED DURING SHIPMENT/DELIVERY  
 Y  N  
 SAMPLES RECEIVED IN LAB AT *0, 9* °C

# Environment 1, Incorporated

REC'D SEP 28 2010

Drinking Water ID: 37715  
Wastewater ID: 10

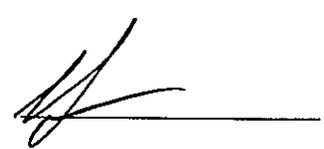
P.O. BOX 7085, 114 OAKMONT DRIVE  
GREENVILLE, N.C. 27835-7085

PHONE (252) 756-6208  
FAX (252) 756-0633

ID#: 6015 C

HALIFAX CO. LANDFILL (CLOSED MSW)  
MS. GWEN MATTHEWS  
P.O. BOX 70  
HALIFAX ,NC 27839

DATE COLLECTED: 08/24/10  
DATE REPORTED : 09/24/10

REVIEWED BY: 

PARAMETERS	MDL	SWSL	BP-3	BP-9	G-13D	Analysis		Method
						Date	Analyst	
PH (field measurement), Units					6.2	08/24/10	RJH	SM4500HB
Antimony, ug/l	0.22	6.0			---	09/03/10	LFJ	EPA200.8
Arsenic, ug/l	0.04	10.0			0.6	09/03/10	LFJ	EPA200.8
Barium, ug/l	0.03	100.0			50.5	09/03/10	LFJ	EPA200.8
Beryllium, ug/l	0.02	1.0			0.3	09/03/10	LFJ	EPA200.8
Cadmium, ug/l	0.02	1.0			0.1	09/03/10	LFJ	EPA200.8
Cobalt, ug/l	0.10	10.0			0.6	09/03/10	LFJ	EPA200.8
Copper, ug/l	0.03	10.0			4.5	09/03/10	LFJ	EPA200.8
Total Chromium, ug/l	0.03	10.0			---	09/03/10	LFJ	EPA200.8
Iron, ug/l	13.8	300.0			523	09/24/10	LFJ	SM3111B
Lead, ug/l	0.01	10.0			0.8	09/03/10	LFJ	EPA200.8
Nickel, ug/l	0.05	50.0			0.3	09/03/10	LFJ	EPA200.8
Selenium, ug/l	0.32	10.0			---	09/03/10	LFJ	EPA200.8
Silver, ug/l	0.03	10.0			---	09/03/10	LFJ	EPA200.8
Thallium, ug/l	0.05	5.5			---	09/03/10	LFJ	EPA200.8
Vanadium, ug/l	0.03	25.0			0.8	09/03/10	LFJ	EPA200.8
Zinc, ug/l	0.08	10.0			28	09/03/10	LFJ	EPA200.8
Conductivity (at 25c), uMhos	1.0	1.0			97	08/24/10	RJH	SM2510B
Temperature, °C					19	08/24/10	RJH	SM2550B
Static Water Level, feet			31.28	30.60	12.60	08/24/10	RJH	
Well Depth, feet					56.72	08/24/10	RJH	

J = Between MDL and SWSL, U = Below ALL Quantitation Limits.

# Environment 1, Incorporated

Drinking Water ID: 37715  
Wastewater ID: 10

P.O. BOX 7085, 114 OAKMONT DRIVE  
GREENVILLE, N.C. 27835-7085

PHONE (252) 756-6208  
FAX (252) 756-0633

CLIENT: HALIFAX CO. LANDFILL (CLOSED MSW)  
MS. GWEN MATTHEWS  
P.O. BOX 70  
HALIFAX, NC 27839

CLIENT ID: 6015 C

ANALYST: MAO  
DATE COLLECTED: 08/24/10 Page: 1  
DATE ANALYZED: 09/07/10  
DATE REPORTED: 09/24/10

REVIEWED BY: 

## VOLATILE ORGANICS EPA METHOD 8260B

PARAMETERS, ug/l	MDL	SWSL	G-13D
1. Chloromethane	0.77	1.0	--- U
2. Vinyl Chloride	0.63	1.0	--- U
3. Bromomethane	0.67	10.0	--- U
4. Chloroethane	0.48	10.0	--- U
5. Trichlorofluoromethane	0.24	1.0	--- U
6. 1,1-Dichloroethene	0.17	5.0	--- U
7. Acetone	9.06	100.0	--- U
8. Iodomethane	0.26	10.0	--- U
9. Carbon Disulfide	0.23	100.0	--- U
10. Methylene Chloride	0.64	1.0	--- U
11. trans-1,2-Dichloroethene	0.23	5.0	--- U
12. 1,1-Dichloroethane	0.20	5.0	--- U
13. Vinyl Acetate	0.20	50.0	--- U
14. Cis-1,2-Dichloroethene	0.25	5.0	--- U
15. 2-Butanone	2.21	100.0	--- U
16. Bromochloromethane	0.27	3.0	--- U
17. Chloroform	0.25	5.0	--- U
18. 1,1,1-Trichloroethane	0.19	1.0	--- U
19. Carbon Tetrachloride	0.22	1.0	--- U
20. Benzene	0.24	1.0	--- U
21. 1,2-Dichloroethane	0.27	1.0	--- U
22. Trichloroethene	0.23	1.0	--- U
23. 1,2-Dichloropropane	0.21	1.0	--- U
24. Bromodichloromethane	0.21	1.0	--- U
25. Cis-1,3-Dichloropropene	0.24	1.0	--- U
26. 4-Methyl-2-Pentanone	1.19	100.0	--- U
27. Toluene	0.23	1.0	--- U
28. trans-1,3-Dichloropropene	0.28	1.0	--- U
29. 1,1,2-Trichloroethane	0.25	1.0	--- U
30. Tetrachloroethene	0.17	1.0	--- U
31. 2-Hexanone	1.57	50.0	--- U
32. Dibromochloromethane	0.24	3.0	--- U
33. 1,2-Dibromoethane	0.26	1.0	--- U
34. Chlorobenzene	0.30	3.0	--- U
35. 1,1,1,2-Tetrachloroethane	0.22	5.0	--- U
36. Ethylbenzene	0.21	1.0	--- U
37. Xylenes	0.68	5.0	--- U
38. Dibromomethane	0.28	10.0	--- U
39. Styrene	0.19	1.0	--- U
40. Bromoform	0.20	3.0	--- U
41. 1,1,2,2-Tetrachloroethane	0.26	3.0	--- U
42. 1,2,3-Trichloropropane	0.43	1.0	--- U
43. 1,4-Dichlorobenzene	0.39	1.0	--- U
44. 1,2-Dichlorobenzene	0.32	5.0	--- U
45. 1,2-Dibromo-3-Chloropropane	0.34	13.0	--- U
46. Acrylonitrile	2.72	200.0	--- U
47. trans-1,4-Dichloro-2-Butene	0.42	100.0	--- U

J = Between MDL and SWSL, U = Below ALL Quantitation Limits.

# CHAIN OF CUSTODY RECORD

Environment 1, Incorporated  
 P.O. Box 7088, Greenville, NC 27835  
 Phone (252) 756-6200 Fax (252) 756-0633  
 Client: **6051C** Week: 33

HALLIXX C&I LANDFILL (CLOSED MSW)  
 MS. GWEN MATTHEWS  
 P.O. BOX 70  
 HALLIXX NC 27839  
 (252) 583-1807

SAMPLE LOCATION	COLLECTION		TOTAL CHLORINE, mg/l AT COLLECTION	TEMPERATURE, °C AT COLLECTION	# OF CONTAINERS	DISINFECTION		Field pH	Metals	Conductivity	Temperature	Field Parameter	EPA 8270C	8270C Dup. 1	EPA 8081B	8260B App. II	8260 App. II 1	8260 App. II 2	8151A Landfill	8151A Duplicate	PARAMETERS	CLASSIFICATION:
	DATE	TIME				CHLORINE	UV															
ENV-7					10	<input type="checkbox"/>	<input type="checkbox"/>															WASTEWATER (NPDES)
ENV-18S					10	<input type="checkbox"/>	<input type="checkbox"/>															WASTEWATER (NPDES)
BP-3					1	<input type="checkbox"/>	<input type="checkbox"/>															DRINKING WATER
ENV-9					1	<input type="checkbox"/>	<input type="checkbox"/>															DRINKING WATER
ENV-18D					19	<input type="checkbox"/>	<input type="checkbox"/>															DRINKING WATER
Environment 1, Incorporated OAKMONT DRIVE 27835-7085		RECEIVED BY (SIG.) <i>[Signature]</i>	RECEIVED BY (SIG.) <i>[Signature]</i>	DATE/TIME 08/24/10 0845	DATE/TIME 08/24/10 0845	COMMENTS: CHAIN OF CUSTODY MAINTAINED DURING SHIPMENT/DELIVERY	SAMPLES COLLECTED BY: (Please Print) <i>Hope Fat</i>	SAMPLES RECEIVED IN LAB AT <i>02</i> °C														

PLEASE READ Instructions for completing this form on the reverse side.

Sampler must place a "C" for composite sample or a "G" for Grab sample in the blank above for each parameter analyzed.

P.O. BOX 7085, 114 OAKMONT DRIVE  
GREENVILLE, N.C. 27835-7085

PHONE (252) 756-6208  
FAX (252) 756-0633

ID#: 6015 C

HALIFAX CO. LANDFILL (CLOSED MSW)  
MS. GWEN MATTHEWS  
P.O. BOX 70  
HALIFAX ,NC 27839

DATE COLLECTED: 08/25/10  
DATE REPORTED : 09/24/10

REVIEWED BY: 

PARAMETERS	MDL	MW-17			MW-18S			G-13			Analysis		Method Code
		SWSL									Date	Analyst	
PH (field measurement), Units			5.88		6.60		6.05	08/25/10	RJH	SM4500HB			
Antimony, ug/l	0.22	6.0	---	U	---	U	---	U	09/03/10	LPJ	EPA200.8		
Arsenic, ug/l	0.04	10.0	0.2	J	3	J	1.2	J	09/03/10	LPJ	EPA200.8		
Barium, ug/l	0.03	100.0	51.3	J	76	J	41.4	J	09/03/10	LPJ	EPA200.8		
Beryllium, ug/l	0.02	1.0	0.5	J	0.1	J	1.1	J	09/03/10	LPJ	EPA200.8		
Cadmium, ug/l	0.02	1.0	0.7	J	1.1	J	0.1	J	09/03/10	LPJ	EPA200.8		
Cobalt, ug/l	0.10	10.0	1	J	6.6	J	1.6	J	09/03/10	LPJ	EPA200.8		
Copper, ug/l	0.03	10.0	2.8	J	1.4	J	1.5	J	09/03/10	LPJ	EPA200.8		
Total Chromium, ug/l	0.03	10.0	---	U	---	U	0.1	J	09/03/10	LPJ	EPA200.8		
Iron, ug/l	13.8	300.0	2316		23420		6441		09/24/10	LPJ	SM3111B		
Lead, ug/l	0.01	10.0	2.2	J	0.8	J	1.8	J	09/03/10	LPJ	EPA200.8		
Mercury, ug/l	0.08	0.20	0.19	J	---	U			09/03/10	LPJ	EPA200.8		
Nickel, ug/l	0.05	50.0	1.4	J	1.3	J	0.8	J	09/03/10	LPJ	EPA200.8		
Selenium, ug/l	0.32	10.0	0.7	J	---	U	0.4	J	09/03/10	LPJ	EPA200.8		
Silver, ug/l	0.03	10.0	0.1	J	---	U	---	U	09/03/10	LPJ	EPA200.8		
Thallium, ug/l	0.05	5.5	---	U	---	U	---	U	09/03/10	LPJ	EPA200.8		
Tin, ug/l	0.11	100.0	0.5	J	0.3	J			09/03/10	LPJ	EPA200.8		
Vanadium, ug/l	0.03	25.0	2.8	J	1	J	3.8	J	09/03/10	LPJ	EPA200.8		
Zinc, ug/l	0.08	10.0	21		5.8	J	8.5	J	09/03/10	LPJ	EPA200.8		
Conductivity (at 25c), uMhos	1.0	1.0	142		248		224		08/25/10	RJH	SM2510B		
Temperature, °C			17.12		18.20		18.22		08/25/10	RJH	SM2550B		
Static Water Level, feet			4.72		4.55		12.54		08/25/10	RJH			
Well Depth, feet			27.59		20.25		15.15		08/25/10	RJH			

# Environment 1, Incorporated

Drinking Water ID: 37715  
Wastewater ID: 10

P.O. BOX 7085, 114 OAKMONT DRIVE  
GREENVILLE, N.C. 27835-7085

PHONE (252) 756-6208  
FAX (252) 756-0633

CLIENT: HALIFAX CO. LANDFILL (CLOSED MSW)  
MS. GWEN MATTHEWS  
P.O. BOX 70  
HALIFAX, NC 27839

CLIENT ID: 6015 C

ANALYST: CHS  
DATE COLLECTED: 08/25/10  
DATE EXTRACTED: 08/27/10  
DATE ANALYZED: 08/27/10  
DATE REPORTED: 09/24/10

REVIEWED BY: 

## PESTICIDES AND PCB'S EPA METHOD 8081B

PARAMETERS, ug/l	MDL	SWSL	MW-17	MW-18S
1. Aldrin	0.029	0.05	--- U	--- U
2. Alpha-BHC	0.032	0.05	--- U	--- U
3. Beta-BHC	0.031	0.05	--- U	--- U
4. Delta-BHC	0.030	0.05	--- U	--- U
5. Gamma-BHC (Lindane)	0.032	0.05	--- U	--- U
6. Chlordane	0.320	0.50	--- U	--- U
7. 4,4-DDD	0.051	0.10	--- U	--- U
8. 4,4-DDE	0.049	0.10	--- U	--- U
9. 4,4-DDT	0.052	0.10	--- U	--- U
10. Dieldrin	0.042	0.075	--- U	--- U
11. Endosulfan I	0.056	0.10	--- U	--- U
12. Endosulfan II	0.046	0.10	--- U	--- U
13. Endosulfan Sulfate	0.072	0.10	--- U	--- U
14. Endrin	0.053	0.10	--- U	--- U
15. Endrin Aldehyde	0.068	0.10	--- U	--- U
16. Heptachlor	0.039	0.05	--- U	--- U
17. Heptachlor Epoxide	0.042	0.075	--- U	--- U
18. Methoxychlor	0.530	1.00	--- U	--- U
19. Pcb's (Aroclors)	0.500	2.00	--- U	--- U
20. Toxaphene	0.690	1.50	--- U	--- U

# Environment 1, Incorporated

Drinking Water ID: 37715  
Wastewater ID: 10

P.O. BOX 7085, 114 OAKMONT DRIVE  
GREENVILLE, N.C. 27835-7085

PHONE (252) 756-6208  
FAX (252) 756-0633

CLIENT: HALIFAX CO. LANDFILL (CLOSED MSW)  
MS. GWEN MATTHEWS  
P.O. BOX 70  
HALIFAX, NC 27839

CLIENT ID: 6015 C

ANALYST: CHS  
DATE COLLECTED: 08/25/10  
DATE EXTRACTED: 08/31/10  
DATE ANALYZED: 08/31/10  
DATE REPORTED: 09/24/10

REVIEWED BY: 

## LANDFILL APPENDIX II EPA METHOD 8151A

PARAMETERS, ug/l	MDL	SWSL	MW-17	MW-18S
1. 2,4-D	0.36	2.0	--- U	--- U
2. Dinoseb	0.54	1.0	--- U	--- U
3. 2,4,5-TP	0.42	2.0	--- U	--- U
4. 2,4,5-T	0.47	2.0	--- U	--- U

# Environment 1, Incorporated

Drinking Water ID: 37715  
Wastewater ID: 10

P.O. BOX 7085, 114 OAKMONT DRIVE  
GREENVILLE, N.C. 27835-7085

PHONE (252) 756-6208  
FAX (252) 756-0633

CLIENT: HALIFAX CO. LANDFILL (CLOSED MSW)  
MS. GWEN MATTHEWS  
P.O. BOX 70  
HALIFAX, NC 27839

CLIENT ID: 6015 C

ANALYST: MAO  
DATE COLLECTED: 08/25/10  
DATE ANALYZED: 09/07/10  
DATE REPORTED: 09/24/10

Page: 1

REVIEWED BY: 

VOLATILE ORGANICS  
EPA METHOD 8260B

PARAMETERS, ug/l	MDL	SWSL	G-13
1. Chloromethane	0.77	1.0	--- U
2. Vinyl Chloride	0.63	1.0	--- U
3. Bromomethane	0.67	10.0	--- U
4. Chloroethane	0.48	10.0	--- U
5. Trichlorofluoromethane	0.24	1.0	--- U
6. 1,1-Dichloroethene	0.17	5.0	--- U
7. Acetone	9.06	100.0	--- U
8. Iodomethane	0.26	10.0	--- U
9. Carbon Disulfide	0.23	100.0	--- U
10. Methylene Chloride	0.64	1.0	--- U
11. trans-1,2-Dichloroethene	0.23	5.0	--- U
12. 1,1-Dichloroethane	0.20	5.0	--- U
13. Vinyl Acetate	0.20	50.0	--- U
14. Cis-1,2-Dichloroethene	0.25	5.0	--- U
15. 2-Butanone	2.21	100.0	--- U
16. Bromochloromethane	0.27	3.0	--- U
17. Chloroform	0.25	5.0	--- U
18. 1,1,1-Trichloroethane	0.19	1.0	--- U
19. Carbon Tetrachloride	0.22	1.0	--- U
20. Benzene	0.24	1.0	--- U
21. 1,2-Dichloroethane	0.27	1.0	--- U
22. Trichloroethene	0.23	1.0	--- U
23. 1,2-Dichloropropane	0.21	1.0	--- U
24. Bromodichloromethane	0.21	1.0	--- U
25. Cis-1,3-Dichloropropane	0.24	1.0	--- U
26. 4-Methyl-2-Pentanone	1.19	100.0	--- U
27. Toluene	0.23	1.0	--- U
28. trans-1,3-Dichloropropane	0.28	1.0	--- U
29. 1,1,2-Trichloroethane	0.25	1.0	--- U
30. Tetrachloroethene	0.17	1.0	--- U
31. 2-Hexanone	1.57	50.0	--- U
32. Dibromochloromethane	0.24	3.0	--- U
33. 1,2-Dibromoethane	0.26	1.0	--- U
34. Chlorobenzene	0.30	3.0	--- U
35. 1,1,1,2-Tetrachloroethane	0.22	5.0	--- U
36. Ethylbenzene	0.21	1.0	--- U
37. Xylenes	0.68	5.0	--- U
38. Dibromomethane	0.28	10.0	--- U
39. Styrene	0.19	1.0	--- U
40. Bromoform	0.20	3.0	--- U
41. 1,1,2,2-Tetrachloroethane	0.26	3.0	--- U
42. 1,2,3-Trichloropropane	0.43	1.0	--- U
43. 1,4-Dichlorobenzene	0.39	1.0	--- U
44. 1,2-Dichlorobenzene	0.32	5.0	--- U
45. 1,2-Dibromo-3-Chloropropane	0.34	13.0	--- U
46. Acrylonitrile	2.72	200.0	--- U
47. trans-1,4-Dichloro-2-Butene	0.42	100.0	--- U

J = Between MDL and SWSL, U = Below ALL Quantitation Limits.

# Environment 1, Incorporated

Drinking Water ID: 37715  
Wastewater ID: 10

P.O. BOX 7085, 114 OAKMONT DRIVE  
GREENVILLE, N.C. 27835-7085

PHONE (252) 756-6208  
FAX (252) 756-0633

CLIENT: HALIFAX CO. LANDFILL (CLOSED MSW)  
MS. GWEN MATTHEWS  
P.O. BOX 70  
HALIFAX, NC 27839

CLIENT ID: 6015 C

ANALYST: CHS  
DATE COLLECTED: 08/25/10  
DATE EXTRACTED: 08/30/10  
DATE ANALYZED: 08/30/10  
DATE REPORTED: 09/24/10

Page: 1

REVIEWED BY: 

## SEMI-VOLATILE ORGANICS EPA METHOD 8270C

PARAMETERS, ug/l	MDL	SWSL	MW-17	MW-18S
1. Acenaphthene	2.66	10.0	--- U	--- U
2. Acenaphthylene	2.60	10.0	--- U	--- U
3. Anthracene	2.97	10.0	--- U	--- U
4. Benzo[a]anthracene	4.16	10.0	--- U	--- U
5. Benzo[b]fluoranthene	3.32	10.0	--- U	--- U
6. Benzo[k]fluoranthene	4.23	10.0	--- U	--- U
7. Benzo[g,h,i]perylene	2.61	10.0	--- U	--- U
8. Benzo[a]pyrene	3.27	10.0	--- U	--- U
9. 4-Bromophenyl Phenyl Ether	2.63	10.0	--- U	--- U
10. Butyl Benzyl Phthalate	5.78	10.0	--- U	--- U
11. Bis-(2-Chloroethoxy) Methane	3.14	10.0	--- U	--- U
12. Bis-(2-Chloroethyl) Ether	2.58	10.0	--- U	--- U
13. Bis-(2-Chloroisopropyl) Ether	2.58	10.0	--- U	--- U
14. 2-Chloronaphthalene	2.17	10.0	--- U	--- U
15. 4-Chlorophenyl Phenyl Ether	2.42	10.0	--- U	--- U
16. Chrysene	4.04	10.0	--- U	--- U
17. Dibenzo[a,h]anthracene	2.78	10.0	--- U	--- U
18. Di-N-Butyl Phthalate	3.09	10.0	--- U	--- U
19. Dimethyl Phthalate	3.78	10.0	--- U	--- U
20. Diethyl Phthalate	3.92	6000	--- U	--- U
21. 2,4-Dinitrotoluene	3.95	10.0	--- U	--- U
22. 2,6-Dinitrotoluene	3.88	10.0	--- U	--- U
23. Di-N-Octyl Phthalate	2.81	10.0	--- U	--- U
24. Bis-(2-Ethylhexyl) Phthalate	9.97	15.0	--- U	10.30 U
25. Fluoranthene	3.92	10.0	--- U	--- U
26. Fluorene	2.95	10.0	--- U	--- U
27. Hexachlorobenzene	2.61	10.0	--- U	--- U
28. Hexachlorocyclopentadiene	4.16	10.0	--- U	--- U
29. Indeno[1,2,3-Cd]pyrene	2.91	10.0	--- U	--- U
30. Isophorone	3.74	10.0	--- U	--- U
31. Nitrobenzene	2.85	10.0	--- U	--- U
32. N-Nitrosodimethylamine	4.25	10.0	--- U	--- U
33. N-Nitrosodiphenylamine	3.95	10.0	--- U	--- U
34. N-Nitrosodi-N-Propylamine	4.06	10.0	--- U	--- U
35. Phenanthrene	3.24	10.0	--- U	--- U
36. Pyrene	3.63	10.0	--- U	--- U
37. 4-Chloro-3-Methylphenol	3.79	20.0	--- U	--- U
38. 2-Chlorophenol	2.75	10.0	--- U	--- U
39. O-Cresol	3.68	10.0	--- U	--- U
40. P-Cresol	4.12	10.0	--- U	--- U
41. 2,4-Dichlorophenol	5.19	10.0	--- U	--- U
42. 2,6-Dichlorophenol	4.89	10.0	--- U	--- U
43. 2,4-Dimethylphenol	3.21	10.0	--- U	--- U
44. 4,6-Dinitro-2-Methylphenol	4.77	50.0	--- U	--- U
45. 2,4-Dinitrophenol	4.37	50.0	--- U	--- U
46. Ethyl Methanesulfonate	5.26	20.0	--- U	--- U
47. Methyl Methanesulfonate	4.92	10.0	--- U	--- U
48. 2-Nitrophenol	3.64	10.0	--- U	--- U

J = Between MDL and SWSL, U = Below ALL Quantitation Limits.

# Environment 1, Incorporated

Drinking Water ID: 37715  
Wastewater ID: 10

P.O. BOX 7085, 114 OAKMONT DRIVE  
GREENVILLE, N.C. 27835-7085

PHONE (252) 756-6208  
FAX (252) 756-0633

CLIENT: HALIFAX CO. LANDFILL (CLOSED MSW)  
MS. GWEN MATTHEWS  
P.O. BOX 70  
HALIFAX, NC 27839

CLIENT ID: 6015 C

ANALYST: CHS  
DATE COLLECTED: 08/25/10  
DATE EXTRACTED: 08/30/10  
DATE ANALYZED: 08/30/10  
DATE REPORTED: 09/24/10

Page: 2

REVIEWED BY: 

## SEMI-VOLATILE ORGANICS EPA METHOD 8270C

PARAMETERS, ug/l	MDL	SWSL	MW-17	MW-18S
49. 4-Nitrophenol	3.17	50.0	--- U	--- U
50. Pentachlorophenol	5.33	25.0	--- U	--- U
51. Phenol	1.86	10.0	--- U	--- U
52. 2,3,4,6-Tetrachlorophenol	3.12	10.0	--- U	--- U
53. 2,4,5-Trichlorophenol	4.17	10.0	--- U	--- U
54. 2,4,6-Trichlorophenol	3.84	10.0	--- U	--- U
55. Acetophenone	2.89	10.0	--- U	--- U
56. 2-Acetylaminofluorene	3.98	20.0	--- U	--- U
57. 4-Aminobiphenyl	4.12	20.0	--- U	--- U
58. Benzyl Alcohol	4.47	20.0	--- U	--- U
59. 4-Chloroaniline	3.36	20.0	--- U	--- U
60. Chlorobenzilate	5.12	10.0	--- U	--- U
61. Diallate	2.98	10.0	--- U	--- U
62. Dibenzofuran	4.28	10.0	--- U	--- U
63. 3,3-Dichlorobenzidine	4.22	20.0	--- U	--- U
64. Dimethoate	3.98	20.0	--- U	--- U
65. P-Dimethylaminoazobenzene	2.89	10.0	--- U	--- U
66. 7,12-Dimethylbenz[a]anthracene	5.26	10.0	--- U	--- U
67. 3,3-Dimethylbenzadine	3.21	10.0	--- U	--- U
68. 1,3-Dinitrobenzene	2.89	20.0	--- U	--- U
69. Diphenylamine	5.10	10.0	--- U	--- U
70. Disulfoton	4.28	10.0	--- U	--- U
71. Famphur	3.98	20.0	--- U	--- U
72. Hexachloropropene	4.31	10.0	--- U	--- U
73. Isosafrole	2.88	10.0	--- U	--- U
74. Kepone	2.78	20.0	--- U	--- U
75. Methapyrilene	3.54	100.0	--- U	--- U
76. 3-Methylchloroanthrene	4.21	10.0	--- U	--- U
77. 2-Methylnaphthalene	3.79	10.0	--- U	--- U
78. Methyl Parathion	4.32	10.0	--- U	--- U
79. m-Cresol	3.81	10.0	--- U	--- U
80. 1,4-Naphthoquinone	4.00	10.0	--- U	--- U
81. 1-Naphthylamine	5.61	10.0	--- U	--- U
82. 2-Naphthylamine	4.62	10.0	--- U	--- U
83. 2-Nitroaniline	3.61	50.0	--- U	--- U
84. 3-Nitroaniline	4.81	50.0	--- U	--- U
85. 4-Nitroaniline	4.22	20.0	--- U	--- U
86. 5-Nitro-O-Toluidine	4.01	10.0	--- U	--- U
87. N-Nitrosodi-n-butylamine	3.63	10.0	--- U	--- U
88. N-Nitrosodiethylamine	3.83	20.0	--- U	--- U
89. N-Nitrosomethylethylamine	3.83	10.0	--- U	--- U
90. N-Nitrosopiperidine	5.19	20.0	--- U	--- U
91. N-Nitrosopyrrolidine	2.89	10.0	--- U	--- U
92. Parathion	3.12	10.0	--- U	--- U
93. Pentachlorobenzene	3.92	10.0	--- U	--- U
94. Pentachloronitrobenzene	3.71	20.0	--- U	--- U
95. Phenacetin	4.41	20.0	--- U	--- U
96. 1,4 Benzenediamine	2.99	10.0	--- U	--- U

J = Between MDL and SWSL, U = Below ALL Quantitation Limits.

# Environment 1, Incorporated

Drinking Water ID: 37715  
Wastewater ID: 10

P.O. BOX 7085, 114 OAKMONT DRIVE  
GREENVILLE, N.C. 27835-7085

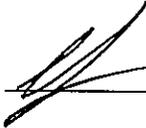
PHONE (252) 756-6208  
FAX (252) 756-0633

CLIENT: HALIFAX CO. LANDFILL (CLOSED MSW)  
MS. GWEN MATTHEWS  
P.O. BOX 70  
HALIFAX, NC 27839

CLIENT ID: 6015 C

ANALYST: CHS  
DATE COLLECTED: 08/25/10  
DATE EXTRACTED: 08/30/10  
DATE ANALYZED: 08/30/10  
DATE REPORTED: 09/24/10

Page: 3

REVIEWED BY: 

## SEMI-VOLATILE ORGANICS EPA METHOD 8270C

PARAMETERS, ug/l	MDL	SWSL	MW-17	MW-18S
97. Phorate	3.86	10.0	--- U	--- U
98. Pronamide	3.69	10.0	--- U	--- U
99. Safrole	4.12	10.0	--- U	--- U
100. 1,2,4,5-Tetrachlorobenzene	5.01	10.0	--- U	--- U
101. Thionazin	4.62	20.0	--- U	--- U
102. O-Toluidine	4.11	10.0	--- U	--- U
103. 1,3,5-Trinitrobenzene	3.98	10.0	--- U	--- U
104. 0,0,0-Triethyl Phosphorothioate	3.61	10.0	--- U	--- U
105. Hexachloroethane	1.49	10.0	--- U	--- U
106. Isodrin	3.11	20.0	--- U	--- U

# Environment 1, Incorporated

Drinking Water ID: 37715  
Wastewater ID: 10

P.O. BOX 7085, 114 OAKMONT DRIVE  
GREENVILLE, N.C. 27835-7085

PHONE (252) 756-6208  
FAX (252) 756-0633

CLIENT: HALIFAX CO. LANDFILL (CLOSED MSW)  
MS. GWEN MATTHEWS  
P.O. BOX 70  
HALIFAX, NC 27839

CLIENT ID: 6015 C

ANALYST: MAO  
DATE COLLECTED: 08/25/10  
DATE ANALYZED: 09/08/10  
DATE REPORTED: 09/24/10

Page: 1

REVIEWED BY: 

## LANDFILL APPENDIX II EPA METHOD 8260B

PARAMETERS, ug/l	MDL	SWSL	MW-17	MW-18S	
1. Chloromethane	0.77	1.0	---	U	
2. Vinyl Chloride	0.63	1.0	---	U	
3. Bromomethane	0.67	10.0	---	U	
4. Chloroethane	0.48	10.0	---	U	
5. Trichlorofluoromethane	0.24	1.0	---	U	
6. 1,1-Dichloroethene	0.17	5.0	0.30 J	---	U
7. Acetone	9.06	100.0	---	U	
8. Iodomethane	0.26	10.0	---	U	
9. Carbon Disulfide	0.23	100.0	---	U	
10. Methylene Chloride	0.64	1.0	---	U	
11. trans-1,2-Dichloroethene	0.23	5.0	---	U	
12. 1,1-Dichloroethane	0.20	5.0	4.80 J	0.80 J	
13. Vinyl Acetate	0.20	50.0	---	U	
14. Cis-1,2-Dichloroethene	0.25	5.0	2.90 J	---	U
15. 2-Butanone	2.21	100.0	---	U	
16. Bromochloromethane	0.27	3.0	---	U	
17. Chloroform	0.25	5.0	---	U	
18. 1,1,1-Trichloroethane	0.19	1.0	---	U	
19. Carbon Tetrachloride	0.22	1.0	---	U	
20. Benzene	0.24	1.0	0.30 J	---	U
21. 1,2-Dichloroethane	0.21	1.0	---	U	
22. Trichloroethene	0.23	1.0	2.10	---	U
23. 1,2-Dichloropropane	0.21	1.0	---	U	
24. Bromodichloromethane	0.21	1.0	---	U	
25. Cis-1,3-Dichloropropene	0.24	1.0	---	U	
26. 4-Methyl-2-Pentanone	1.19	100.0	---	U	
27. Toluene	0.23	1.0	---	U	
28. trans-1,3-Dichloropropene	0.28	1.0	---	U	
29. 1,1,2-Trichloroethane	0.25	1.0	---	U	
30. Tetrachloroethene	0.17	1.0	1.80	---	U
31. 2-Hexanone	1.57	50.0	---	U	
32. Dibromochloromethane	0.24	3.0	---	U	
33. 1,2-Dibromoethane	0.26	1.0	---	U	
34. Chlorobenzene	0.30	3.0	---	U	
35. 1,1,1,2-Tetrachloroethane	0.22	5.0	---	U	
36. Ethylbenzene	0.21	1.0	---	U	
37. Xylenes	0.68	5.0	---	U	
38. Dibromomethane	0.28	10.0	---	U	
39. Styrene	0.19	1.0	---	U	
40. Bromoform	0.20	3.0	---	U	
41. 1,1,2,2-Tetrachloroethane	0.26	3.0	---	U	
42. 1,2,3-Trichloropropane	0.43	1.0	---	U	
43. 1,4-Dichlorobenzene	0.39	1.0	---	U	
44. 1,2-Dichlorobenzene	0.32	5.0	---	U	
45. 1,2-Dibromo-3-Chloropropane	0.34	13.0	---	U	
46. Acrylonitrile	2.72	200.0	---	U	
47. trans-1,4-Dichloro-2-Butene	0.42	100.0	---	U	
48. Acrolein	40.57	53.0	---	U	

J = Between MDL and SWSL, U = Below ALL Quantitation Limits.

# Environment 1, Incorporated

Drinking Water ID: 37715  
Wastewater ID: 10

P.O. BOX 7085, 114 OAKMONT DRIVE  
GREENVILLE, N.C. 27835-7085

PHONE (252) 756-6208  
FAX (252) 756-0633

CLIENT: HALIFAX CO. LANDFILL (CLOSED MSW)  
MS. GWEN MATTHEWS  
P.O. BOX 70  
HALIFAX, NC 27839

CLIENT ID: 6015 C

ANALYST: MAO  
DATE COLLECTED: 08/25/10  
DATE ANALYZED: 09/08/10  
DATE REPORTED: 09/24/10

Page: 2

REVIEWED BY: 

## LANDFILL APPENDIX II EPA METHOD 8260B

PARAMETERS, ug/l	MDL	SWSL	MW-17	MW-18S
49. Allyl Chloride	0.20	10.0	--- U	--- U
50. Chloroprene	0.21	20.0	--- U	--- U
51. 1,3-Dichlorobenzene	0.41	5.0	--- U	--- U
52. Dichlorodifluoromethane	0.51	5.0	2.00 J	--- U
53. 1,3-Dichloropropane	0.28	1.0	--- U	--- U
54. 2,2-Dichloropropane	0.17	15.0	--- U	--- U
55. 1,1-Dichloropropene	0.22	5.0	--- U	--- U
56. Ethyl Methacrylate	0.16	10.0	--- U	--- U
57. Hexachlorobutadiene	0.57	10.0	--- U	--- U
58. Isobutyl Alcohol	12.80	100.0	--- U	--- U
59. Methacrylonitrile	1.93	100.0	--- U	--- U
60. Methyl Methacrylate	0.25	30.0	--- U	--- U
61. Naphthalene	0.47	10.0	--- U	--- U
62. Propionitrile	3.26	150.0	--- U	--- U
63. 1,2,4-Trichlorobenzene	0.50	10.0	--- U	--- U
64. Acetonitrile	36.29	55.0	--- U	--- U

Environment 1, Inc.  
 P.O. Box 7085, 114 Oakmont Dr.  
 Greenville, NC 27858

Phone (252) 756-6208 • Fax (252) 756-0633

CLIENT: 6015 C Week: 33

HALIFAX CO. LANDFILL (CLOSED MSW)  
 MRS. GWEN MATTHEWS  
 P.O. BOX 70  
 HALIFAX NC 27839

(252) 583-1807

CHAIN OF CUSTODY RECORD

SAMPLE LOCATION	COLLECTION		RECEIVED BY (SIG.)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME	COMMENTS:	PARAMETERS	CLASSIFICATION:	CHLORINE NEUTRALIZED AT COLLECTION	pH CHECK (LAB)	CONTAINER TYPE, P/G	CHEMICAL PRESERVATION
	DATE	TIME											
MW-17	08	05/10 1105	[Signature]		[Signature]								
MW-18S	08	05/10 0940	[Signature]		[Signature]								
BP-3			[Signature]		[Signature]								
BP-9			[Signature]		[Signature]								
G-13	08	05/10 1850	[Signature]		[Signature]								
G-13D			[Signature]		[Signature]								
RELINQUISHED BY (SIG.)			[Signature]		[Signature]								
RELINQUISHED BY (SIG.)			[Signature]		[Signature]								
RELINQUISHED BY (SIG.)			[Signature]		[Signature]								

FORM #5

PLEASE READ Instructions for completing this form on the reverse side.

Sampler must place a "C" for composite sample or a "G" for Grab sample in the blocks above for each parameter requested. No 202364

CHLORINE NEUTRALIZED AT COLLECTION

pH CHECK (LAB)

CONTAINER TYPE, P/G

CHEMICAL PRESERVATION

A - NONE D - NAOH  
 B - HNO<sub>3</sub> E - HCL  
 C - H<sub>2</sub>SO<sub>4</sub> F - ZINC ACETATE  
 G - NATHIOSULFATE

CLASSIFICATION:

WASTEWATER (NPDES)  
 DRINKING WATER  
 DMO/GW  
 SOLID WASTE SECTION

CHAIN OF CUSTODY MAINTAINED DURING SHIPMENT/DELIVERY

SAMPLES COLLECTED BY: (Please Print) W Page

SAMPLES RECEIVED IN LAB AT 22 °C

# Environment 1, Incorporated

REC'D SEP 28 2010

Drinking Water ID: 37715  
Wastewater ID: 10

P.O. BOX 7085, 114 OAKMONT DRIVE  
GREENVILLE, N.C. 27835-7085

PHONE (252) 756-6208  
FAX (252) 756-0633

ID#: 6015 X

HALIFAX CO. LANDFILL (CLOSED MSW)  
MS. GWEN MATTHEWS  
P.O. BOX 70  
HALIFAX ,NC 27839

DATE COLLECTED: 08/25/10  
DATE REPORTED : 08/31/10

REVIEWED BY: 

PARAMETERS	MDL	SWSL	MW-2A	MW-3D	MW-17	MW-2AD	MW-6D	Analysis		Method			
									Date	Analyst	Code		
BOD, mg/l	2.0	2.0	7.0	---	U	---	U	---	U	2.0	08/26/10	TRB	SM5210B
COD, mg/l	10.0	10.0	44	16	---	U	---	U	17	17	08/31/10	TRB	HACH8000
Nitrate Nitrogen as N, mg/l	0.03	10.0	0.08 J	0.08 J	0.06 J	---	U	---	U	---	08/27/10	TWA	EPA353.2
Total Organic Carbon, mg/l	0.15	1.0	6.54	1.02	---	U	1.17	2.08	---	---	08/30/10	SEJ	SM5310C
Total Alkalinity, mg/l	1.0	1.0	124	66	64	---	---	---	---	---	08/26/10	TRB	SM2320B
Chloride, mg/l	5.0	5.0	6	8	6	---	---	---	---	---	08/30/10	MEL	SM4500-CLB
Sulfate, mg/l	5.0	250.0	---	U	8.4 J	---	U	13.6 J	20.4 J	---	08/30/10	TRB	SM426C
Turbidity, NTU	1.0	1.0	500	3.2	160	---	---	---	---	---	08/26/10	MJN	SM2130B
Sulfide, ug/l	100	1000	---	U	---	U	---	---	---	---	08/30/10	LPJ	SM4500-S2D
Dissolved Oxygen, mg/l			2.94	0.86	0.60	0.58	---	---	---	---	08/25/10	RJH	SM4500OG
Carbon Dioxide, mg/l			72	84	122	171	---	---	---	---	08/26/10	TRB	SM4500CO2C
ORP, mv			-26.7	585.3	324.5	77.9	---	---	---	---	08/25/10	RJH	SM2580B

J = Between MDL and SWSL, U = Below ALL Quantitation Limits.

# Environment 1, Incorporated

Drinking Water ID: 37715  
Wastewater ID: 10

P.O. BOX 7085, 114 OAKMONT DRIVE  
GREENVILLE, N.C. 27835-7085

PHONE (252) 756-6208  
FAX (252) 756-0633

ID#: 6015 X

HALIFAX CO. LANDFILL (CLOSED MSW)  
MS. GWEN MATTHEWS  
P.O. BOX 70  
HALIFAX ,NC 27839

DATE COLLECTED: 08/25/10  
DATE REPORTED : 08/31/10

REVIEWED BY: 

PARAMETERS	MDL	MW-3AS	MW-10S	G-13	Analysis		Method
		SWSL			Date	Analyst	Code
BOD, mg/l	2.0	2.0	9.2	11	---	U	08/26/10 TRB SM5210B
COD, mg/l	10.0	10.0	44	38	---	U	08/31/10 TRB HACH8000
Nitrate Nitrogen as N, mg/l	0.03	10.0	0.05 J	0.08 J			08/27/10 TWA EPA353.2
Nitrate Nitrogen as N, mg/l	0.03	10.0			0.25 J		08/30/10 TWA EPA353.2
Total Organic Carbon, mg/l	0.15	1.0	6.37	8.77	1.93		08/30/10 SEJ SM5310C
Total Alkalinity, mg/l	1.0	1.0	313	81	72		08/26/10 TRB SM2320B
Chloride, mg/l	5.0	5.0	8	8	14		08/30/10 MEL SM4500-CLB
Sulfate, mg/l	5.0	250.0	---	U	---	U	08/30/10 TRB SM426C
Sulfate, mg/l	5.0	250.0			18.8 J		08/26/10 TRB SM426C
Turbidity, NTU	1.0	1.0	700	950	14		08/26/10 MJN SM2130B
Sulfide, ug/l	100	1000	---	U	---	U	08/30/10 LFPJ SM4500-S2D
Dissolved Oxygen, mg/l			2.06	8.21	0.59		08/25/10 RJH SM45000G
Carbon Dioxide, mg/l			427	75	79		08/26/10 TRB SM4500CO2C
ORP, mv			67.3	10.2	-12.4		08/25/10 RJH SM2580B

J = Between MDL and SWSL, U = Below ALL Quantitation Limits.







Microseeps  
Lab. Proj. #

Prod. 8335

# CHAIN - OF CUSTODY RECORD

Microseeps  
COC cont. #

552

Phone: (412) 826-5245      Microseeps, Inc. - 220 William Pitt Way - Pittsburgh, PA 15238      Fax No: (412) 826-3493

Company: ENVIRONMENTAL  
 Co. Address: 114 OAKMONT DRIVE, GREENVILLE, NC  
 Phone #: 252-788-6208 Fax #: 252-786-0613  
 Proj. Manager: STEVE JONES  
 Proj. Name/Number: HALIFAX COUNTY  
 Sampler's signature: \_\_\_\_\_

Parameters Requested: \_\_\_\_\_  
 Results to: \_\_\_\_\_  
 Invoice to: \_\_\_\_\_  
 Remarks: \_\_\_\_\_

Sample ID	Sample Description	Sample Type (Water, Vapor, Solid)	Date	Time	COPIES MADE	Remarks
1 W12A	WELL 2A	✓	08/10	4	2	✓
2 W13D	WELL 3D	✓		4	2	✓
3 W17	WELL 17	✓		4	2	✓
4 W2AD	WELL 2AD	✓		4	2	✓
5 W16D	WELL 6D	✓		4	2	✓
6 W1AS	WELL 1AS	✓		4	2	✓
7 W18S	WELL 18S	✓		4	2	✓
8 G13	WELL G13	✓		4	2	✓

Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:
<i>[Signature]</i>	ENVIRONMENTAL	08/10	2:00 PM	<i>[Signature]</i>		08/17	1:00 PM
Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:
Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:



Client Name: Environment 1, Inc.  
Contact: Steve Jones  
Address: PO Box 7085  
114 Oakmont Drive  
Greenville, NC 27835

Page: Page 1 of 9  
Lab Proj #: P1008335  
Report Date: 09/14/10  
Client Proj Name: Halifax  
Client Proj #: 6015

### Laboratory Results

Total pages in data package: 10

<u>Lab Sample #</u>	<u>Client Sample ID</u>
P1008335-01	WL2A
P1008335-02	MW3D
P1008335-03	MW17
P1008335-04	W2AD
P1008335-05	WL6D
P1008335-06	W3AS
P1008335-07	W18S
P1008335-08	G13

Microseeps test results meet all the requirements of the NELAC standards or provide reasons and/or justification if they do not.

Approved By: \_\_\_\_\_

*Debbie Hailo*

Date: \_\_\_\_\_

*9-14-10*

Project Manager: \_\_\_\_\_

Debbie Hailo

The analytical results reported here are reliable and usable to the precision expressed in this report. As required by some regulating authorities, a full discussion of the uncertainty in our analytical results can be obtained at our web site or through customer service. Unless otherwise specified, all results are reported on a wet weight basis.

*As a valued client we would appreciate your comments on our service.*

*Please call customer service at (412)826-5245 or email [customerservice@microseeps.com](mailto:customerservice@microseeps.com).*

**Case Narrative:** The percent recoveries for the batch MS/MSD analyses for volatile fatty acids could only be calculated for hexanoic and i-hexanoic acids because of the sample matrix.

Client Name: Environment 1, Inc.  
 Contact: Steve Jones  
 Address: PO Box 7085  
 114 Oakmont Drive  
 Greenville, NC 27835

Page: Page 2 of 9  
 Lab Proj #: P1008335  
 Report Date: 09/14/10  
 Client Proj Name: Halifax  
 Client Proj #: 6015

<u>Sample Description</u>	<u>Matrix</u>	<u>Lab Sample #</u>	<u>Sampled Date/Time</u>	<u>Received</u>		
WL2A	Vapor	P1008335-01	25 Aug. 10	27 Aug. 10 13:31		
<u>Analyte(s)</u>	<u>Result</u>	<u>PQL</u>	<u>Units</u>	<u>Method #</u>	<u>Analysis Date</u>	<u>By</u>
<u>RiskAnalysis</u>						
N Ethane	0.043	0.010	ug/L	AM20GAX	9/8/10	sl
N Ethene	0.130	0.010	ug/L	AM20GAX	9/8/10	sl
N Hydrogen	1.200	0.600	nM	AM20GAX	9/8/10	sl
N Methane	5900.000	0.015	ug/L	AM20GAX	9/8/10	sl
<u>SemiVolatiles</u>						
N Acetic Acid	<0.070	0.070	mg/L	AM23G	9/3/10	kb
N Butyric Acid	<0.050	0.050	mg/L	AM23G	9/3/10	kb
N Hexanoic Acid	<0.050	0.050	mg/L	AM23G	9/3/10	kb
N i-Hexanoic Acid	<0.050	0.050	mg/L	AM23G	9/3/10	kb
N i-Pentanoic Acid	<0.150	0.150	mg/L	AM23G	9/3/10	kb
N Lactic Acid	0.170	0.100	mg/L	AM23G	9/3/10	kb
N Pentanoic Acid	<0.070	0.070	mg/L	AM23G	9/3/10	kb
N Propionic Acid	<0.050	0.050	mg/L	AM23G	9/3/10	kb
N Pyruvic Acid	<0.150	0.150	mg/L	AM23G	9/3/10	kb



Client Name: Environment 1, Inc.  
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 114 Oakmont Drive  
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 Lab Proj #: P1008335  
 Report Date: 09/14/10  
 Client Proj Name: Halifax  
 Client Proj #: 6015

<u>Sample Description</u>	<u>Matrix</u>	<u>Lab Sample #</u>	<u>Sampled Date/Time</u>	<u>Received</u>		
MW3D	Vapor	P1008335-02	25 Aug. 10	27 Aug. 10 13:31		
<u>Analyte(s)</u>	<u>Result</u>	<u>PQL</u>	<u>Units</u>	<u>Method #</u>	<u>Analysis Date</u>	<u>By</u>
<u>RiskAnalysis</u>						
N Ethane	<0.010	0.010	ug/L	AM20GAX	9/8/10	sl
N Ethene	<0.010	0.010	ug/L	AM20GAX	9/8/10	sl
N Hydrogen	1.100	0.600	nM	AM20GAX	9/8/10	sl
N Methane	3400.000	0.015	ug/L	AM20GAX	9/8/10	sl
<u>SemiVolatiles</u>						
N Acetic Acid	<0.070	0.070	mg/L	AM23G	9/3/10	kb
N Butyric Acid	<0.050	0.050	mg/L	AM23G	9/3/10	kb
N Hexanoic Acid	<0.050	0.050	mg/L	AM23G	9/3/10	kb
N i-Hexanoic Acid	<0.050	0.050	mg/L	AM23G	9/3/10	kb
N i-Pentanoic Acid	<0.150	0.150	mg/L	AM23G	9/3/10	kb
N Lactic Acid	0.150	0.100	mg/L	AM23G	9/3/10	kb
N Pentanoic Acid	<0.070	0.070	mg/L	AM23G	9/3/10	kb
N Propionic Acid	<0.050	0.050	mg/L	AM23G	9/3/10	kb
N Pyruvic Acid	<0.150	0.150	mg/L	AM23G	9/3/10	kb



Client Name: Environment 1, Inc.  
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 Lab Proj #: P1008335  
 Report Date: 09/14/10  
 Client Proj Name: Halifax  
 Client Proj #: 6015

<u>Sample Description</u>	<u>Matrix</u>	<u>Lab Sample #</u>	<u>Sampled Date/Time</u>	<u>Received</u>		
MW17	Vapor	P1008335-03	25 Aug. 10	27 Aug. 10 13:31		
<u>Analyte(s)</u>	<u>Result</u>	<u>PQL</u>	<u>Units</u>	<u>Method #</u>	<u>Analysis Date</u>	<u>By</u>
<u>RiskAnalysis</u>						
N Ethane	<0.010	0.010	ug/L	AM20GAX	9/8/10	sl
N Ethene	0.013	0.010	ug/L	AM20GAX	9/8/10	sl
N Hydrogen	1.400	0.600	nM	AM20GAX	9/8/10	sl
N Methane	1300.000	0.015	ug/L	AM20GAX	9/8/10	sl
<u>SemiVolatiles</u>						
N Acetic Acid	<0.070	0.070	mg/L	AM23G	9/3/10	kb
N Butyric Acid	<0.050	0.050	mg/L	AM23G	9/3/10	kb
N Hexanoic Acid	<0.050	0.050	mg/L	AM23G	9/3/10	kb
N i-Hexanoic Acid	<0.050	0.050	mg/L	AM23G	9/3/10	kb
N i-Pentanoic Acid	<0.150	0.150	mg/L	AM23G	9/3/10	kb
N Lactic Acid	0.130	0.100	mg/L	AM23G	9/3/10	kb
N Pentanoic Acid	<0.070	0.070	mg/L	AM23G	9/3/10	kb
N Propionic Acid	<0.050	0.050	mg/L	AM23G	9/3/10	kb
N Pyruvic Acid	<0.150	0.150	mg/L	AM23G	9/3/10	kb



Client Name: Environment 1, Inc.  
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 Address: PO Box 7085  
 114 Oakmont Drive  
 Greenville, NC 27835

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 Lab Proj #: P1008335  
 Report Date: 09/14/10  
 Client Proj Name: Halifax  
 Client Proj #: 6015

<u>Sample Description</u>	<u>Matrix</u>	<u>Lab Sample #</u>	<u>Sampled Date/Time</u>	<u>Received</u>		
W2AD	Vapor	P1008335-04	25 Aug. 10	27 Aug. 10 13:31		
<u>Analyte(s)</u>	<u>Result</u>	<u>PQL</u>	<u>Units</u>	<u>Method #</u>	<u>Analysis Date</u>	<u>By</u>
<u>RiskAnalysis</u>						
N Ethane	0.120	0.010	ug/L	AM20GAX	9/8/10	sl
N Ethene	0.360	0.010	ug/L	AM20GAX	9/8/10	sl
N Hydrogen	1.300	0.600	nM	AM20GAX	9/8/10	sl
N Methane	340.000	0.015	ug/L	AM20GAX	9/8/10	sl
<u>SemiVolatiles</u>						
N Acetic Acid	<0.070	0.070	mg/L	AM23G	9/3/10	kb
N Butyric Acid	0.054	0.050	mg/L	AM23G	9/3/10	kb
N Hexanoic Acid	<0.050	0.050	mg/L	AM23G	9/3/10	kb
N i-Hexanoic Acid	<0.050	0.050	mg/L	AM23G	9/3/10	kb
N i-Pentanoic Acid	<0.150	0.150	mg/L	AM23G	9/3/10	kb
N Lactic Acid	0.140	0.100	mg/L	AM23G	9/3/10	kb
N Pentanoic Acid	<0.070	0.070	mg/L	AM23G	9/3/10	kb
N Propionic Acid	<0.050	0.050	mg/L	AM23G	9/3/10	kb
N Pyruvic Acid	<0.150	0.150	mg/L	AM23G	9/3/10	kb



Client Name: Environment 1, Inc.  
 Contact: Steve Jones  
 Address: PO Box 7085  
 114 Oakmont Drive  
 Greenville, NC 27835

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 Lab Proj #: P1008335  
 Report Date: 09/14/10  
 Client Proj Name: Halifax  
 Client Proj #: 6015

<u>Sample Description</u>	<u>Matrix</u>	<u>Lab Sample #</u>	<u>Sampled Date/Time</u>	<u>Received</u>		
WL6D	Vapor	P1008335-05	25 Aug. 10	27 Aug. 10 13:31		
<u>Analyte(s)</u>	<u>Result</u>	<u>PQL</u>	<u>Units</u>	<u>Method #</u>	<u>Analysis Date</u>	<u>By</u>
<u>RiskAnalysis</u>						
N Ethane	0.330	0.010	ug/L	AM20GAX	9/8/10	sl
N Ethene	0.049	0.010	ug/L	AM20GAX	9/8/10	sl
N Hydrogen	1.000	0.600	nM	AM20GAX	9/8/10	sl
N Methane	200.000	0.015	ug/L	AM20GAX	9/8/10	sl
<u>SemiVolatiles</u>						
N Acetic Acid	<0.070	0.070	mg/L	AM23G	9/3/10	kb
N Butyric Acid	<0.050	0.050	mg/L	AM23G	9/3/10	kb
N Hexanoic Acid	<0.050	0.050	mg/L	AM23G	9/3/10	kb
N i-Hexanoic Acid	<0.050	0.050	mg/L	AM23G	9/3/10	kb
N i-Pentanoic Acid	<0.150	0.150	mg/L	AM23G	9/3/10	kb
N Lactic Acid	0.140	0.100	mg/L	AM23G	9/3/10	kb
N Pentanoic Acid	<0.070	0.070	mg/L	AM23G	9/3/10	kb
N Propionic Acid	<0.050	0.050	mg/L	AM23G	9/3/10	kb
N Pyruvic Acid	<0.150	0.150	mg/L	AM23G	9/3/10	kb



Client Name: Environment 1, Inc.  
 Contact: Steve Jones  
 Address: PO Box 7085  
 114 Oakmont Drive  
 Greenville, NC 27835

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 Lab Proj #: P1008335  
 Report Date: 09/14/10  
 Client Proj Name: Halifax  
 Client Proj #: 6015

<u>Sample Description</u>	<u>Matrix</u>	<u>Lab Sample #</u>	<u>Sampled Date/Time</u>	<u>Received</u>		
W3AS	Vapor	P1008335-06	25 Aug. 10	27 Aug. 10 13:31		
<u>Analyte(s)</u>	<u>Result</u>	<u>PQL</u>	<u>Units</u>	<u>Method #</u>	<u>Analysis Date</u>	<u>By</u>
<u>RiskAnalysis</u>						
N Ethane	0.570	0.010	ug/L	AM20GAX	9/8/10	sl
N Ethene	0.042	0.010	ug/L	AM20GAX	9/8/10	sl
N Hydrogen	1.100	0.600	nM	AM20GAX	9/8/10	sl
N Methane	800.000	0.015	ug/L	AM20GAX	9/8/10	sl
<u>SemiVolatiles</u>						
N Acetic Acid	<0.070	0.070	mg/L	AM23G	9/3/10	kb
N Butyric Acid	<0.050	0.050	mg/L	AM23G	9/3/10	kb
N Hexanoic Acid	<0.050	0.050	mg/L	AM23G	9/3/10	kb
N i-Hexanoic Acid	<0.050	0.050	mg/L	AM23G	9/3/10	kb
N i-Pentanoic Acid	<0.150	0.150	mg/L	AM23G	9/3/10	kb
N Lactic Acid	0.160	0.100	mg/L	AM23G	9/3/10	kb
N Pentanoic Acid	<0.070	0.070	mg/L	AM23G	9/3/10	kb
N Propionic Acid	<0.050	0.050	mg/L	AM23G	9/3/10	kb
N Pyruvic Acid	<0.150	0.150	mg/L	AM23G	9/3/10	kb



Client Name: Environment 1, Inc.  
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 Address: PO Box 7085  
 114 Oakmont Drive  
 Greenville, NC 27835

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 Lab Proj #: P1008335  
 Report Date: 09/14/10  
 Client Proj Name: Halifax  
 Client Proj #: 6015

<u>Sample Description</u>	<u>Matrix</u>	<u>Lab Sample #</u>	<u>Sampled Date/Time</u>	<u>Received</u>		
W18S	Vapor	P1008335-07	25 Aug. 10	27 Aug. 10 13:31		
<u>Analyte(s)</u>	<u>Result</u>	<u>PQL</u>	<u>Units</u>	<u>Method #</u>	<u>Analysis Date</u>	<u>By</u>
<u>RiskAnalysis</u>						
N Ethane	0.260	0.010	ug/L	AM20GAX	9/8/10	sl
N Ethene	0.054	0.010	ug/L	AM20GAX	9/8/10	sl
N Hydrogen	1.100	0.600	nM	AM20GAX	9/8/10	sl
N Methane	4700.000	0.015	ug/L	AM20GAX	9/8/10	sl
<u>SemiVolatiles</u>						
N Acetic Acid	<0.070	0.070	mg/L	AM23G	9/3/10	kb
N Butyric Acid	<0.050	0.050	mg/L	AM23G	9/3/10	kb
N Hexanoic Acid	<0.050	0.050	mg/L	AM23G	9/3/10	kb
N i-Hexanoic Acid	<0.050	0.050	mg/L	AM23G	9/3/10	kb
N i-Pentanoic Acid	<0.150	0.150	mg/L	AM23G	9/3/10	kb
N Lactic Acid	0.210	0.100	mg/L	AM23G	9/3/10	kb
N Pentanoic Acid	<0.070	0.070	mg/L	AM23G	9/3/10	kb
N Propionic Acid	<0.050	0.050	mg/L	AM23G	9/3/10	kb
N Pyruvic Acid	<0.150	0.150	mg/L	AM23G	9/3/10	kb



Client Name: Environment 1, Inc.  
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 Greenville, NC 27835

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 Lab Proj #: P1008335  
 Report Date: 09/14/10  
 Client Proj Name: Halifax  
 Client Proj #: 6015

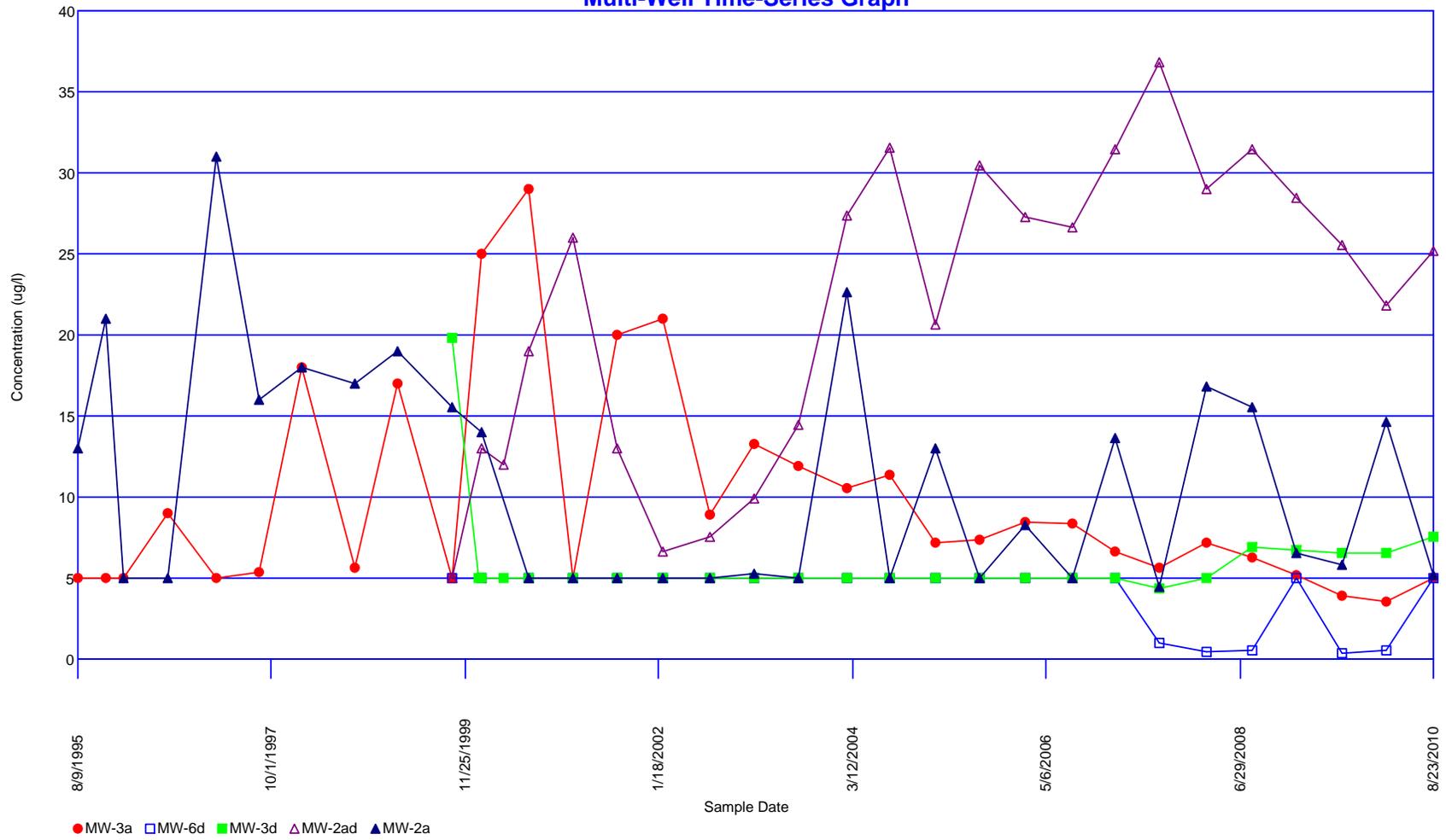
<u>Sample Description</u>	<u>Matrix</u>	<u>Lab Sample #</u>	<u>Sampled Date/Time</u>	<u>Received</u>		
G13	Vapor	P1008335-08	25 Aug. 10	27 Aug. 10 13:31		
<u>Analyte(s)</u>	<u>Result</u>	<u>PQL</u>	<u>Units</u>	<u>Method #</u>	<u>Analysis Date</u>	<u>By</u>
<u>RiskAnalysis</u>						
N Ethane	<0.010	0.010	ug/L	AM20GAX	9/8/10	sl
N Ethene	0.015	0.010	ug/L	AM20GAX	9/8/10	sl
N Hydrogen	1.300	0.600	nM	AM20GAX	9/8/10	sl
N Methane	1000.000	0.015	ug/L	AM20GAX	9/8/10	sl
<u>SemiVolatiles</u>						
N Acetic Acid	<0.070	0.070	mg/L	AM23G	9/3/10	kb
N Butyric Acid	<0.050	0.050	mg/L	AM23G	9/3/10	kb
N Hexanoic Acid	<0.050	0.050	mg/L	AM23G	9/3/10	kb
N i-Hexanoic Acid	<0.050	0.050	mg/L	AM23G	9/3/10	kb
N i-Pentanoic Acid	<0.150	0.150	mg/L	AM23G	9/3/10	kb
N Lactic Acid	<0.100	0.100	mg/L	AM23G	9/3/10	kb
N Pentanoic Acid	<0.070	0.070	mg/L	AM23G	9/3/10	kb
N Propionic Acid	<0.050	0.050	mg/L	AM23G	9/3/10	kb
N Pyruvic Acid	<0.150	0.150	mg/L	AM23G	9/3/10	kb



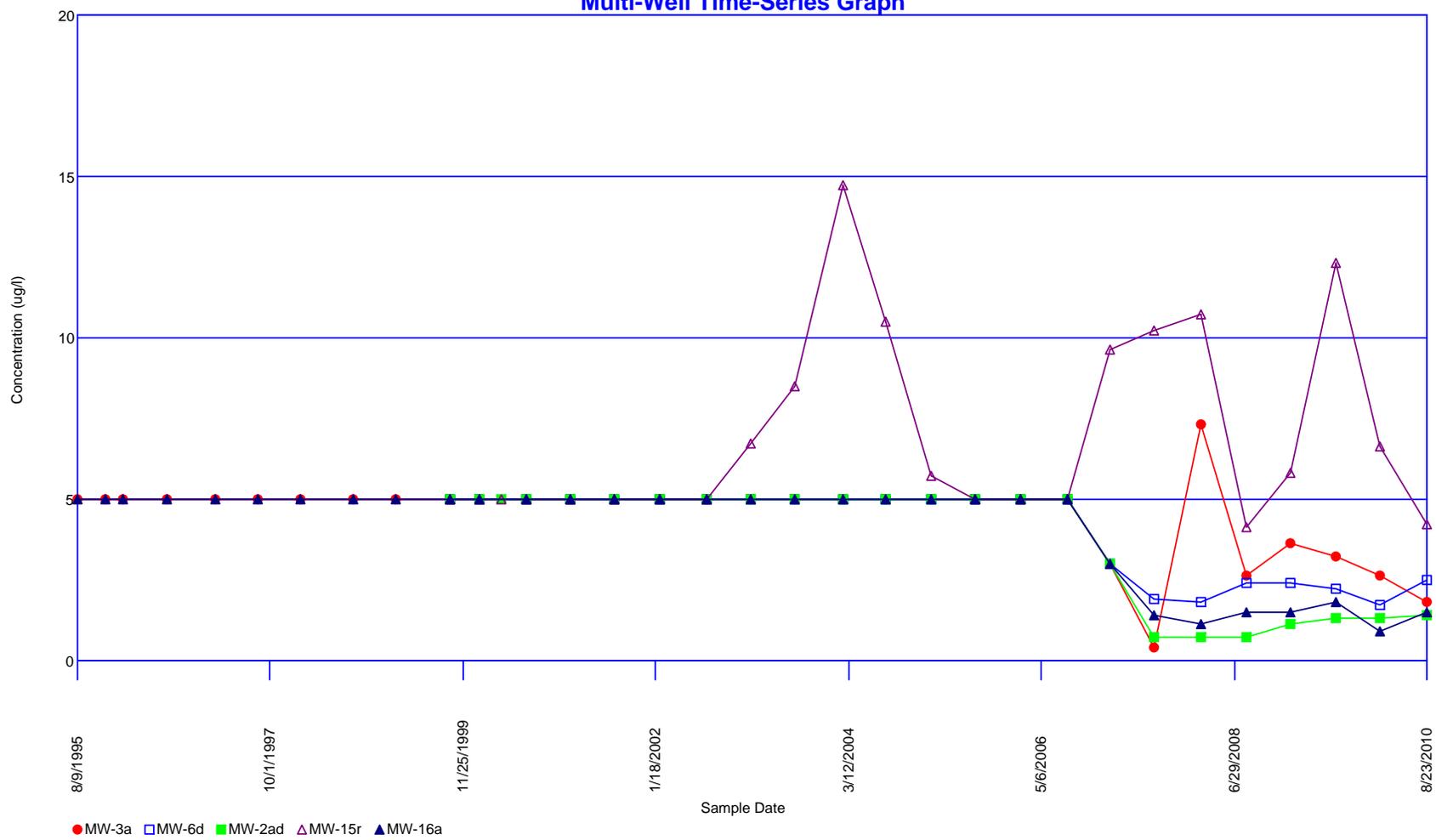
## Appendix C

### Time vs. Concentration Graphs

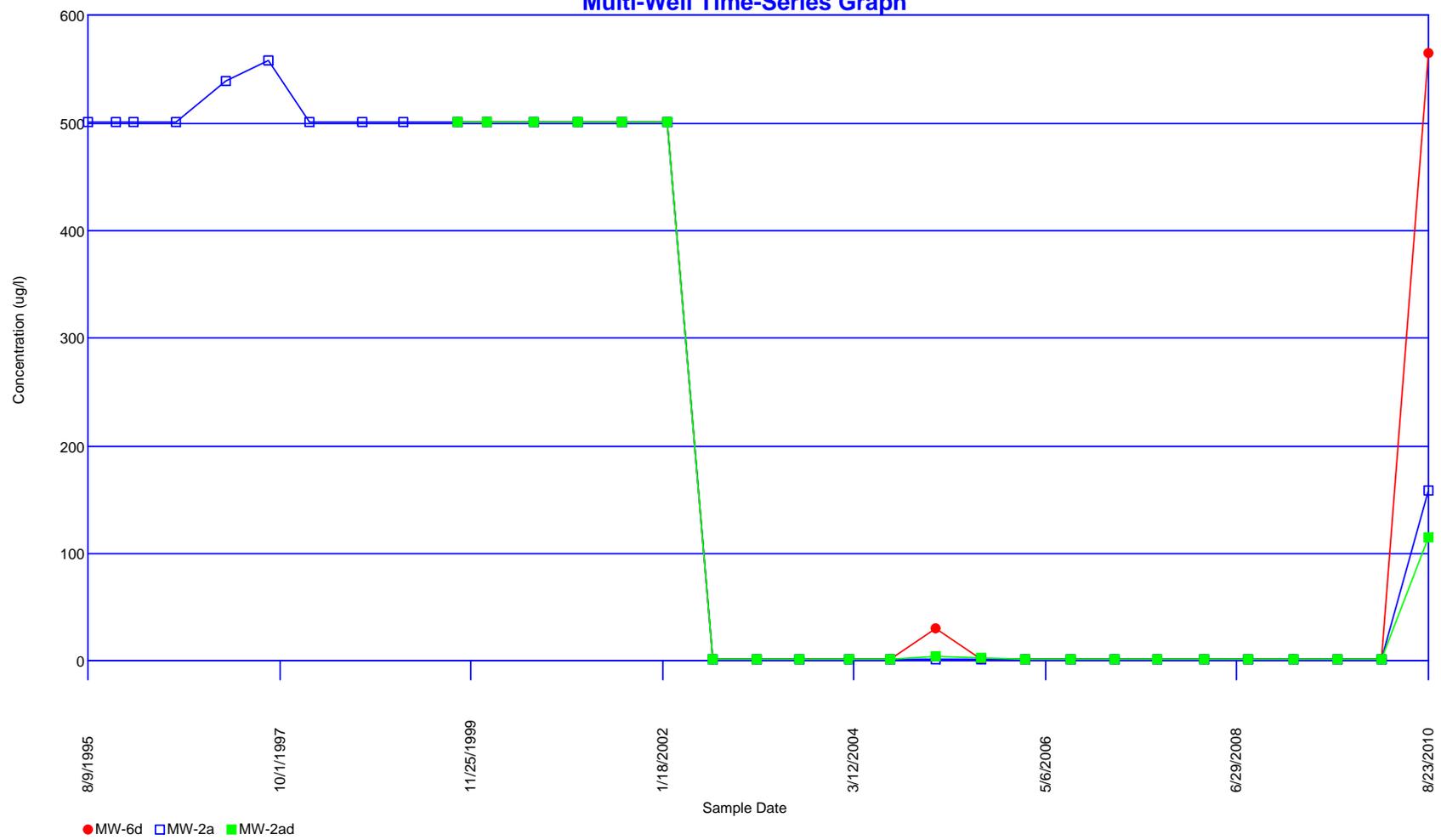
# 1,1-Dichloroethane Multi-Well Time-Series Graph



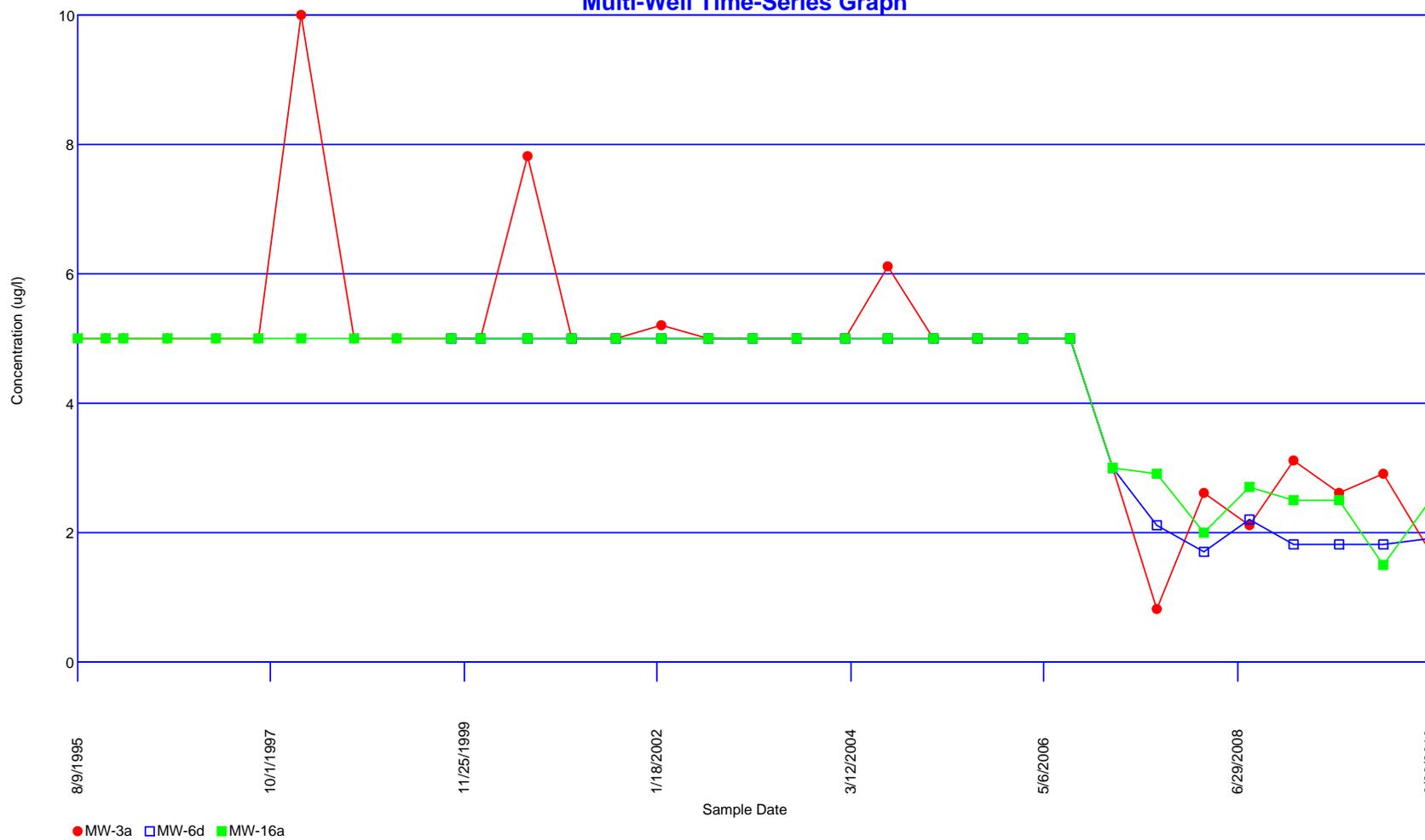
# 1,4-Dichlorobenzene Multi-Well Time-Series Graph



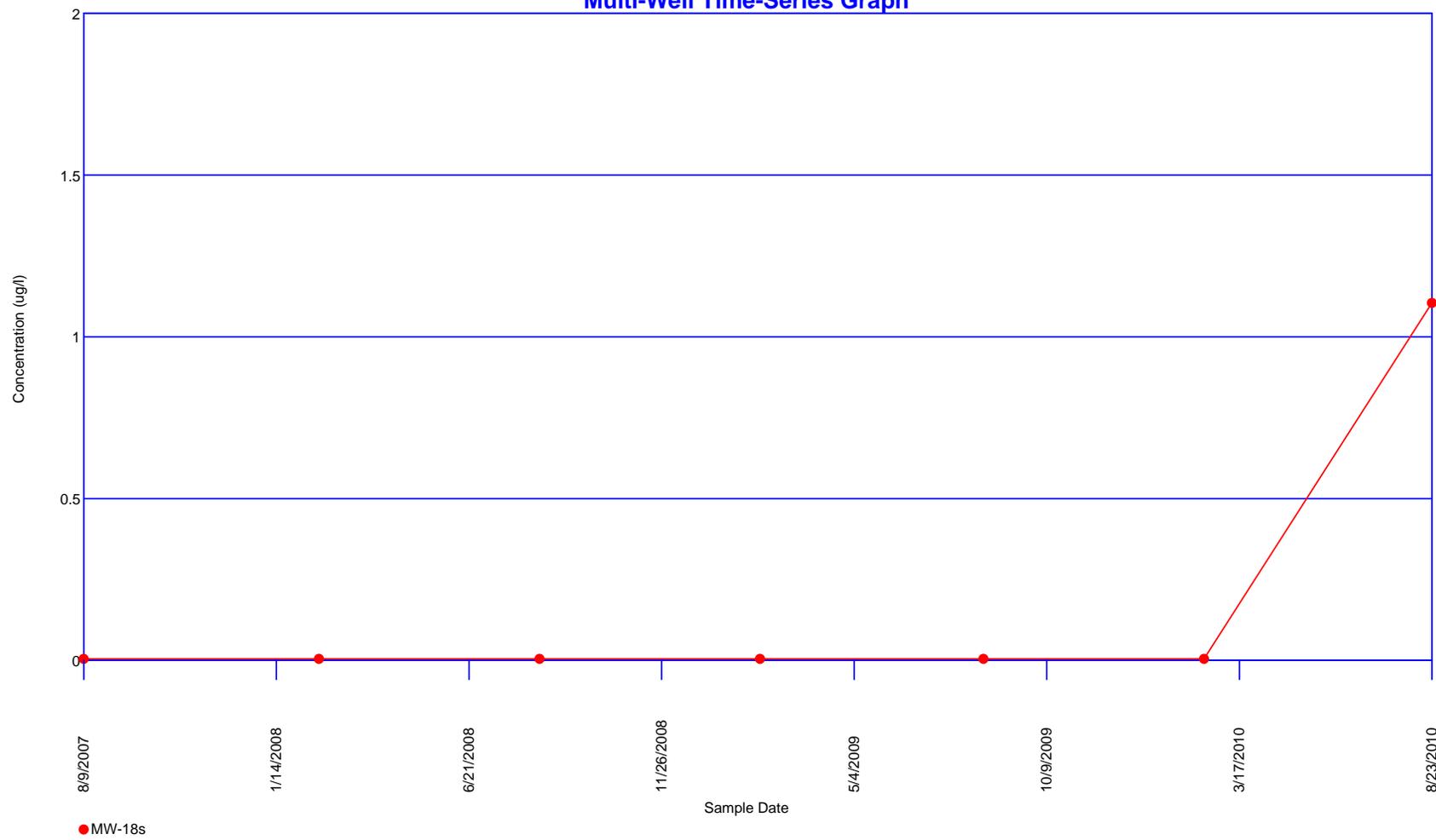
# Barium Multi-Well Time-Series Graph



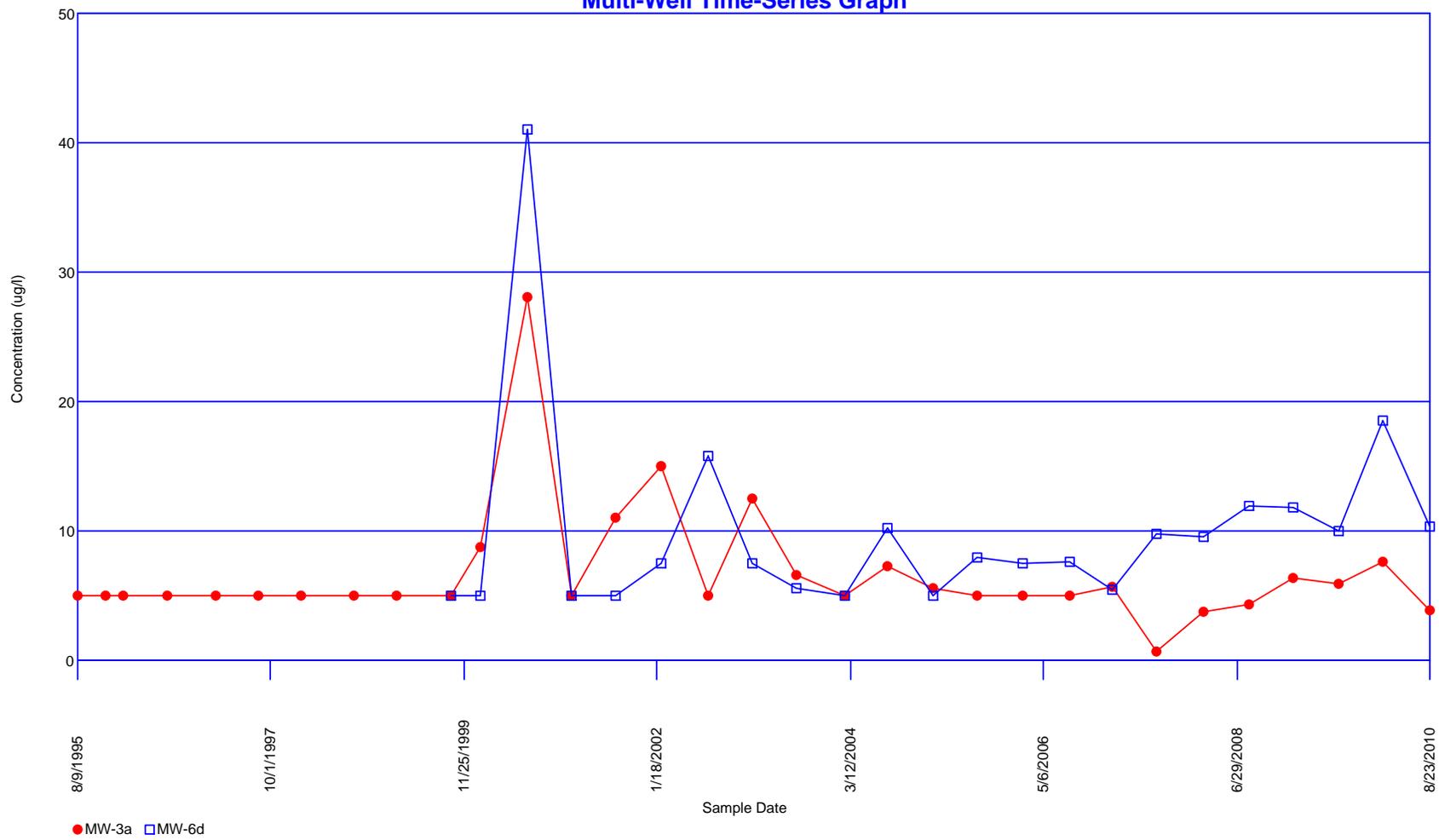
# Benzene Multi-Well Time-Series Graph



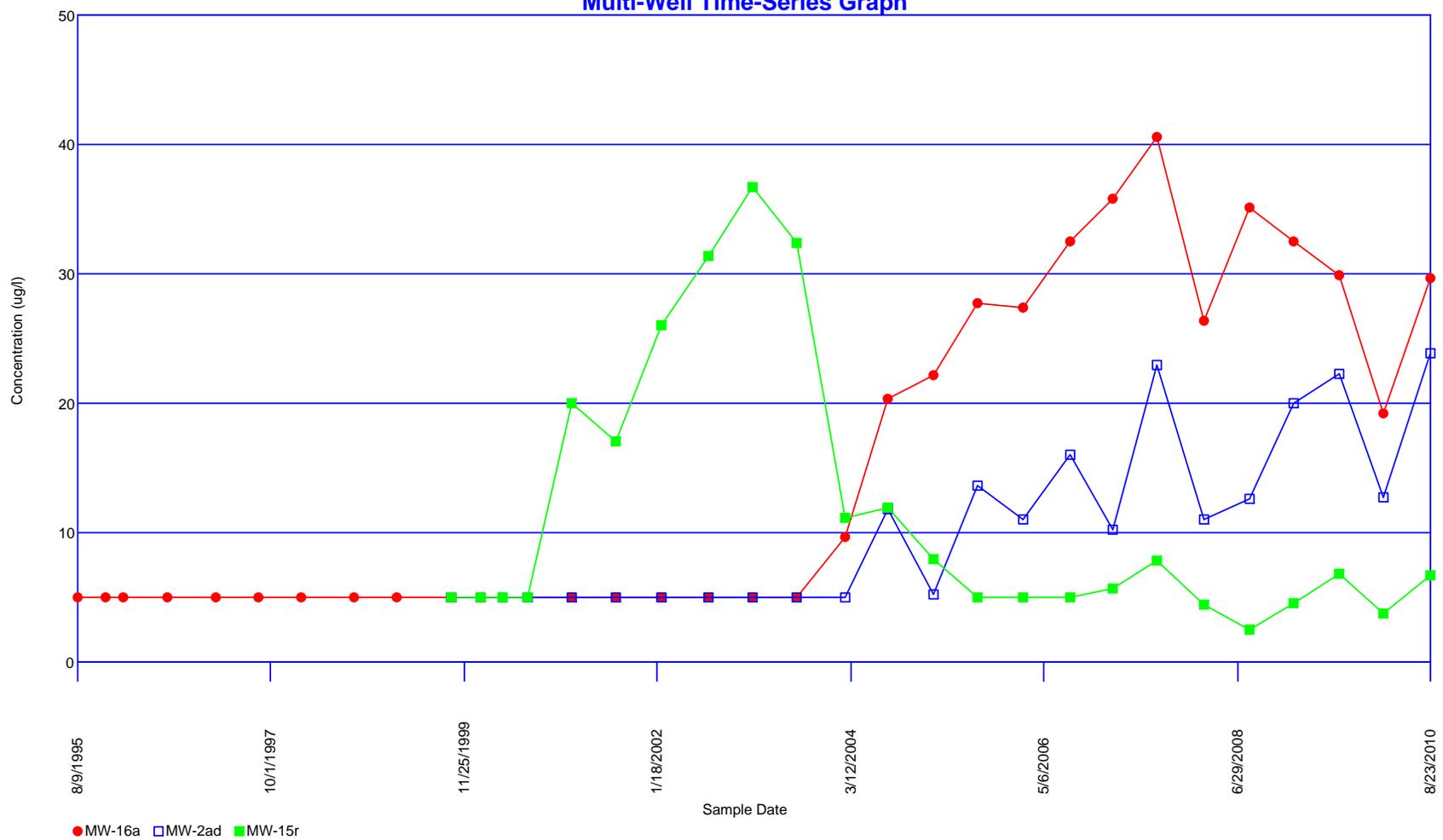
# Cadmium Multi-Well Time-Series Graph



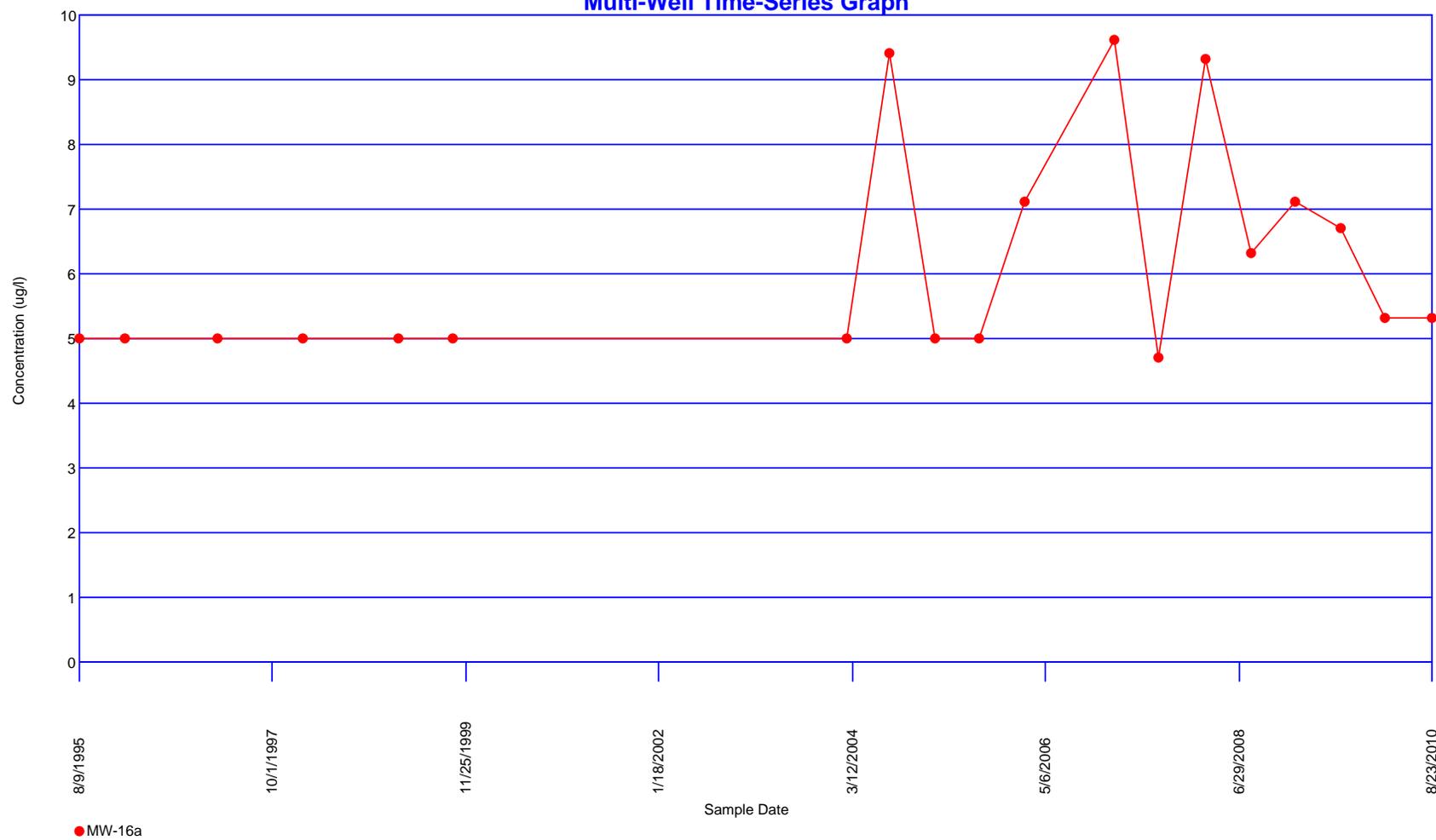
# Chlorobenzene Multi-Well Time-Series Graph



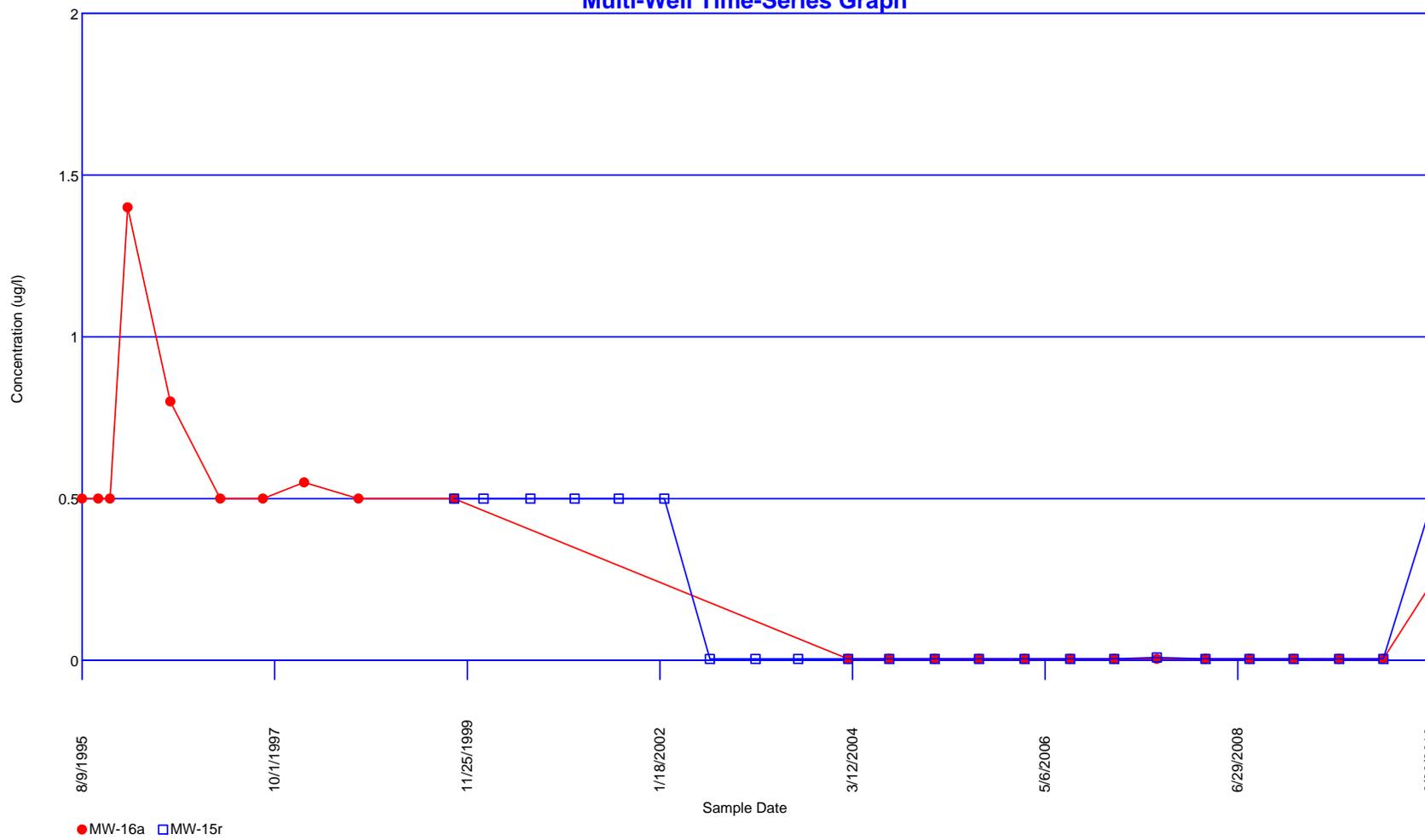
### Cis-1,2-Dichloroethene Multi-Well Time-Series Graph



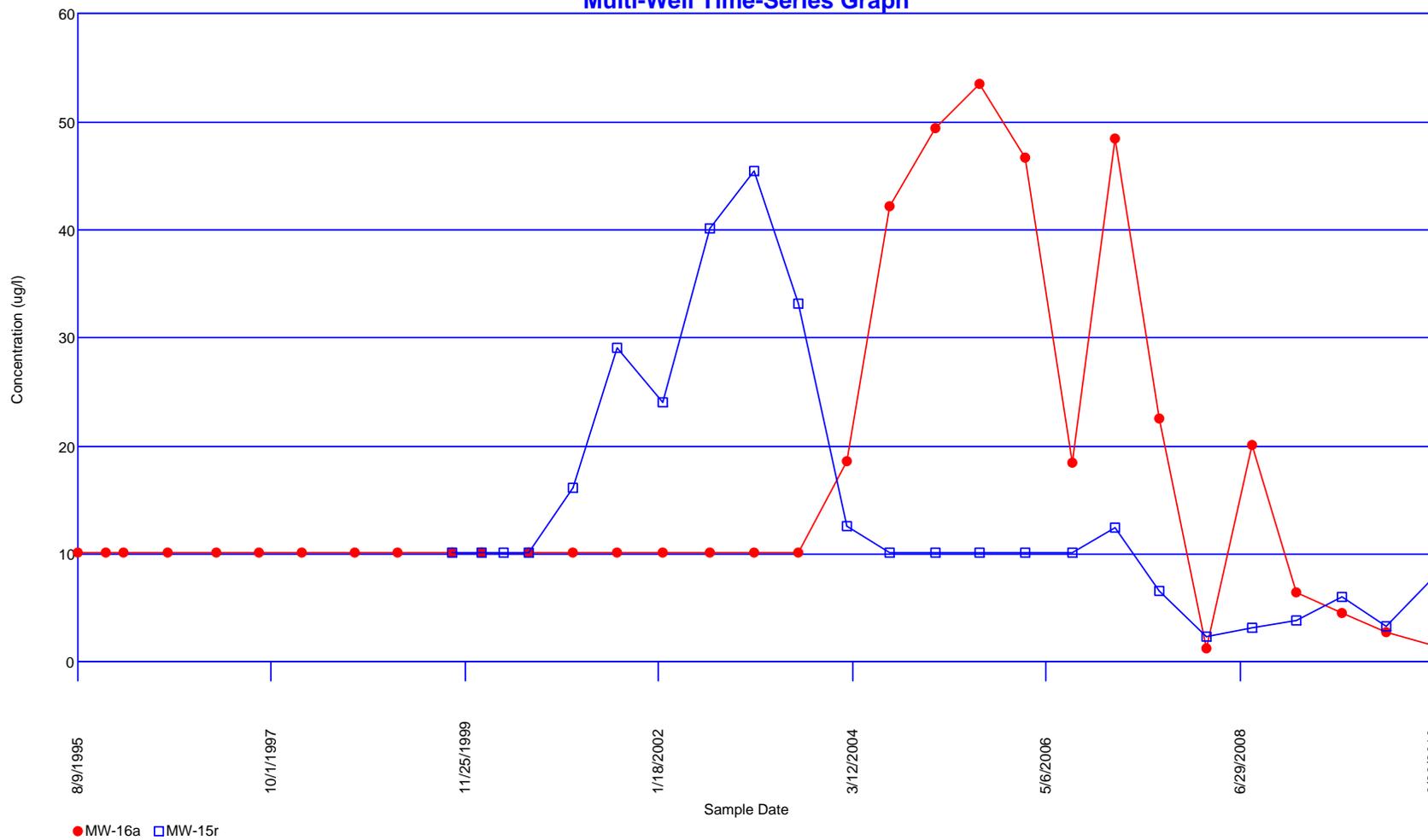
### Dichlorodifluoromethane Multi-Well Time-Series Graph



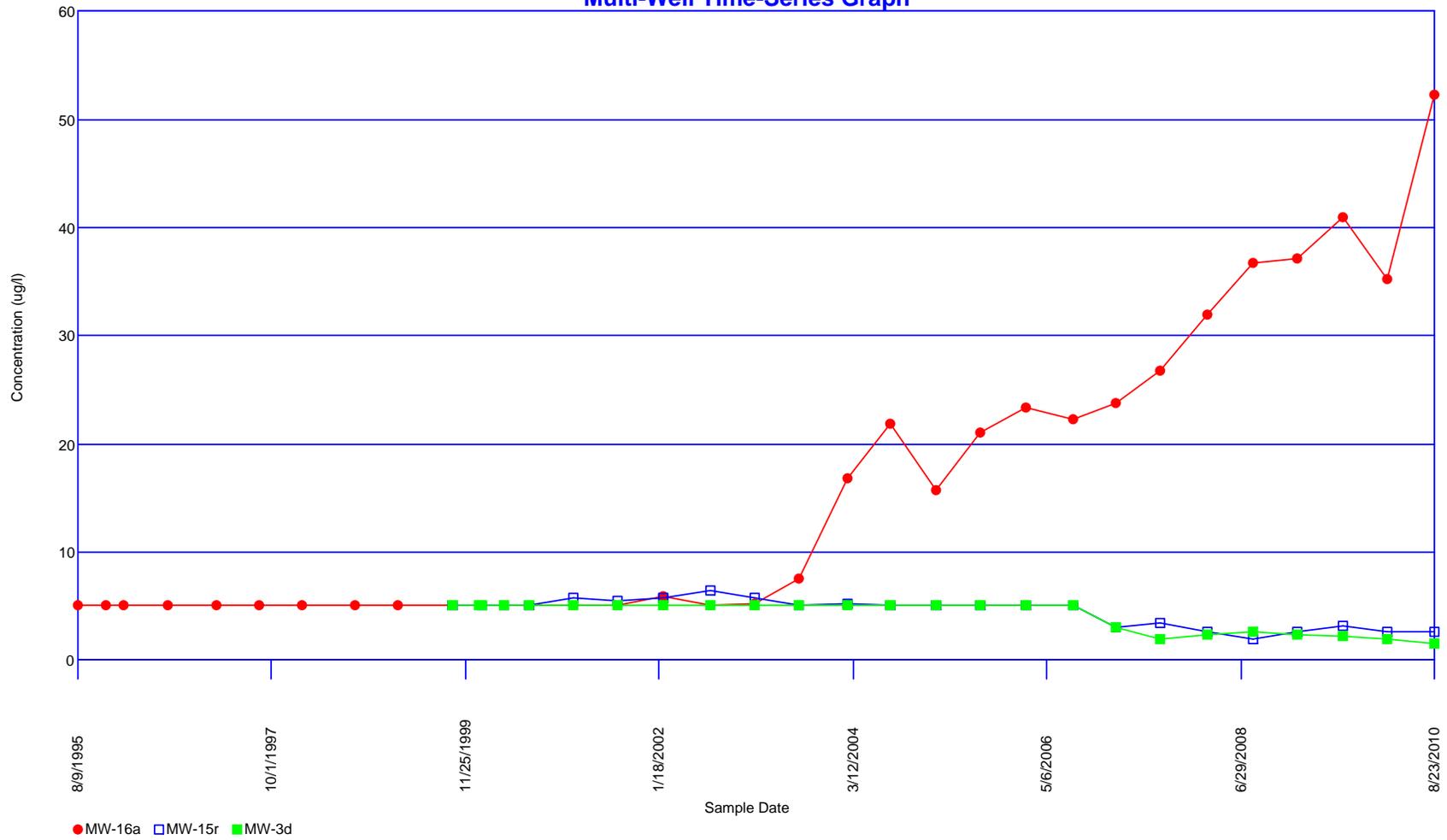
# Mercury Multi-Well Time-Series Graph



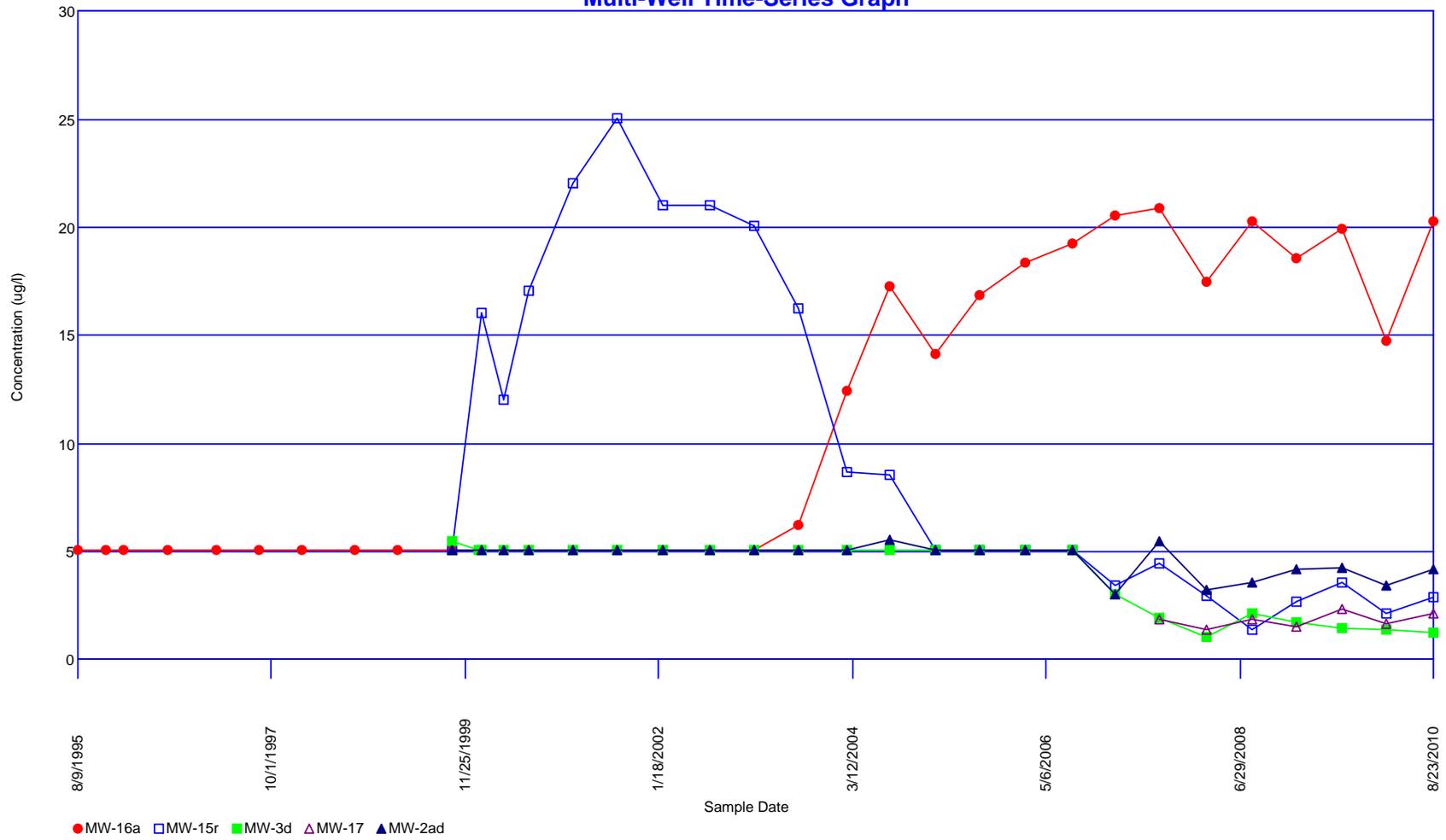
# Methylene Chloride Multi-Well Time-Series Graph



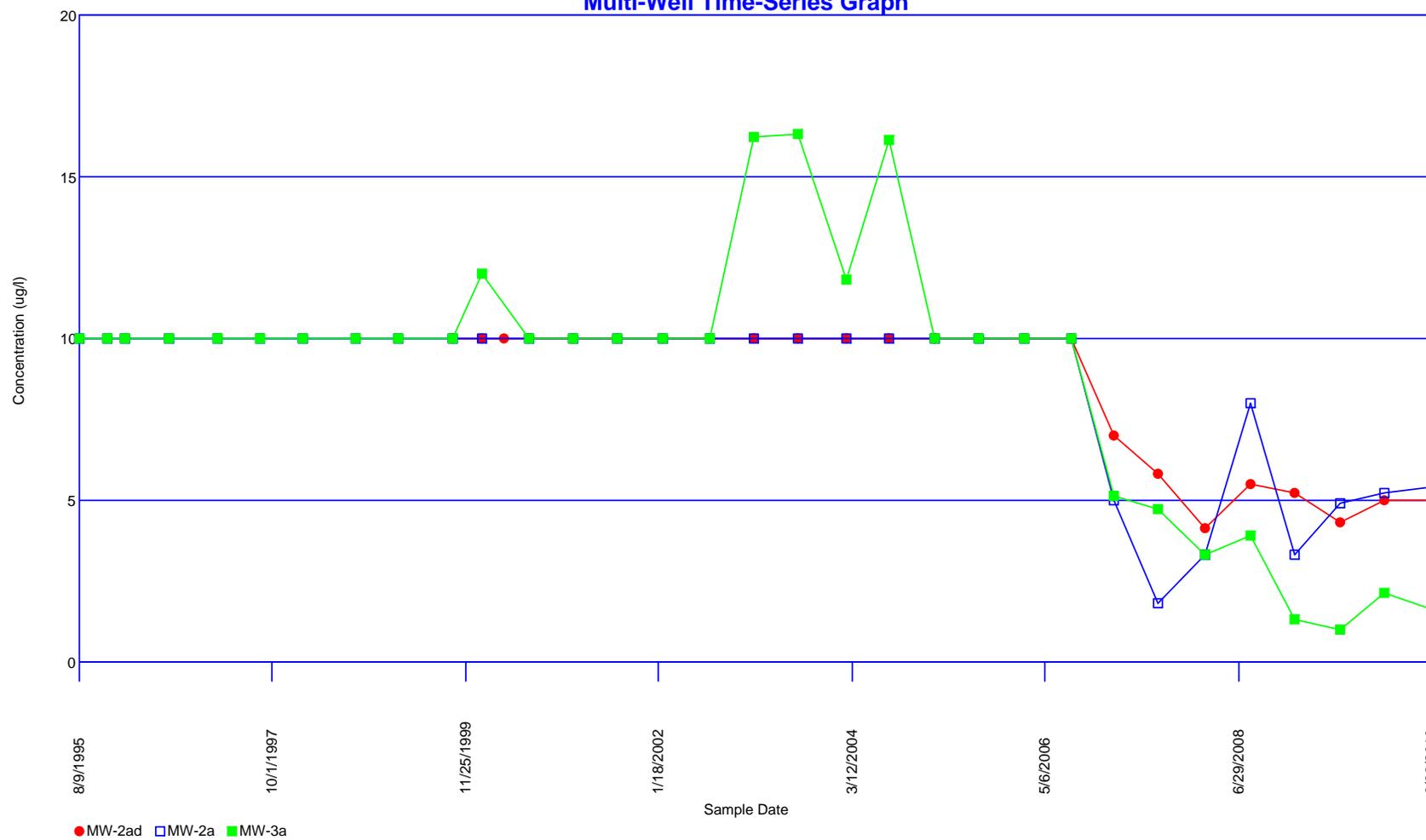
# Tetrachloroethene Multi-Well Time-Series Graph



# Trichloroethene Multi-Well Time-Series Graph



# Vinyl chloride Multi-Well Time-Series Graph



# Zinc Multi-Well Time-Series Graph

