
Semi-Annual Water Quality Monitoring Report

Prepared for
Hertford County Closed Unlined MSWLF
Winton, North Carolina

June 2014

Permit Number: 46-01
MESCO Project Number: G14012.0

Submitted on September 26, 2014

P.O. Box 97
Garner, NC 27529
License No. C-0281



Municipal Engineering Services Company, P.A.
Garner and Boone, North Carolina

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, NCDENR-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):

Municipal Engineering Services Co., PA

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

Name: Jonathan Pfohl Phone: (919)772-5393
 E-mail: jpfohl@mesco.com

Facility name:	Facility Address:	Facility Permit #	NC Landfill Rule: (.0500 or .1600)	Actual sampling dates (e.g., October 20-24, 2006)
Hertford County Closed Unlined MSWLF	227 Mount Moriah Road Winton, NC 27986	46-01	.0500	June 17, 2014

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) _____
 Leachate monitoring data
 Surface water monitoring data
 Other(specify) _____

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.

Steven R. Gandy, Ph.D., P.E. Senior Project Manager (919) 772-5393
 Facility Representative Name (Print) Steven R. Gandy, Ph.D., P.E. Title 9/26/2014 (Area Code) Telephone Number
 Signature _____ Date _____ Affix NC Licensed Professional Geologist Seal

P.O. Box 97, Garner, NC 27529
 Facility Representative Address
 C-0281
 NC PE Firm License Number (if applicable effective May 1, 2009)

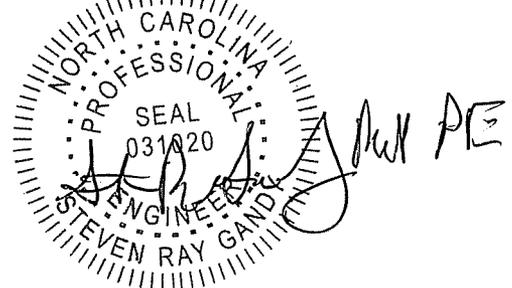


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CIVIL/SANITARY/ENVIRONMENTAL ENGINEERS

SOLID WASTE MANAGEMENT

**Municipal
Services**

SITE PLANNING/SUBDIVISIONS


**Engineering
Company, P.A.**

SUBSURFACE UTILITY ENGINEERING (SUE)

September 26, 2014

Mr. Ervin Lane
Solid Waste Section
NC DENR Division of Waste Management
1646 Mail Service Center
Raleigh, NC 27699-1646

Re: ***Semi-Annual Water Quality Monitoring Report***
Hertford County Closed Unlined Landfill
Permit No. 46-01
MESCO Project No. G14012.0
Event Date: June 17, 2014

Dear Mr. Lane:

Introduction

The Hertford County Closed Unlined MSWLF located near Winton, North Carolina operated under permit 46-01 and is required to submit semi-annual compliance reports as a condition of rule 15A NCAC 13B .0500. This water quality monitoring event was reportedly performed by Environment 1 Incorporated (E1) personnel of Greenville NC on June 17, 2014 in accordance with the semi-annual monitoring schedule prescribed by the NC Solid Waste Section (SWS) rules/regulations. Laboratory analytical results indicate concentrations of volatile organic compounds (VOCs) at levels above the 2L Standard continue to persist in the surficial aquifer at nine locations, but natural attenuation processes appear to be occurring.

Water quality monitoring at this facility includes sampling at locations outlined in the approved site specific Sampling and Analysis Plan (SAP) submitted in the facility *Transition Plan* in November 1995. As required in SWS rules and the SWS Environmental Monitoring Report Form, this report contains sampling procedures, field and laboratory results, groundwater and surface water characterization, and findings. A detections compared to standards table, groundwater flow directions and rates table, groundwater potentiometric map, quality assurance/quality control data, and laboratory analytical data are also provided.

Sampling Procedures

During the June 2014 sampling event, water samples were reportedly collected from all thirteen groundwater monitoring wells (MW-A through MW-M) and all four designated surface water sample points (SW-1 through SW-4). Quality control measures were also implemented during this event which included submittal and subsequent quantification of an equipment blank (EB) and trip blank (TB). Monitoring locations are shown on **Figure 1**.

Sampling was reported to be performed using methods outlined in the NCDENR *Solid Waste Section Guidelines for Groundwater, Soil, and Surface Water Sampling* revised April 2008. Static water levels were measured, and a potentiometric map was constructed, as provided in **Figure 1**. Samples were transported under chain-of-custody (C-O-C) protocol and documented to be analyzed within their method specified hold times.

Field Parameter Data

Field parameters (pH, specific conductance and temperature) were recorded and are presented in the laboratory report in **Appendix A**. Field parameters appear generally consistent with historically reported data.

Laboratory Results

Groundwater, surface water and quality control samples were analyzed for VOCs and total metals as listed in 40 CFR 258 Appendix I. Additionally, groundwater samples and the quality control EB was tested for total mercury.

Water samples were reported to laboratory specific Method Detection Limits (MDL) which are quantifiable at or below current Solid Waste Section Limits (SWSL). **Table 1** summarizes constituents detected in water samples in concentrations exceeding the current SWSL, Groundwater Protection Standards (GWP), North Carolina Groundwater Standards (2L) or the North Carolina Surface Water Standards (2B) for Class C surface waters. Laboratory results and C-O-Cs are presented in **Appendix A**.

Quality Control Samples

Two of the sixteen (13%) targeted total metals were detected in low concentrations in the equipment blank (EB); however, it appears that this laboratory/field induced artifact contamination had no effect on the validity of the data set.

Groundwater Samples

Total barium was detected in MW-L in a concentration of 1,100 ug/L which is above the 2L Standard 700 ug/L. The preliminary source of the total metal detection is believed to be erosion of natural deposits rather than anthropogenic. One or more VOCs were detected in concentrations above their respective 2L Standards in MW-A, MW-B, MW-D, MW-E, MW-F, MW-G, MW-I, MW-J and MW-L. Vinyl chloride, a common biodegradation daughter byproduct and LFG constituent, continues to be the most prevalently detected contaminant.

Surface Water Samples

There were no constituents detected in levels above 2B Surface Water Standards in any of the surface water samples.

Groundwater and Surface Water Characterization

A potentiometric map constructed from groundwater elevation data obtained by E1 during this event is presented as **Figure 1**. Groundwater flow rates and directions were calculated and are included on **Table 2**. Groundwater in the surficial aquifer flows in a general north-northwestern direction towards Potecasi Creek. Groundwater flow rates range from less than 1 ft/yr (MW-C) to 60 ft/yr (MW-E), and average 25 ft/yr. Flow directions and gradients are consistent with historical observations.

Findings

Results from the latest semi-annual sampling event indicate that contaminants continue to persist at levels above 2L Standards in eight wells that monitor the surficial aquifer. Landfill gas (LFG) has previously been detected at the facility and may be the transport mechanism for the VOC contaminants in groundwater, especially in MW-A, MW-B and MW-G which are located hydraulically upgradient of the waste boundary. An active LFG extraction system has been in operation along the western property boundary since 2003 designed to reduce LFG migration through the vadose and improve groundwater quality. The latest data indicates that the water quality has not degraded significantly compared to past events as all constituents detected in exceedance of the 2L Standard have previously been detected within their own respective historically identified range.

Closing

Water quality monitoring at the facility will continue. The next sampling event is tentatively scheduled for December 2014. If you have any questions or comments regarding this report, please contact us by phone at (919) 772-5393 or by email at jpfohl@mesco.com or sgandy@mesco.com.

Sincerely,

MUNICIPAL ENGINEERING SERVICES CO., P.A.



Jonathan Pfohl
Environmental Specialist



Steven R. Gandy, Ph.D., P.E.
Senior Project Manager

Enclosures

cc: Mr. Mike Bradley
Hertford County

Figures

NOTES

1. MONITORING WELLS HAVE BEEN SURVEYED.
2. ROADS, PROPERTY LINES AND CREEKS ARE APPROXIMATE.
3. SURFACE WATER LOCATIONS ARE APPROXIMATE.
4. GCCS SYSTEM LOCATION APPROXIMATE

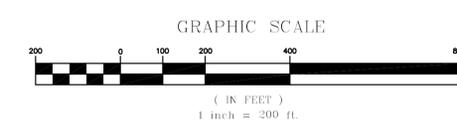
ALL SUPPLY WELLS REPORTEDLY NOT IN USE.
BUILDINGS NOW CONNECTED TO MUNICIPAL WATER.

WATER SUPPLY WELLS	
1.	Howard Godwin
2.	John Eley
3.	Hattie Casey
4.	Mt. Moriah Church
5.	Small Frame House
6.	Arthur Williams
7.	Armstead Sharp
8.	Landfill

**Groundwater Levels & VOCs Detected Above 2L Standards
June 17, 2014**

WELL #	TOP OF CASING ELEVATION (FT AMSL)	DEPTH TO WATER (FT BTWC)	GROUNDWATER POTENTIOMETRIC ELEVATION (FT AMSL)	BENZENE (UG/L)	1,4-DCB (UG/L)	TCE (UG/L)	VCM (UG/L)
15A NCAC 2L Groundwater Quality Standard							
				1	6	3	0.03
MW-A	50.25	25.91	24.34	1.1			
MW-B	49.77	24.85	24.92			5.1	4.4
MW-C	45.58	20.68	24.90				
MW-D	48.31	27.65	20.66				1.2
MW-E	47.86	27.11	20.75	2.3			0.9 (j)
MW-F	49.49	30.70	18.79	2.9			8.0
MW-G	50.10	24.80	25.30				1.8
MW-H	45.46	27.64	17.82				
MW-I	48.00	30.00	18.00	3.3	6.1		6.8
MW-J	46.26	27.61	18.65				1.0
MW-K	48.81	28.95	19.86				
MW-L	46.41	24.94	21.47				
MW-M	47.77	22.80	24.97				1.0

(j) = "J" Qualified concentration <SWSL so value considered estimated

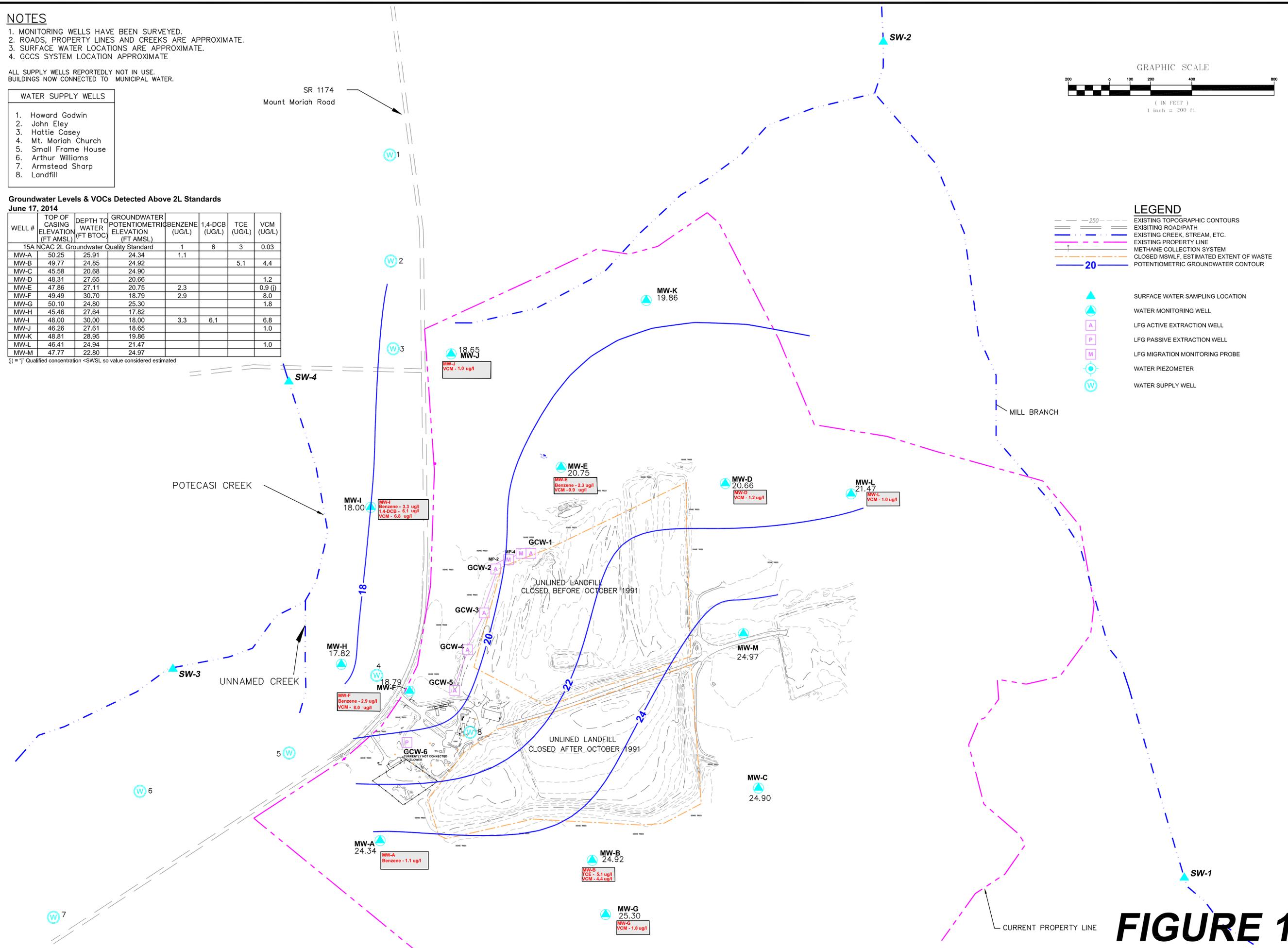


LEGEND

- EXISTING TOPOGRAPHIC CONTOURS
- EXISTING ROAD/PATH
- EXISTING CREEK, STREAM, ETC.
- EXISTING PROPERTY LINE
- METHANE COLLECTION SYSTEM
- CLOSED MSWLF, ESTIMATED EXTENT OF WASTE
- POTENTIOMETRIC GROUNDWATER CONTOUR

20

- SURFACE WATER SAMPLING LOCATION
- WATER MONITORING WELL
- LFG ACTIVE EXTRACTION WELL
- LFG PASSIVE EXTRACTION WELL
- LFG MIGRATION MONITORING PROBE
- WATER PIEZOMETER
- WATER SUPPLY WELL



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(828) 262-1767
LICENSE NUMBER: C-0281

Municipal Services
P.O. BOX 97 GARNER, N.C. 27529
(919) 772-5393

**CLOSED UNLINED
LANDFILL FACILITY
HERTFORD COUNTY
NORTH CAROLINA**

DATE	BY	REV.	DESCRIPTION

SINGLE-DAY POTENTIOMETRIC MAP
WITH VOCs ABOVE 2L STANDARD

SCALE: SEE BAR SCALE
DATE: 9/18/14
DRWN BY: J. PFOHL
CHKD BY: S. GANDY

PROJECT NUMBER: G14012.0
DRAWING NO.: FIGURE 1
SHEET NO.: 1 OF 1

FIGURE 1

Tables

Table 1
Detections in Water Samples that Attain or Exceed SWSL, GWP, 2L or 2B
June 17, 2014

Sample ID	Parameter Name ¹	Sample Date	Result	Unit	MDL ²	SWSL ³	2L ⁴	2B ⁵	GWP ⁶	Exceedance Amount	Preliminary Cause ⁷
MW-A	Benzene	6/17/14	1.1	ug/l	0.24	1	1			0.1	LFG
MW-A	Chlorobenzene	6/17/14	3.3	ug/l	0.3	3	50				
MW-B	Trichloroethene	6/17/14	5.1	ug/l	0.23	1	3			2.1	LFG
MW-B	Vinyl Chloride	6/17/14	4.4	ug/l	0.63	1	0.03			4.37	LFG
MW-B	Cis-1,2-Dichloroethene	6/17/14	12.4	ug/l	0.25	5	70				
MW-D	Vinyl Chloride	6/17/14	1.2	ug/l	0.63	1	0.03			1.17	L &/or LFG
MW-D	1,4-Dichlorobenzene	6/17/14	1	ug/l	0.39	1	6				
MW-E	Benzene	6/17/14	2.3	ug/l	0.24	1	1			1.3	L &/or LFG
MW-E	Vinyl Chloride	6/17/14	0.9 j	ug/l	0.63	1	0.03			0.87	L &/or LFG
MW-E	Chlorobenzene	6/17/14	20.7	ug/l	0.3	3	50				
MW-E	1,4-Dichlorobenzene	6/17/14	4.9	ug/l	0.39	1	6				
MW-F	Vinyl Chloride	6/17/14	8	ug/l	0.63	1	0.03			7.97	L &/or LFG
MW-F	Benzene	6/17/14	2.9	ug/l	0.24	1	1			1.9	L &/or LFG
MW-F	Trichloroethene	6/17/14	1.2	ug/l	0.23	1	3				
MW-F	Zinc, total	6/17/14	32	ug/l	0.53	10	1000				
MW-F	Chlorobenzene	6/17/14	19	ug/l	0.3	3	50				
MW-F	1,4-Dichlorobenzene	6/17/14	5.6	ug/l	0.39	1	6				
MW-F	Cis-1,2-Dichloroethene	6/17/14	28.4	ug/l	0.25	5	70				
MW-F	Barium, total	6/17/14	542	ug/l	0.12	100	700				
MW-F	Cobalt, total	6/17/14	177	ug/l	0.12	10			70	107	
MW-G	Vinyl Chloride	6/17/14	1.8	ug/l	0.63	1	0.03			1.77	LFG
MW-G	Zinc, total	6/17/14	16	ug/l	0.53	10	1000				
MW-G	Barium, total	6/17/14	139	ug/l	0.12	100	700				
MW-G	Cobalt, total	6/17/14	25	ug/l	0.12	10			70		
MW-H	Cobalt, total	6/17/14	105	ug/l	0.12	10			70	35	
MW-H	Barium, total	6/17/14	309	ug/l	0.12	100	700				
MW-I	1,4-Dichlorobenzene	6/17/14	6.1	ug/l	0.39	1	6			0.1	L &/or LFG
MW-I	Vinyl Chloride	6/17/14	6.8	ug/l	0.63	1	0.03			6.77	L &/or LFG
MW-I	Benzene	6/17/14	3.3	ug/l	0.24	1	1			2.3	L &/or LFG
MW-I	Barium, total	6/17/14	269	ug/l	0.12	100	700				
MW-I	Cobalt, total	6/17/14	97	ug/l	0.12	10			70	27	
MW-I	Chlorobenzene	6/17/14	20.4	ug/l	0.3	3	50				
MW-I	Zinc, total	6/17/14	60	ug/l	0.53	10	1000				
MW-J	Vinyl Chloride	6/17/14	1	ug/l	0.63	1	0.03			0.97	L &/or LFG
MW-J	Zinc, total	6/17/14	15	ug/l	0.53	10	1000				
MW-J	Cobalt, total	6/17/14	14	ug/l	0.12	10			70		

Sample ID	Parameter Name ¹	Sample Date	Result	Unit	MDL ²	SWSL ³	2L ⁴	2B ⁵	GWP ⁶	Exceedance Amount	Preliminary Cause ⁷
MW-L	Vinyl Chloride	6/17/14	1	ug/l	0.63	1	0.03			0.97	L &/or LFG
MW-L	Barium, total	6/17/14	1001	ug/l	0.12	100	700			301	N
MW-L	Cobalt, total	6/17/14	62	ug/l	0.12	10			70		
MW-L	Zinc, total	6/17/14	14	ug/l	0.53	10	1000				
SW-1	Cobalt, total	6/17/14	13	ug/l	0.12	10		270			
SW-3	Vinyl Chloride	6/17/14	2.1	ug/l	0.63	1		2.4			
SW-3	Cobalt, total	6/17/14	61	ug/l	0.12	10		270			
SW-3	1,4-Dichlorobenzene	6/17/14	1.6	ug/l	0.39	1		100			
SW-3	Barium, total	6/17/14	741	ug/l	0.12	100		200000			
SW-3	Zinc, total	6/17/14	10	ug/l	0.53	10		50			
SW-3	Chlorobenzene	6/17/14	6.1	ug/l	0.3	3		140			
SW-4	Zinc, total	6/17/14	21	ug/l	0.53	10		50			
SW-4	Barium, total	6/17/14	256	ug/l	0.12	100		200000			
SW-4	Cobalt, total	6/17/14	18	ug/l	0.12	10		270			

¹ Table contains constituents detected at or above SWSL, GWP, 2L, or 2B

² MDL = Method Detection Limit

³ SWSL = Solid Waste Section Reporting Limit

⁴ 2L = North Carolina 15A NCAC 2L Groundwater Quality Standard

⁵ 2B = North Carolina 15 NCAC 2B Surface Water Quality Standard for this Specific Stream Classification

⁶ GWP = Groundwater Protection Standard

^j =The reported value is between the laboratory method detection limit (MDL) and the laboratory method reporting limit (MRL), adjusted for actual sample preparation data and moisture content, where applicable

⁷ Preliminary Cause = Refers to a preliminary analysis of the cause and/or source of a detection over the respective 2L/2B Standard.
A definitive source of the detection was not determined as part of this report.

NE = Not Established

N = Natural from erosion of natural deposits

L = Leachate

LFG = Landfill Gas

BOLD = Concentration > 2L, or 2B Standard

Table 2
Hydrologic Properties at Monitoring Well Locations
June 17, 2014

Monitoring Location	Hydraulic Conductivity (cm/second)	Effective Porosity (%)	Hydraulic Gradient (feet/feet)	Groundwater Average Linear Velocity Rate (feet/year)	Flow Direction	Depth to Groundwater (ft btoc)	Groundwater Potentiometric Elevation (ft amsl)	Screened Interval Lithology	Hydraulic Direction in Relation to Waste Limit
MW-A	7.30E-04	20	0.0081	31	N03W	25.91	24.34	Sand	Crossgradient
MW-B	6.90E-04	20	0.0038	13	N34W	24.85	24.92	Sand	Upgradient
MW-C	1.10E-04	20	0.0014	1	N62W	20.68	24.90	Clayey Sand	Upgradient
MW-D	4.40E-04	20	0.0062	14	N00E	27.65	20.66	Clayey Silt	Downgradient
MW-E	3.10E-03	20	0.0037	60	N60W	27.11	20.75	Sand	Downgradient
MW-F	3.10E-03	20	0.0027	44	N70E	30.70	18.79	Clayey Sand	Downgradient
MW-G	1.80E-03	20	0.0026	24	N30W	24.80	25.30	Sand	Upgradient
MW-H	4.60E-03	20	0.0022	52	N71W	27.64	17.82	Sand	Downgradient
MW-I	1.10E-03	20	0.0030	17	N86W	30.00	18.00	Sand	Downgradient
MW-J	1.20E-03	20	0.0018	11	N74W	27.61	18.65	Sand	Downgradient
MW-K	3.50E-03	20	0.0010	19	N16E	28.95	19.86	Sand	Downgradient
MW-L	1.60E-04	20	0.0063	5	N14E	24.94	21.47	Sand	Downgradient
MW-M	1.20E-03	20	0.0060	37	N06W	22.8	24.97	Sand	Crossgradient
Minimum	1.10E-04	20	0.0010	1	-	20.68	17.82	-	-
Average	1.67E-03	20	0.0038	25	-	26.43	21.57	-	-
Maximum	7.30E-04	20	0.0081	60	-	30.70	25.30	-	-

NOTE: Values for effective porosity & hydraulic conductivity obtained from GAI Consultants' *Assessment Report* (Feb. 1996).

Hydrologic Gradient from groundwater elevations reportedly recorded on June 17, 2014.

Average linear velocity rate (Q) is defined by modified Darcy's equation:

where

$$Q = - \frac{K}{n_e} \cdot \frac{dh}{dl}$$

K = hydraulic conductivity

n_e = effective porosity

dh = head difference

dl = horizontal distance

Appendix A
Laboratory Analysis Report
Field Analysis Report
Chains of Custody

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#: 6025

HERTFORD COUNTY LANDFILL
C/O MUNICIPAL ENGINEERS
P.O. BOX 97
GARNER ,NC 27529

DATE COLLECTED: 06/17/14
DATE REPORTED : 07/01/14

REVIEWED BY: 

PARAMETERS	MDL	SWSL	MWA	MWB	MW-C	MW-D	MW-E	Analysis Date	Method Code
									Analyst
PH (field measurement), Units			5.9	5.9	5.0	5.6	5.8	06/17/14BF	4500HB-00
Antimony, ug/l	0.12	6.0	0.18 J	---	0.43 J	0.20 J	---	06/20/14LFJ	EPA200.8
Arsenic, ug/l	0.10	10.0	6.5 J	7 J	---	1.9 J	4.9 J	06/20/14LFJ	EPA200.8
Barium, ug/l	0.12	100.0	140	164	90.2 J	138	123	06/24/14LFJ	EPA200.8
Beryllium, ug/l	0.04	1.0	0.10 J	0.10 J	1	0.09 J	0.09 J	06/24/14LFJ	EPA200.8
Cadmium, ug/l	0.04	1.0	0.27 J	0.05 J	0.10 J	0.15 J	0.06 J	06/20/14LFJ	EPA200.8
Cobalt, ug/l	0.12	10.0	225	160	8.2 J	43	41	06/24/14LFJ	EPA200.8
Copper, ug/l	0.10	10.0	1.8 J	0.78 J	1.1 J	0.76 J	1.7 J	06/20/14LFJ	EPA200.8
Total Chromium, ug/l	0.14	10.0	1.3 J	0.78 J	---	0.31 J	1.2 J	06/24/14LFJ	EPA200.8
Lead, ug/l	0.13	10.0	1.3 J	0.32 J	0.21 J	0.18 J	0.68 J	06/20/14LFJ	EPA200.8
Mercury, ug/l	0.06	0.20	---	---	---	---	---	06/19/14MTM	245.1 R3-94
Nickel, ug/l	0.12	50.0	4.8 J	15.8 J	6.6 J	6.2 J	4.1 J	06/20/14LFJ	EPA200.8
Selenium, ug/l	0.16	10.0	---	---	0.22 J	0.59 J	---	06/20/14LFJ	EPA200.8
Silver, ug/l	0.04	10.0	---	---	---	---	---	06/24/14LFJ	EPA200.8
Thallium, ug/l	0.13	5.5	---	---	---	---	---	06/20/14LFJ	EPA200.8
Vanadium, ug/l	0.06	25.0	2.7 J	1.8 J	1.1 J	1.4 J	3.2 J	06/20/14LFJ	EPA200.8
Zinc, ug/l	0.53	10.0	18	6.0 J	37	42	14	06/20/14LFJ	EPA200.8
Conductivity (at 25c), uMhos/cm	1.0	1.0	542	420	113	385	408	06/17/14BF	2510B-97
Temperature, °C			18	17	16	18	19	06/17/14BF	2550B-00
Static Water Level, feet			25.91	24.85	20.68	27.65	27.11	06/17/14BF	
Well Depth, feet			30.41	28.85	25.20	35.49	35.33	06/17/14BF	

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#: 6025

HERTFORD COUNTY LANDFILL
C/O MUNICIPAL ENGINEERS
P.O. BOX 97
GARNER ,NC 27529

DATE COLLECTED: 06/17/14
DATE REPORTED : 07/01/14

REVIEWED BY: 

PARAMETERS	MDL	SWSL	MW-F	MW-G	MW-H	MW-I	MW-J	Analysis Date	Method Code
								Analyst	
PH (field measurement), Units			6.1	5.9	6.2	5.8	5.7	06/17/14BF	4500HB-00
Antimony, ug/l	0.12	6.0	0.64 J	0.32 J	---	U	---	U	0.12 J 06/20/14LFJ EPA200.8
Arsenic, ug/l	0.10	10.0	4.3 J	4.7 J	0.57 J	1.7 J	0.32 J	06/20/14LFJ	EPA200.8
Barium, ug/l	0.12	100.0	542	139	309	269	86.6 J	06/24/14LFJ	EPA200.8
Beryllium, ug/l	0.04	1.0	0.27 J	0.13 J	---	U	0.16 J	0.17 J	06/24/14LFJ EPA200.8
Cadmium, ug/l	0.04	1.0	0.26 J	0.05 J	---	U	0.48 J	0.26 J	06/20/14LFJ EPA200.8
Cobalt, ug/l	0.12	10.0	177	25	105	97	14	06/24/14LFJ	EPA200.8
Copper, ug/l	0.10	10.0	0.95 J	0.51 J	0.17 J	0.66 J	0.51 J	06/20/14LFJ	EPA200.8
Total Chromium, ug/l	0.14	10.0	0.62 J	0.18 J	---	U	0.28 J	1.4 J	06/24/14LFJ EPA200.8
Lead, ug/l	0.13	10.0	0.59 J	0.39 J	---	U	0.50 J	0.38 J	06/20/14LFJ EPA200.8
Mercury, ug/l	0.06	0.20	---	U	---	U	0.13 J	---	U 06/26/14MTM 245.1 R3-94
Nickel, ug/l	0.12	50.0	10.0 J	9.0 J	18.1 J	6.1 J	5.9 J	06/20/14LFJ	EPA200.8
Selenium, ug/l	0.16	10.0	---	U	---	U	---	U	06/20/14LFJ EPA200.8
Silver, ug/l	0.04	10.0	---	U	---	U	---	U	06/24/14LFJ EPA200.8
Thallium, ug/l	0.13	5.5	0.17 J	---	U	2.0 J	---	U	06/20/14LFJ EPA200.8
Vanadium, ug/l	0.06	25.0	1.7 J	1.2 J	---	U	1.0 J	2.0 J	06/20/14LFJ EPA200.8
Zinc, ug/l	0.53	10.0	32	16	9.2 J	60	15	06/20/14LFJ	EPA200.8
Conductivity (at 25c), uMhos/cm	1.0	1.0	1026	345	367	625	267	06/17/14BF	2510B-97
Temperature, °C			19	18	18	19	18	06/17/14BF	2550B-00
Static Water Level, feet			30.70	24.80	27.64	30.00	27.61	06/17/14BF	
Well Depth, feet			35.28	39.65	37.11	36.47	38.45	06/17/14BF	

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
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ID#: 6025

HERTFORD COUNTY LANDFILL
C/O MUNICIPAL ENGINEERS
P.O. BOX 97
GARNER ,NC 27529

DATE COLLECTED: 06/17/14
DATE REPORTED : 07/01/14

REVIEWED BY: 

PARAMETERS	MDL	SWSL	MW-K	MW-L	MW-M	Equipment	Trip	Analysis	Method
						Blank	Blank	Date	Analyst
PH (field measurement), Units			5.7	5.7	5.6			06/17/14BF	4500HB-00
Antimony, ug/l	0.12	6.0	0.25 J	--- U	--- U	---	U	06/20/14LFJ	EPA200.8
Arsenic, ug/l	0.10	10.0	--- U	0.77 J	---	U	---	06/20/14LFJ	EPA200.8
Barium, ug/l	0.12	100.0	57.3 J	1001	62.6 J	---	U	06/24/14LFJ	EPA200.8
Beryllium, ug/l	0.04	1.0	0.07 J	0.15 J	0.09 J	---	U	06/24/14LFJ	EPA200.8
Cadmium, ug/l	0.04	1.0	0.09 J	0.05 J	0.07 J	---	U	06/20/14LFJ	EPA200.8
Cobalt, ug/l	0.12	10.0	--- U	62	5.6 J	---	U	06/24/14LFJ	EPA200.8
Copper, ug/l	0.10	10.0	0.21 J	0.26 J	0.44 J	---	U	06/20/14LFJ	EPA200.8
Total Chromium, ug/l	0.14	10.0	--- U	--- U	0.50 J	---	U	06/24/14LFJ	EPA200.8
Lead, ug/l	0.13	10.0	--- U	--- U	0.29 J	---	U	06/20/14LFJ	EPA200.8
Mercury, ug/l	0.06	0.20	--- U	--- U	---	U	---	06/26/14MTM	245.1 R3-94
Nickel, ug/l	0.12	50.0	3.0 J	6.9 J	2.1 J	0.20 J	---	06/20/14LFJ	EPA200.8
Selenium, ug/l	0.16	10.0	--- U	--- U	---	U	---	06/20/14LFJ	EPA200.8
Silver, ug/l	0.04	10.0	--- U	--- U	---	U	---	06/24/14LFJ	EPA200.8
Thallium, ug/l	0.13	5.5	--- U	--- U	---	U	---	06/20/14LFJ	EPA200.8
Vanadium, ug/l	0.06	25.0	0.80 J	0.66 J	0.93 J	0.36 J	---	06/20/14LFJ	EPA200.8
Zinc, ug/l	0.53	10.0	5.7 J	14	3.8 J	---	U	06/20/14LFJ	EPA200.8
Conductivity (at 25c), uMhos/cm	1.0	1.0	187	245	134			06/17/14BF	2510B-97
Temperature, °C			17	17	20			06/17/14BF	2550B-00
Static Water Level, feet			28.95	24.94	22.80			06/17/14BF	
Well Depth, feet			42.92	35.19	39.83			06/17/14BF	

Environment 1, Incorporated

Drinking Water ID: 37715
Wastewater ID: 10

P.O. BOX 7085, 114 OAKMONT DRIVE
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CLIENT: HERTFORD COUNTY LANDFILL
C/O MUNICIPAL ENGINEERS
P.O. BOX 97
GARNER, NC 27529

CLIENT ID: 6025

ANALYST: MAO
DATE COLLECTED: 06/17/14
DATE REPORTED: 07/01/14

Page: 1

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VOLATILE ORGANICS EPA METHOD 8260B R1(96)

PARAMETERS, ug/l	Date Analyzed		06/24/14	06/24/14	06/24/14	06/24/14	06/24/14		
	MDL	SWSL	MWA	MWB	MW-C	MW-D	MW-E		
1. Chloromethane	0.77	1.0	---	U	---	U	---	U	
2. Vinyl Chloride	0.63	1.0	---	U	4.40	---	U	0.90 J	
3. Bromomethane	0.67	10.0	---	U	---	U	---	U	
4. Chloroethane	0.48	10.0	---	U	---	U	---	U	
5. Trichlorofluoromethane	0.24	1.0	---	U	---	U	---	U	
6. 1,1-Dichloroethene	0.17	5.0	---	U	---	U	---	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	0.30 J	---	U	---	U
12. 1,1-Dichloroethane	0.20	5.0	0.50 J	---	1.60 J	---	U	---	U
13. Vinyl Acetate	0.20	50.0	---	U	---	U	---	U	
14. Cis-1,2-Dichloroethene	0.25	5.0	0.40 J	---	12.40	---	U	2.30 J	0.40 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	1.10	---	0.50 J	---	U	0.80 J	2.30
21. 1,2-Dichloroethane	0.27	1.0	---	U	---	U	---	U	
22. Trichloroethene	0.23	1.0	---	U	5.10	---	U	---	U
23. 1,2-Dichloropropane	0.21	1.0	---	U	---	U	---	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	---	U	---	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	3.30	---	1.60 J	---	U	1.20 J	20.70
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	0.80 J	---	---	U	1.00	---	4.90
44. 1,2-Dichlorobenzene	0.32	5.0	---	U	---	U	---	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	

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: HERTFORD COUNTY LANDFILL
C/O MUNICIPAL ENGINEERS
P.O. BOX 97
GARNER, NC 27529

CLIENT ID: 6025

ANALYST: MAO
DATE COLLECTED: 06/17/14
DATE REPORTED: 07/01/14

Page: 2

REVIEWED BY: 

VOLATILE ORGANICS EPA METHOD 8260B R1(96)

PARAMETERS, ug/l	Date Analyzed:		06/24/14	06/24/14	06/24/14	06/24/14	06/24/14	
	MDL	SWSL	MW-F	MW-G	MW-H	MW-I	MW-J	
1. Chloromethane	0.77	1.0	---	U	---	U	---	U
2. Vinyl Chloride	0.63	1.0	8.00		1.80		6.80	1.00
3. Bromomethane	0.67	10.0	---	U	---	U	---	U
4. Chloroethane	0.48	10.0	1.00	J	---	U	---	U
5. Trichlorofluoromethane	0.24	1.0	---	U	---	U	---	U
6. 1,1-Dichloroethene	0.17	5.0	---	U	---	U	---	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	2.90	J	---	U	1.50	J
13. Vinyl Acetate	0.20	50.0	---	U	---	U	---	U
14. Cis-1,2-Dichloroethene	0.25	5.0	28.40		---	U	0.90	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	2.90		---	U	3.30	
21. 1,2-Dichloroethane	0.27	1.0	---	U	---	U	---	U
22. Trichloroethene	0.23	1.0	1.20		0.70	J	---	U
23. 1,2-Dichloropropane	0.21	1.0	---	U	---	U	---	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	---	U	---	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	19.00		---	U	0.90	J
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	5.60		---	U	6.10	
44. 1,2-Dichlorobenzene	0.32	5.0	---	U	---	U	---	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

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: HERTFORD COUNTY LANDFILL
C/O MUNICIPAL ENGINEERS
P.O. BOX 97
GARNER, NC 27529

CLIENT ID: 6025

ANALYST: MAO
DATE COLLECTED: 06/17/14
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Page: 3

REVIEWED BY: 

VOLATILE ORGANICS EPA METHOD 8260B R1 (96)

PARAMETERS, ug/l	Date Analyzed:		06/24/14	06/24/14	06/25/14	06/25/14	06/25/14
	MDL	SWSL	MW-X	MW-L	MW-M	Equipment Blank	Trip Blank
1. Chloromethane	0.77	1.0	--- U	--- U	--- U	--- U	--- U
2. Vinyl Chloride	0.63	1.0	--- U	1.00	--- U	--- U	--- U
3. Bromomethane	0.67	10.0	--- U	--- U	--- U	--- U	--- U
4. Chloroethane	0.48	10.0	--- U	--- U	--- U	--- U	--- U
5. Trichlorofluoromethane	0.24	1.0	--- U	--- U	--- U	--- U	--- U
6. 1,1-Dichloroethene	0.17	5.0	--- U	--- U	--- U	--- U	--- U
7. Acetone	9.06	100.0	--- U	--- U	--- U	--- U	--- U
8. Iodomethane	0.26	10.0	--- U	--- U	--- U	--- U	--- U
9. Carbon Disulfide	0.23	100.0	--- U	--- U	--- U	--- U	--- U
10. Methylene Chloride	0.64	1.0	--- U	--- U	--- U	--- U	--- U
11. trans-1,2-Dichloroethene	0.23	5.0	--- U	--- U	--- U	--- U	--- U
12. 1,1-Dichloroethane	0.20	5.0	--- U	--- U	--- U	--- U	--- U
13. Vinyl Acetate	0.20	50.0	--- U	--- U	--- U	--- U	--- U
14. Cis-1,2-Dichloroethene	0.25	5.0	0.60 J	1.60 J	--- U	--- U	--- U
15. 2-Butanone	2.21	100.0	--- U	--- U	--- U	--- U	--- U
16. Bromochloromethane	0.27	3.0	--- U	--- U	--- U	--- U	--- U
17. Chloroform	0.25	5.0	--- U	--- U	--- U	--- U	--- U
18. 1,1,1-Trichloroethane	0.19	1.0	--- U	--- U	--- U	--- U	--- U
19. Carbon Tetrachloride	0.22	1.0	--- U	--- U	--- U	--- U	--- U
20. Benzene	0.24	1.0	--- U	0.70 J	--- U	--- U	--- U
21. 1,2-Dichloroethane	0.27	1.0	--- U	--- U	--- U	--- U	--- U
22. Trichloroethene	0.23	1.0	--- U	--- U	--- U	--- U	--- U
23. 1,2-Dichloropropane	0.21	1.0	--- U	--- U	--- U	--- U	--- U
24. Bromodichloromethane	0.21	1.0	--- U	--- U	--- U	--- U	--- U
25. Cis-1,3-Dichloropropene	0.24	1.0	--- U	--- U	--- U	--- U	--- U
26. 4-Methyl-2-Pentanone	1.19	100.0	--- U	--- U	--- U	--- U	--- U
27. Toluene	0.23	1.0	--- U	--- U	--- U	--- U	--- U
28. trans-1,3-Dichloropropene	0.28	1.0	--- U	--- U	--- U	--- U	--- U
29. 1,1,2-Trichloroethane	0.25	1.0	--- U	--- U	--- U	--- U	--- U
30. Tetrachloroethene	0.17	1.0	--- U	--- U	--- U	--- U	--- U
31. 2-Hexanone	1.57	50.0	--- U	--- U	--- U	--- U	--- U
32. Dibromochloromethane	0.24	3.0	--- U	--- U	--- U	--- U	--- U
33. 1,2-Dibromoethane	0.26	1.0	--- U	--- U	--- U	--- U	--- U
34. Chlorobenzene	0.30	3.0	--- U	0.90 J	0.90 J	--- U	--- U
35. 1,1,1,2-Tetrachloroethane	0.22	5.0	--- U	--- U	--- U	--- U	--- U
36. Ethylbenzene	0.21	1.0	--- U	--- U	--- U	--- U	--- U
37. Xylenes	0.68	5.0	--- U	--- U	--- U	--- U	--- U
38. Dibromomethane	0.28	10.0	--- U	--- U	--- U	--- U	--- U
39. Styrene	0.19	1.0	--- U	--- U	--- U	--- U	--- U
40. Bromoform	0.20	3.0	--- U	--- U	--- U	--- U	--- U
41. 1,1,2,2-Tetrachloroethane	0.26	3.0	--- U	--- U	--- U	--- U	--- U
42. 1,2,3-Trichloropropane	0.43	1.0	--- U	--- U	--- U	--- U	--- U
43. 1,4-Dichlorobenzene	0.39	1.0	--- U	0.80 J	--- U	--- U	--- U
44. 1,2-Dichlorobenzene	0.32	5.0	--- U	--- U	--- U	--- U	--- U
45. 1,2-Dibromo-3-Chloropropane	0.34	13.0	--- U	--- U	--- U	--- U	--- U
46. Acrylonitrile	2.72	200.0	--- U	--- U	--- U	--- U	--- U
47. trans-1,4-Dichloro-2-Butene	0.42	100.0	--- U	--- U	--- U	--- U	--- U

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

CHAIN OF CUSTODY RECORD

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CLIENT: 6025 **Week:** 26
HERTFORD COUNTY LANDFILL
C/O MUNICIPAL ENGINEERS
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 GARNER NC 27529

(919) 772-5393

SAMPLE LOCATION	COLLECTION		TOTAL CHLORINE, mg/l OR ug/l AT COLLECTION	TEMPERATURE, °C AT COLLECTION	# OF CONTAINERS	DISINFECTION			Field pH	Metals	Conductivity	Temperature	Field Parameter	EPA 8260B	8260 Dup. 1	8260 Dup. 2	PARAMETERS/TESTS
	DATE	TIME				<input type="checkbox"/> CHLORINE	<input type="checkbox"/> UV	<input type="checkbox"/> NONE									
MW-L	6-17-14	1035		17	4	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	A	A	A	A	E	E	E		CLASSIFICATION: <input type="checkbox"/> WASTEWATER (NPDES) <input type="checkbox"/> DRINKING WATER <input type="checkbox"/> DMQ/GW <input checked="" type="checkbox"/> SOLID WASTE SECTION CHAIN OF CUSTODY MAINTAINED DURING SHIPMENT/DELIVERY SAMPLES COLLECTED BY: <u>Bobby Tom</u> (Please Print) <u>Y N</u> SAMPLES RECEIVED IN LAB AT <u>8:3</u> °C
MW-M	6-17-14	1005		20	5	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	P	A	A	A	G	G	G		
Equipment Blank	6-17-14	0945			3	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>									
Trip Blank	6-17-14				2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>									
REINQUISHED BY (SIG.)	DATE/TIME	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME	DATE/TIME	DATE/TIME	DATE/TIME	DATE/TIME	DATE/TIME	DATE/TIME	DATE/TIME	DATE/TIME	DATE/TIME	COMMENTS:
<i>Bobby Tom</i>	6-17-14	2:54	<i>[Signature]</i>	6/17/14	2:09 pm	<i>[Signature]</i>											
REINQUISHED BY (SIG.)	DATE/TIME	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME	DATE/TIME	DATE/TIME	DATE/TIME	DATE/TIME	DATE/TIME	DATE/TIME	DATE/TIME	DATE/TIME	DATE/TIME	COMMENTS:

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 278105

Environment 1, Incorporated

Drinking Water ID: 37715
Wastewater ID: 10

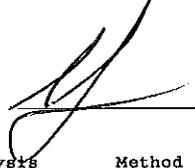
P.O. BOX 7085, 114 OAKMONT DRIVE
GREENVILLE, N.C. 27835-7085

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

ID#: 6025 A

HERTFORD COUNTY LANDFILL
C/O MUNICIPAL ENGINEERS
P.O. BOX 97
GARNER ,NC 27529

DATE COLLECTED: 06/17/14
DATE REPORTED : 07/01/14

REVIEWED BY: 

PARAMETERS	MDL	SWSL	SW-1	SW-2	SW-3	SW-4	Analysts	Method
							Date	Analyst
PH (field measurement), Units			6.1	6.3	6.1	6.5	06/17/14BF	4500HB-00
Antimony, ug/l	0.12	6.0	--- U	0.46 J	0.13 J	--- U	06/20/14LFFJ	EPA200.8
Arsenic, ug/l	0.10	10.0	1.7 J	0.72 J	0.87 J	0.96 J	06/20/14LFFJ	EPA200.8
Barium, ug/l	0.12	100.0	80.0 J	66.2 J	741	256	06/24/14LFFJ	EPA200.8
Beryllium, ug/l	0.04	1.0	0.07 J	0.05 J	--- U	0.08 J	06/24/14LFFJ	EPA200.8
Cadmium, ug/l	0.04	1.0	0.06 J	0.07 J	0.06 J	0.18 J	06/20/14LFFJ	EPA200.8
Cobalt, ug/l	0.12	10.0	13	2.4 J	61	18	06/24/14LFFJ	EPA200.8
Copper, ug/l	0.10	10.0	1.3 J	0.63 J	0.83 J	1.3 J	06/20/14LFFJ	EPA200.8
Total Chromium, ug/l	0.14	10.0	0.88 J	0.25 J	--- U	0.74 J	06/24/14LFFJ	EPA200.8
Lead, ug/l	0.13	10.0	1.6 J	0.63 J	0.33 J	1.3 J	06/20/14LFFJ	EPA200.8
Nickel, ug/l	0.12	50.0	2.3 J	1.2 J	22.1 J	3.6 J	06/20/14LFFJ	EPA200.8
Selenium, ug/l	0.16	10.0	--- U	--- U	--- U	--- U	06/20/14LFFJ	EPA200.8
Silver, ug/l	0.04	10.0	--- U	--- U	--- U	--- U	06/24/14LFFJ	EPA200.8
Thallium, ug/l	0.13	5.5	--- U	--- U	0.19 J	--- U	06/20/14LFFJ	EPA200.8
Vanadium, ug/l	0.06	25.0	3.4 J	1.0 J	0.87 J	2.1 J	06/20/14LFFJ	EPA200.8
Zinc, ug/l	0.53	10.0	5.9 J	3.9 J	10	21	06/20/14LFFJ	EPA200.8
Conductivity (at 25c), uMhos/cm	1.0	1.0	80	184	626	349	06/17/14BF	2510B-97
Temperature, °C			24	23	21	25	06/17/14BF	2550B-00

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

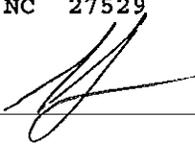
PHONE (252) 756-6208
FAX (252) 756-0633

CLIENT: HERTFORD COUNTY LANDFILL
C/O MUNICIPAL ENGINEERS
P.O. BOX 97
GARNER, NC 27529

CLIENT ID: 6025 A

ANALYST: MAO
DATE COLLECTED: 06/17/14
DATE ANALYZED: 06/27/14
DATE REPORTED: 07/01/14

Page: 1

REVIEWED BY: 

VOLATILE ORGANICS EPA METHOD 8260B R1(96)

PARAMETERS, ug/l	MDL	SWSL	SW-1	SW-2	SW-3	SW-4
1. Chloromethane	0.77	1.0	--- U	--- U	--- U	--- U
2. Vinyl Chloride	0.63	1.0	--- U	--- U	2.10	--- U
3. Bromomethane	0.67	10.0	--- U	--- U	--- U	--- U
4. Chloroethane	0.48	10.0	--- U	--- U	--- U	--- U
5. Trichlorofluoromethane	0.24	1.0	--- U	--- U	--- U	--- U
6. 1,1-Dichloroethene	0.17	5.0	--- U	--- U	--- U	--- U
7. Acetone	9.06	100.0	--- U	--- U	--- U	--- U
8. Iodomethane	0.26	10.0	--- U	--- U	--- U	--- U
9. Carbon Disulfide	0.23	100.0	--- U	--- U	--- U	--- U
10. Methylene Chloride	0.64	1.0	--- U	--- U	--- U	--- U
11. trans-1,2-Dichloroethene	0.23	5.0	--- U	--- U	--- U	--- U
12. 1,1-Dichloroethane	0.20	5.0	--- U	--- U	0.70 J	--- U
13. Vinyl Acetate	0.20	50.0	--- U	--- U	--- U	--- U
14. Cis-1,2-Dichloroethene	0.25	5.0	--- U	--- U	3.30 J	--- U
15. 2-Butanone	2.21	100.0	--- U	--- U	--- U	--- U
16. Bromochloromethane	0.27	3.0	--- U	--- U	--- U	--- U
17. Chloroform	0.25	5.0	--- U	--- U	--- U	--- U
18. 1,1,1-Trichloroethane	0.19	1.0	--- U	--- U	--- U	--- U
19. Carbon Tetrachloride	0.22	1.0	--- U	--- U	--- U	--- U
20. Benzene	0.24	1.0	--- U	--- U	0.80 J	--- U
21. 1,2-Dichloroethane	0.27	1.0	--- U	--- U	--- U	--- U
22. Trichloroethene	0.23	1.0	--- U	--- U	--- U	--- U
23. 1,2-Dichloropropane	0.21	1.0	--- U	--- U	--- U	--- U
24. Bromodichloromethane	0.21	1.0	--- U	--- U	--- U	--- U
25. Cis-1,3-Dichloropropene	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-Dichloropropene	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	--- 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	--- U	--- U	6.10	--- U
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	1.60	--- U
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 4, Inc.
P.O. Box 7085, 114 Oakmont Dr.
Greenville, NC 27858
environment4inc.com
Phone (252) 756-6208 • Fax (252) 756-0633

CHAIN OF CUSTODY RECORD

CLIENT: 6025 A Week: 26

HERTFORD COUNTY LANDFILL
C/O MUNICIPAL ENGINEERS
P.O. BOX 97
GARNER NC 27529

(919) 772-5393

SAMPLE LOCATION	COLLECTION		TOTAL CHLORINE, mg/l OR ug/l AT COLLECTION	TEMPERATURE, °C AT COLLECTION	# OF CONTAINERS	DISINFECTION		Field pH	Metals	Conductivity	Temperature	EPA 8260B	8260 Dup. 1	PARAMETERS/TESTS	CLASSIFICATION:	
	DATE	TIME				CHLORINE	UV									
SW-1	6-17-14	1230		24	4	<input type="checkbox"/>	<input type="checkbox"/>	A	A	A	A	E	E	A - NONE D - NAOH B - HNO ₃ E - HCL C - H ₂ SO ₄ F - ZINC ACETATE/NAOH G - NA THIOSULFATE	<input type="checkbox"/> WASTEWATER (NPDES) <input type="checkbox"/> DRINKING WATER <input type="checkbox"/> DWO/GW <input checked="" type="checkbox"/> SOLID WASTE SECTION	
SW-2	6-17-14	1220		23	4	<input type="checkbox"/>	<input type="checkbox"/>	P	P	P	P	G	G			
SW-3	6-17-14	1150		21	4	<input type="checkbox"/>	<input type="checkbox"/>	P	P	P	P	G	G			
SW-4	6-17-14	1200		25	4	<input type="checkbox"/>	<input type="checkbox"/>	A	A	A	A	E	E			
RELINQUISHED BY (SIG.)	DATE/TIME	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME	DATE/TIME	DATE/TIME	DATE/TIME	DATE/TIME	DATE/TIME	DATE/TIME	DATE/TIME	DATE/TIME	COMMENTS:
<i>Bobby Fox</i>	6-17-14 2:00		<i>[Signature]</i>	6-17-14 2:00		<i>[Signature]</i>	6-17-14 2:00									CHAIN OF CUSTODY MAINTAINED DURING SHIPMENT/DELIVERY N SAMPLES COLLECTED BY: (Please Print) <i>Bobby Fox</i> SAMPLES RECEIVED IN LAB AT 6.3°C

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