

DENR USE ONLY:

Paper Report

Electronic Data - Email CD (data loaded: Yes / No)

Doc/Event #:

NC DENR

Division of Waste Management - Solid Waste

Environmental Monitoring Reporting Form

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):

Smith Gardner, Inc.

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

Name: Madeline German

Phone: 919-828-0577x222

E-mail: madeline@smithgardnerinc.com

Facility name:

Facility Address:

Facility Permit #

NC Landfill Rule:
(.0500 or .1600)

Actual sampling dates (e.g.,
October 20-24, 2006)

Washington County Closed MSW
Landfill

718 Landfill Road, Roper, NC

94-02

.0500

September 2, 2015

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 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.

Madeline German, PG

Geologist

919-828-0577x222

Facility Representative Name (Print)

Title

(Area Code) Telephone Number

Signature

Date

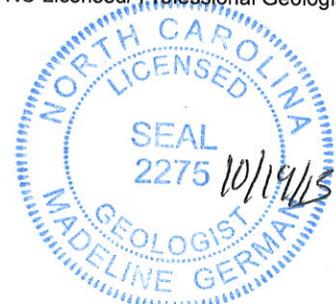
Affix NC Licensed/ Professional Geologist Seal

14 N. Boylan Ave, Raleigh, NC 27603

Facility Representative Address

CO828

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



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September 2015 Groundwater Monitoring Report

Washington County Closed MSW Landfill Roper, North Carolina NC Solid Waste Permit No. 94-02 – MSWLF-1980

Prepared for:



Washington County
P.O. Box 1007
Plymouth, North Carolina 27962

October 2015

Prepared by:

SMITH+GARDNER

14 N. Boylan Avenue, Raleigh NC 27603 | 919.828.0577



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September 2015 Groundwater Monitoring Report

**Washington County Closed MSW Landfill
NC Permit No. 94-02-MSWLF-1980**

Prepared For:

**Washington County Solid Waste
Plymouth, North Carolina**

S+G Project No. WASH 08-2



Madeline German, P.G.
Project Geologist





Joan A. Smyth, P.G.
Senior Hydrogeologist

October 2015

SMITH+GARDNER

14 N. Boylan Avenue, Raleigh NC 27603 | 919.828.0577

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**Washington County Closed MSW Landfill
NC Solid Waste Permit No. 94-02-MSWLF 1980**

September 2015 Groundwater Monitoring Report

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FIGURE

Figure 1 Washington County Landfill Site Map

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Appendix C Organic Constituent Results - Graphs

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1.0 INTRODUCTION

The Washington County Closed unlined, MSW Landfill, operating under Solid Waste Permit #94-02-MSWLF-1980, is required to conduct semi-annual groundwater monitoring in accordance with Solid Waste Section Rule 15A NCAC 13B.0500 (et seq.). This report presents the semi-annual sampling results for the event conducted on September 2, 2015; and includes a field procedure summary, laboratory analyses and groundwater characterization for the site. The laboratory analytical results and a single-day potentiometric surface map are also included.

2.0 REGIONAL GEOLOGY

The Washington County Landfill is located near Roper, North Carolina. According to the Geologic Map of North Carolina (*USGS, 1985*) this site is underlain by Quaternary surficial deposits that include sand, gravel, clay, and peat deposited in marine, fluvial, eolian and lacustrine environments; typical for a coastal plain environment.

3.0 SAMPLING PROCEDURES

The sampling event, reportedly performed by Environment 1, Inc. on September 2, 2015, included sample collection from four groundwater monitoring wells (MW-1 through MW-4). Well logs are presented in **Appendix A**. No surface water monitoring locations are identified for this site. A trip blank was analyzed for Appendix I volatile organic compounds (VOCs) for quality control purposes.

Sampling methods followed the protocol outlined in the North Carolina Water Quality Monitoring Guidance Document for Solid Waste Facilities (North Carolina Department of Environment and Natural Resources, Division of Waste Management). The depth to water in each well was gauged prior to purging and sampling. Field measurements for pH, specific conductivity, and temperature were recorded for each well.

Samples were collected in laboratory prepared containers for the specified analytical procedures. Groundwater 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 DATA

4.1 Laboratory Analysis

The groundwater samples were transported to Environment 1, Inc., in Greenville, NC, a North Carolina certified laboratory (NC Wastewater ID #10). Samples were analyzed for the Appendix I VOCs via EPA Test Method 8260B and metals via EPA Test Method 200.8. Constituents detected between the Method Detection Limit (MDL) and SWSL are defined by the laboratory as "J" qualified values; indicating they are not quantifiable values. The laboratory analytical report is included as **Appendix B**.

4.2 Field and Laboratory Results

No inorganic constituents were reported above their 15A NCAC 2L.0100 et seq Standards (2L).

Only 1,4-dichlorobenzene in MW-2 was reported above its 2L Groundwater Standard for this event. Benzene and Chlorobenzene were detected at concentrations below the 2L groundwater standard.

The field parameter results are shown in **Table 2**. Detected inorganic constituents (metals) are presented in **Table 3** and organic constituents (VOCs) are presented in **Table 4**. Historic detected organic constituent graphs are included in **Appendix C**.

5.0 GROUNDWATER CHARACTERIZATION

A single-day potentiometric surface map was prepared from groundwater data collected during this sampling event; from both the closed MSW landfill and the adjacent C&D landfill. The groundwater elevations indicate that groundwater flows in a general north - northwesterly direction. Hydraulic conductivity data is not available for these wells so groundwater velocities could not be calculated. The potentiometric surface map is presented as **Figure 1**.

6.0 CONCLUSIONS

Laboratory results indicate that water quality at the Washington County Closed MSW Landfill is generally consistent with reported historical detections. 1,4-dichlorobenzene was reported above its 2L value this event; however concentrations are below maximum reported values. Chlorobenzene and benzene concentrations are below the 2L groundwater standard and are within the range of historical detections in MW-2 and MW-3.

The next groundwater monitoring event is scheduled for March 2016. Results will be reported to NCDENR following laboratory analysis.

FIGURE

**September 2015 Groundwater Monitoring Report
Washington County Closed MSW Landfill
NC Solid Waste Permit No. 94-02-MSWLF-1980**

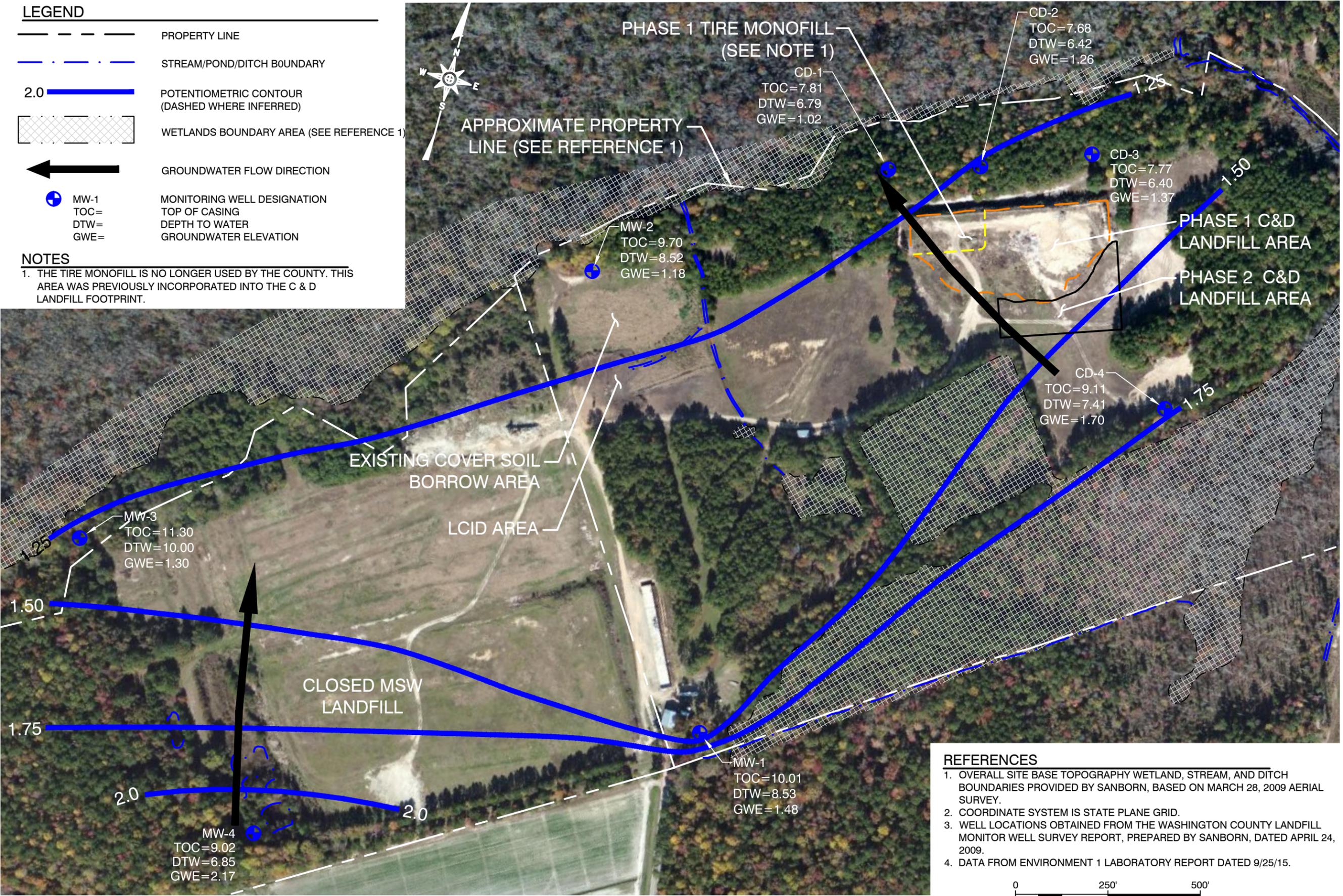
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LEGEND

- PROPERTY LINE
- STREAM/POND/DITCH BOUNDARY
- 2.0 POTENTIOMETRIC CONTOUR (DASHED WHERE INFERRED)
- WETLANDS BOUNDARY AREA (SEE REFERENCE 1)
- GROUNDWATER FLOW DIRECTION
- MW-1
TOC=
DTW=
GWE= MONITORING WELL DESIGNATION
TOP OF CASING
DEPTH TO WATER
GROUNDWATER ELEVATION

NOTES

1. THE TIRE MONOFILL IS NO LONGER USED BY THE COUNTY. THIS AREA WAS PREVIOUSLY INCORPORATED INTO THE C & D LANDFILL FOOTPRINT.



- REFERENCES**
1. OVERALL SITE BASE TOPOGRAPHY WETLAND, STREAM, AND DITCH BOUNDARIES PROVIDED BY SANBORN, BASED ON MARCH 28, 2009 AERIAL SURVEY.
 2. COORDINATE SYSTEM IS STATE PLANE GRID.
 3. WELL LOCATIONS OBTAINED FROM THE WASHINGTON COUNTY LANDFILL MONITOR WELL SURVEY REPORT, PREPARED BY SANBORN, DATED APRIL 24, 2009.
 4. DATA FROM ENVIRONMENT 1 LABORATORY REPORT DATED 9/25/15.



G:\CAD\Washington County\Wash 08-2\sheets\WASH-B0049.dwg - 10/5/2015 2:02 PM

© 2015 Smith Gardner, Inc.

PREPARED BY: **SMITH+GARDNER**
 NC LIC. NO. C-0828 (ENGINEERING)
 14 N. Boylan Avenue, Raleigh NC 27603 | 919.828.0577

FIGURE NO:	1
SCALE:	AS SHOWN
APPROVED:	M.M.G.
DRAWN:	T.R.S.
PROJECT NO:	WASH 08-2
DATE:	Oct 2015
FILENAME:	WASH-B0049

PREPARED FOR:
**WASHINGTON COUNTY
 MSW AND C&D LANDFILLS
 POTENTIOMETRIC SURFACE MAP
 SEPTEMBER 2015**

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TABLES

**September 2015 Groundwater Monitoring Report
Washington County Closed MSW Landfill
NC Solid Waste Permit No. 94-02-MSWLF-1980**

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Table 1
 Groundwater Elevation Data
 Washington County MSW Landfill
 September 2, 2015

Well	Well Installation Date	Latitude	Longitude	Well Diameter (inches)	Total Well Depth (feet bgs)	Ground Surface Elevation (feet amsl)	TOC Elevation (feet amsl)	Depth to Water (feet)	Groundwater Elevation (feet)	Screen Interval (feet bgs)	Screen Geology
MW-1	6/29/1989	35.9186669	76.66470642	2.0	27.0	7.30	10.01	8.53	1.48	8-23	sand
MW-2	6/28/1989	35.9218076	76.66665444	2.0	27.0	7.23	9.70	8.52	1.18	5-20	sand
MW-3	6/29/1989	35.9189837	76.67063239	2.0	25.0	8.51	11.30	10.00	1.30	8-23	sand
MW-4	6/28/1989	35.9171607	76.66845219	2.0	26.5	6.25	9.02	6.85	2.17	4-24	sand

NOTE:

1. Well locations and elevations provided by Sanborn, Charlotte, NC from field survey conducted on 4/8/09.
2. Depth to Water measured from top of PVC casing.
3. Depth to water obtained from Environment 1 Laboratory Report dated 09/25/2015, Client #6018.

Table 2
 Field Parameter Results
 Washington County MSW Landfill
 September 2, 2015

Well	pH (Std units)	Specific Conductivity (umhos/cm)	Temperature (Celsius)
MW-1	5.3	455	23
MW-2	6.3	746	23
MW-3	6.1	158	20
MW-4	5.7	405	20

NOTE: Data from Environment 1 laboratory report dated 9/25/2015, Client ID# 6018.

Table 3
 Detected Inorganic Constituents
 Washington County MSW Landfill
 September 2, 2015

Parameter	MDL	SWSL	2L	MCL	MW-1	MW-2	MW-3	MW-4
Arsenic	0.14	10	10	10	1.3 J	8J	1.8 J	0.54 J
Barium	0.01	100	700	200	123	140	24.7 J	132
Cadmium	0.01	1	2	5	0.15 J	0.05 J	0.04 J	0.11 J
Total Chromium	0.12	10	10	100	<0.12	2.3 J	0.12 J	1.1 J
Lead	0.03	10	15	1300	<0.03	<0.03	<0.03	0.69 J
Selenium	0.22	10	20	50	1.1 J	0.53 J	<0.22	<0.22

NOTE:

- MDL - Method Detection Limit
- SWSL - Solid Waste Section Quantitation Limit
- 2L - Groundwater Standard (15A NCAC 2L 0200)
- MCL - Federal Maximum Contaminant Level
- <MDL - Not detected at or above MDL
- Bold** - Constituent reported above 2L standard
- J - Identified by Laboratory as detected between MDL and SWSL limit

Standards and Results are presented in ug/l.

Data from Environment 1 laboratory report dated 9/25/2015, Client ID# 6018.

Table 4
 Detected Organic Constituents
 Washington County MSW Landfill
 September 2, 2015

Parameter	MDL	SWSL	2L	MCL	MW-2	MW-3	MW-4
Carbon Disulfide	0.23	100	700	NE	<0.23	<0.23	0.3 J
1,4-Dichlorobenzene	0.39	1	6	75	6.30	<0.39	<0.39
1,1-Dichloroethane	0.20	5	6	NE	0.30 J	<0.20	<0.20
Benzene	0.24	1	1	5	0.50 J	<0.24	<0.24
Chlorobenzene	0.30	3	50	100	11.30	1.00 J	<0.30

NOTE:

- MDL - Method Detection Limit
- SWSL - Solid Waste Section Quantitation Limits
- 2L - Groundwater Standards (15A NCAC 2L 0200)
- MCL - Federal Maximum Contaminant Limit
- BOLD** - Constituents reported above 2L standard
- < MDL - Constituent detected above the MDL
- NE - Standard Not Established
- J - Identified by Laboratory as detected between MDL and SWSL limit

Table data presented in ug/l (ppb)

Data from Environment 1 laboratory report dated 9/25/2015, Client ID# 6018.

Appendix A

Well Logs

**September 2015 Groundwater Monitoring Reports
Washington County Closed MSW Landfill
NC Solid Waste Permit No. 94-02-MSWLF-1980**

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LOG OF HAND AUGER BORING NO.

MW-1

JOB NAME

Washington County Landfill

SITE LOCATION

Washington County



WILSON
ENGINEERING
ASSOCIATES, INC.

ELEVATION
DEPTH
SAMPLE NO
SAMPLE TYPE
SAMPLE DISTANCE
RECOVERY

DESCRIPTION OF MATERIAL

NOTES

○ CALIBRATED PENETROMETER
TONS/FT²
1 2 3 4 5 7 9

PLASTIC LIMIT % WATER CONTENT % LIQUID LIMIT %
X-----●-----△
10 20 30 40 50 70 90

⊗ DYNAMIC CONE PENETRATION BLOWS/1.75"
10 20 30 40 50 70 90

SURFACE ELEVATION

TOPSOIL

CLAYEY SILTY SAND, Tan. (SM-SC)

SAND, Tan to gray. (SW)
NOTE: Saturated

CLAYEY SILTY FINE SAND, trace of mica, dark gray. (SM-SC)

BORING TERMINATED AT 27.0 FEET
Hollow Stem Auger Used Full Depth

NOTES: WATER LEVEL IN BOREHOLE AT "N" HOURS AFTER BORING

D = _____ DRY DENSITY FROM UNDISTURBED SAMPLE LBS/FT³

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN SITU THE TRANSITION MAY BE GRADUAL.

SHEET NO. 1 OF 1	BORING STARTED
DRAWN: BNO CHECKED BVW	BORING COMPLETED
WEA JOB NO. 89-978 EA	CREW

WILSON ENGINEERING ASSOCIATES, INC.
P.O. Box 12015
Research Triangle Park
North Carolina 27709
Durham (919) 544-1733
Raleigh (919) 566-9515
Wilmington (919) 770-3010

LOG OF HAND AUGER BORING NO.

MW-2

JOB NAME

Washington County Landfill

SITE LOCATION

Washington County



WILSON
ENGINEERING
ASSOCIATES, INC.

ELEVATION DEPTH	SAMPLE NO	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL
					SURFACE ELEVATION
5					CLAYEY SILTY SAND, tan to brown. (SC-SM)
10					FINE SAND, some silt, gray. (SP) NOTE: Saturated
15					FINE TO MEDIUM SAND, trace of silt, light gray to tan. (SW) NOTE: Saturated
25					CLAYEY SILTY FINE SAND, trace of mica, dark gray. (SM-SC)
30					BORING TERMINATED AT 27.0 FEET Hollow Stem Auger Used Full Depth

NOTES

○ CALIBRATED PENETROMETER TONS/FT²
1 2 3 4 5 7 9

PLASTIC LIMIT % WATER CONTENT % LIQUID LIMIT %
X-----●-----△
10 20 30 40 50 70 90

⊗ DYNAMIC CONE PENETRATION BLOWS/1.75"
10 20 30 40 50 70 90

⊗ 11

⊗ 19

⊗ 21

⊗ 27

⊗ 6

Suspect boring terminated at 25'

NOTES: WATER LEVEL IN BOREHOLE AT 'N' HOURS AFTER BORING

D = _____ DRY DENSITY FROM UNDISTURBED SAMPLE LBS/FT³

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN SITU THE TRANSITION MAY BE GRADUAL.

SHEET NO. 1 OF 1	BORING STARTED 6/8/89
DRAWN: BNO CHECKED BVW	BORING COMPLETED 6/8/89
WEA JOB NO. 89-078 EA	CREW WRM/PS

WILSON
ENGINEERING
ASSOCIATES, INC.

P.O. Box 12015
Research Triangle Park
North Carolina 27709
Durham (919) 566-1730
Raleigh (919) 566-9515
Washington (919) 276-3016

MW-3

JOB NAME

Washington County Landfill

SITE LOCATION

Washington County



WILSON
ENGINEERING
ASSOCIATES, INC.

ELEVATION
DEPTH
SAMPLE NO
SAMPLE TYPE
SAMPLE DISTANCE
RECOVERY

DESCRIPTION OF MATERIAL

SURFACE ELEVATION

CLAYEY SILTY SAND, Tan to brown.
(SM-SC)

SAND, Tan to white. (SW)

NOTE: Saturated

CLAYEY SILTY FINE SAND, dark
gray. (SM-SC)

BORING TERMINATED AT 25.0 FEET
Hollow Stem Auger Used Full Depth

NOTES

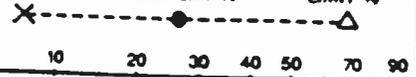
○ CALIBRATED PENETROMETER
TONS/FT²

1 2 3 4 5 7 9

PLASTIC
LIMIT %

WATER
CONTENT %

LIQUID
LIMIT %



⊗ DYNAMIC CONE
PENETRATION

BLOWS/1.75"

10 20 30 40 50 70 90

Any split sample

NOTES:



WATER LEVEL IN BOREHOLE
AT "N" HOURS AFTER BORING

D = _____ DRY DENSITY FROM UNDISTURBED SAMPLE LBS/FT³

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN SITU THE TRANSITION MAY BE GRADUAL.

SHEET NO.

OF

1

BORING STARTED

DRAWN: BNO

CHECKED BVW

BORING COMPLETED

WEA JOB NO. 89-078 EA

CREW

WILSON
ENGINEERING
ASSOCIATES, INC.

P.O. Box 12015
Research Triangle Park
North Carolina 27709

Durham (919) 544-1736
Raleigh (919) 566-0515
Washington (703) 770-2016

LOG OF HAND AUGER BORING NO.

MW-4

JOB NAME

Washington County Landfill

SITE LOCATION

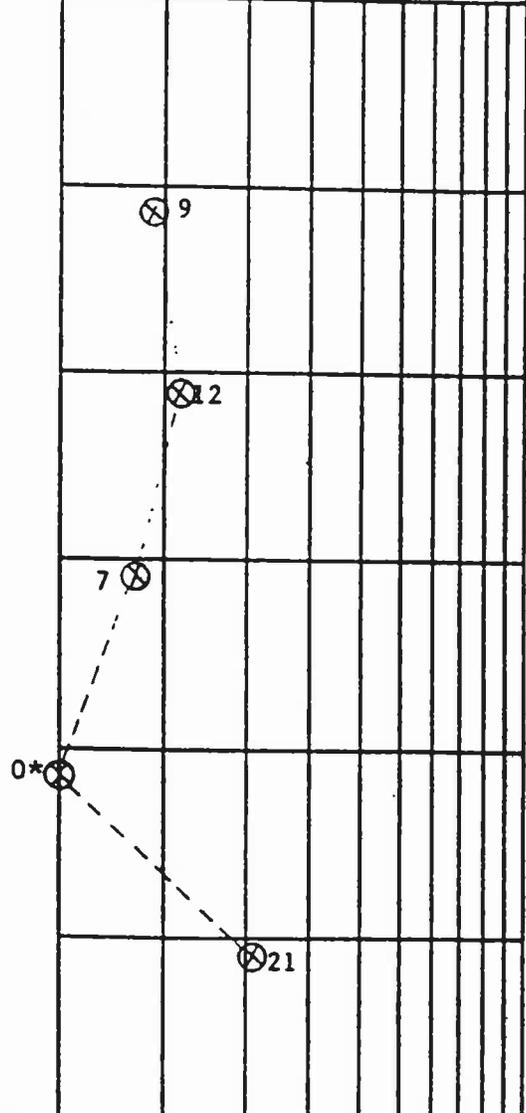
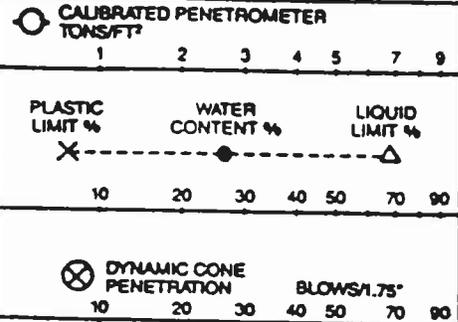
Washington County



WILSON
ENGINEERING
ASSOCIATES, INC.

ELEVATION	DEPTH	SAMPLE NO	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL
						SURFACE ELEVATION
						TOPSOIL
5						CLAYEY SILTY SAND, loose to medium dense, tan to brown. (SM-SC)
10						FINE SAND, some silt, medium dense, gray. (SP) NOTE: Saturated
15						
20						MEDIUM TO COARSE SAND, trace of silt, very loose to loose, white. (SW) NOTE: Saturated
25						
30						CLAYEY SILTY, FINE SAND, dark gray. (SM-SC) BORING TERMINATED AT 26.5 FEET Hollow Stem Auger Used Full Depth

NOTES



NOTES: WATER LEVEL IN BOREHOLE AT 'N' HOURS AFTER BORING

* - WEIGHT OF ROD
D = _____ DRY DENSITY FROM UNDISTURBED SAMPLE LBS/FT³

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN SITU THE TRANSITION MAY BE GRADUAL.

SHEET NO. OF	BORING STARTED 6/28/89
DRAWN: BNO CHECKED BVW	BORING COMPLETED 6/28/89
WEA JOB NO. 89-078 EA	CREW RP/HW

WILSON
ENGINEERING
ASSOCIATES, INC.

P.O. Box 12015
Research Triangle Park
North Carolina 27709

Durham (919) 544-1736
Raleigh (919) 566-0915
Wilmington (919) 778-3016

Appendix B

Laboratory Analytical Reports

**September 2015 Groundwater Monitoring Reports
Washington County Closed MSW Landfill
NC Solid Waste Permit No. 94-02-MSWLF-1980**

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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

ID#: 6018

WASHINGTON CO. LANDFILL
MR. CARL CRITCHER
P.O. BOX 1007
PLYMOUTH ,NC 27962

DATE COLLECTED: 09/02/15
DATE REPORTED : 09/25/15

REVIEWED BY: 

PARAMETERS	MDL	SWSL	MW-1	MW-2	MW-3	MW-4	Trip Blank	Analysis		Method Code
								Date	Analyst	
PH (field measurement), Units			5.3	6.3	6.1	5.7		09/02/15	TB	4500HB-00
Arsenic, ug/l	0.14	10.0	1.3 J	8 J	1.8 J	0.54 J		09/11/15	LFJ	EPA200.8
Barium, ug/l	0.01	100.0	123	140	24.7 J	132		09/11/15	LFJ	EPA200.8
Cadmium, ug/l	0.01	1.0	0.15 J	0.05 J	0.04 J	0.11 J		09/11/15	LFJ	EPA200.8
Total Chromium, ug/l	0.12	10.0	--- U	2.3 J	0.12 J	1.1 J		09/11/15	LFJ	EPA200.8
Lead, ug/l	0.03	10.0	--- U	--- U	--- U	0.69 J		09/11/15	LFJ	EPA200.8
Mercury, ug/l	0.05	0.20	--- U	--- U	--- U	--- U		09/11/15	MJM	245.1 R3-9
Selenium, ug/l	0.22	10.0	1.1 J	0.53 J	--- U	--- U		09/11/15	LFJ	EPA200.8
Silver, ug/l	0.01	10.0	--- U	--- U	--- U	--- U		09/11/15	LFJ	EPA200.8
Conductivity (at 25c), uMhos/cm	1.0	1.0	455	746	158	405		09/02/15	TB	2510B-97
Temperature, °C			23	23	20	20		09/02/15	TB	2550B-00
Static Water Level, feet			8.53	8.52	10.00	6.85		09/02/15	TB	
Well Depth, feet			23.09	19.30	19.97	22.90		09/02/15	TB	

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: WASHINGTON CO. LANDFILL
MR. CARL CRITCHER
P.O. BOX 1007
PLYMOUTH, NC 27962

CLIENT ID: 6018

ANALYST: MAO
DATE COLLECTED: 09/02/15
DATE ANALYZED: 09/14/15
DATE REPORTED: 09/25/15

Page: 1

REVIEWED BY: 

VOLATILE ORGANICS EPA METHOD 8260B R1(96)

PARAMETERS, ug/l	MDL	SWSL	MW-1	MW-2	MW-3	MW-4	Trip Blank
1. Chloromethane	0.77	1.0	--- U	--- U	--- U	--- U	--- U
2. Vinyl Chloride	0.63	1.0	--- U	--- U	--- 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	0.30 J	--- 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	0.30 J	--- U	--- U	--- U
13. Vinyl Acetate	0.20	50.0	--- U	--- U	--- U	--- U	--- U
14. Cis-1,2-Dichloroethene	0.25	5.0	--- U	--- U	--- 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	0.50 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-Dichloropropane	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	11.30	1.00 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	6.30	--- 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

Environment 1, Inc.
 P.O. Box 7085, 114 Oakmont Dr.
 Greenville, NC 27858
 environment1inc.com
 Phone (252) 756-6208 • Fax (252) 756-0633

CLIENT: 6018 **Week:** 39

WASHINGTON CO. LANDFILL
 MR. CARL CRITCHER
 P.O. BOX 1007
 PLYMOUTH NC 27962

(252) 793-5615

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	CLASSIFICATION:
	DATE	TIME				CHLORINE	UV	NONE										
MW-1	9-2-15	1205		23	5	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	A	A	A	A	G	G	G			WASTEWATER (NPDES)
MW-2	9-2-15	1035		23	4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	P	P	P	P	G	G	G			DRINKING WATER
MW-3	9-2-15	1015		20	4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	P	P	P	P	G	G	G			DRINKING WATER
MW-4	9-2-15	1000		20	4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	P	P	P	P	G	G	G			DRINKING WATER
Trip Blank					2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	A	A	A	A	E	E	E			DW/GW
						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>										SOLID WASTE SECTION
RELINQUISHED BY (SIG.)			DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME	COMMENTS:												
Tom Beasley			9-2-15 1435	[Signature]	9/2/15 2022	CHAIN OF CUSTODY (SEAL) MAINTAINED DURING SHIPMENT/DELIVERY												
RELINQUISHED BY (SIG.)			DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME	SAMPLES COLLECTED BY: Tom Beasley												
RELINQUISHED BY (SIG.)			DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME	SAMPLES RECEIVED IN LAB AT 0-2 °C												

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 306225

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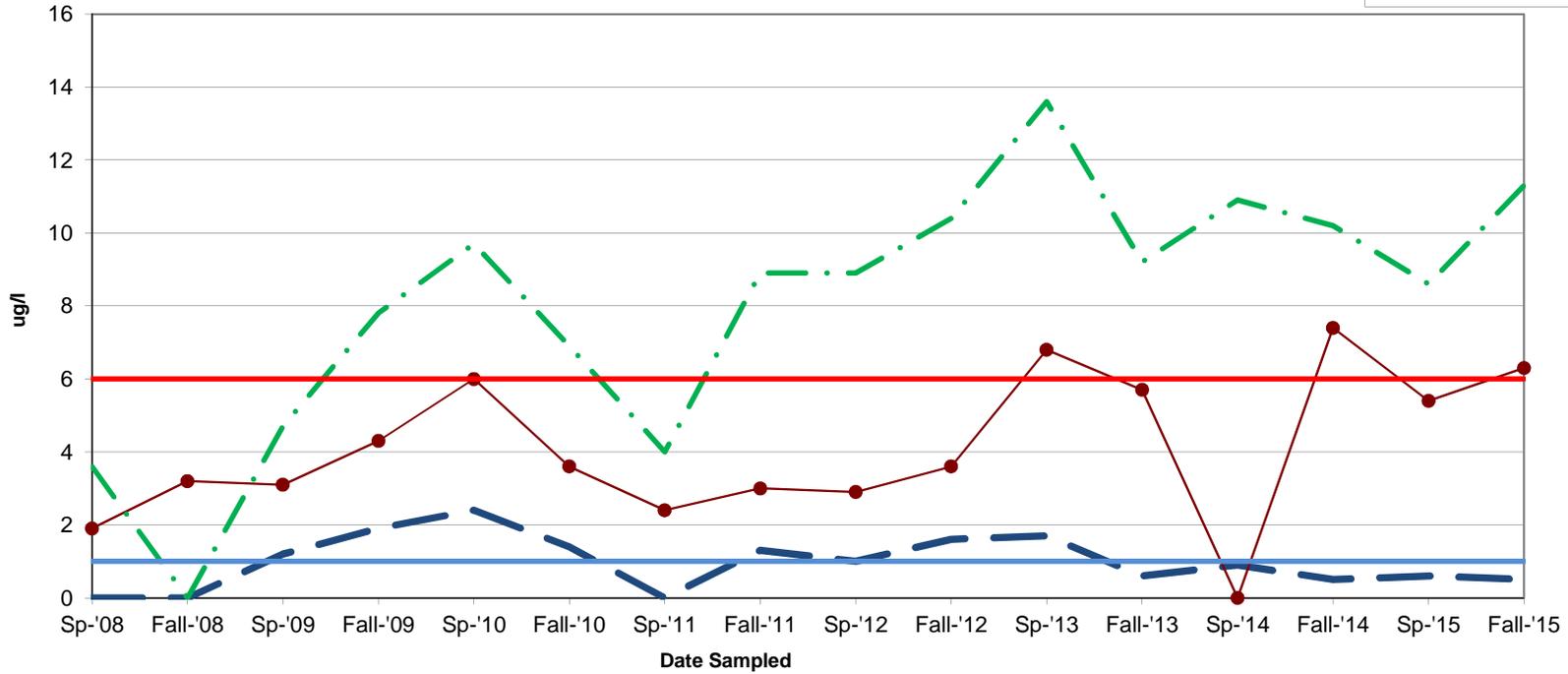
Appendix C

Historic Organic Constituent Graphs

**September 2015 Groundwater Monitoring Report
Washington County Closed MSW Landfill
NC Solid Waste Permit No. 94-02-MSWLF-1980**

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**Washington County MSW Landfill
MW-2
Historic Organic Detection Data**



Washington County MSW Landfill
MW-3
Historic Organic Detection Data

