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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).
- In accordance with NC General Statutes Chapter 89C and 89E and NC Solid Waste Management Rules 15A NCAC 13B, be sure to affix a seal to the bottom of this page, when applicable.
- 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):

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

Name: Joan Smyth, P.G. Phone: 919-828-0577 x 122

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)
Washington County C&D Landfill	Washington County Landfill 943 Washington Square Mall Plymouth, NC 27962	94-04	.0500	March 6, 2008

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
☐ Groundwater monitoring data from private water supply wells
☐ Leachate monitoring data
☐ Surface water monitoring data
☐ Methane gas monitoring data
☐ Corrective action data (specify)
☐ Other(specify)

Received JUN 2008 Waste Management

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 Smyth, P.G.	Senior Hydrogeologist	919-828-0577 x122
Facility Representative Name (Print)	Title	(Area Code) Telephone Number

Joan A. Smyth — 6/17/08
Signature — Date

Affix NC Licensed Professional Geologist/Engineer Seal here:

NORTH CAROLINA LICENSED SEAL 1369 GEOLOGIST JOAN A. SMYTH

Revised 01/2007

Washington County C&D Landfill

Ground Water Monitoring Report

March 2008 Semi-annual Monitoring Event

Washington County C&D Landfill
Washington, North Carolina
NC Solid Waste Permit # 94-04 CDLF 1996

Prepared for:
Washington County
943 Washington Square Mall
Plymouth, NC 27962

June 2008

Richardson Smith Gardner & Associates, Inc.
Engineering and Geological Services
14 North Boylan Avenue
Raleigh, North Carolina 27603

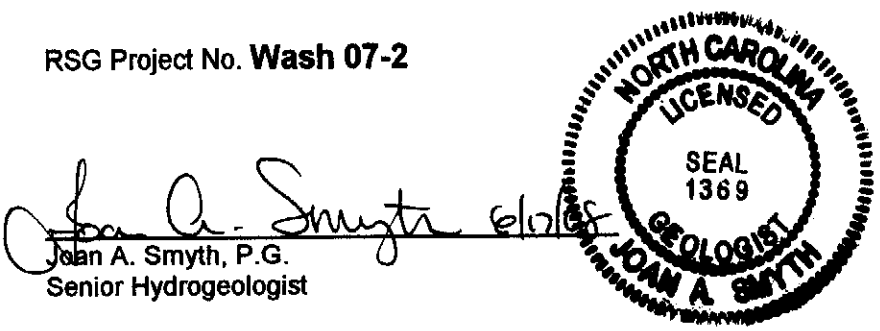
Spring 2008 Ground Water Monitoring Report

Washington County C&D Landfill
Washington, North Carolina
NC Solid Waste Permit # 94-04 CDLF-1996

Prepared for:

Washington County Solid Waste
943 Washington Square Mall
Plymouth, North Carolina 27962

RSG Project No. **Wash 07-2**



Joan A. Smyth, P.G.
Senior Hydrogeologist

June 2008

RICHARDSON SMITH GARDNER & ASSOCIATES
Engineering and Geological Services
14 N. Boylan Avenue
Raleigh, North Carolina 27603

Washington County C&D Landfill

Semi-annual Ground Water Monitoring Report
March 2008 Event

TABLES

APPENDICES

1.0 Introduction

The Washington County Landfill, operating under Solid Waste Permit #94-04-CDLF-1996, is required to submit semiannual ground water monitoring reports for ground water monitoring. This report presents the results of the first semiannual monitoring event for 2008, conducted on March 6, 2008.

The Washington County Landfill is currently accepting C&D waste. The ground water monitoring network consists of four (4) wells located around the perimeter of the landfill. This report includes summaries of the field procedures, laboratory analyses, and ground water characterization.

2.0 Sampling Procedures

The sampling event, performed by Environment 1, Inc. on March 6th, 2008, consisted of collecting samples from four (4) ground water wells (MW-1 through MW-4) in accordance with the approved site Sampling and Analysis Plan. Also included in the analysis were trip and field blanks for quality control.

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 of pH, specific conductivity, and temperature were obtained from each well.

All samples were collected in laboratory prepared containers for the specified analytical procedures. Sampling equipment (Teflon 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.

3.0 Field & Laboratory Results

3.1 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 I constituents Parameters were reported at NC DWM Solid Waste Section Limits (SWSLs). The laboratory analytical report is included as **Appendix A**.

3.2 Field and Laboratory Results

The field parameter results are included in **Table 1**, while detected constituents are presented in **Tables 2 & 3**.

Six (6) inorganic constituents, and four (4) indicator parameters, shown in **Table 2**, were detected above the SWSL in 4 wells (MW-1 through MW-4). Of these, four (4) inorganic constituents were detected above the 2L ground water standards:

Beryllium;
Cobalt;
Iron; and
Manganese.

One (1) organic constituent, Acetone, shown in **Table 3** were detected below the SWSL. No surface water samples were taken. Constituents detected below the SWSL are denoted as "J" values and are also included in **Tables 2 & 3**.

4.0 Ground Water Characterization

Currently, we are unable to locate survey data for the ground water monitoring wells. Prior to the next ground water monitoring event we expect that these wells will be surveyed and an evaluation of the potentiometric surface and ground water flow direction will be presented.

5.0 Conclusions

The data and analyses show relatively stable ground water quality at the Washington County C&D Landfill. The inorganic constituents detected are likely due to turbidity in the sample as these are naturally occurring in the soils. The detection of acetone below the SWSL is likely due to laboratory impact as acetone is common laboratory contaminant.

The next ground water monitoring event is scheduled for October 2008. Results will be reported upon completion of laboratory analysis.

Figures

Tables

Table 1
Field Parameter Results
Washington County C&D Landfill
3/6/2008

Well Number	pH (standard units)	Specific Conductance (umhos/cm)	Temp (Celsius)
MW-1	4.4	388	14
MW-2	4.2	672	15
MW-3	5.4	87	16
MW-4	5.5	65	15

Table 2
Detected Inorganic Constituents
Washington County C&D Landfill
3/6/2008

Parameters	SWSL	2L	MW-1	MW-2	MW-3	REMW-3
Arsenic	10.0	50	1.0J	1.7J	0.2J	0.6J
Barium	100.0	2000	44.4J	15.7J	21.8J	10.7J
Beryllium	1.0	--	2.5	2.2	0.1J	0.1J
Cadmium	1.0	1.75	1	0.4J	0.1J	ND
Cobalt	10.0	--	7.3J	3.1	0.7J	1.6J
Copper	10.0	1000	0.6J	1.2J	0.3J	0.5J
Iron	300.0	300	4,250	1,600	52	150
Manganese	50.0	50	305	210	2.1	47J
Lead	10.0	15	0.6J	0.8J	1.1J	0.5J
Nickel	50.0	100	4.2J	6.9J	0.4J	0.5J
Selenium	10.0	50	4.3J	1.9J	ND	ND
Silver	10.0	17.5	0.1J	0.1J	0.1J	ND
Thallium	5.0	--	0.1J	0.1J	0.1J	0.1J
Vanadium	25.0	--	1.4J	6.4J	5.1J	3.5J
Zinc	10.0	1050	11	36	1.7J	3.1J

Note: All results in ug/l (ppb)
J - Value detected above the method detection limit, but below the Solid Waste Section Quantitation Limit (SWSL).
2L = Ground Water Standards (15A NCAC 2L 0200)
Shading indicates level above 2L standard.

Table 3
Detected Organic Constituents
Washington County C&D Landfill
3/6/2008

Parameter	SWSL	2L	MW-1	MW-2	MW-3	MW-4
Acetone	1.21	100	5.40J	8.60J	5.60J	5.90J

Note: All results in ug/l (ppb)
J - indicates value detected above the method detection limit, but below the Solid Waste Section Quantitation Limit (SWSL).
2L = Ground Water Standards (15A NCAC 2L 0200).

Appendix A

Laboratory Analytical Report

Environment 1, Incorporated

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

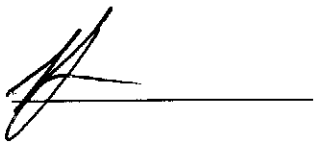
PHONE (252) 756-6208
FAX (252) 756-0633

REC'D APR 11 2008

ID#: 6030

WASHINGTON CO. LANDFILL (C&D)
MR. CARL CRITCHER
P.O. BOX 1007
PLYMOUTH ,NC 27962

DATE COLLECTED: 03/06/08
DATE REPORTED : 04/09/08

REVIEWED BY: 

PARAMETERS	MDL	SWSL	Well #1	Well #2	Well #3	Well #4	Analysis Date	Analyst	Method Code
PH (field measurement), Units			4.4	4.2	5.4	5.5	03/06/08	RJH	SM4500HB
Total Alkalinity, mg/l	1.0	1.0	--- U	--- U	6	5	03/06/08	TRB	SM2320B
Chloride, mg/l	5.0	5.0	40	28	37	46	03/10/08	MDM	SM4500-CLB
Total Dissolved Residue, mg/l	1.0	1.0	276	481	79	58	03/10/08	TRB	SM2540C
Sulfate, mg/l	5.0	250.0	106.3 J	328.8	18.6 J	7.9 J	03/12/08	TRB	SM4500-SO4E
Antimony, ug/l	0.08	6.0	--- U	--- U	--- U	--- U	03/26/08	LFJ	EPA200.8
Arsenic, ug/l	0.07	10.0	1.0 J	1.7 J	0.2 J	0.6 J	03/26/08	LFJ	EPA200.8
Barium, ug/l	0.34	100.0	44.4 J	15.7 J	21.8 J	10.7 J	03/26/08	LFJ	EPA200.8
Beryllium, ug/l	0.17	1.0	2.5	2.3	0.1 J	0.1 J	03/26/08	LFJ	EPA200.8
Cadmium, ug/l	0.04	1.0	1.0	0.4 J	0.1 J	--- U	03/26/08	LFJ	EPA200.8
Cobalt, ug/l	2.53	10.0	7.3 J	17	0.7 J	1.6 J	03/26/08	LFJ	EPA200.8
Copper, ug/l	2.24	10.0	0.6 J	1.2 J	0.3 J	0.5 J	03/26/08	LFJ	EPA200.8
Total Chromium, ug/l	1.38	10.0	--- U	--- U	--- U	--- U	03/26/08	LFJ	EPA200.8
Iron, ug/l	14.0	300.0	14250	16080	4625	1190	03/12/08	ADD	SM3111B
Manganese, ug/l	0.50	50.0	305	2623	287	47 J	03/11/08	LFJ	EPA200.7
Lead, ug/l	0.04	10.0	0.6 J	0.8 J	1.1 J	0.5 J	03/26/08	LFJ	EPA200.8
Mercury, ug/l	0.13	0.20	--- U	--- U	--- U	--- U	03/26/08	LFJ	EPA200.8
Nickel, ug/l	1.35	50.0	4.2 J	6.9 J	0.4 J	0.5 J	03/26/08	LFJ	EPA200.8
Selenium, ug/l	0.14	10.0	4.3 J	1.9 J	--- U	--- U	03/26/08	LFJ	EPA200.8
Silver, ug/l	2.32	10.0	0.1 J	0.1 J	0.1 J	--- U	03/26/08	LFJ	EPA200.8
Thallium, ug/l	0.04	5.0	0.1 J	0.1 J	0.1 J	0.1 J	03/26/08	LFJ	EPA200.8
Vanadium, ug/l	1.21	25.0	1.4 J	6.4 J	5.1 J	3.5 J	03/26/08	LFJ	EPA200.8
Zinc, ug/l	1.86	10.0	11	36	1.7 J	3.1 J	03/26/08	LFJ	EPA200.8
Conductivity (at 25c), uMhos	1.0	1.0	388	672	87	65	03/06/08	RJH	SM2510B
Temperature, °C			14	15	16	15	03/06/08	RJH	SM2550B
Static Water Level, feet			6.00	5.45	5.22	5.92	03/06/08	RJH	
Well Depth, feet			22.90	19.90	21.45	20.67	03/06/08	RJH	

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

Environment 1, Incorporated

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

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

CLIENT: WASHINGTON CO. LANDFILL (C&D)
MR. CARL CRITCHER
P.O. BOX 1007
PLYMOUTH, NC 27962

CLIENT ID: 6030

ANALYST: MAO
DATE COLLECTED: 03/06/08
DATE ANALYZED: 03/20/08
DATE REPORTED: 04/09/08

REVIEWED BY:

VOLATILE ORGANICS
EPA METHOD 8260B

PARAMETERS, ug/l	MDL	SWSL	Well #1	Well #2	Well #3	Well #4
1. Chloromethane	0.18	1.0	--- U	--- U	--- U	--- U
2. Vinyl Chloride	0.34	1.0	--- U	--- U	--- U	--- U
3. Bromomethane	0.26	10.0	--- U	--- U	--- U	--- U
4. Chloroethane	0.29	10.0	--- U	--- U	--- U	--- U
5. Trichlorofluoromethane	0.13	1.0	--- U	--- U	--- U	--- U
6. 1,1-Dichloroethene	0.14	5.0	--- U	--- U	--- U	--- U
7. Acetone	1.21	100.0	5.40 J	8.60 J	5.60 J	5.90 J
8. Iodomethane	0.12	10.0	--- U	--- U	--- U	--- U
9. Carbon Disulfide	0.14	100.0	--- U	--- U	--- U	--- U
10. Methylene Chloride	0.14	1.0	--- U	--- U	--- U	--- U
11. trans-1,2-Dichloroethene	0.13	5.0	--- U	--- U	--- U	--- U
12. 1,1-Dichloroethane	0.16	5.0	--- U	--- U	--- U	--- U
13. Vinyl Acetate	0.20	50.0	--- U	--- U	--- U	--- U
14. Cis-1,2-Dichloroethene	0.14	5.0	--- U	--- U	--- U	--- U
15. 2-Butanone	0.85	100.0	--- U	--- U	--- U	--- U
16. Bromochloromethane	0.11	3.0	--- U	--- U	--- U	--- U
17. Chloroform	0.13	5.0	--- U	--- U	--- U	--- U
18. 1,1,1-Trichloroethane	0.11	1.0	--- U	--- U	--- U	--- U
19. Carbon Tetrachloride	0.13	1.0	--- U	--- U	--- U	--- U
20. Benzene	0.16	1.0	--- U	--- U	--- U	--- U
21. 1,2-Dichloroethane	0.12	1.0	--- U	--- U	--- U	--- U
22. Trichloroethene	0.13	1.0	--- U	--- U	--- U	--- U
23. 1,2-Dichloropropane	0.17	1.0	--- U	--- U	--- U	--- U
24. Bromodichloromethane	0.13	1.0	--- U	--- U	--- U	--- U
25. Cis-1,3-Dichloropropene	0.17	1.0	--- U	--- U	--- U	--- U
26. 4-Methyl-2-Pentanone	0.68	100.0	--- U	--- U	--- U	--- U
27. Toluene	0.13	1.0	--- U	--- U	--- U	--- U
28. trans-1,3-Dichloropropene	0.14	1.0	--- U	--- U	--- U	--- U
29. 1,1,2-Trichloroethane	0.20	1.0	--- U	--- U	--- U	--- U
30. Tetrachloroethene	0.16	1.0	--- U	--- U	--- U	--- U
31. 2-Hexanone	1.00	50.0	--- U	--- U	--- U	--- U
32. Dibromochloromethane	0.14	3.0	--- U	--- U	--- U	--- U
33. 1,2-Dibromoethane	0.13	1.0	--- U	--- U	--- U	--- U
34. Chlorobenzene	0.13	3.0	--- U	--- U	--- U	--- U
35. 1,1,1,2-Tetrachloroethane	0.14	5.0	--- U	--- U	--- U	--- U
36. Ethylbenzene	0.16	1.0	--- U	--- U	--- U	--- U
37. Xylenes	0.48	5.0	--- U	--- U	--- U	--- U
38. Dibromomethane	0.17	10.0	--- U	--- U	--- U	--- U
39. Styrene	0.16	1.0	--- U	--- U	--- U	--- U
40. Bromoform	0.11	3.0	--- U	--- U	--- U	--- U
41. 1,1,2,2-Tetrachloroethane	0.16	3.0	--- U	--- U	--- U	--- U
42. 1,2,3-Trichloropropane	0.06	1.0	--- U	--- U	--- U	--- U
43. 1,4-Dichlorobenzene	0.21	1.0	--- U	--- U	--- U	--- U
44. 1,2-Dichlorobenzene	0.13	5.0	--- U	--- U	--- U	--- U
45. 1,2-Dibromo-3-Chloropropane	0.26	13.0	--- U	--- U	--- U	--- U
46. Acrylonitrile	1.49	200.0	--- U	--- U	--- U	--- U
47. trans-1,4-Dichloro-2-Butene	0.14	100.0	--- U	--- U	--- U	--- U

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

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

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

CHAIN OF CUSTODY RECORD

CLIENT: 6030 Week: 12

WASHINGTON CO. LANDFILL (C&D)
MR. CARL CRITCHER
P.O. BOX 1007
PLYMOUTH NC 27962

(252) 793-5615

DISINFECTION
- ☐ CHLORINE
- ☐ UV
- ☐ NONE
- ☐ _____

SAMPLE LOCATION	COLLECTION DATE	COLLECTION TIME	TOTAL CHLORINE, mg/l AT COLLECTION	TEMPERATURE, °C AT COLLECTION	# OF CONTAINERS	Field pH	Alkalinity	Chloride	TDS	Sulfate	Metals	Conductivity	Temperature	Field Parameter	EPA 8260B	8260 Dup. 1	8260 Dup. 2
CHLORINE NEUTRALIZED AT COLLECTION																	
pH CHECK (LAB)											12				12	12	12
CONTAINER TYPE, P/G						P	P	P	P	P	P	P	P		G	G	G
CHEMICAL PRESERVATION						A	A	A	A	A	A	A	A		E	E	E
Well #1	03 06 08	1205		14	9	G	G	G	G	G	G	G	G	G	G	G	G
Well #2	03 06 08	1015		15	8	G	G	G	G	G	G	G	G	G	G	G	
Well #3	03 06 08	1025		16	8	G	G	G	G	G	G	G	G	G	G	G	
Well #4	03 06 08	1040		15	8	G	G	G	G	G	G	G	G	G	G	G	

PARAMETERS

A - NONE D - NAOH
B - HNO_3 E - HCL
C - H_2SO_4 F - ZINC ACETATE
G - NA THIOSULFATE

CLASSIFICATION:
- ☐ WASTEWATER (NPDES)
- ☐ DRINKING WATER
- ☐ DWQ/GW
- ☒ SOLID WASTE SECTION

CHAIN OF CUSTODY MAINTAINED DURING SHIPMENT/DELIVERY
Y N

SAMPLES COLLECTED BY: (Please Print)
H Page for

SAMPLES RECEIVED IN LAB AT 2-2

RELINQUISHED BY (SIG.) (SAMPLER)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME
Dale H Page 03	06 08 2:47	Jonathan Hall 3/6/08	2:47
RELINQUISHED BY (SIG.)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME
RELINQUISHED BY (SIG.)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME

COMMENTS:

Instructions for completing this form are 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.

FORM #5

№ 160957

TITLE:

WASHINGTON COUNTY
LANDFILL SITE MAP

DRAWN BY:	CHECKED BY:	SCALE:	FIGURE NO.
J.A.L.		AS SHOWN	1

DATE:	PROJECT NO.	FILE NAME
Jun. 2008	WASH 08-2	WASH-B0001

RICHARDSON SMITH GARDNER & ASSOCIATES

14 N. Boylan Ave.
Raleigh, N.C. 27603
www.rsgengineers.com
phn: 919-828-0577
fax: 919-828-2092

REFERENCES
1. TOPOGRAPHY FROM NCDOT, DATED 2007.
2. SITE PROPOERTY LINE, WELLS AND FEATURES FROM DRAWING "PROPOSED COLF CAP SECTION" BY THE WOOTEN COMPANY, DATED DECEMBER 2004.
3. WELL LOCATIONS ARE NOT SURVEYED AND ARE THEREFORE APPROXIMATE.

0 300' 600' 900'

CD-1
CD-2
CD-3
CD-4

C&D LANDFILL
TIRE MONOFILL
EXISTING SITE ACCESS ROAD
SITE OFFICE, SCALES AND SCALEHOUSE
CLOSED MSW LANDFILL
APPROXIMATE PROPERTY LINE

N E S W

G:\CAD\Washington County\Wash 08-2\sheets\WASH-B0001.dwg - 6/16/2008 2:49 PM