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Doc/Event #:

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)(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):

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)
Davidson Co. C&D Landfill	220 Landfill Rd. Lexington, NC	29-06	.0500	March 16 - 17, 2011

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.

Joan A. Smyth, P.G.

Senior Hydrogeologist

919-828-0577 x 221

Facility Representative Name (Print)

Title

(Area Code) Telephone Number

Affix NC Licensed/ Professional Geologist Seal

Joan A. Smyth
Signature

5/19/11

Date

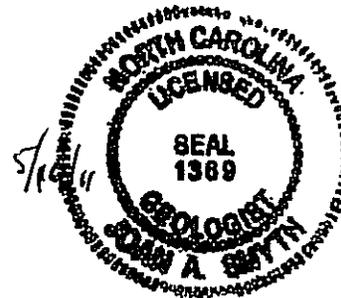
14 N. Boylan Avenue Raleigh, NC 27603

Facility Representative Address

C0828

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

Revised 6/2009



Ground Water Monitoring Report

Spring 2011 Monitoring Event

Davidson County

**Construction & Demolition Debris Landfill
Lexington, North Carolina
NC Solid Waste Permit # 29-06**

Prepared for:

Davidson County Integrated Solid Waste

1242 Old Highway 29
Thomasville, NC 27360-0024

May 2011



PRINTED ON 100% RECYCLED PAPER

**Ground Water Monitoring Report
Davidson County Construction & Demolition Debris Landfill
Spring 2011 Semi - Annual Report**

Prepared for:

**Davidson County Integrated Solid Waste
1242 Old Highway 29
Thomasville, NC 27360**

RSG Project No. **DAVDCO - 13A**



Joan A. Smyth, P.G.
Senior Hydrogeologist



May 2011



PRINTED ON 100% RECYCLED PAPER

Davidson County C&D Landfill
Ground Water Monitoring Report
Spring 2011 Monitoring Event

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1.0 Introduction

On March 14th and 15th, Richardson Smith Gardner & Associates, Inc. (RSG), personnel performed the required semi-annual ground water monitoring event at the Davidson County C&D Landfill. This sampling event satisfies the requirements of the monitoring programs for this site in accordance with 15A NCAC 13B.0500 et. seq. The following report summarizes the monitoring event, sampling procedures, field and laboratory results and ground water characterization as required by NC Solid Waste Regulations. Also included are summary tables of ground water measurements, field parameters, detected constituents and the laboratory analytical report.

2.0 Site Geology

The Davidson County Landfill facility is located in the Piedmont Physiographic Province of North Carolina. More specifically, the Geologic Map of North Carolina (1985) indicates that the site lies within, but at the western margin of, the Carolina Slate Belt. This belt includes predominantly volcanic and sedimentary rocks of Late Proterozoic to Cambrian age that have been metamorphosed and intruded by numerous igneous plutons. The boundary zone between the Carolina Slate Belt and the adjacent Charlotte Belt is known as the Gold Hill/Silver Hill shear zone.

The most detailed mapping of the area was published by the US Geological Survey in the Geologic Map of Charlotte by Goldsmith, Milton and Horton (1988). This mapping indicates that the site vicinity is underlain by three stratigraphic units: metavolcanic rocks, and felsic metavolcanic rocks.

The metavolcanic rocks include mafic, intermediate and felsic volcanic rocks, rocks from the Flat Swamp Member of the Cid Formation, and metavolcanic rocks of the Battleground Formation. The Battleground Formation is characterized as a quartz-sericite schist and phyllite. It contains subordinate beds of quartz-pebble conglomerate, quartzite, kyanite or sillmanite quartzite and manganiferous schist. The felsic metavolcanic rocks (mvf) are fine to medium grained rhyolitic and rhyodacitic metatuffs. Locally these are coarse-grained. This unit contains minor intermediate and mafic metavolcanic rocks and is probably correlative, at least in part, with felsic metavolcanic rocks of the Battleground Formation. Metamorphosed granitic plutons are also mapped in the area of the site. These plutons are megacrystic and well foliated. The rocks of this region are intruded by a swarm of metagabbro and metabasalt dikes and conformable sheets. This metagabbro typically crops out as round residual boulders that show no foliation except in the Gold Hill/Silver Hill shear zone.

Soils encountered include sandy silt and partially weathered rock. In this instance, partially weathered rock is defined as soils with a standard penetration test blow count of 100+ blows per foot.

3.0 Davidson County C&D Landfill Monitoring Event

3.1 Sampling Procedures

Ground water sampling was performed at the four (4) ground water monitoring well locations

associated with the C&D landfill. It should be noted that due to construction of Phase-2 of the C&D landfill, CDMW-4 was abandoned and replaced with CDMW-4A. Sampling procedures followed the protocols set forth in the site's Sampling and Analysis Plan¹ and the North Carolina Water Quality Monitoring Guidance Document for Solid Waste Facilities. Each well was gauged to determine ground water depth and then purged of three well volumes or until dry. The wells were purged and allowed to stabilize prior to sample collection. Ground water purging and sample collection was performed using a factory sealed Teflon™ bailer.

Field measurements of temperature, pH, turbidity, and conductivity were taken at each well. Groundwater elevations are summarized in **Table 1** while field measurements are summarized in **Table 2**. Field data sheets are included in **Appendix A** while monitoring well boring logs are included in **Appendix B**. Samples were collected in laboratory containers provided by Environment 1, Inc. (NC Laboratory Certification # 10). Upon collection, the samples were sealed, placed on ice, and transported via overnight delivery to the laboratory. Field blanks were also collected for quality control purposes.

During the sampling process, each well was inspected for signs of damage or unusual conditions. CDMW-3 was found to be damaged and could not be sampled.

3.2 Field and Laboratory Results

Ground water samples were collected from the three monitoring wells (CDMW-2, CDMW-4A and CDMW-5) located down gradient of the C&D Landfill. Field parameters were consistent with previous sampling events. Analysis of these samples indicated detectable levels above the Solid Waste Section Limit (SWSL)² of iron (CDMW-2, CDMW-4A & CDMW-5), manganese (CDMW-4A & CDMW-5), and zinc (CDMW-4A). The results are summarized in **Table 3**. Two (2) inorganic constituents were detected above their 15A NCAC 2L.0200 (2L) / Ground Water Protection (GWP) standards:

- Iron (CDMW-2, CDMW-4A & CDMW-5); and
- Manganese (CDMW-4A & CDMW-5).

These constituents are naturally occurring in the soils and groundwater of North Carolina. The concentrations detected are likely due to turbidity within the samples which can yield “biased high” results of naturally occurring constituents.

Detected constituents below the Solid Waste Section Limit (SWSL) are denoted as “J” values and are also included in **Table 3**. The laboratory report is included in **Appendix C**.

4.0 Site Ground Water Characterization

A potentiometric surface map was prepared for the entire site from ground water elevation data collected during this sampling event.

¹ Davidson County C&D Landfill Water Quality Monitoring Plan. G.N. Richardson and Associates, June 1998.

² New Guidelines for electronic submittal of environmental monitoring data memo, NCDENR DWM, Solid Waste Section, October 27, 2006.

Ground water at the C&D landfill is migrating both to the north and east at this site. An ephemeral to perennial stream is located east and northeast of the C&D landfill. The potentiometric surface for the landfill property is shown on **Figure 1**.

5.0 Conclusions

The results presented above from the C&D landfill indicate two (2) inorganic constituents at concentrations above the 2L groundwater standards. These are likely due variations in these naturally occurring constituents and are not indicative of ground water impact from the landfill. The next ground water monitoring event is scheduled for September 2011. A monitoring report will be submitted after receipt of analytical data from that event.

Figures



LEGEND

-  POTENTIOMETRIC SURFACE (DASHED WHERE INFERRED)
-  PROPERTY LINES
-  MEASUREMENT FOR HYDRAULIC GRADIENT CALCULATION
-  GROUNDWATER MONITORING WELLS
-  SURFACE WATER MONITORING LOCATION

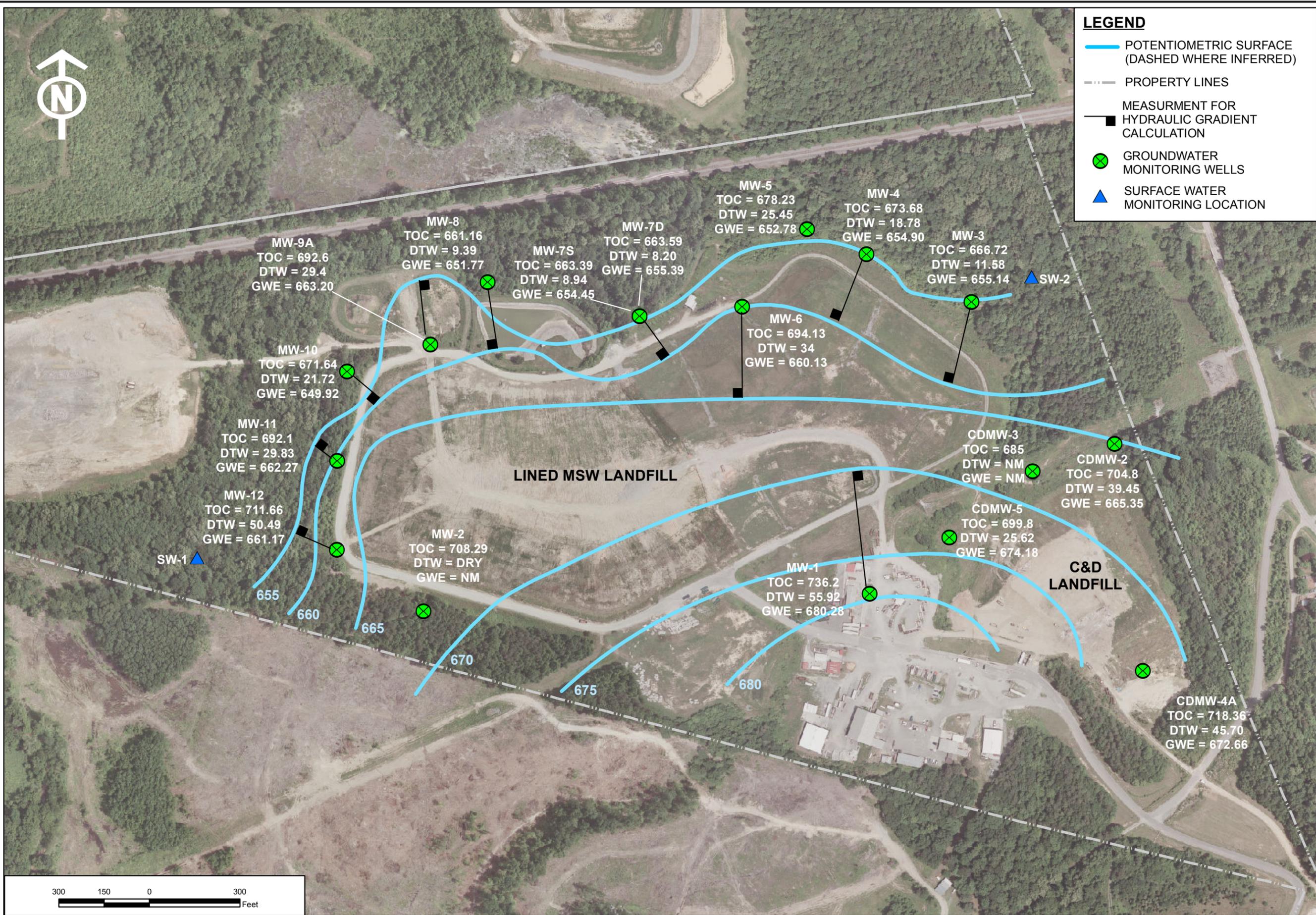


FIGURE NO.	1	FILE NAME	david_lined
SCALE:	AS SHOWN	PROJECT NO.	DAVDCO-4
CHECKED BY:	J.A.S.	DATE:	MAY 2011
DRAWN BY:	D.M.M.		

**DAVIDSON COUNTY
LINED AND C&D LANDFILLS
POTENTIOMETRIC SURFACE MAP
SPRING 2011**

C:\gw\dauidson sp 2011\potentiometric map data\david_lined.mxd 5/13/2011 11:40:23 AM



Tables



By: DMM
Date: 4/26/2011

Table 1
Ground Water Elevations
Davidson County C&D Landfill
3/14-15/2011

Well	Northing	Easting	TOC Elevation (feet)	Water Level (feet)	GW Elev (feet)
CDMW-2	763805.91	1651700.59	704.80	39.45	665.35
CDMW-3	763715.69	1651429.31	685.00	NM	NM
CDMW-4A	763055.46	1651793.86	718.36	45.70	672.66
CDMW-5	763497.87	1651153.73	699.80	25.62	674.18

- Survey data from Michael Green and Associates.
- CDMW-3 was damaged and was unable to be sampled during this event

Table 2
Field Parameters
Davidson County C&D Landfill
3/14-15/2011

Well	pH (Std Units)	Conductivity (uhmos/cm)	Temperature (Celsius)	Turbidity (NTU)
CDMW-2	6.4	170	13.0	98
CDMW-3	NM	NM	NM	NM
CDMW-4A	6.4	510	15.0	78
CDMW-5	6.0	240	10.0	71

Notes: - Data Collected by Don Misenheimer and Lindsay Quant of RSG Engineers Inc.
 - CDMW-3 was damaged and was unable to be sampled during this event

Table 3
Detected Inorganic Parameters
Davidson County C&D Landfill
3/14-15/2011

Constituent	SWSL	2L	CDMW-2	CDMW-3	CDMW-4A	CDMW-5
Inorganic						
total alkalinity	NE	NE	34	NM	229	87
chloride	NE	250000	13	NM	47	21
sulfate	250000	250000	37.6 J	NM	35.7 J	32.2 J
arsenic	10	50	0.33 J	NM	0.29 J	ND
barium	100	2000	61.9 J	NM	18.9 J	50.1 J
beryllium	1	4	ND	NM	0.08 J	ND
cadmium	1	1.75	0.39 J	NM	0.18 J	0.15 J
cobalt	10	70	0.44 J	NM	2.0 J	2.0 J
copper	10	1000	1.6 J	NM	4.8 J	1.4 J
total chromium	10	50	ND	NM	7.1 J	0.30 J
iron	300	300	1594	NM	4010	1249
manganese	50	50	37 J	NM	166	139
lead	10	15	0.35 J	NM	1.9 J	0.13 J
mercury	0.2	1	ND	NM	0.07 J	ND
nickel	50	100	0.28 J	NM	4.7 J	2.3 J
selenium	10	50	ND	NM	0.90 J	ND
silver	10	17.5	0.05 J	NM	0.04 J	ND
thallium	5.5	NE	0.08 J	NM	ND	ND
vanadium	25	3.5	3.5 J	NM	11.1 J	5.2 J
zinc	10	1050	4.4 J	NM	10	3.4 J

- SWSL - Solid Waste Section Quantitation Limits
- GWP - Ground Water Protection Standards
- ND - Not detected at or above SWSL
- Shading - Levels above 2L standard or no 2L standard
- Bold Letters - Constituents detected above SWSL limit
- J - Constituents detected below SWSL limit
- Note - All SWSL, 2L Standards and Results are in ug/l.
- Lab analysis performed by Environment 1, Inc.
- NA - No water detected to collect sample.

- CDMW-3 was damaged and was unable to be sampled during this event

Appendix A

Field Data Sheets

Groundwater Monitoring Well Inspection Checklist

This checklist is provided to inform our clients about the health and maintenance of their groundwater monitoring wells. This checklist provides no information pertaining to groundwater quality, but focuses on the physical characteristics of the well and its vicinity.

Site: DAVIDSON C&D

Date: 3-14-11

Well ID: MW-2

Initials: MD

Please mark the appropriate box for the following areas of concern. If you answer NO, please explain in the comment box.

		YES	NO
1. Well Vicinity			
A. Well is assessable and surrounding area is safe for employees.	<input checked="" type="checkbox"/>		
B. Vicinity is free of potential contaminants.	<input checked="" type="checkbox"/>		
C. Dead trees, etc. not in danger of falling and damaging wells.	<input checked="" type="checkbox"/>		
D. Well is in the same location as on field maps.	<input checked="" type="checkbox"/>		
E.			
Comments/ items addressed or to be addressed: <p style="text-align: center; font-size: 1.2em;">o.k.</p>			

		YES	NO
2. Concrete Apron and Steel Case			
A. Concrete apron is present and in good condition.	<input checked="" type="checkbox"/>		
B. Steel case is present and upright.	<input checked="" type="checkbox"/>		
C. Steel case is not movable and cemented in.	<input checked="" type="checkbox"/>		
D. Steel case lid opens and closes correctly with no gaps. Lock can be easily applied.	<input checked="" type="checkbox"/>		
E. Well tag is present with pertinent information.	<input checked="" type="checkbox"/>		
F. Well numbers are prominently displayed (Reflective address numbers, etc.).	<input checked="" type="checkbox"/>		
G. No evidence of tampering is present.	<input checked="" type="checkbox"/>		
H. Lock operates properly.	<input checked="" type="checkbox"/>		
I.			
Comments/ items addressed or to be addressed: <p style="text-align: center; font-size: 1.2em;">o.k.</p>			

		YES	NO
3. PVC Riser			
A. Monitoring cap is present and provides a tight seal.	<input checked="" type="checkbox"/>		
B. Riser is of appropriate height (has not been cut off too low within the steel case).	<input checked="" type="checkbox"/>		
C. Riser is not loose/ easily moved.	<input checked="" type="checkbox"/>		
D. Riser does not appear cracked, broken, or brittle.	<input checked="" type="checkbox"/>		
E. No visual sign of external contamination entering well through riser.	<input checked="" type="checkbox"/>		
F.			
Comments/ items addressed or to be addressed: <p style="text-align: center; font-size: 1.2em;">o.k.</p>			

Groundwater Monitoring Well Inspection Checklist

This checklist is provided to inform our clients about the health and maintenance of their groundwater monitoring wells. This checklist provides no information pertaining to groundwater quality, but focuses on the physical characteristics of the well and its vicinity.

Site: DAVIDSON C+D Date: 3.14.11
 Well ID: MW-3 Initials: MD

Please mark the appropriate box for the following areas of concern. If you answer NO, please explain in the comment box.

1. Well Vicinity		YES	NO
A. Well is assessable and surrounding area is safe for employees.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B. Vicinity is free of potential contaminants.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C. Dead trees, etc. not in danger of falling and damaging wells.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
D. Well is in the same location as on field maps.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments/ items addressed or to be addressed: <p style="text-align: center;"><i>O.K.</i></p>			

2. Concrete Apron and Steel Case		YES	NO
A. Concrete apron is present and in good condition.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
B. Steel case is present and upright.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
C. Steel case is not movable and cemented in.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
D. Steel case lid opens and closes correctly with no gaps. Lock can be easily applied.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
E. Well tag is present with pertinent information.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
F. Well numbers are prominently displayed (Reflective address numbers, etc.).	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
G. No evidence of tampering is present.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
H. Lock operates properly.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
I.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Comments/ items addressed or to be addressed: <p style="text-align: center;"><i>Well is damaged and needs repair. Cannot Sample.</i></p>			

3. PVC Riser		YES	NO
A. Monitoring cap is present and provides a tight seal.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
B. Riser is of appropriate height (has not been cut off too low within the steel case).	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
C. Riser is not loose/ easily moved.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
D. Riser does not appear cracked, broken, or brittle.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
E. No visual sign of external contamination entering well through riser.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
F.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments/ items addressed or to be addressed: <p style="text-align: center;"><i>well is damaged and needs repair. Cannot Sample.</i></p>			

Groundwater Monitoring Well Inspection Checklist

This checklist is provided to inform our clients about the health and maintenance of their groundwater monitoring wells. This checklist provides no information pertaining to groundwater quality, but focuses on the physical characteristics of the well and its vicinity.

Site: DAVIDSON (FD) Date: 3-14-11
 Well ID: MW-4 Initials: MD

Please mark the appropriate box for the following areas of concern. If you answer NO, please explain in the comment box.

		YES	NO
1. Well Vicinity			
A.	Well is assessable and surrounding area is safe for employees.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
B.	Vicinity is free of potential contaminants.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
C.	Dead trees, etc. not in danger of falling and damaging wells.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
D.	Well is in the same location as on field maps.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
E.		<input type="checkbox"/>	<input type="checkbox"/>
Comments/ items addressed or to be addressed: <p style="text-align: center;"><i>o.k.</i></p>			

		YES	NO
2. Concrete Apron and Steel Case			
A.	Concrete apron is present and in good condition.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
B.	Steel case is present and upright.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
C.	Steel case is not movable and cemented in.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
D.	Steel case lid opens and closes correctly with no gaps. Lock can be easily applied.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
E.	Well tag is present with pertinent information.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
F.	Well numbers are prominently displayed (Reflective address numbers, etc.).	<input checked="" type="checkbox"/>	<input type="checkbox"/>
G.	No evidence of tampering is present.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
H.	Lock operates properly.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
I.		<input type="checkbox"/>	<input type="checkbox"/>
Comments/ items addressed or to be addressed: <p style="text-align: center;"><i>o.k.</i></p>			

		YES	NO
3. PVC Riser			
A.	Monitoring cap is present and provides a tight seal.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
B.	Riser is of appropriate height (has not been cut off too low within the steel case).	<input checked="" type="checkbox"/>	<input type="checkbox"/>
C.	Riser is not loose/ easily moved.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
D.	Riser does not appear cracked, broken, or brittle.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
E.	No visual sign of external contamination entering well through riser.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
F.		<input type="checkbox"/>	<input type="checkbox"/>
Comments/ items addressed or to be addressed: <p style="text-align: center;"><i>o.k.</i></p>			

Groundwater Monitoring Well Inspection Checklist

This checklist is provided to inform our clients about the health and maintenance of their groundwater monitoring wells. This checklist provides no information pertaining to groundwater quality, but focuses on the physical characteristics of the well and its vicinity.

Site: DAVIDSON C&D Date: 3-14-11

Well ID: MW-5 Initials: MD

Please mark the appropriate box for the following areas of concern. If you answer NO, please explain in the comment box.

		YES	NO
1. Well Vicinity			
A.	Well is assessable and surrounding area is safe for employees.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
B.	Vicinity is free of potential contaminants.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
C.	Dead trees, etc. not in danger of falling and damaging wells.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
D.	Well is in the same location as on field maps.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
E.		<input type="checkbox"/>	<input type="checkbox"/>
Comments/ items addressed or to be addressed: <p style="text-align: center;"><i>o.k.</i></p>			

		YES	NO
2. Concrete Apron and Steel Case			
A.	Concrete apron is present and in good condition.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
B.	Steel case is present and upright.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
C.	Steel case is not movable and cemented in.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
D.	Steel case lid opens and closes correctly with no gaps. Lock can be easily applied.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
E.	Well tag is present with pertinent information.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
F.	Well numbers are prominently displayed (Reflective address numbers, etc.).	<input checked="" type="checkbox"/>	<input type="checkbox"/>
G.	No evidence of tampering is present.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
H.	Lock operates properly.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
I.		<input type="checkbox"/>	<input type="checkbox"/>
Comments/ items addressed or to be addressed: <p style="text-align: center;"><i>o.k.</i></p>			

		YES	NO
3. PVC Riser			
A.	Monitoring cap is present and provides a tight seal.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
B.	Riser is of appropriate height (has not been cut off too low within the steel case).	<input checked="" type="checkbox"/>	<input type="checkbox"/>
C.	Riser is not loose/ easily moved.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
D.	Riser does not appear cracked, broken, or brittle.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
E.	No visual sign of external contamination entering well through riser.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
F.		<input type="checkbox"/>	<input type="checkbox"/>
Comments/ items addressed or to be addressed: <p style="text-align: center;"><i>o.k.</i></p>			

Appendix B

Monitoring Well Information

FIELD BOREHOLE LOG		BOREHOLE NUMBER B-6
PROJECT NUMBER: Davdco-14 PROJECT NAME: Davideon County Landfill LOCATION: Lexington, North Carolina DRILLING COMPANY: Engineering Tectonics RIG TYPE & NUMBER: MOBILE B-50 DRILLING METHOD: Hollow Stem/Air Rotary/Hammer WEATHER: Sunny, 95 DEGREES FIELD PARTY: R. Barron GEOLOGIST: P. May DATE BEGUN: 7/16/98		TOP OF CASING ELEVATION: TBD TOTAL DEPTH: 51.0 FT GROUND SURFACE ELEVATION: TBD SHEET: 1 OF 2
STATIC WATER LEVEL (BLS) WD=While Drilling AB=After Boring		
DATE COMPLETED: 7/16/98		Depth(Ft) - - Time - - Date: - -

DEPTH	BLDN COUNTS	SAMPLING METHOD	SAMPLE NUMBER	MOISTURE	CONSISTENCY	SAMPLE RECOVERY	DRILL METHOD	LITHOLOGY DESCRIPTION	DEPTH	LITHOLOGY	WELL INSTALLATION
1.0							AR	<p>SAND: Tan orange fine to medium with some coarse sand mottled with iron and manganese, SP.</p>	1.0		
0.0									0.0		
1.0									1.0		
2.0									2.0		
3.0	10	Ss	S1						3.0		
4.0	15								4.0		
5.0	18								5.0		
6.0									6.0		
7.0									7.0		
8.0		Ss	S2						8.0		
9.0	17								9.0		
10.0	26								10.0		
11.0	34								11.0		
12.0								12.0			
13.0	50/5	Ss	S3					13.0			
14.0								14.0			
15.0								15.0			
16.0								16.0			
17.0								17.0			
18.0	50/4	Ss	S4					18.0			
19.0								19.0			
20.0								20.0			
21.0								21.0			
22.0								22.0			
23.0							AH	23.0			
24.0								24.0			

GRANITE: Tan and gray granite. Dry.

FIELD BOREHOLE LOG						BOREHOLE NUMBER	
						B-6	
PROJECT NUMBER: Davdco-14 PROJECT NAME: Davidson County Landfill LOCATION: Lexington, North Carolina DRILLING COMPANY: Engineering Tectonics RIG TYPE & NUMBER: MOBILE B-50 DRILLING METHOD: Hollow Stem/Air Rotary/Hammer WEATHER: Sunny, 95 DEGREEE6 FIELD PARTY: R. Barron GEOLGIST: P. May DATE BEGUN: 7/16/98				TOP OF CASING ELEVATION: TBD TOTAL DEPTH: 51.0 FT GROUND SURFACE ELEVATION: TBD SHEET: 2 OF 2			
STATIC WATER LEVEL (BLS)							
WD=While Drilling AB=After Boring							
Depth(ft)		-		-		-	
Time		-		-		-	
Date		-		-		-	

DEPTH	BLOW COUNTS	SAMPLING METHOD	SAMPLE NUMBER	MOISTURE	CONSISTANCY	SAMPLE RECOVERY	DRILL METHOD	LITHOLOGY DESCRIPTION	DEPTH	LITHOLOGY	WELL INSTALLATION
25.0								GRANITE: Tan and gray granite. Dry.	25.0		
26.0											
27.0											
28.0		G	S5								
29.0											
30.0											
31.0											
32.0											
33.0		G	S6								
34.0											
35.0								GRANITE: Gray and tan granite. Darker than above. Water seam at 51 feet. Boring terminated.	35.0		
36.0											
37.0											
38.0		G	S7								
39.0											
40.0											
41.0											
42.0											
43.0		G	S8								
44.0											
45.0											
46.0											
47.0											
48.0		G	S9								
49.0											
50.0											
51.0											



G. N. Richardson & Associates, Inc.
 14 North Boylan Avenue, Raleigh NC 27603
 (919) 828-0577

FIELD BOREHOLE LOG

BOREHOLE NUMBER **CDMW-4a** Page 1 of 2

PROJECT NAME: **Davidson County C&D Landfill**
 LOCATION: **Lexington, NC**
 DRILLING CO: **Engineering Tectonics, P.A.**
 DRILLING METHOD: **AR/AH**
 FIELD PARTY: **R. Barron**
 GEOLOGIST: **J. Smyth**
 DATE BEGUN: **1/24/06** COMPLETED: **1/24/06**

TOTAL DEPTH: **78**
 GROUND SURFACE ELEVATION: **NA**
 TOP OF CASING ELEVATION:

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

DEPTH	BLOW COUNT	SAMPLING METHOD	RECOVERY	DRILL METHOD	DESCRIPTION	LITHOLOGY	DEPTH	WELL INSTALLATION
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0.0				AR	SAND: Highly weathered partially weathered rock, granitic sand rock, dry. Auger refusal at 17 feet		0.0	
1.0				1.0				
2.0				2.0				
3.0		Grab		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		Grab			10.0			
11.0					11.0			
12.0					12.0			
13.0					13.0			
14.0					14.0			
15.0		Grab			15.0			
16.0					16.0			
17.0				AH	GRANITE: Weathered granite, dry.		17.0	
18.0				18.0				
19.0					19.0			
20.0					20.0			
21.0					21.0			
22.0		Grab			22.0			
23.0					23.0			
24.0					24.0			
25.0					25.0			
26.0					26.0			
27.0					27.0			
28.0		Grab			28.0			
29.0					29.0			
30.0		Grab			30.0			
31.0					SANDY SILT: Soil seam of sandy silt, dry.		31.0	
32.0				32.0				
33.0					GRANITE: Weathered granite, dry.		33.0	
34.0		Grab		34.0				
35.0				35.0				
36.0		Grab		36.0				
37.0					37.0			
38.0					38.0			
39.0					39.0			



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FIELD BOREHOLE LOG

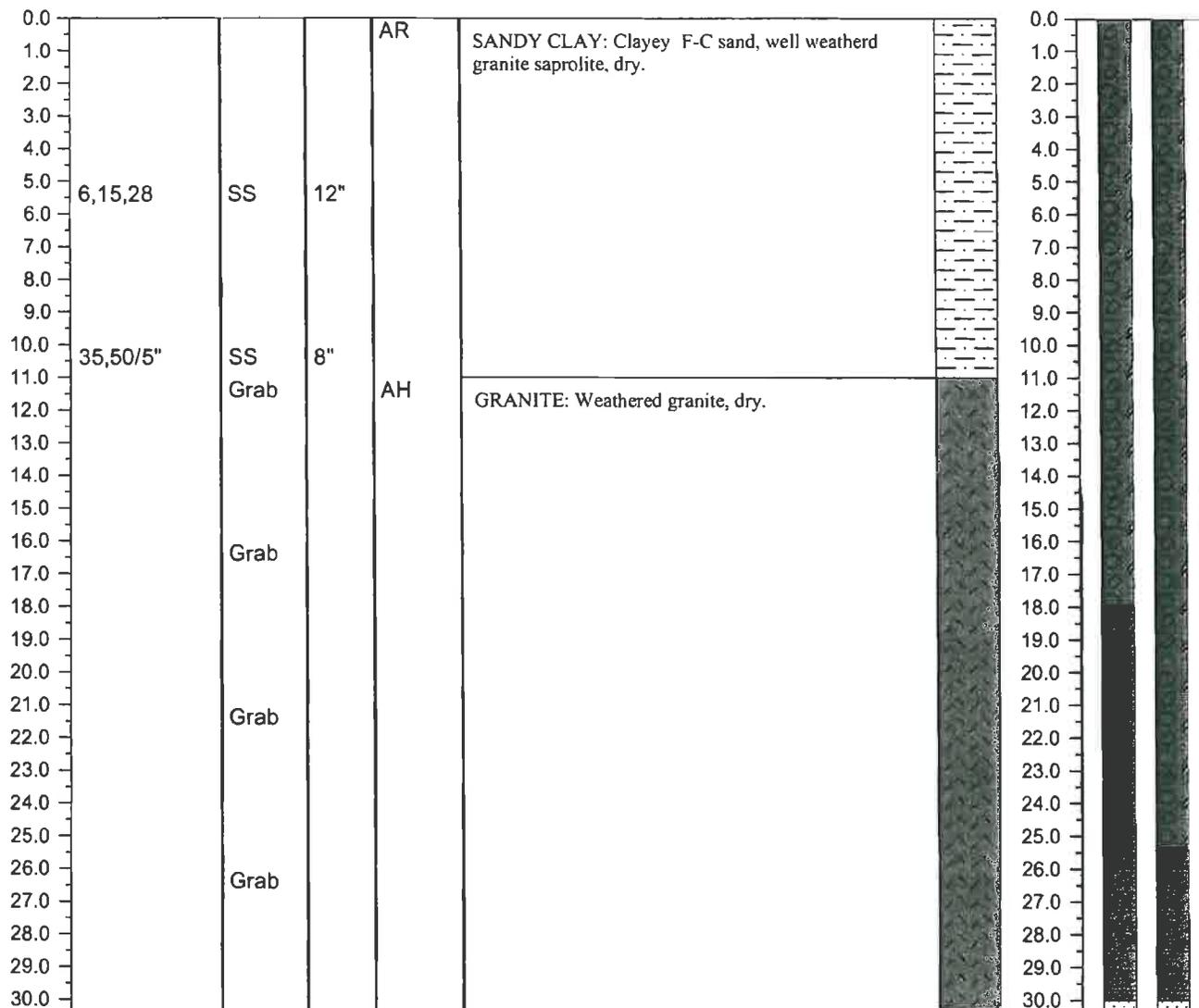
BOREHOLE NUMBER **CDMW-5** Page 1 of 2

PROJECT NAME: **Davidson County C&D Landfill**
 LOCATION: **Lexington, NC**
 DRILLING CO: **Engineering Tectonics, P.A.**
 DRILLING METHOD: **AR/AH**
 FIELD PARTY: **R. Barron**
 GEOLOGIST: **J. Smyth**
 DATE BEGUN: **1/30/06** COMPLETED: **1/30/06**

TOTAL DEPTH: **47**
 GROUND SURFACE ELEVATION: **NA**
 TOP OF CASING ELEVATION:

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

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

BOREHOLE NUMBER CDMW-5

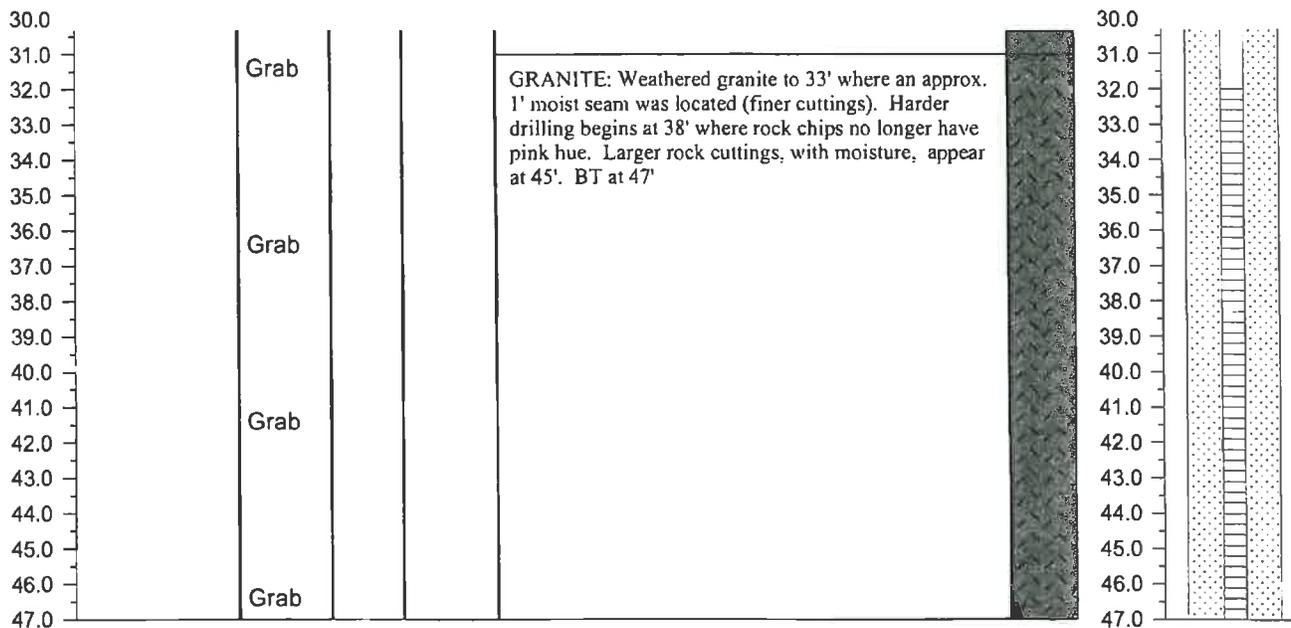
Page 2 of 2

PROJECT NAME: Davidson County C&D Landfill
LOCATION: Lexington, NC
DRILLING CO: Engineering Tectonics, P.A.
DRILLING METHOD: AR/AH
FIELD PARTY: R. Barron
GEOLOGIST: J. Smyth
DATE BEGUN: 1/30/06 COMPLETED: 1/30/06

TOTAL DEPTH: 47
GROUND SURFACE ELEVATION: NA
TOP OF CASING ELEVATION:

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

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

Laboratory Analytical Report

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#: 6050

DAVIDSON COUNTY LANDFILL (C&D)
MS. JOAN SMYTH
RICHARDSON SMITH GARDNER
133 SPRING AVENUE
FUQUAY VARINA, NC 27526

DATE COLLECTED: 03/15/11
DATE REPORTED : 04/06/11

REVIEWED BY: 

PARAMETERS	MDL	SWSL	CDMW-2		CDMW-3		CDMW-4A		CDMW-5		Trip	Analysis	Method
									Blank	Date	Analyst	Code	
Total Alkalinity, mg/l	1.0	1.0	34	Missing	229	87			03/18/11	TRB	SM2320B		
Chloride, mg/l	5.0	5.0	13	Missing	47	21			03/21/11	HLB	SM4500-CLB		
Total Dissolved Residue, mg/l	1.0	1.0	180	Missing	395	225			03/21/11	MEL	SM2540C		
Sulfate, mg/l	5.0	250.0	37.6 J	Missing	35.7 J	32.2 J			03/21/11	TRB	SM426C		
Antimony, ug/l	0.14	6.0	---	U	---	U			03/24/11	CMF	EPA200.8		
Arsenic, ug/l	0.10	10.0	0.33 J	Missing	0.29 J	---	U		03/24/11	CMF	EPA200.8		
Barium, ug/l	0.02	100.0	61.9 J	Missing	18.9 J	50.1 J			03/24/11	CMF	EPA200.8		
Beryllium, ug/l	0.02	1.0	---	U	0.08 J	---	U		03/24/11	CMF	EPA200.8		
Cadmium, ug/l	0.02	1.0	0.39 J	Missing	0.18 J	0.15 J			03/24/11	CMF	EPA200.8		
Cobalt, ug/l	0.03	10.0	0.44 J	Missing	2.0 J	2.0 J			03/24/11	CMF	EPA200.8		
Copper, ug/l	0.02	10.0	1.6 J	Missing	4.8 J	1.4 J			03/24/11	CMF	EPA200.8		
Total Chromium, ug/l	0.04	10.0	---	U	7.1 J	0.30 J			03/24/11	CMF	EPA200.8		
Iron, ug/l	15.9	300.0	1594	Missing	4010	1249			03/30/11	ADD	SM3111B		
Manganese, ug/l	0.61	50.0	37 J	Missing	166	139			04/04/11	LFJ	EPA200.7		
Lead, ug/l	0.02	10.0	0.35 J	Missing	1.9 J	0.13 J			03/24/11	CMF	EPA200.8		
Mercury, ug/l	0.05	0.20	---	U	0.07 J	---	U		03/24/11	HG	EPA200.8		
Nickel, ug/l	0.04	50.0	0.28 J	Missing	4.7 J	2.3 J			03/24/11	CMF	EPA200.8		
Selenium, ug/l	0.20	10.0	---	U	0.90 J	---	U		03/24/11	CMF	EPA200.8		
Silver, ug/l	0.02	10.0	0.05 J	Missing	0.04 J	---	U		03/24/11	CMF	EPA200.8		
Thallium, ug/l	0.02	5.5	0.08 J	Missing	---	---	U		03/24/11	CMF	EPA200.8		
Vanadium, ug/l	0.14	25.0	3.5 J	Missing	11.1 J	5.2 J			03/24/11	CMF	EPA200.8		
Zinc, ug/l	0.24	10.0	4.4 J	Missing	10	3.4 J			03/24/11	CMF	EPA200.8		

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: DAVIDSON COUNTY LANDFILL (C&D)
MS. JOAN SMYTH
RICHARDSON SMITH GARDNER
133 SPRING AVENUE
FUQUAY VARINA, NC 27526

CLIENT ID: 6050
ANALYST: MAO
DATE COLLECTED: 03/15/11
DATE ANALYZED: 03/21/11
DATE REPORTED: 04/06/11

Page: 1

REVIEWED BY: 

VOLATILE ORGANICS EPA METHOD 8260B

PARAMETERS, ug/l	MDL	SWSL	CDMW-2	CDMW-4A	CDMW-5	Trip Blank
1. Chloromethane	0.77	1.0	--- U	--- U	--- U	--- U
2. Vinyl Chloride	0.63	1.0	--- U	--- U	--- U	--- 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	--- U	--- U
13. Vinyl Acetate	0.20	50.0	--- U	--- U	--- U	--- U
14. Cis-1,2-Dichloroethene	0.25	5.0	--- U	--- U	--- U	--- 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	--- U	--- 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-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	--- 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	--- U	--- 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	--- U	--- 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
48. Tetrahydrofuran	0.39	1.0	--- U	--- U	--- U	--- U

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

CHAIN OF CUSTODY RECORD

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

CLIENT: 6050 Week: 12

DAVIDSON COUNTY LANDELL (CAD)
 MS. JOAN SMYTH
 RICHARDSON SMITH GARDNER
 133 SPRING AVENUE
 FUQUAY VARRINA NC 27526

(919) 828-0577

SAMPLE LOCATION	COLLECTION		TOTAL CHLORINE, mg/l AT COLLECTION	TEMPERATURE, °C AT COLLECTION	# OF CONTAINERS	DISINFECTION			Alkalinity	Chloride	TDS	Sulfate	Metals	8260 Dup. 1	8260 Dup. 2	EPA 8260B	PARAMETERS	CLASSIFICATION:
	DATE	TIME				<input type="checkbox"/> CHLORINE	<input type="checkbox"/> UV	<input type="checkbox"/> NONE										
CDMW-2	3/15/11	11:16a			8													
CDMW-3	3/15/11	11:45a			7													
CDMW-4A	3/15/11	11:45a			7													
CDMW-5	3/15/11	11:28a			7													
Trip Blank					2													
RELINQUISHED BY (SIG.)	DATE/TIME	RECEIVED BY (SIG.)	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	DATE/TIME	DATE/TIME	DATE/TIME	DATE/TIME
<i>[Signature]</i>	3/17/11 2:30p	<i>[Signature]</i>	3/18 8:35	<i>[Signature]</i>														
RELINQUISHED BY (SIG.)	DATE/TIME	RECEIVED BY (SIG.)	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	DATE/TIME	DATE/TIME	DATE/TIME	DATE/TIME
<i>[Signature]</i>		<i>[Signature]</i>		<i>[Signature]</i>														

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 213056