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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):

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 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)
Davidson County Holly Grove Landfill	220 Landfill Road Lexington, NC 27292	29-02	.0500	April 8, 2009

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)

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. — Facility Representative Name (Print)

Senior Hydrogeologist — Title

919-828-0577 x 122 — (Area Code) Telephone Number

Joan A. Smyth — Signature

5/27/09 — Date

Affix NC Licensed Professional Geologist/Engineer Seal here:

NORTH CAROLINA LICENSED SEAL 1249 GEOLOGIST JOAN A. SMYTH

Revised 01/2007

Ground Water Monitoring Report

April 2009 Monitoring Event

Davidson County
Holly Grove Landfill
Lexington, North Carolina
NC Solid Waste Permit # 29-02

Prepared for:
Davidson County Integrated Solid Waste
1242 Old Highway 29
Thomasville, NC 27360-0024

May 2009

RICHARDSON SMITH GARDNER
& ASSOCIATES
ENGINEERING & GEOLOGICAL
SERVICES

Ground Water Monitoring Report
Davidson County Holly Grove Landfill
April 2009 Semi - Annual Report

Prepared for:

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

RSG Project No. **DAVDCO - 1**

Joan A. Smyth, P.G.
Senior Hydrogeologist

NORTH CAROLINA LICENSED SEAL 1369 GEOLOGIST JOAN A. SMYTH

May 2009

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ENGINEERING & GEOLOGICAL SERVICES

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Davidson County Holly Grove Landfill

Ground Water Monitoring Report
April 2009 Monitoring Event

1.0 INTRODUCTION 1

2.0 SITE GEOLOGY 1

3.0 DAVIDSON COUNTY HOLLY GROVE LANDFILL MONITORING EVENT 1
3.1 Sampling Procedures 2
3.2 Field and Laboratory Results 2

4.0 SITE GROUND WATER CHARACTERIZATION 3

5.0 CONCLUSIONS 3

FIGURES

Figure 1 – Davidson County Landfill Site Potentiometric Map

TABLES

Table 1 – Holly Grove Landfill Ground Water Elevations
Table 2 – Holly Grove Landfill Field Parameters
Table 3 – Holly Grove Landfill Detected Inorganic Constituents
Table 4 – Holly Grove Landfill Detected Organic Constituents
Table 5 – Holly Grove Landfill Ground Water Velocities

APPENDICES

Appendix A – Field Data Sheets
Appendix B – Monitoring Well Information
Appendix C – Laboratory Analytical Report

1.0 Introduction

On April 8th 2009, Richardson Smith Gardner & Associates, Inc. (RSG), personnel performed the required semi-annual ground water monitoring event at the Davidson County Holly Grove Landfill required by 15A NCAC 13B.0600 This sampling event satisfies the requirements of the monitoring programs for this site. 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 two stratigraphic units: metavolcanic rocks (mv), and metamorphosed granodiorite (mgd).

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 metamorphosed granodiorite (mgd) occurs in the central portion of the proposed Phase 2 area. This unit is locally porphyritic.

3.0 Davidson County Holly Grove Landfill Monitoring Event

The following 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 field measurements and detected constituents, as well as the laboratory analysis reports.

The Holly Grove Landfills consists of three separate phases (**Figure 1**). Areas 1 and 2 were unlined municipal solid waste facilities owned and operated by Davidson County Integrated Solid Waste. The Scarlett Landfill, to the west of Areas 1 and 2, is a private landfill formerly owned by Ms. Virginia White, and previously owned and operated by Mr. Scarlett. The property was recently sold to another individual and is being used to house storage containers. These three landfills comprise the Holly Grove Landfill (under permit 29-02) and are monitored as one unit due to the close proximity of the waste margins.

3.1 Sampling Procedures

Ground water sampling was performed at sixteen (16) well locations. Monitoring well MW-7 was previously abandoned after significant damage and could not be sampled. Well replacement efforts yielded no water, so this location has been removed from the well network. In addition, semi-annual surface water monitoring was performed at three locations around the landfills. The background well for the site, MW-4, is also MW-1s for the lined Davidson County Landfill (Permit 29-06). The lined landfill was sampled in conjunction with this site. This data is included in the summary tables of this report.

Sampling procedures followed the protocols set forth in the site's Water Quality Monitoring Plan 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. Ground water purging and sample collection was performed using a factory sealed teflon bailer.

Field measurements of pH, specific conductivity, turbidity, and temperature, were taken at each well and surface water sampling location. 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 to the above referenced laboratory. All samples were preserved and remained on fresh ice prior to shipment, and were received by the laboratory and analyzed within specified holding times.

During the sampling process, all wells were found to be in good condition and free of obstructions.

3.2 Field and Laboratory Results

All samples were transported to the laboratory facility under proper chain of custody analyzed at the specified Solid Waste Section Limits (SWSLs) for Appendix I constituents[1]. The laboratory analysis was received by our office and reviewed for accuracy. The laboratory report is attached as **Appendix C**. Ground water and field measurements included as **Tables 1 and 2,** respectively, remained similar to previous results.

Inorganic laboratory analysis detected eight (8) inorganic constituents (barium, cobalt, copper, total chromium, iron, manganese, selenium and zinc) in eleven (11) wells. One constituent, iron was detected above the 15A NCAC 2L.0200 (2L) or Ground Water Protection (GWP) standards.

Surface water sampling was conducted at three points, with the results included in **Table 3** and locations shown in **Figure 1**. One constituent, zinc was detected in SW-3 above the SWSL limit.

[1] New guidelines for electronic submittal of environmental monitoring data memo, NCDENR DWM, Solid Waste Section, October 27, 2006.

Organic analyses resulted in ten (10) parameters detected in nine (9) wells. Detected organic constituents are shown in **Table 4**. Five (5) organic constituents were detected above the 2L standard:

- 1,2-dichloroethane (MW-1a);
- 1,2-dichloropropane (MW-1a);
- 1,4-dichlorobenzene (MW-1a, MW-2, MW-9, MW-11, MW-12, and MW-13);
- benzene (MW-1a, MW-2, MW-8, MW-9, and MW-13); and
- vinyl chloride (MW-1a, MW-2, MW-11 and MW-12).

A review of historical data indicates general stability of detected constituents across the site. It should be noted that many of the recent detections shown are "J" values below the SWSL.

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. Ground water velocity was calculated for each monitoring well on-site using the equation V = (KI)/n where:

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

Ground water velocities at the Holly Grove Landfill ranged from 0.021 feet/day (MW-3a) to 1.74 feet/day (MW-9). These calculations are included in **Table 5**. The data indicates that ground water is flowing generally to the south and southwest across most of the site. This is consistent with ground water flow patterns previously seen at this site. The potentiometric surface map (**Figure 1**) is also attached for your review.

5.0 Conclusions

During the spring 2009 monitoring event all proper sampling protocols were followed. Analysis of samples indicated the detection of organic constituents in certain wells above the 2L or GWP standards. Monitoring wells located further from the landfill (MW-15, MW-16 and MW-17 do not indicate exceedances of the 2L or GWP standards. In general, detected ground water concentrations at the site have remained stable.

The next ground water monitoring event is tentatively scheduled for October 2009. The results of this event will be reported to NCDENR upon completion of analysis of laboratory data.

Figures

Tables

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Table 1
Ground Water Elevations
Davidson County Holly Grove Landfill
04/08/09

Well	Northing	Easting	Top of Casing	Depth to Water	Water Table Elevation
MW-1a	761805.92	1652937.78	781.39	23.86	757.53
MW-2	760300.50	1651891.20	665.81	4.88	660.93
MW-3a	759934.68	1652014.48	662.49	3.81	658.68
MW-4*	763311.06	1650889.31	736.20	57.25	678.95
MW-5	759598.21	1652909.22	664.29	6.10	658.19
MW-6	761831.31	1652957.39	781.25	61.51	719.74
MW-8	762282.39	1652584.06	737.60	13.89	723.71
MW-9	762456.06	1651933.56	719.03	9.75	709.28
MW-10	762057.74	1651474.85	678.24	4.16	674.08
MW-11	761158.90	1651252.18	680.07	23.42	656.65
MW-12	760532.63	1651580.20	671.48	15.65	655.83
MW-13	760559.79	1651571.95	671.31	13.45	657.86
MW-14	762282.39	1652584.06	666.04	8.27	657.77
MW-15	760193.97	1652774.91	697.33	4.97	692.36
MW-16	761771.23	1653160.68	757.54	6.94	750.60
MW-17	761121.95	1652995.87	737.99	6.83	731.16

* MW-4 associated with Holly Grove Landfill is the same as MW-1 associated with Lined Landfill.

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Table 2
Field Parameters
Davidson County Holly Grove Landfill
04/08/09

Well	pH (std units)	Turbidity (NTU)	Sp. Conductivity (uMhos)	Temperature (degrees C)
MW-1a	7.2	28.9	1680	15
MW-2	6.6	9.96	960	14
MW-3A	7.6	7.3	510	10
MW-4*	7.0	28	520.0	15
MW-5	7.8	6.59	180	11
MW-6	8	305	790	14.5
MW-8	7.5	33.9	960	14
MW-9	6.8	NM	1270	12
MW-10	7.5	59.7	164	11
MW-11	7.3	33.9	1530	13
MW-12	7.3	10.7	2090	14
MW-13	6.9	32.7	2870	13
MW-14	7.6	6.13	380	11
MW-15	8	117	150	11
MW-16	7.4	20.1	830	13
MW-17	7.2	22.6	580	11
SW-1	8.8	9.17	170	11.5
SW-2	8.9	7.49	180	12
SW-3	8.3	1.72	290	10

NM- Not Measured

Note: SW-3 associated with the C&D landfill reported in Holly Grove Landfill laboratory analysis.
Data Collected by Don Misenheimer and Richard Sheehan of RSG Engineers Inc.
* MW-4 associated with Holly Grove Landfill is the same as MW-1 associated with the Phase 1 Lined Landfill.

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Table 3
Detected Inorganic Parameters
Davidson County Holly Grove Landfill
04/08/09

Constituent	SWSL	2L or GWP	MW-1a	MW-2	MW-3a	MW-4	MW-5	MW-6	MW-8	MW-9	MW-10	MW-11	MW-12	MW-13	MW-14	MW-15	MW-16	MW-17	SW-1	SW-2	SW-3
Antimony	6	1.4	0.2 J	0.1 J	ND	ND	ND	0.2 J	ND	0.9 J	0.3 J	0.1 J	0.4 J	0.3 J	ND	0.1 J	0.1 J	ND	0.2 J	0.2 J	0.7 J
Arsenic	10	50	0.8 J	0.7 J	0.2 J	0.5 J	ND	0.9 J	0.8 J	1.7 J	2.4 J	1.3 J	3.3 J	6.9 J	ND	0.2 J	0.5 J	0.5 J	0.4 J	0.3 J	0.3 J
Barium	100	2000	**302**	**170**	24.5 J	38.8 J	26.4 J	**136**	49.8 J	**197**	**189**	94.5 J	72.8 J	**331**	39.2 J	56.3 J	40.8 J	**112**	15.3 J	16.2 J	66.6 J
Beryllium	1	4	ND	ND	ND	ND	ND	0.1 J	ND	0.1 J	0.1 J	ND	ND	ND	ND	0.1 J	ND	ND	ND	ND	ND
Cadmium	1	1.75	0.1 J	0.2 J	0.1 J	0.1 J	ND	0.3 J	0.1 J	0.1 J	0.3 J	0.3 J	0.6 J	0.1 J	0.1 J	0.1 J	0.1 J	0.1 J	ND	ND	ND
Cobalt	10	70	8.9 J	**10**	0.6 J	1.2 J	0.3 J	2.6 J	1.2 J	**12**	7.9 J	2.1 J	0.8 J	**16**	0.5 J	**10**	1.2 J	1.7 J	0.6 J	0.5 J	1 J
Copper	10	1000	2.5 J	2.4 J	3 J	5.3 J	1.6 J	6.7 J	2.7 J	7.6 J	**11**	4.4 J	2.3 J	4.2 J	3.2 J	8.5 J	5.7 J	1.8 J	2.8 J	2.4 J	1.8 J
Total Chromium	10	50	0.4 J	ND	0.2 J	0.5 J	0.4 J	**11**	4.6 J	4.8 J	1.7 J	0.2 J	0.3 J	0.7 J	0.3 J	**11**	2 J	ND	0.6 J	0.3 J	0.1 J
Lead	10	15	0.2 J	0.1 J	0.3 J	0.9 J	0.1 J	3 J	0.6 J	0.7 J	1 J	0.2 J	0.9 J	0.5 J	0.1 J	0.8 J	4.2 J	0.3 J	0.6 J	0.4 J	0.2 J
Nickel	50	100	6.4 J	3.6 J	1.6 J	2.5 J	1.3 J	4.6 J	4.5 J	7.3 J	19 J	10 J	9 J	24 J	1.4 J	8.7 J	3.9 J	1.8 J	3.3 J	3.8 J	1.8 J
iron	300	300	ND	ND	ND	**1202**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
manganese	50	50	ND	ND	ND	**44**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium	10	50	0.5 J	0.8 J	0.4 J	1.8 J	ND	0.6 J	1.2 J	0.8 J	6.6 J	4.6 J	**10**	**19**	0.6 J	ND	2.3 J	0.6 J	0.3 J	0.3 J	0.6 J
Silver	10	17.5	0.1 J	ND	0.1 J	0.1 J	0.1 J	ND	ND	0.1 J	ND	ND	0.1 J	ND	ND	ND	ND	ND	0.1 J	UD	0.1 J
Thallium	5	0.28	ND	ND	ND	0.1 J	ND	0.1 J	ND	ND	ND	ND	0.1 J	ND	ND	ND	ND	ND	0.2 J	0.1 J	0.1 J
Vanadium	25	3.5	11.2 J	2 J	3.3 J	4.8 J	2.1 J	16.6 J	4.3 J	7.6 J	9.9 J	1.3 J	3.7 J	4.7 J	4.5 J	14.6 J	5.7 J	3.8 J	2.5 J	1.8 J	1.2 J
Zinc	10	1050	4.7 J	5.1 J	1.8 J	2.5 J	3.2 J	**28**	**11**	**18**	6 J	7 J	4.7 J	6.7 J	3.2 J	**16**	7.1 J	7 J	7.2 J	6.2 J	**38**

SWSL - Solid Waste Section Quantitative Limits
ND - Not detected at or above SWSL
Shading - Detection above 2L standard or GWP standard
Bold Letters - Constituents detected above SWSL
J - Constituents detected below SWSL
ND - Not detected at or above SWSL
GWP - Ground Water Protection Standard
- MW-4 is also known as MW-1 for the Phase 1 lined landfill.
Note: - All SWSLs, 2L Standards and Results are in ug/l.
- Lab data analysis by Environment 1, Inc.

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ENGINEERING & GEOLOGICAL SERVICES

Table 4
Detected Organic Parameters
Davidson County Holly Grove Landfill
04/08/09

Parameter	SWSL	2L or GWP	MW-1a	MW-2	MW-3a	MW-4	MW-5	MW-6	MW-8	MW-9	MW-10	MW-11	MW-12	MW-13	MW-14	MW-15	MW-16	MW-17	SW-1	SW-2	SW-3
1,1-dichloroethane	5	70	**23.5**	1 J	2.9 J	ND	0.2 J	**7**	**14.7**	0.3 J	ND	2.8 J	**19.1**	**10.3**	1.9 J	0.4 J	0.3 J	**13.8**	ND	ND	ND
1,1-dichloroethene	5	7	0.2 J	ND	ND	ND	ND	ND	0.5 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-dichlorobenzene	5	24	ND	ND	ND	ND	ND	ND	ND	0.2 J	ND	0.5 J	0.4 J	1.4 J	ND	ND	ND	ND	ND	ND	ND
1,2-dichloroethane	1	0.38	**1.4**	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.6 J	0.4 J	ND	ND	ND	ND	ND	ND	ND
1,2-dichloropropane	1	0.51	**2.3**	ND	ND	ND	ND	0.4 J	ND	ND	ND	0.3 J	0.7 J	ND	ND	ND	ND	0.8 J	ND	ND	ND
1,4-dichlorobenzene	1	1.4	**3.1**	**2**	0.3 J	ND	ND	ND	ND	**3**	0.4 J	**1.5**	**4.9**	**8.4**	ND	ND	ND	ND	ND	ND	ND
acetone	100	700	20.6 J	1.8 J	1.3 J	ND	ND	51.2 J	3.7 J	2.5 J	5.2 J	4.8 J	3.3 J	6.8 J	2.2 J	17.9 J	15.3 J	9.6 J	ND	ND	ND
benzene	1	1	**4.9**	**1**	ND	ND	ND	ND	**2**	**1.6**	ND	0.3 J	0.7 J	**2.5**	ND	ND	ND	0.2 J	ND	ND	ND
Carbon Disulfide	100	700	ND	ND	ND	ND	0.3 J	ND	0.6 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
chlorobenzene	3	50	0.4 J	2.8 J	ND	ND	ND	ND	ND	**3**	0.9 J	2.9 J	1.6 J	**8.6**	ND	ND	ND	ND	ND	ND	ND
chloroethane	10	2800	3.2 J	6.1 J	0.6 J	ND	0.3 J	ND	2.1 J	1 J	0.3 J	ND	3.8 J	**46.0**	ND	ND	ND	0.5 J	ND	ND	ND
chloromethane	1	2.6	ND	ND	ND	ND	ND	ND	0.5 J	ND	ND	0.5 J	ND	ND	0.2 J	ND	ND	0.2 J	ND	ND	ND
cis-1,2-dichloroethene	5	70	**34.5**	0.2 J	0.2 J	ND	ND	0.5 J	0.4 J	2.1 J	ND	0.5 J	0.4 J	ND	ND	ND	ND	1.9 J	ND	ND	ND
ethylbenzene	1	550	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.3 J	ND	ND	ND	ND	ND	ND	ND
methylene chloride	1	4.6	0.2 J	0.2 J	0.3 J	ND	ND	0.3 J	0.3 J	ND	ND	0.2 J	0.5 J	0.2 J	0.3 J	ND	ND	ND	ND	ND	ND
trichlorofluoromethane	1	2100	ND	ND	ND	ND	ND	ND	0.2 J	ND	ND	ND	0.9 J	ND	**4.2**	ND	ND	ND	ND	ND	ND
trans-1,2-dichloroethene	5	100	0.4 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
tetrachloroethene	1	0.7	0.5 J	ND	ND	ND	ND	0.4 J	0.2 J	ND	ND	ND	ND	ND	ND	ND	ND	**0.8 J**	ND	ND	ND
toluene	1	1000	0.2 J	0.2 J	ND	0.2 J	ND	0.2 J	0.3 J	0.4 J	0.2 J	0.2 J	0.2 J	0.9 J	0.2 J	ND	ND	ND	0.2 J	ND	ND
trichloroethene	1	2.8	**1.3**	ND	0.2 J	ND	ND	0.4 J	**2.5**	ND	ND	ND	0.3 J	0.2 J	0.2 J	ND	ND	**1.0**	ND	ND	ND
vinyl chloride	1	0.015	**2.2**	**3.5**	ND	ND	ND	ND	0.9 J	0.6 J	ND	**1.1**	**3.2**	0.8 J	ND	ND	ND	0.5 J	ND	ND	ND
xylenes	5	530	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1 J	ND	ND	ND	ND	ND	ND	ND

SWSL - Solid Waste Section Quantitative Limits
GWP - Ground Water Protection Standard
ND - Not detected at or above SWSL
Shading - Levels above 2L standard or no 2L standard
Bold Letters - Constituents detected above SWSL
J - Constituents detected below SWSL
NS - Not Sampled
Note - 0.20 J Toluene was detected in Trip Blank.
- MW-4 is also known as MW-1 for the Phase 1 lined landfill.
All SWSLs, 2L Standards and Results are in ug/l.
Lab data analysis by Environment 1, Inc.

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ENGINEERING & GEOLOGICAL SERVICES

Table 5
Ground Water Velocity Calculations
Holly Grove Landfill - Davidson County
04/08/09

Parameter Units	Hydraulic Conductivity feet/day	Porosity %	Hydraulic Gradient feet/foot	Velocity feet/day
MW-1a	0.415	0.15	0.067	0.185
MW-2	1.440	0.20	0.047	0.338
MW-3a	0.105	0.15	0.030	0.021
MW-5	1.814	0.20	0.039	0.354
MW-9	3.787	0.20	0.092	1.742
MW-10	1.541	0.20	0.061	0.470
MW-11	1.440	0.15	0.045	0.427
MW-13	5.890	0.20	0.048	1.414
MW-15	5.688	0.20	0.019	0.540

Notes: Velocity calculated from V=KI/n:

V = Velocity
K = Hydraulc Conductivity
I = Gradient
n = Porosity

Hydraulic conductivity data from slug testing

Appendix A

Field Data Sheets

RICHARDSON SMITH GARDNER & ASSOCIATES
ENGINEERING & GEOLOGICAL SERVICES

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 (HG) **Date:** 4/6/09

Well ID: MW-1A **Initials:** DM

Please mark the aproprate 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.	✓	
B. Vicinity is free of potential contaminants.	✓	
C. Dead trees, etc. not in danger of falling and damaging wells.	✓	
D. Well is in the same location as on field maps.	✓	
E.		

Comments/ items addressed or to be addressed:

o.k.

2. Concrete Apron and Steel Case	YES	NO
A. Concrete apron is present and in good condition.		✓
B. Steel case is present and upright.	✓	
C. Steel case is not movable and cemented in.	✓	
D. Steel case lid opens and closes correctly with no gaps. Lock can be easily applied.	✓	
E. Well tag is present with pertinent information.	✓	
F. Well numbers are prominently displayed (Reflective address numbers, etc.).		✓
G. No evidence of tampering is present.	✓	
H. Lock operates properly.		✓
I.		

Comments/ items addressed or to be addressed:

Well numbers applied to steel casing

well locks replaced

if concrete apron is present, it appears to be buried

3. PVC Riser	YES	NO
A. Monitoring cap is present and provides a tight seal.	✓	
B. Riser is of appropriate height (has not been cut off too low within the steel case).	✓	
C. Riser is not loose/ easily moved.	✓	
D. Riser does not appear cracked, broken, or brittle.	✓	
E. No visual sign of external contamination entering well through riser.	✓	
F.	✓	

Comments/ items addressed or to be addressed:

o.k.

RICHARDSON SMITH GARDNER & ASSOCIATES
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Groundwater Monitoring Well Inspection Checklist

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Site: DAVIDSON (HG) **Date:** 4/6/09

Well ID: MW-2 **Initials:** DM

Please mark the aproprate 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.	✓	
B. Vicinity is free of potential contaminants.	✓	
C. Dead trees, etc. not in danger of falling and damaging wells.	✓	
D. Well is in the same location as on field maps.	✓	
E.		

Comments/ items addressed or to be addressed:

o.k

2. Concrete Apron and Steel Case	YES	NO
A. Concrete apron is present and in good condition.		✓
B. Steel case is present and upright.	✓	
C. Steel case is not movable and cemented in.	✓	
D. Steel case lid opens and closes correctly with no gaps. Lock can be easily applied.	✓	
E. Well tag is present with pertinent information.	✓	
F. Well numbers are prominently displayed (Reflective address numbers, etc.).		✓
G. No evidence of tampering is present.	✓	
H. Lock operates properly.		✓
I.		

Comments/ items addressed or to be addressed:

well numbers applied to steel casing

well lock replaced.

if concrete apron is present, it appears to be buried

3. PVC Riser	YES	NO
A. Monitoring cap is present and provides a tight seal.		
B. Riser is of appropriate height (has not been cut off too low within the steel case).		
C. Riser is not loose/ easily moved.		
D. Riser does not appear cracked, broken, or brittle.		
E. No visual sign of external contamination entering well through riser.		
F.		

Comments/ items addressed or to be addressed:

o.k.

RICHARDSON SMITH GARDNER & ASSOCIATES
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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 (HG) **Date:** 4/6/09

Well ID: MW-3a **Initials:** DM

Please mark the aproprate 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.	✓	
B. Vicinity is free of potential contaminants.	✓	
C. Dead trees, etc. not in danger of falling and damaging wells.	✓	
D. Well is in the same location as on field maps.	✓	
E.		

Comments/ items addressed or to be addressed:

ok

2. Concrete Apron and Steel Case	YES	NO
A. Concrete apron is present and in good condition.		✓
B. Steel case is present and upright.	✓	
C. Steel case is not movable and cemented in.	✓	
D. Steel case lid opens and closes correctly with no gaps. Lock can be easily applied.	✓	
E. Well tag is present with pertinent information.	✓	
F. Well numbers are prominently displayed (Reflective address numbers, etc.).		✓
G. No evidence of tampering is present.	✓	
H. Lock operates properly.		✓
I.		

Comments/ items addressed or to be addressed:

Well numbers applied to steel casing

Well lock replaced

if concrete apron is present, it appears to be buried

3. PVC Riser	YES	NO
A. Monitoring cap is present and provides a tight seal.	✓	
B. Riser is of appropriate height (has not been cut off too low within the steel case).	✓	
C. Riser is not loose/ easily moved.	✓	
D. Riser does not appear cracked, broken, or brittle.	✓	
E. No visual sign of external contamination entering well through riser.	✓	
F.		

Comments/ items addressed or to be addressed:

ok.

RICHARDSON SMITH GARDNER & ASSOCIATES
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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 (HG) **Date:** 4/6/09

Well ID: MW-5 **Initials:** DM

Please mark the aproprate 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.	✓	
B. Vicinity is free of potential contaminants.	✓	
C. Dead trees, etc. not in danger of falling and damaging wells.	✓	
D. Well is in the same location as on field maps.	✓	
E.		

Comments/ items addressed or to be addressed:

2. Concrete Apron and Steel Case	YES	NO
A. Concrete apron is present and in good condition.		✓
B. Steel case is present and upright.	✓	
C. Steel case is not movable and cemented in.	✓	
D. Steel case lid opens and closes correctly with no gaps. Lock can be easily applied.	✓	
E. Well tag is present with pertinent information.	✓	
F. Well numbers are prominently displayed (Reflective address numbers, etc.).		✓
G. No evidence of tampering is present.	✓	
H. Lock operates properly.		✓
I.		

Comments/ items addressed or to be addressed:

well numbers applied to steel casing

well lock replaced

concrete apron is broken in half, with half removed

3. PVC Riser	YES	NO
A. Monitoring cap is present and provides a tight seal.	✓	
B. Riser is of appropriate height (has not been cut off too low within the steel case).	✓	
C. Riser is not loose/ easily moved.	✓	
D. Riser does not appear cracked, broken, or brittle.	✓	
E. No visual sign of external contamination entering well through riser.	✓	
F.		

Comments/ items addressed or to be addressed:

RICHARDSON SMITH GARDNER & ASSOCIATES
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Groundwater Monitoring Well Inspection Checklist

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Site: DAVIDSON (HG) **Date:** 4/6/09

Well ID: MW-6 **Initials:** DM

Please mark the aproprate 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.	✓	
B. Vicinity is free of potential contaminants.	✓	
C. Dead trees, etc. not in danger of falling and damaging wells.	✓	
D. Well is in the same location as on field maps.	✓	
E.		

Comments/ items addressed or to be addressed:

o.k.

2. Concrete Apron and Steel Case	YES	NO
A. Concrete apron is present and in good condition.	✓	
B. Steel case is present and upright.	✓	
C. Steel case is not movable and cemented in.	✓	
D. Steel case lid opens and closes correctly with no gaps. Lock can be easily applied.	✓	
E. Well tag is present with pertinent information.	✓	
F. Well numbers are prominently displayed (Reflective address numbers, etc.).		✓
G. No evidence of tampering is present.	✓	
H. Lock operates properly.		✓
I.		

Comments/ items addressed or to be addressed:

well numbers applied to steel casing

well lock replaced

3. PVC Riser	YES	NO
A. Monitoring cap is present and provides a tight seal.	✓	
B. Riser is of appropriate height (has not been cut off too low within the steel case).	✓	
C. Riser is not loose/ easily moved.	✓	
D. Riser does not appear cracked, broken, or brittle.	✓	
E. No visual sign of external contamination entering well through riser.	✓	
F.		

Comments/ items addressed or to be addressed:

o.k.

RICHARDSON SMITH GARDNER & ASSOCIATES
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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 (HG) **Date:** 4/6/09

Well ID: MW-8 **Initials:** DM

Please mark the aproprate 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.	✓	
B. Vicinity is free of potential contaminants.	✓	
C. Dead trees, etc. not in danger of falling and damaging wells.	✓	
D. Well is in the same location as on field maps.	✓	
E.		

Comments/ items addressed or to be addressed:

o.k.

2. Concrete Apron and Steel Case	YES	NO
A. Concrete apron is present and in good condition.	✓	
B. Steel case is present and upright.	✓	
C. Steel case is not movable and cemented in.	✓	
D. Steel case lid opens and closes correctly with no gaps. Lock can be easily applied.	✓	
E. Well tag is present with pertinent information.	✓	
F. Well numbers are prominently displayed (Reflective address numbers, etc.).		✓
G. No evidence of tampering is present.	✓	
H. Lock operates properly.		✓
I.		

Comments/ items addressed or to be addressed:

well numbers applied to steel casing

well locks replaced

3. PVC Riser	YES	NO
A. Monitoring cap is present and provides a tight seal.	✓	
B. Riser is of appropriate height (has not been cut off too low within the steel case).	✓	
C. Riser is not loose/ easily moved.	✓	
D. Riser does not appear cracked, broken, or brittle.	✓	
E. No visual sign of external contamination entering well through riser.	✓	
F.		

Comments/ items addressed or to be addressed:

o.k

RICHARDSON SMITH GARDNER & ASSOCIATES
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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 (HG) **Date:** 4/6/09

Well ID: MW-9 **Initials:** DM

Please mark the aproprate 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.	✓	
B. Vicinity is free of potential contaminants.	✓	
C. Dead trees, etc. not in danger of falling and damaging wells.	✓	
D. Well is in the same location as on field maps.	✓	
E.	✓	

Comments/ items addressed or to be addressed:

o.k.

2. Concrete Apron and Steel Case	YES	NO
A. Concrete apron is present and in good condition.	✓	
B. Steel case is present and upright.	✓	
C. Steel case is not movable and cemented in.	✓	
D. Steel case lid opens and closes correctly with no gaps. Lock can be easily applied.	✓	
E. Well tag is present with pertinent information.	✓	
F. Well numbers are prominently displayed (Reflective address numbers, etc.).	~~✓~~	✓
G. No evidence of tampering is present.	✓	
H. Lock operates properly.		✓
I.		

Comments/ items addressed or to be addressed:

Well numbers applied to steel casing

Replaced well lock

3. PVC Riser	YES	NO
A. Monitoring cap is present and provides a tight seal.		
B. Riser is of appropriate height (has not been cut off too low within the steel case).		
C. Riser is not loose/ easily moved.		
D. Riser does not appear cracked, broken, or brittle.		
E. No visual sign of external contamination entering well through riser.		
F.		

Comments/ items addressed or to be addressed:

o.k.

RICHARDSON SMITH GARDNER & ASSOCIATES
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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 (H&G) **Date:** 4/6/09

Well ID: MW-10 **Initials:** DMR

Please mark the aproprate 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.	✓	
B. Vicinity is free of potential contaminants.	✓	
C. Dead trees, etc. not in danger of falling and damaging wells.	✓	
D. Well is in the same location as on field maps.	✓	
E.		

Comments/ items addressed or to be addressed:

ok

2. Concrete Apron and Steel Case	YES	NO
A. Concrete apron is present and in good condition.	✓	
B. Steel case is present and upright.	✓	
C. Steel case is not movable and cemented in.	✓	
D. Steel case lid opens and closes correctly with no gaps. Lock can be easily applied.	✓	
E. Well tag is present with pertinent information.	✓	
F. Well numbers are prominently displayed (Reflective address numbers, etc.).		✓
G. No evidence of tampering is present.	✓	
H. Lock operates properly.	✓	
I.		

Comments/ items addressed or to be addressed:

Well numbers applied to steel casing

3. PVC Riser	YES	NO
A. Monitoring cap is present and provides a tight seal.	✓	
B. Riser is of appropriate height (has not been cut off too low within the steel case).	✓	
C. Riser is not loose/ easily moved.	✓	
D. Riser does not appear cracked, broken, or brittle.	✓	
E. No visual sign of external contamination entering well through riser.	✓	
F.	✓	

Comments/ items addressed or to be addressed:

o.k.

RICHARDSON SMITH GARDNER & ASSOCIATES
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Groundwater Monitoring Well Inspection Checklist

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Site: DAVIDSON (HG) **Date:** 4/6/09

Well ID: MW-11 **Initials:** DM

Please mark the aproprate 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.	✓	
B. Vicinity is free of potential contaminants.	✓	
C. Dead trees, etc. not in danger of falling and damaging wells.	✓	
D. Well is in the same location as on field maps.	✓	
E.		

Comments/ items addressed or to be addressed:

ok.

2. Concrete Apron and Steel Case	YES	NO
A. Concrete apron is present and in good condition.		✓
B. Steel case is present and upright.	✓	
C. Steel case is not movable and cemented in.	✓	
D. Steel case lid opens and closes correctly with no gaps. Lock can be easily applied.	✓	
E. Well tag is present with pertinent information.	✓	
F. Well numbers are prominently displayed (Reflective address numbers, etc.).		✓
G. No evidence of tampering is present.	✓	
H. Lock operates properly.	✓	
I.		

Comments/ items addressed or to be addressed:

well numbers applied to steel casing

Dead, fallen tree is laying across concrete apron, appears to have cracked pad.

3. PVC Riser	YES	NO
A. Monitoring cap is present and provides a tight seal.		
B. Riser is of appropriate height (has not been cut off too low within the steel case).		
C. Riser is not loose/ easily moved.		
D. Riser does not appear cracked, broken, or brittle.		
E. No visual sign of external contamination entering well through riser.		
F.		

Comments/ items addressed or to be addressed:

O.K.

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Groundwater Monitoring Well Inspection Checklist

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Site: DAVIDSON (HG) **Date:** 4/6/09

Well ID: MW-12 **Initials:** Dm

Please mark the aproprate 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.	✓	
B. Vicinity is free of potential contaminants.	✓	
C. Dead trees, etc. not in danger of falling and damaging wells.	✓	
D. Well is in the same location as on field maps.	✓	
E.		

Comments/ items addressed or to be addressed:

O.K

2. Concrete Apron and Steel Case	YES	NO
A. Concrete apron is present and in good condition.	✓	
B. Steel case is present and upright.	✓	
C. Steel case is not movable and cemented in.	✓	
D. Steel case lid opens and closes correctly with no gaps. Lock can be easily applied.	✓	
E. Well tag is present with pertinent information.	✓	
F. Well numbers are prominently displayed (Reflective address numbers, etc.).		✓
G. No evidence of tampering is present.	✓	
H. Lock operates properly.	✓	
I.		

Comments/ items addressed or to be addressed:

Well numbers applied to steel casing

3. PVC Riser	YES	NO
A. Monitoring cap is present and provides a tight seal.	✓	
B. Riser is of appropriate height (has not been cut off too low within the steel case).	✓	
C. Riser is not loose/ easily moved.	✓	
D. Riser does not appear cracked, broken, or brittle.	✓	
E. No visual sign of external contamination entering well through riser.	✓	
F.	✓	

Comments/ items addressed or to be addressed:

o.k.

RICHARDSON SMITH GARDNER & ASSOCIATES
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Groundwater Monitoring Well Inspection Checklist

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Site: DAVIDSON (HG) **Date:** 4/6/09

Well ID: MW-13 **Initials:** DM

Please mark the aproprate 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.	✓	
B. Vicinity is free of potential contaminants.	✓	
C. Dead trees, etc. not in danger of falling and damaging wells.	✓	
D. Well is in the same location as on field maps.	✓	
E.	✓	

Comments/ items addressed or to be addressed:

o.k.

2. Concrete Apron and Steel Case	YES	NO
A. Concrete apron is present and in good condition.	✓	
B. Steel case is present and upright.	✓	
C. Steel case is not movable and cemented in.	✓	
D. Steel case lid opens and closes correctly with no gaps. Lock can be easily applied.	✓	
E. Well tag is present with pertinent information.	✓	
F. Well numbers are prominently displayed (Reflective address numbers, etc.).	✓	
G. No evidence of tampering is present.	✓	
H. Lock operates properly.	✓	
I.	✓	

Comments/ items addressed or to be addressed:

o.k.

3. PVC Riser	YES	NO
A. Monitoring cap is present and provides a tight seal.	✓	
B. Riser is of appropriate height (has not been cut off too low within the steel case).	✓	
C. Riser is not loose/ easily moved.	✓	
D. Riser does not appear cracked, broken, or brittle.	✓	
E. No visual sign of external contamination entering well through riser.	✓	
F.		

Comments/ items addressed or to be addressed:

o.k.

RICHARDSON SMITH GARDNER & ASSOCIATES
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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 (H6) **Date:** 4/6/09

Well ID: MW-14 **Initials:** DM

Please mark the aproprate 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.	✓	
B. Vicinity is free of potential contaminants.	✓	
C. Dead trees, etc. not in danger of falling and damaging wells.	✓	
D. Well is in the same location as on field maps.	✓	
E.		

Comments/ items addressed or to be addressed:

o.k.

2. Concrete Apron and Steel Case	YES	NO
A. Concrete apron is present and in good condition.	✓	
B. Steel case is present and upright.	✓	
C. Steel case is not movable and cemented in.	✓	
D. Steel case lid opens and closes correctly with no gaps. Lock can be easily applied.	✓	
E. Well tag is present with pertinent information.	✓	
F. Well numbers are prominently displayed (Reflective address numbers, etc.).	✓	
G. No evidence of tampering is present.	✓	
H. Lock operates properly.		✓
I.		

Comments/ items addressed or to be addressed:

well lock replaced

3. PVC Riser	YES	NO
A. Monitoring cap is present and provides a tight seal.	✓	
B. Riser is of appropriate height (has not been cut off too low within the steel case).	✓	
C. Riser is not loose/ easily moved.	✓	
D. Riser does not appear cracked, broken, or brittle.	✓	
E. No visual sign of external contamination entering well through riser.	✓	
F.		

Comments/ items addressed or to be addressed:

o.k.

RICHARDSON SMITH GARDNER & ASSOCIATES
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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 (HG) **Date:** 4/6/09

Well ID: MW-15 **Initials:** DM

Please mark the aproprate 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.	✓	
B. Vicinity is free of potential contaminants.	✓	
C. Dead trees, etc. not in danger of falling and damaging wells.	✓	
D. Well is in the same location as on field maps.	✓	
E.	✓	

Comments/ items addressed or to be addressed:

o.k.

2. Concrete Apron and Steel Case	YES	NO
A. Concrete apron is present and in good condition.	✓	
B. Steel case is present and upright.	✓	
C. Steel case is not movable and cemented in.	✓	
D. Steel case lid opens and closes correctly with no gaps. Lock can be easily applied.	✓	
E. Well tag is present with pertinent information.	✓	
F. Well numbers are prominently displayed (Reflective address numbers, etc.).	✓	
G. No evidence of tampering is present.	✓	
H. Lock operates properly.		✓
I.	✓	

Comments/ items addressed or to be addressed:

Replaced well lock

3. PVC Riser	YES	NO
A. Monitoring cap is present and provides a tight seal.	✓	
B. Riser is of appropriate height (has not been cut off too low within the steel case).	✓	
C. Riser is not loose/ easily moved.	✓	
D. Riser does not appear cracked, broken, or brittle.	✓	
E. No visual sign of external contamination entering well through riser.	✓	
F.		

Comments/ items addressed or to be addressed:

o.k.

RICHARDSON SMITH GARDNER & ASSOCIATES
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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 (HG) **Date:** 4/6/09

Well ID: MW-16 **Initials:** DM

Please mark the aproprate 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.	✓	
B. Vicinity is free of potential contaminants.	✓	
C. Dead trees, etc. not in danger of falling and damaging wells.	✓	
D. Well is in the same location as on field maps.	✓	
E.		

Comments/ items addressed or to be addressed:

o.k.

2. Concrete Apron and Steel Case	YES	NO
A. Concrete apron is present and in good condition.	✓	
B. Steel case is present and upright.	✓	
C. Steel case is not movable and cemented in.	✓	
D. Steel case lid opens and closes correctly with no gaps. Lock can be easily applied.	✓	
E. Well tag is present with pertinent information.	✓	
F. Well numbers are prominently displayed (Reflective address numbers, etc.).		✓
G. No evidence of tampering is present.	✓	
H. Lock operates properly.		✓
I.		

Comments/ items addressed or to be addressed:

well numbers applied to steel casing

well lock replaced

3. PVC Riser	YES	NO
A. Monitoring cap is present and provides a tight seal.	✓	
B. Riser is of appropriate height (has not been cut off too low within the steel case).	✓	
C. Riser is not loose/ easily moved.	✓	
D. Riser does not appear cracked, broken, or brittle.	✓	
E. No visual sign of external contamination entering well through riser.	✓	
F.		

Comments/ items addressed or to be addressed:

o.k.

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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 (HG) **Date:** 4/6/09

Well ID: MW-17 **Initials:** DM

Please mark the aproprate 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.	✓	
B. Vicinity is free of potential contaminants.	✓	
C. Dead trees, etc. not in danger of falling and damaging wells.	✓	
D. Well is in the same location as on field maps.	✓	
E.		

Comments/ items addressed or to be addressed:

o.k.

2. Concrete Apron and Steel Case	YES	NO
A. Concrete apron is present and in good condition.	✓	
B. Steel case is present and upright.	✓	
C. Steel case is not movable and cemented in.	✓	
D. Steel case lid opens and closes correctly with no gaps. Lock can be easily applied.	✓	
E. Well tag is present with pertinent information.	✓	
F. Well numbers are prominently displayed (Reflective address numbers, etc.).		✓
G. No evidence of tampering is present.	✓	
H. Lock operates properly.		✓
I.		

Comments/ items addressed or to be addressed:

well numbers replaced on steel casing

well lock replaced

3. PVC Riser	YES	NO
A. Monitoring cap is present and provides a tight seal.	✓	
B. Riser is of appropriate height (has not been cut off too low within the steel case).	✓	
C. Riser is not loose/ easily moved.	✓	
D. Riser does not appear cracked, broken, or brittle.	✓	
E. No visual sign of external contamination entering well through riser.	✓	
F.		

Comments/ items addressed or to be addressed:

o.k.

Appendix B

Monitoring Well Information

Sheet 1 of 2

OWNER: Davidson County Solid Waste Dept.	BORING NUMBER: MW-1A
PROJECT NAME: Davidson County Landfill	ARCHITECT-ENGINEER:
SITE LOCATION: Holly Grove, NC	JOB. NO.: 89-468-E

DEPTH IN FEET	SAMPLE NO.	SAMPLE TYPE	SAMPLE DEPTH FROM-TO	DESCRIPTION OF MATERIAL / SURFACE ELEVATION
				SANDY SILT, tan, white, hard, (ML). NOTE: (Field description).
	1	ss	2.5 3.0	
5	2	ss	5.0 5.5	
	3	ss	7.5 8.0	
10	4	ss	10.0 10.5	
				SILT, tan, hard, (ML). NOTE: Contains weathered rock fragments. (Field description).
15	5	ss	15.0 15.5	
				Auger Refusal at 18.0 ft.
20				Metavolcanic Bedrock (Rock type based on Geologic Map of North Carolina).
25				
30				

UNCONFINED COMPRESSIVE STRENGTH TONS/FT.^{2} (1, 2, 3, 4, 5)

PLASTIC LIMIT % — WATER CONTENTS % — LIQUID LIMIT % (10, 20, 30, 40, 50)

STANDARD PENETRATION BLOWS/FT. (10, 20, 30, 40, 50)

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDRY LINES BETWEEN SOIL TYPES: IN-STU THE TRANSITION MAY BE GRADUAL

WATER TABLE DATA — DEPTH BELOW SURFACE: NA @ 0 HRS. @ ___ HRS.	BORING STARTED 1-23-90		BORING COMPLETED 1-23-90
	RIG Air Rotary	FOREMAN	APP'D BY ABN	AUGER NA

ENGINEERING TECTONICS, P. A.

Sheet 2 of 2

OWNER: Davidson County Solid Waste Dept.	BORING NUMBER: MW-1A
PROJECT NAME: Davidson County Landfill	ARCHITECT-ENGINEER:
SITE LOCATION: Holly Grove, NC	JOB. NO.: 89-468-E

UNCONFINED COMPRESSIVE STRENGTH TONS/FT.^{2} (1, 2, 3, 4, 5)

PLASTIC LIMIT % X — WATER CONTENTS % ⊕ — LIQUID LIMIT % Δ (10, 20, 30, 40, 50)

● STANDARD PENETRATION BLOWS/FT. (10, 20, 30, 40, 50)

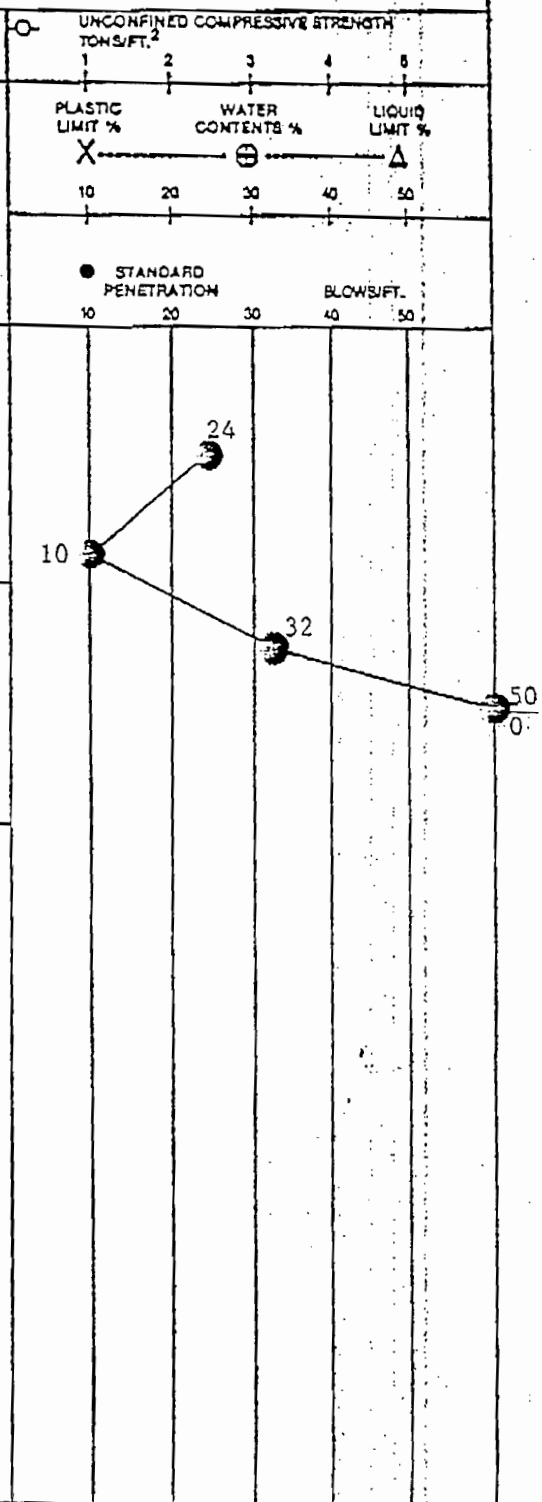
DEPTH IN FEET	SAMPLE NO.	SAMPLE TYPE	SAMPLE DEPTH FROM-TO	DESCRIPTION OF MATERIAL / SURFACE ELEVATION
35				
				Boring Terminated at 37.5 ft.

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDRY LINES BETWEEN SOIL TYPES: IN-STU, THE TRANSITION MAY BE GRADUAL

WATER TABLE DATA — DEPTH BELOW SURFACE: _____ @ 0 HRS. _____ @ _____ HRS.	BORING STARTED		BORING COMPLETED
	RIG	FOREMAN	APP'D BY	AUGER

OWNER: Davidson County Solid Waste Dept.	BORING NUMBER: MW-3A
PROJECT NAME: Davidson County Landfill	ARCHITECT-ENGINEER:
SITE LOCATION: Holly Grove, NC	JOB NO.: 89-468-E

DEPTH IN FEET	SAMPLE NO.	SAMPLE TYPE	SAMPLE DEPTH FROM-TO	DESCRIPTION OF MATERIAL / SURFACE ELEVATION
	1	ss	2.5 4.0	SANDY SILT, brown, tan, white, firm, (ML). NOTE: (Field description).
5	2	ss	5.0 6.5	
	3	ss	7.5 9.0	CLAYEY SILT, gray, stiff, (ML). NOTE: (Field description).
10				Auger Refusal at 13.5 ft.
15				Metavolcanic Bedrock (Rock type based on Geologic Map of North Carolina).
20				
25				
30				Boring Terminated at 32.0 ft.



THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDRY LINES BETWEEN SOIL TYPES; IN-STU. THE TRANSITION MAY BE GRADUAL

WATER TABLE DATA — DEPTH BELOW SURFACE	BORING STARTED	BORING COMPLETED	
NA @ 0 HRS. @ HRS.	1-23-90	1-23-90	
RIG: Air Rotary	FOREMAN	APP'D BY: ABN	AUGER: NA

ENGINEERING TECTONICS, P. A.

FIELD GEOLOGIC LOG

PROJECT: *DAVIDSON COUNTY LANDFILL*		DATE: *10/27/92*	SHEET: *1* OF *1*
		DRILLING CONTRACTOR: *McCall Brothers Inc.*	
WELL No.: *MW-5*	SAMPLING METHOD: *Split Spoon (24")*	DRILLER:	
LOGGED BY: *M. Sanford*	OFFICE: *CDM/Ral*	DRILLING METHOD: *8" O.D. HSA and Air Rotary*	

SAMP. No.	DEPTH, feet	LITHOLOGY	BLOW COUNT	SAMPLE DESCRIPTION	DRILLING COMMENTS
	1, 2, 3			*0-3 1/2" - dark brown silty, fine-grained SAND* *3 1/2" - 9 1/2' - light brown, fine-grained, sandy, clayey SILT*	
	4, 5, 6, 7, 8		*4* *11* *12* *12* *6*		
	9		*10* *17*	*9.5' - 10.2' - light green, silty, clayey, fine-to-medium grained SAND with rock fragments, moist*	
	10, 1, 2, 3, 4, 15, 6, 7, 8, 9, 20		*50/3"*	*10.2'- 25' - Air Rotary drilling Metavolcanics*	*Auger refusal @ 10'* *Perched water on top of bedrock* *Water-bearing fracture zone encountered @ 18.67'* *Boring terminated @ 25'*

FIELD BOREHOLE LOG

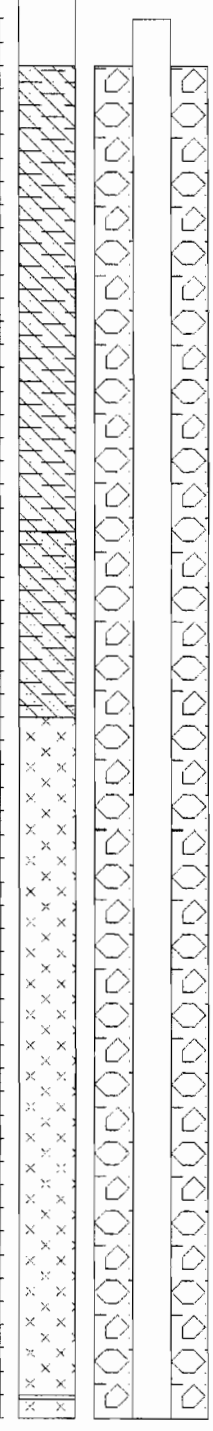
BOREHOLE NUMBER: MW-6

PROJECT NUMBER: DAVDCD-1
PROJECT NAME: Holly Grove Landfill
LOCATION: Lexington, North Carolina
DRILLING COMPANY: Engineering Tectonics
RIG TYPE & NUMBER: MOBILE B-80
DRILLING METHOD: Hollow Stem Auger
WEATHER: Sunny, 80 DEGREES
FIELD PARTY: D. Barron
GEOLOGIST: P. May
DATE BEGUN: 7/29/97 DATE COMPLETED: 7/30/97

TOP OF CASING ELEVATION: 781.25
TOTAL DEPTH: 65.0 FT
GROUND SURFACE ELEVATION: 779.04
SHEET: 1 OF: 2

STATIC WATER LEVEL (BLS)		
WD=While Drilling AB=After Boring		
Depth(ft)	58.5 bg	63.30 bg
Time	-	7:00 pm
Date:	7/31/97	8/1/97

DEPTH	BLOW COUNTS	SAMPLING METHOD	SAMPLE NUMBER	MOISTURE	CONSISTANCY	SAMPLE RECOVERY	DRILL METHOD	LITHOLOGY DESCRIPTION
1.0								
0.0								CLAYEY SILT: Light brown with trace fine sand.
1.0								
2.0								
3.0								
4.0								
5.0		G	S1					
6.0								
7.0								
8.0								
9.0								
10.0		G	S2					SANDY CLAYEY SILT: Light brown with some gravel sized partially weathered rock. Roller bit refusal at 12.0'. Setting outer casing in competent rock at 14'.
11.0		G						
12.0								
13.0								
14.0								DIORITE: Competent rock.
15.0								
16.0								
17.0								
18.0								
19.0								
20.0								
21.0								
22.0								
23.0								
24.0								
25.0								
26.0								
27.0								
28.0								
29.0								



FIELD BOREHOLE LOG

BOREHOLE NUMBER: MW-6

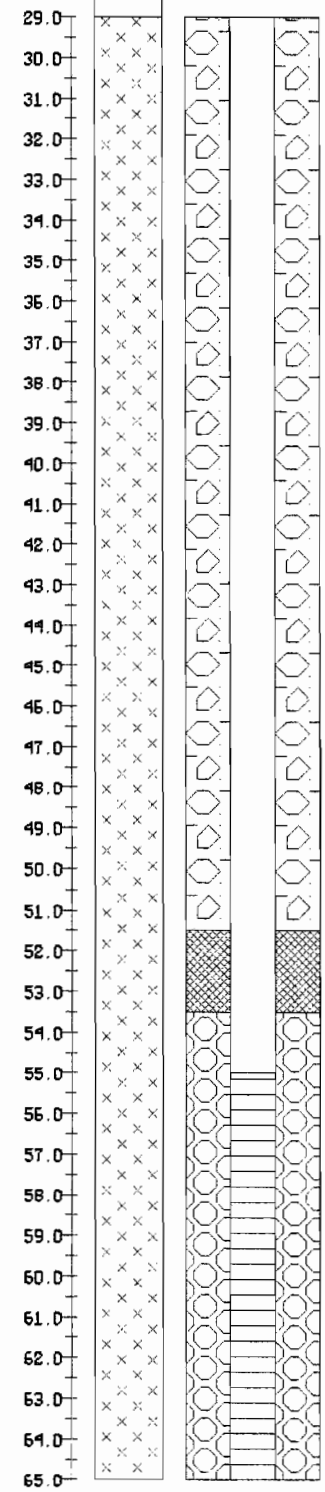
PROJECT NUMBER: DAVDCO-1
PROJECT NAME: Holly Grove Landfill
LOCATION: Lexington, North Carolina
DRILLING COMPANY: Engineering Tectonics
RIG TYPE & NUMBER: MOBILE B-80
DRILLING METHOD: Hollow Stem Auger
WEATHER: Sunny, 80 DEGREES
FIELD PARTY: D. Barron
GEOLOGIST: P. May
DATE BEGUN: 7/29/97 DATE COMPLETED: 7/30/97

TOP OF CASING ELEVATION: 781.23
TOTAL DEPTH: 65.0 FT
GROUND SURFACE ELEVATION: 779.04
SHEET: 2 OF: 2

STATIC WATER LEVEL (BLS)		
WD=While Drilling AB=After Boring		
Depth(ft)	58.5 bg	63.30 bg
Time	-	7:00 pm
Date:	7/31/97	8/1/97

DEPTH	BLOW COUNTS	SAMPLING METHOD	SAMPLE NUMBER	MOISTURE	CONSISTANCY	SAMPLE RECOVERY	DRILL METHOD	LITHOLOGY DESCRIPTION
29.0								DIORITE: No significant water bearing fractures. Boring Terminated at 65 feet.
30.0								
31.0								
32.0								
33.0								
34.0								
35.0								
36.0								
37.0								
38.0								
39.0								
40.0								
41.0								
42.0								
43.0								
44.0								
45.0								
46.0								
47.0								
48.0								
49.0								
50.0								
51.0								
52.0								
53.0								
54.0								
55.0								
56.0								
57.0								
58.0								
59.0								
60.0								
61.0								
62.0								
63.0								
64.0								
65.0								

DEPTH | LITHOLOGY | WELL INSTALLATION



FIELD BOREHOLE LOG

BOREHOLE NUMBER: MW-7

PROJECT NUMBER: DAVDCD-1
PROJECT NAME: Holly Grove Landfill
LOCATION: Lexington, North Carolina
DRILLING COMPANY: Engineering Tectonics
RIG TYPE & NUMBER: MOBILE B-80
DRILLING METHOD: Hollow Stem Auger
WEATHER: Sunny, 80 DEGREES
FIELD PARTY D. Barron
GEOLOGIST: P. May
DATE BEGUN: 7/25/97 DATE COMPLETED: 7/28/97

TOP OF CASING ELEVATION: 762.14
TOTAL DEPTH: 34.0 FT
GROUND SURFACE ELEVATION: 759.65
SHEET: 1 OF: 2

STATIC WATER LEVEL (BLS)		
WD=While Drilling AB=After Boring		
Depth(ft)	23.51	22.17
Time	10:00	11:00
Date:	7/28/97	7/29/97

DEPTH	BLOW COUNTS	SAMPLING METHOD	SAMPLE NUMBER	MOISTURE	CONSISTANCY	SAMPLE RECOVERY	DRILL METHOD	LITHOLOGY DESCRIPTION
1.0								
0.0								CLAYEY SILT: Dark brown. Dry. Some ribbon and cast. 6" of partially weathered rock. ML. iron & manganese stains.
1.0								
2.0								
3.0	18	Ss	S1			12"		
4.0	50/6							
5.0								
6.0								
7.0								
8.0	50/6	Ss	S2			4"		
9.0								CLAYEY SILT: Brown, dry, clayey silt. Some cast, no ribbon. mottled with feldspar. ML.
10.0								
11.0								
12.0								
13.0	50/6	Ss	S3			6"		
14.0								DIORITE: Partially weathered rock. Auger refusal at 19 ft.
15.0								
16.0								
17.0								
18.0	50/1	Ss	S4			1"		
19.0								

DEPTH | LITHOLOGY | WELL INSTALLATION

FIELD BOREHOLE LOG

BOREHOLE NUMBER: MW-7

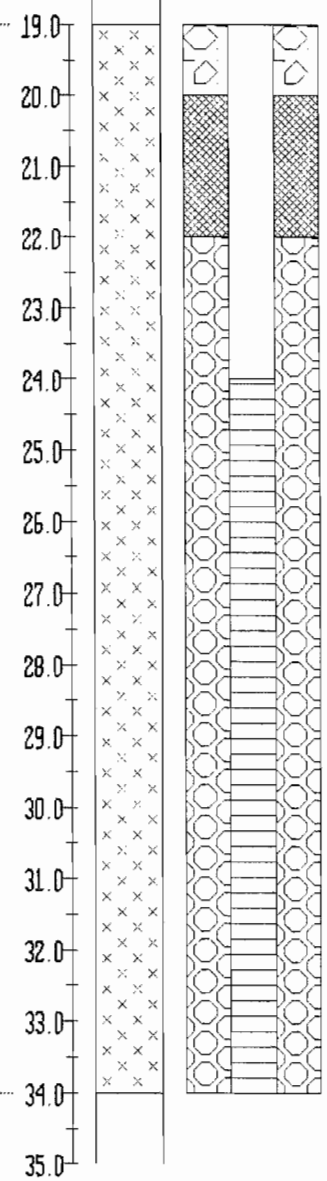
ROJECT NUMBER: DAVDCO-1
PROJECT NAME: Holly Grove Landfill
LOCATION: Lexington, North Carolina
DRILLING COMPANY: Engineering Tectonics
RIG TYPE & NUMBER: MOBILE B-80
DRILLING METHOD: Hollow Stem Auger
WEATHER: Sunny, 80 DEGREES
FIELD PARTY: D. Barron
GEOLOGIST: P. May
DATE BEGUN: 7/25/97 DATE COMPLETED: 7/28/97

TOP OF CASING ELEVATION: 762.14
TOTAL DEPTH: 34.0 FT
GROUND SURFACE ELEVATION: 759.65
SHEET: 2 OF: 2

STATIC WATER LEVEL (BLS)		
WD=While Drilling AB=After Boring		
Depth(ft)	23.51	22.17
Time	10:00	11:00
Date:	7/28/97	7/29/97

DEPTH	BLOW COUNTS	SAMPLING METHOD	SAMPLE NUMBER	MOISTURE	CONSISTANCY	SAMPLE RECOVERY	DRILL METHOD	LITHOLOGY DESCRIPTION
19.0								DIORITE: competent rock. Water bearing fracture at 30 feet.
20.0		G	S5					
21.0								
23.0								
24.0								
25.0		G	S6					
26.0								
27.0								
28.0								
29.0								
30.0		G	S7					
31.0								
32.0								
33.0								
34.0								Boring terminated at 34.0'.
35.0								

DEPTH | LITHOLOGY | WELL INSTALLATION



FIELD BOREHOLE LOG

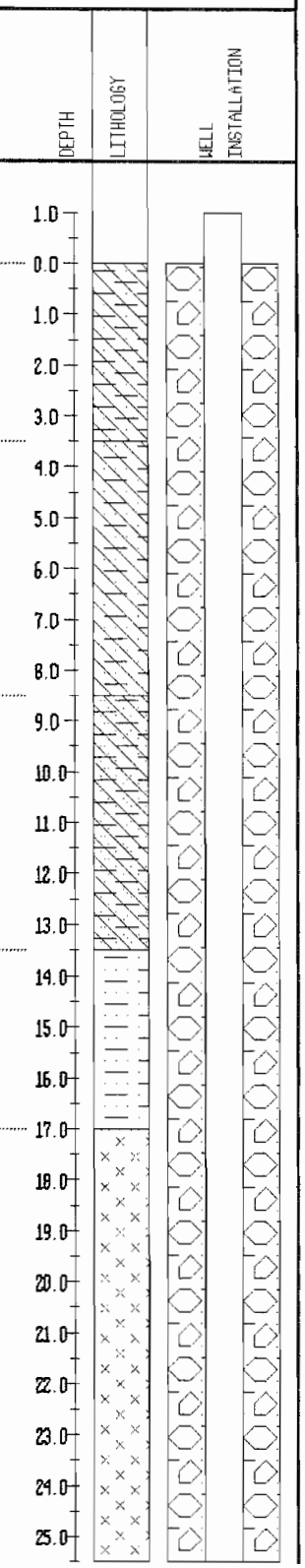
BOREHOLE NUMBER: MW-8

PROJECT NUMBER: DAVDCO-1
PROJECT NAME: Holly Grove Landfill
LOCATION: Lexington, North Carolina
DRILLING COMPANY: Engineering Tectonics
RIG TYPE & NUMBER: MOBILE B-80
DRILLING METHOD: Hollow Stem Auger
WEATHER: Sunny, 80 DEGREES
FIELD PARTY: D. Barron
GEOLOGIST: P. May
DATE BEGUN: 7/28/97 DATE COMPLETED 7/29/97

TOP OF CASING ELEVATION: 737.60
TOTAL DEPTH: 57.0 FT
GROUND SURFACE ELEVATION: 735.54
SHEET: 1 OF: 2

STATIC WATER LEVEL (BLS)		
WD=While Drilling AB=After Boring		
Depth(Ft)	38.63	31.47
Time	11:00	7:00
Date:	7/29/97	7/30/97

DEPTH	BLOW COUNTS	SAMPLING METHOD	SAMPLE NUMBER	MOISTURE	CONSISTANCY	SAMPLE RECOVERY	DRILL METHOD	LITHOLOGY DESCRIPTION
0.0	4 6 8	Ss	S1			12"		CLAYEY SILT: brown silt to clayey silt. slight cast, no ribbon. ML.
3.0	10 12 15	Ss	S2			14"		CLAYEY SANDY SILT: Brown, dry, clayey silt to clayey sandy silt. Slight cast, no ribbon. trace gravel. manganese stained at 4.5'. SM-SC.
8.0	17 23 21	Ss	S3			10"		CLAYEY SILTY SAND: sandy clayey silt to clayey silty sand, trace course sand. dry. slight cast. SM.
13.0	50/3	Ss	S4			3"		SANDY SILT: Brown, dry, sandy silt. trace gravel. SM. Auger refusal at 17'.
17.0								DIORITE: competent rock.
20.0		G	S5					
25.0		G	S6					



FIELD BOREHOLE LOG

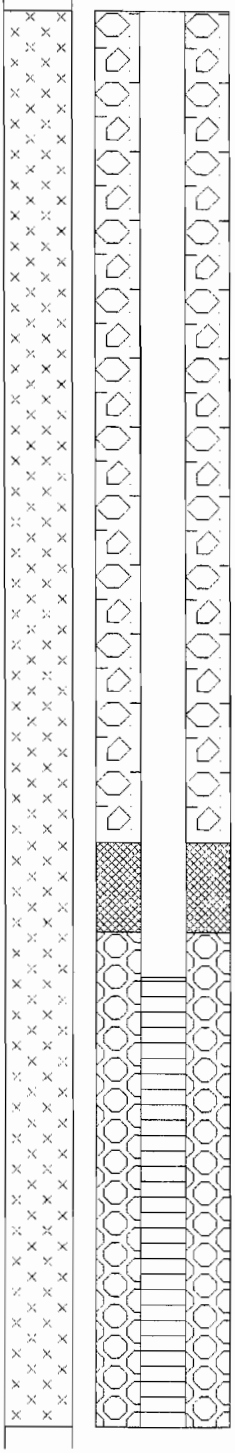
BOREHOLE NUMBER: MW-8

PROJECT NUMBER: DAVDCO-1
PROJECT NAME: Holly Grove Landfill
LOCATION: Lexington, North Carolina
DRILLING COMPANY: Engineering Tectonics
RIG TYPE & NUMBER: MOBILE B-80
DRILLING METHOD: Hollow Stem Auger
WEATHER: Sunny, 80 DEGREES
FIELD PARTY: D. Barron
GEOLOGIST: P. May
DATE BEGUN: 7/28/97 DATE COMPLETED: 7/29/97

TOP OF CASING ELEVATION: 737.60
TOTAL DEPTH: 57.0 FT
GROUND SURFACE ELEVATION: 735.54
SHEET: 2 OF: 2

STATIC WATER LEVEL (BLS)		
WD=While Drilling AB=After Boring		
Depth(Ft)	38.63	31.47
Time	11:00	7:00
Date:	7/29/97	7/30/97

DEPTH	BLOW COUNTS	SAMPLING METHOD	SAMPLE NUMBER	MOISTURE	CONSISTANCY	SAMPLE RECOVERY	DRILL METHOD	LITHOLOGY DESCRIPTION
26.0								DIORITE: competent rock. No water bearing fractures noted.
27.0								
28.0								
29.0								
30.0		G	S7					
31.0								
32.0								
33.0								
34.0								
35.0		G	S8					
36.0								
37.0								
38.0								
39.0								
40.0		G	S9					
41.0								
42.0								
43.0								
44.0								
45.0		G	S10					
46.0								
47.0								
48.0								
49.0								
50.0		G	S11					
51.0								
52.0								
53.0								
54.0								
55.0		G	S12					
56.0								
57.0								Boring terminated at 57.0'.



FIELD BOREHOLE LOG

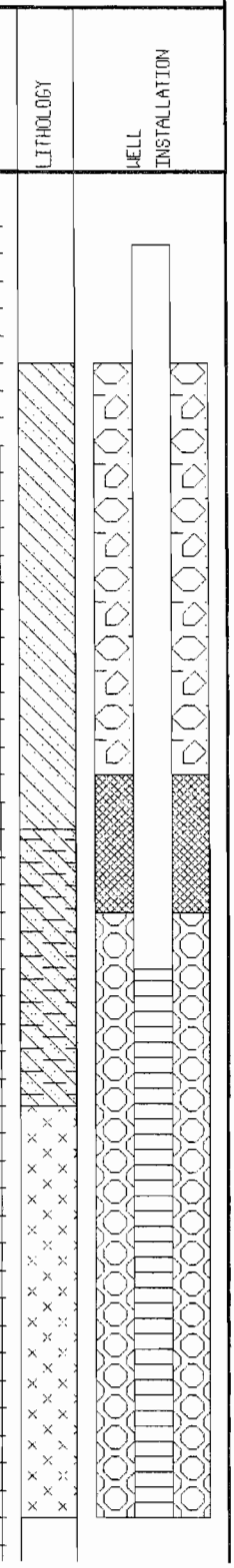
BOREHOLE NUMBER: MW-9

PROJECT NUMBER: DAVDCD-1
PROJECT NAME: Holly Grove Landfill
LOCATION: Lexington, North Carolina
DRILLING COMPANY: Engineering Tectonics
RIG TYPE & NUMBER: MOBILE B-80
DRILLING METHOD: Hollow Stem Auger
WEATHER: Sunny, 80 DEGREES
FIELD PARTY: D. Barron
GEOLOGIST: P. May
DATE BEGUN: 7/25/97 DATE COMPLETED: 7/25/97

TOP OF CASING ELEVATION: 719.03
TOTAL DEPTH: 21.0 FT
GROUND SURFACE ELEVATION: 716.95
SHEET: 1 OF: 1

STATIC WATER LEVEL (BLS)		
WD=While Drilling AB=After Boring		
Depth(ft)	14.01 bg	15.78 bg
Time	-	-
Date:	7/25/97	7/28/97

DEPTH	BLOW COUNTS	SAMPLING METHOD	SAMPLE NUMBER	MOISTURE	CONSISTANCY	SAMPLE RECOVERY	DRILL METHOD	LITHOLOGY DESCRIPTION
0.0								SANDY CLAY: Purple dry sandy clay to tan sandy clayey silt, with clayey silty sand, SM-SC; iron staining at 3.5'.
3.0	9 18 21	SS	S1			14"		
8.0	29 50/5	SS	S2			10"		CLAYEY SILTY SAND: dark tan with some partially weathered rock.
13.0	50/4	SS	S3			4"		DIORITE: partially weathered rock. Auger refusal at 21 ft.
18.0	50/5	SS	S4			2"		



FIELD BOREHOLE LOG

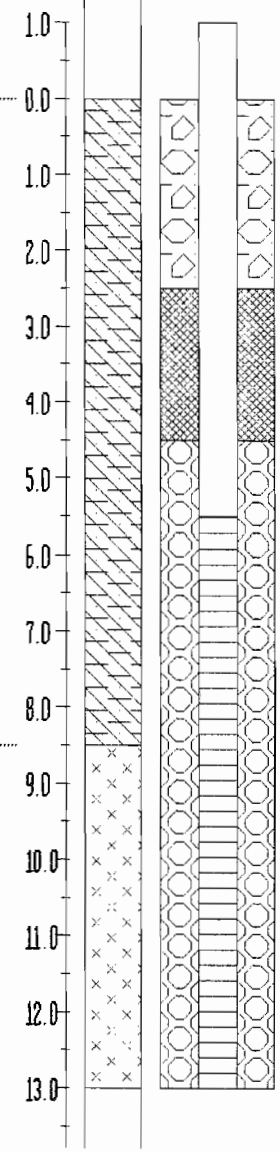
BOREHOLE NUMBER: MW-10

PROJECT NUMBER: DAVDCO-1
PROJECT NAME: Holly Grove Landfill
LOCATION: Lexington, North Carolina
DRILLING COMPANY: Engineering Tectonics
RIG TYPE & NUMBER: MOBILE B-80
DRILLING METHOD: Hollow Stem Auger
WEATHER: Sunny, 80 DEGREES
FIELD PARTY: D. Barron
GEOLOGIST: P. May
DATE BEGUN: 7/30/97 DATE COMPLETED: 7/30/97

TOP OF CASING ELEVATION: 678.24
TOTAL DEPTH: 13.0 FT
GROUND SURFACE ELEVATION: 675.68
SHEET: 1 OF: 1

STATIC WATER LEVEL (BLS)		
WD=While Drilling AB=After Boring		
Depth(ft)	9.0 bg	2.48 bg
Time	11:00 am	-
Date:	7/30/97	7/31/97

DEPTH	BLOW COUNTS	SAMPLING METHOD	SAMPLE NUMBER	MOISTURE	CONSISTANCY	SAMPLE RECOVERY	DRILL METHOD	LITHOLOGY DESCRIPTION
1.0								
0.0								CLAYEY SILT: Dark brown, dry, clayey silt with some gravel. Some brown silty sandy clay.
1.0								
2.0								
3.0	5	Ss	S1			18"		
4.0	8							
	8							
5.0								
6.0								
7.0								
8.0	50/6	Ss	S2			8"		
9.0								DIORITE: partially weathered rock. Auger refusal at 13'.
10.0								
11.0								
12.0								
13.0								



FIELD BOREHOLE LOG

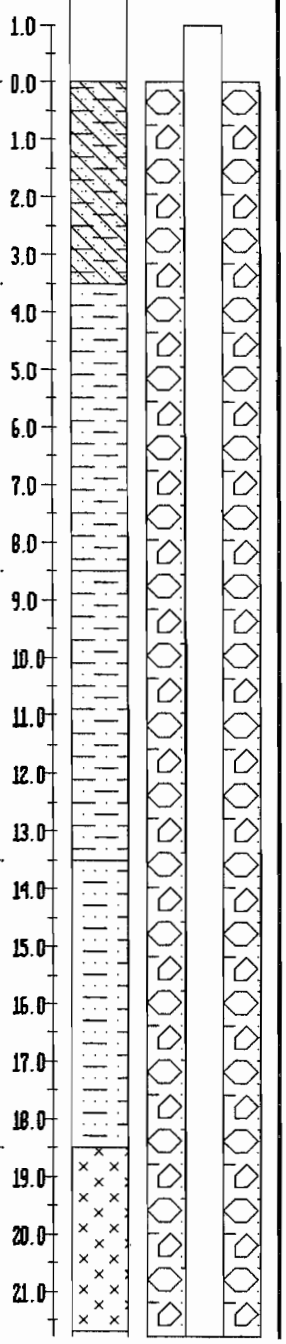
BOREHOLE NUMBER: MW-11

PROJECT NUMBER: DAVDCD-1
PROJECT NAME: Holly Grove Landfill
LOCATION: Lexington, North Carolina
DRILLING COMPANY: Engineering Tectonics
RIG TYPE & NUMBER: MOBILE B-80
DRILLING METHOD: Hollow Stem Auger
WEATHER: Sunny, 80 DEGREES
FIELD PARTY: D. Barron
GEOLOGIST: P. May
DATE BEGUN: 7/29/97 DATE COMPLETED: 7/29/97

TOP OF CASING ELEVATION: 680.07
TOTAL DEPTH: 38.0 FT
GROUND SURFACE ELEVATION: 677.72
SHEET: 1 OF: 2

STATIC WATER LEVEL (BLS)		
WD-While Drilling AB-After Boring		
Depth(ft)	23.25 bg	23.28 bg
Time	-	-
Date:	7/31/97	8/4/97

DEPTH	BLOW COUNTS	SAMPLING METHOD	SAMPLE NUMBER	MOISTURE	CONSISTANCY	SAMPLE RECOVERY	DRILL METHOD	LITHOLOGY DESCRIPTION
0.0	3 4 8	Ss	S1			12"		SANDY CLAYEY SILT: brown to tan sandy clayey silt, dry.
3.0	18 26 34	Ss	S2			10"		SILT: Brown silt with trace clay and sand, dry.
8.0	18 50/5	Ss	S3			10"		SILT: Brown silt with trace clay and sand, dry, damp at 10'.
13.0	50/6	Ss	S4			6"		SANDY SILT: Dry, gravelly sandy silt. with manganese and iron staining. Partially weathered rock.
18.0	50/3	Ss				0"		DIORITE: competent rock.
20.0			S5					



FIELD BOREHOLE LOG

BOREHOLE NUMBER: MW-11

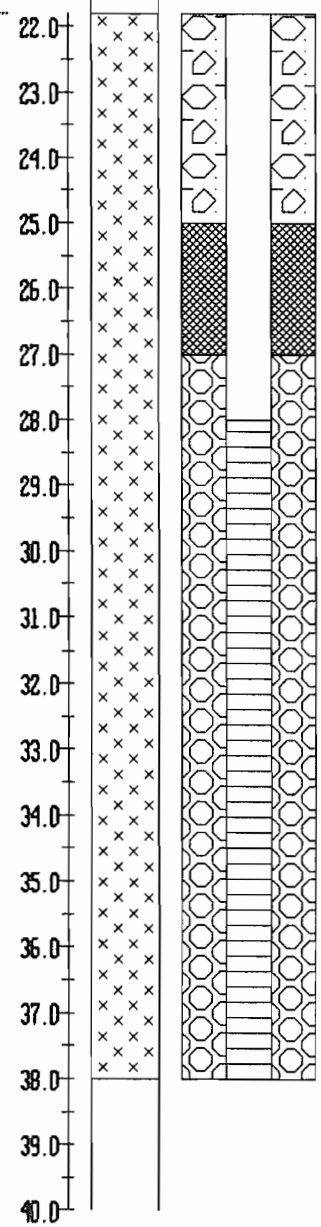
ROJECT NUMBER: DAVDCD-1
PROJECT NAME: Holly Grove Landfill
LOCATION: Lexington, North Carolina
DRILLING COMPANY: Engineering Tectonics
RIG TYPE & NUMBER: MOBILE B-80
DRILLING METHOD: Hollow Stem Auger
WEATHER: Sunny, 80 DEGREES
FIELD PARTY: D. Barron
GEOLOGIST: P. May
DATE BEGUN: 7/29/97 DATE COMPLETED: 7/29/97

TOP OF CASING ELEVATION: 680.07
TOTAL DEPTH: 38.0 FT
GROUND SURFACE ELEVATION: 677.72
SHEET: 2 OF: 2

STATIC WATER LEVEL (BLS)		
WD=While Drilling AB=After Boring		
Depth(ft)	23.25 bg	23.28 bg
Time	-	-
Date:	7/31/97	8/4/97

DEPTH	BLOW COUNTS	SAMPLING METHOD	SAMPLE NUMBER	MOISTURE	CONSISTANCY	SAMPLE RECOVERY	DRILL METHOD	LITHOLOGY DESCRIPTION
22.0								DIORITE: competent rock. water bearing fracture at 34 ft. Boring terminated at 38'.
23.0								
24.0								
25.0		G	S6					
26.0								
27.0								
28.0								
29.0								
30.0		G	S7					
31.0								
32.0								
33.0								
34.0								
35.0		G	S8					
36.0								
37.0								
38.0								
39.0								
40.0								

DEPTH | LITHOLOGY | WELL INSTALLATION



FIELD BOREHOLE LOG

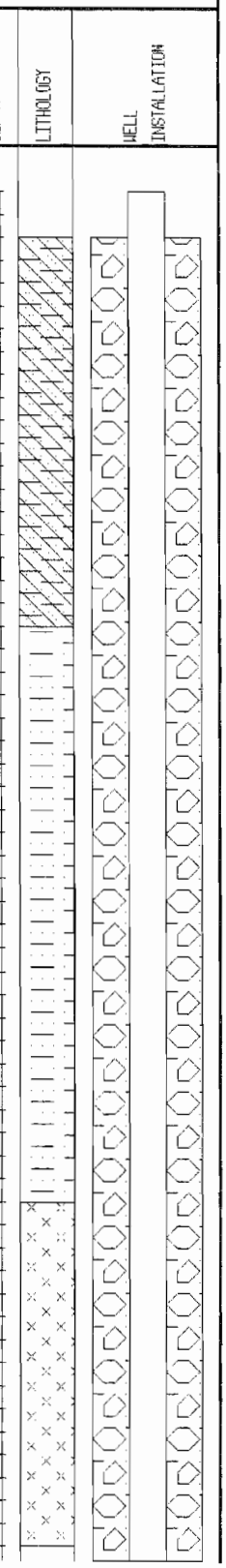
BOREHOLE NUMBER: MW-12

PROJECT NUMBER: DAVDCO-1
PROJECT NAME: Holly Grove Landfill
LOCATION: Lexington, North Carolina
DRILLING COMPANY: Engineering Tectonics
RIG TYPE & NUMBER: MOBILE B-80
DRILLING METHOD: Hollow Stem Auger
WEATHER: Sunny, 80 DEGREES
FIELD PARTY: D. Barron
GEOLOGIST: P. May
DATE BEGUN: 7/29/97 DATE COMPLETED: 7/30/97

TOP OF CASING ELEVATION: 671.48
TOTAL DEPTH: 65.0 FT
GROUND SURFACE ELEVATION: 669.08
SHEET: 1 OF: 2

STATIC WATER LEVEL (BLS)		
WD=While Drilling AB=After Boring		
Depth(ft)	63.7 bg	62.05 bg
Time	-	7:00 pm
Date	7/31/97	8/1/97

DEPTH	BLOW COUNTS	SAMPLING METHOD	SAMPLE NUMBER	MOISTURE	CONSISTANCY	SAMPLE RECOVERY	DRILL METHOD	LITHOLOGY DESCRIPTION
3.0	9 20 50/4	Ss	S1			14"		SILTY SANDY CLAY: Orange brown silty sandy clay, dry some partially weathered rock. Switched to air hammer at 7.5'.
8.0	37 50/3	Ss	S2			6"		SANDY SILT: Tan orange dry sandy silt with partially weathered rock at 15'.
21.0								DIORITE: Competent rock. 6-inch outer casing set to 28.5 feet.



FIELD BOREHOLE LOG

BOREHOLE NUMBER: MW-12

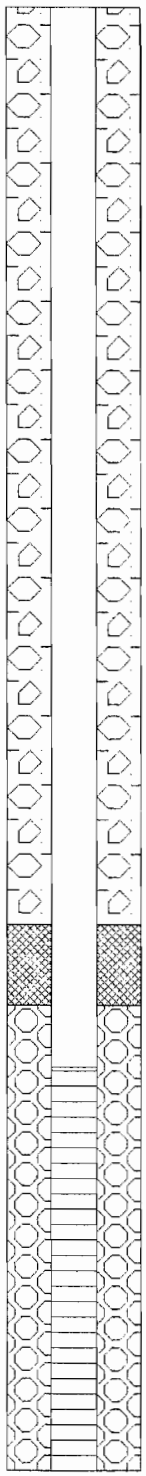
PROJECT NUMBER: DAVDCO-1
PROJECT NAME: Holly Grove Landfill
LOCATION: Lexington, North Carolina
DRILLING COMPANY: Engineering Tectonics
RIG TYPE & NUMBER: MOBILE B-80
DRILLING METHOD: Hollow Stem Auger
WEATHER: Sunny, 80 DEGREES
FIELD PARTY: D. Barron
GEOLOGIST: P. May
DATE BEGUN: 7/29/97 DATE COMPLETED: 7/30/97

TOP OF CASING ELEVATION: 671.48
TOTAL DEPTH: 65.0 FT
GROUND SURFACE ELEVATION: 669.08
SHEET: 2 OF: 2

STATIC WATER LEVEL (BLS)		
WD=While Drilling AB=After Boring		
Depth(ft)	63.7 bg	62.05 bg
Time	-	7:00 pm
Date:	7/31/97	8/1/97

DEPTH	BLOW COUNTS	SAMPLING METHOD	SAMPLE NUMBER	MOISTURE	CONSISTANCY	SAMPLE RECOVERY	DRILL METHOD	LITHOLOGY DESCRIPTION
29.0								DIORITE: No water bearing fractures. Boring Terminated at 65 feet.
30.0								
31.0								
32.0								
33.0								
34.0								
35.0								
36.0								
37.0								
38.0								
39.0								
40.0								
41.0								
43.0								
44.0								
45.0								
46.0								
47.0								
48.0								
49.0								
50.0								
51.0								
52.0								
53.0								
54.0								
55.0								
56.0								
57.0								
58.0								
59.0								
60.0								
61.0								
63.0								
64.0								
65.0								

DEPTH | LITHOLOGY | WELL INSTALLATION



FIELD BOREHOLE LOG

BOREHOLE NUMBER: MW-13

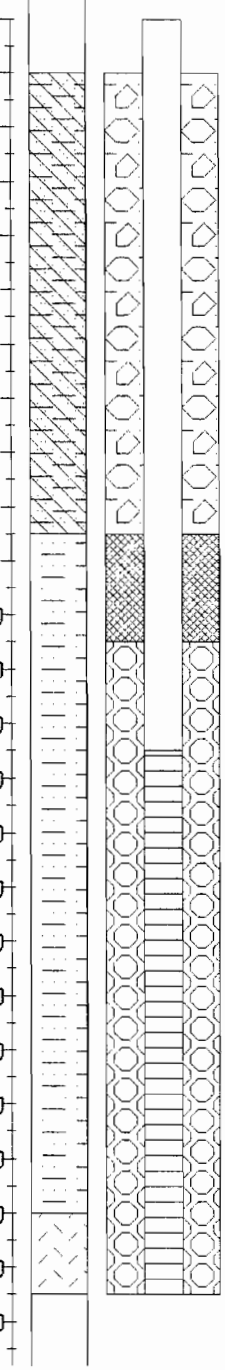
PROJECT NUMBER: DAVDCO-1
PROJECT NAME: Holly Grove Landfill
LOCATION: Lexington, North Carolina
DRILLING COMPANY: Engineering Tectonice
RIG TYPE & NUMBER: MOBILE B-80
DRILLING METHOD: Hollow Stem Auger
WEATHER: Sunny, 80 DEGREES
FIELD PARTY: D. Barron
GEOLOGIST: P. May
DATE BEGUN: 7/29/97 DATE COMPLETED: 7/29/97

TOP OF CASING ELEVATION 671.31
TOTAL DEPTH: 22.5 FT
GROUND SURFACE ELEVATION: 668.89
SHEET: 1 OF: 1

STATIC WATER LEVEL (BLS)		
WD=While Drilling AB=After Boring		
Depth(ft)	14.50 bg	14.03 bg
Time	-	-
Date:	7/29/97	7/31/97

DEPTH	BLOW COUNTS	SAMPLING METHOD	SAMPLE NUMBER	MOISTURE	CONSISTANCY	SAMPLE RECOVERY	DRILL METHOD	LITHOLOGY DESCRIPTION
1.0								
0.0								SILTY SANDY CLAY: Orange brown silty sandy clay, dry some partially weathered rock. Switched to air hammer at 7.5'.
1.0								
2.0								
3.0	9	Ss	S1			14"		
4.0	20 50/4							
5.0								
6.0								
7.0								
8.0	37	Ss	S2			6"		
9.0	50/3							SANDY SILT: Tan orange dry sandy silt with partially weathered rock at 15'.
10.0								
11.0								
12.0								
13.0								
14.0								
15.0								
16.0								
17.0								
18.0								
19.0								
20.0								
21.0								GRANITE: Fairly competent rock. Some partially weathered rock. Boring Terminated at 22.5'.
22.0								
23.0								

DEPTH | LITHOLOGY | WELL INSTALLATION



FIELD BOREHOLE LOG

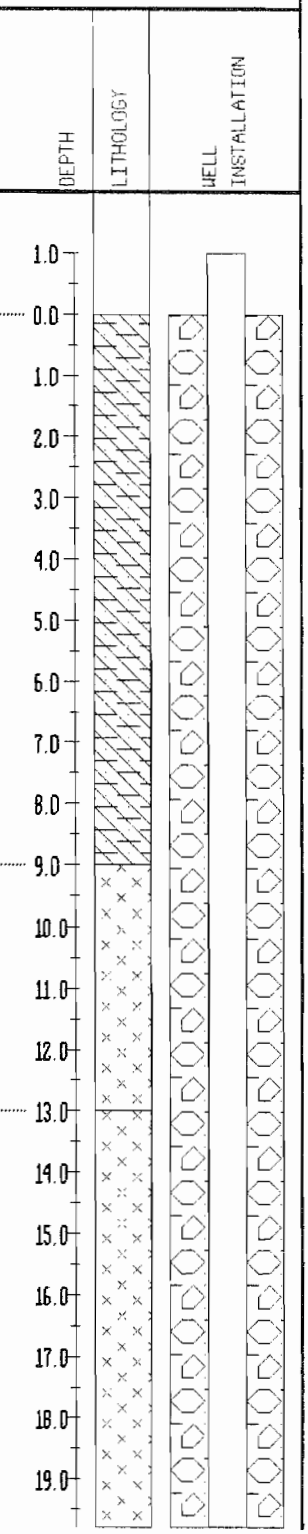
BOREHOLE NUMBER: MW-14

PROJECT NUMBER: DAVDCO-1
PROJECT NAME: Holly Grove Landfill
LOCATION: Lexington, North Carolina
DRILLING COMPANY: Engineering Tectonics
RIG TYPE & NUMBER: MOBILE B-80
DRILLING METHOD: Roller Bit/Air Hammer
WEATHER: Sunny, 80 DEGREES
FIELD PARTY: D. Barron
GEOLOGIST: J. Finkbeiner
DATE BEGUN: 7/22/97 DATE COMPLETED: 7/24/97

TOP OF CASING ELEVATION: 666.04
TOTAL DEPTH: 42.0 FT
GROUND SURFACE ELEVATION: 663.43
SHEET: 1 OF: 2

STATIC WATER LEVEL (BLS)		
WD=While Drilling AB=After Boring		
Depth(ft)	12.77 bg	12.84 bg
Time	-	-
Date:	7/28/97	7/31/97

DEPTH	BLOW COUNTS	SAMPLING METHOD	SAMPLE NUMBER	MOISTURE	CONSISTANCY	SAMPLE RECOVERY	DRILL METHOD	LITHOLOGY DESCRIPTION
1.0								
0.0								CLAYEY SILT: Red brown silty clay to clayey silt.
1.0								
2.0			S1					
3.0		G						
4.0								
5.0			S2					
6.0								
7.0								
8.0		G						
9.0			S3					DIORITE: Partially weathered rock.
10.0			S4					
11.0								
12.0								
13.0		G						DIORITE: Light gray cuttings. Upper 7 feet of rock is fractured; set outer casing at 19.0'.
14.0								
15.0								
16.0								
17.0								
18.0		G						
19.0								



FIELD BOREHOLE LOG

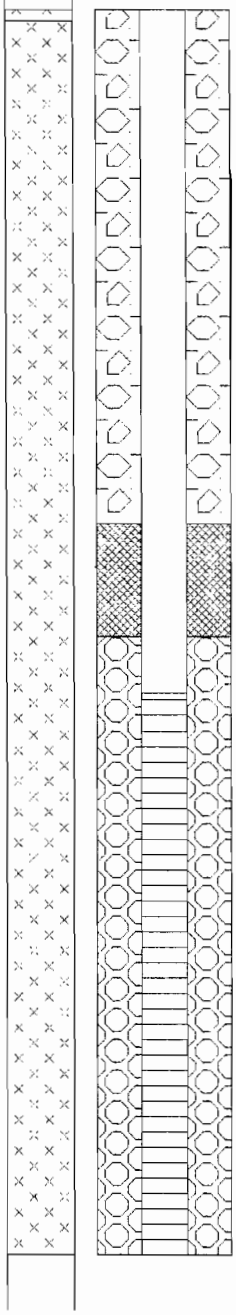
BOREHOLE NUMBER: MW-14

ROJECT NUMBER: DAVDCO-1
ROJECT NAME: Holly Grove Landfill
LOCATION: Lexington, North Carolina
DRILLING COMPANY: Engineering Tectonics
RIG TYPE & NUMBER: MOBILE B-80
DRILLING METHOD: Roller Bit/Air Hammer
WEATHER: Sunny, 80 DEGREES
FIELD PARTY: D. Barron
GEOLOGIST: J. Finkbeiner
DATE BEGUN: 7/22/97 DATE COMPLETED: 7/24/97

TOP OF CASING ELEVATION: 666.04
TOTAL DEPTH: 42.0 FT
GROUND SURFACE ELEVATION: 663.43
SHEET 2 OF 2

STATIC WATER LEVEL (BLS)		
WD=While Drilling AB=After Boring		
Depth(ft)	12.77 bg	12.84 bg
Time	-	-
Date:	7/28/97	7/31/97

DEPTH	BLOW COUNTS	SAMPLING METHOD	SAMPLE NUMBER	MOISTURE	CONSISTANCY	SAMPLE RECOVERY	DRILL METHOD	LITHOLOGY DESCRIPTION
20.0								DIORITE: Light gray cuttings. water seam at 38.5 feet.
21.0								
22.0								
23.0		G						
24.0								
25.0			S5					
[illegible]								
[illegible]								
28.0		G						
29.0			S6					
30.0								
31.0								
32.0								
33.0		G						
34.0								
35.0								
36.0								
37.0								
38.0		G	S7					
39.0								
40.0								
41.0								
42.0								Boring terminated at 42.0'.
43.0		G						



FIELD BOREHOLE LOG

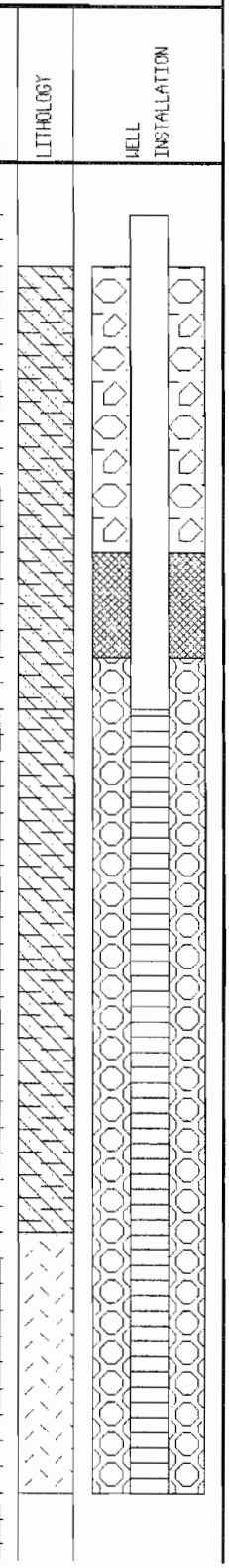
BOREHOLE NUMBER: MW-15

PROJECT NUMBER: DAVDCO-1
PROJECT NAME: Holly Grove Landfill
LOCATION: Lexington, North Carolina
DRILLING COMPANY: Engineering Tectonics
RIG TYPE & NUMBER: MOBILE B-80
DRILLING METHOD: Hollow Stem Auger
WEATHER: Sunny, 80 DEGREES
FIELD PARTY: D. Barron
GEOLOGIST: P. May
DATE BEGUN: 7/25/97 DATE COMPLETED: 7/25/97

TOP OF CASING ELEVATION: 697.33
TOTAL DEPTH: 23.5 FT
GROUND SURFACE ELEVATION: 695.29
SHEET: 1 OF: 1

STATIC WATER LEVEL (BLS)		
WD=While Drilling AB=After Boring		
Depth(ft)	13.30 bg	14.75
Time	-	-
Date:	7/25/97	7/31/97

DEPTH	BLOW COUNTS	SAMPLING METHOD	SAMPLE NUMBER	MOISTURE	CONSISTANCY	SAMPLE RECOVERY	DRILL METHOD	LITHOLOGY DESCRIPTION
0.0								SANDY CLAYEY SILT: Dark brown. Has ribbon and cast. ML-CL.
3.0	1 2 2	SS	S1			18"		
8.0	8 12 21	SS	S2			14"		CLAYEY SILT: Brown gray clayey silt with trace sand. Some ribbon and cast with relict banding. ML.
13.0	29 50/5	SS	S3			10"		SILTY CLAY: Brown silty clay with ribbon and cast, dry, with 6" partially weathered rock.
18.0	50/4	SS	S4			6"		GRANITE: Tan partially weathered rock. CL. Auger refusal at 23.5 ft.



Appendix C

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

Drinking Water ID: 37715
Wastewater ID: 10

REC'D MAY 13 2009

ID#: 6037 A

DAVIDSON COUNTY (HOLLY GROVE)
MS. JOAN SMYTH
RICHARDSON SMITH GARDNER
14 N. BOYLAN AVENUE
RALEIGH ,NC 27603

DATE COLLECTED: 04/08/09
DATE REPORTED : 05/08/09

REVIEWED BY:

PARAMETERS	MDL	SWSL	SW-1	SW-2	SW-3	MW-15	MW-16	Analysis Date	Analyst	Method Code
Antimony, ug/l	0.06	6.0	0.2 J	0.2 J	0.7 J			04/22/09	LFJ	EPA200.8
Antimony, ug/l	0.06	6.0				0.1 J	0.1 J	04/17/09	LFJ	EPA200.8
Arsenic, ug/l	0.17	10.0	0.4 J	0.3 J	0.3 J			04/22/09	LFJ	EPA200.8
Arsenic, ug/l	0.17	10.0				0.2 J	0.5 J	04/17/09	LFJ	EPA200.8
Barium, ug/l	0.04	100.0	15.3 J	16.2 J	66.6 J			04/22/09	LFJ	EPA200.8
Barium, ug/l	0.04	100.0				56.3 J	40.8 J	04/17/09	LFJ	EPA200.8
Beryllium, ug/l	0.06	1.0	--- U	--- U	--- U			04/22/09	LFJ	EPA200.8
Beryllium, ug/l	0.06	1.0				0.1 J	--- U	04/17/09	LFJ	EPA200.8
Cadmium, ug/l	0.04	1.0	--- U	--- U	--- U			04/22/09	LFJ	EPA200.8
Cadmium, ug/l	0.04	1.0				0.1 J	0.1 J	04/17/09	LFJ	EPA200.8
Cobalt, ug/l	0.02	10.0	0.6 J	0.5 J	1 J			04/22/09	LFJ	EPA200.8
Cobalt, ug/l	0.02	10.0				10	1.2 J	04/17/09	LFJ	EPA200.8
Copper, ug/l	0.04	10.0	2.8 J	2.4 J	1.8 J			04/22/09	LFJ	EPA200.8
Copper, ug/l	0.04	10.0				8.5 J	5.7 J	04/17/09	LFJ	EPA200.8
Total Chromium, ug/l	0.10	10.0	0.6 J	0.3 J	0.1 J			04/22/09	LFJ	EPA200.8
Total Chromium, ug/l	0.10	10.0				11	2 J	04/17/09	LFJ	EPA200.8
Lead, ug/l	0.04	10.0	0.6 J	0.4 J	0.2 J			04/22/09	LFJ	EPA200.8
Lead, ug/l	0.04	10.0				0.8 J	4.2 J	04/17/09	LFJ	EPA200.8
Nickel, ug/l	0.04	50.0	3.3 J	3.8 J	1.8 J			04/22/09	LFJ	EPA200.8
Nickel, ug/l	0.04	50.0				8.7 J	3.9 J	04/17/09	LFJ	EPA200.8
Selenium, ug/l	0.12	10.0	0.3 J	0.3 J	0.6 J			04/22/09	LFJ	EPA200.8
Selenium, ug/l	0.12	10.0				--- U	2.3 J	04/17/09	LFJ	EPA200.8
Silver, ug/l	0.04	10.0	0.1 J	--- U	0.1 J			04/22/09	LFJ	EPA200.8
Silver, ug/l	0.04	10.0				--- U	--- U	04/17/09	LFJ	EPA200.8
Thallium, ug/l	0.03	5.0	0.2 J	0.1 J	0.1 J			04/22/09	LFJ	EPA200.8
Thallium, ug/l	0.03	5.0				--- U	--- U	04/17/09	LFJ	EPA200.8
Vanadium, ug/l	0.28	25.0	2.5 J	1.8 J	1.2 J			04/22/09	LFJ	EPA200.8
Vanadium, ug/l	0.28	25.0				14.6 J	5.7 J	04/17/09	LFJ	EPA200.8
Zinc, ug/l	0.14	10.0	7.2 J	6.2 J	38			04/22/09	LFJ	EPA200.8
Zinc, ug/l	0.14	10.0				16	7.1 J	04/17/09	LFJ	EPA200.8

J = Between MDL and SWSL, U = Below ALL Quanititation 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#: 6037 A

DAVIDSON COUNTY (HOLLY GROVE)
MS. JOAN SMYTH
RICHARDSON SMITH GARDNER
14 N. BOYLAN AVENUE
RALEIGH ,NC 27603

DATE COLLECTED: 04/08/09
DATE REPORTED : 05/08/09

REVIEWED BY:

PARAMETERS	MDL	SWSL	MW-17	Trip Blank	Analysis Date	Analyst	Method Code
Antimony, ug/l	0.06	6.0	--- U		04/17/09	LFJ	EPA200.8
Arsenic, ug/l	0.17	10.0	0.5 J		04/17/09	LFJ	EPA200.8
Barium, ug/l	0.04	100.0	112		04/17/09	LFJ	EPA200.8
Beryllium, ug/l	0.06	1.0	--- U		04/17/09	LFJ	EPA200.8
Cadmium, ug/l	0.04	1.0	0.1 J		04/17/09	LFJ	EPA200.8
Cobalt, ug/l	0.02	10.0	1.7 J		04/17/09	LFJ	EPA200.8
Copper, ug/l	0.04	10.0	1.8 J		04/17/09	LFJ	EPA200.8
Total Chromium, ug/l	0.10	10.0	--- U		04/17/09	LFJ	EPA200.8
Lead, ug/l	0.04	10.0	0.3 J		04/17/09	LFJ	EPA200.8
Nickel, ug/l	0.04	50.0	1.8 J		04/17/09	LFJ	EPA200.8
Selenium, ug/l	0.12	10.0	0.6 J		04/17/09	LFJ	EPA200.8
Silver, ug/l	0.04	10.0	--- U		04/17/09	LFJ	EPA200.8
Thallium, ug/l	0.03	5.0	--- U		04/17/09	LFJ	EPA200.8
Vanadium, ug/l	0.28	25.0	3.8 J		04/17/09	LFJ	EPA200.8
Zinc, ug/l	0.14	10.0	7 J		04/17/09	LFJ	EPA200.8

J = Between MDL and SWSL, U = Below ALL Quanititation 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 (HOLLY GROVE)
MS. JOAN SMYTH
RICHARDSON SMITH GARDNER
14 N. BOYLAN AVENUE
RALEIGH, NC 27603

REVIEWED BY:

CLIENT ID: 6037 A

ANALYST: MAO
DATE COLLECTED: 04/08/09
DATE ANALYZED: 04/22/09
DATE REPORTED: 05/08/09

VOLATILE ORGANICS
EPA METHOD 8260B

PARAMETERS, ug/l	MDL	SWSL	SW-1	SW-2	SW-3	MW-15	MW-16
1. Chloromethane	0.18	1.0	--- U	--- U	--- U	--- U	--- U
2. Vinyl Chloride	0.34	1.0	--- U	--- U	--- U	--- U	--- U
3. Bromomethane	0.26	10.0	--- U	--- U	--- U	--- U	--- U
4. Chloroethane	0.29	10.0	--- U	--- U	--- U	--- U	--- U
5. Trichlorofluoromethane	0.13	1.0	--- U	--- U	--- U	--- U	--- U
6. 1,1-Dichloroethene	0.14	5.0	--- U	--- U	--- U	--- U	--- U
7. Acetone	1.21	100.0	--- U	--- U	--- U	17.90 J	15.30 J
8. Iodomethane	0.12	10.0	--- U	--- U	--- U	--- U	--- U
9. Carbon Disulfide	0.14	100.0	--- U	--- U	--- U	--- U	--- U
10. Methylene Chloride	0.14	1.0	--- U	--- U	--- U	--- U	--- U
11. trans-1,2-Dichloroethene	0.13	5.0	--- U	--- U	--- U	--- U	--- U
12. 1,1-Dichloroethane	0.16	5.0	--- U	--- U	--- U	0.40 J	0.30 J
13. Vinyl Acetate	0.20	50.0	--- U	--- U	--- U	--- U	--- U
14. Cis-1,2-Dichloroethene	0.14	5.0	--- U	--- U	--- U	--- U	--- U
15. 2-Butanone	0.85	100.0	--- U	--- U	--- U	--- U	--- U
16. Bromochloromethane	0.11	3.0	--- U	--- U	--- U	--- U	--- U
17. Chloroform	0.13	5.0	--- U	--- U	--- U	--- U	--- U
18. 1,1,1-Trichloroethane	0.11	1.0	--- U	--- U	--- U	--- U	--- U
19. Carbon Tetrachloride	0.13	1.0	--- U	--- U	--- U	--- U	--- U
20. Benzene	0.16	1.0	--- U	--- U	--- U	--- U	--- U
21. 1,2-Dichloroethane	0.12	1.0	--- U	--- U	--- U	--- U	--- U
22. Trichloroethene	0.13	1.0	--- U	--- U	--- U	--- U	--- U
23. 1,2-Dichloropropane	0.17	1.0	--- U	--- U	--- U	--- U	--- U
24. Bromodichloromethane	0.13	1.0	--- U	--- U	--- U	--- U	--- U
25. Cis-1,3-Dichloropropene	0.17	1.0	--- U	--- U	--- U	--- U	--- U
26. 4-Methyl-2-Pentanone	0.68	100.0	--- U	--- U	--- U	--- U	--- U
27. Toluene	0.13	1.0	0.20 J	--- U	--- U	--- U	--- U
28. trans-1,3-Dichloropropene	0.14	1.0	--- U	--- U	--- U	--- U	--- U
29. 1,1,2-Trichloroethane	0.20	1.0	--- U	--- U	--- U	--- U	--- U
30. Tetrachloroethene	0.16	1.0	--- U	--- U	--- U	--- U	--- U
31. 2-Hexanone	1.00	50.0	--- U	--- U	--- U	--- U	--- U
32. Dibromochloromethane	0.14	3.0	--- U	--- U	--- U	--- U	--- U
33. 1,2-Dibromoethane	0.13	1.0	--- U	--- U	--- U	--- U	--- U
34. Chlorobenzene	0.13	3.0	--- U	--- U	--- U	--- U	--- U
35. 1,1,1,2-Tetrachloroethane	0.14	5.0	--- U	--- U	--- U	--- U	--- U
36. Ethylbenzene	0.16	1.0	--- U	--- U	--- U	--- U	--- U
37. Xylenes	0.48	5.0	--- U	--- U	--- U	--- U	--- U
38. Dibromomethane	0.17	10.0	--- U	--- U	--- U	--- U	--- U
39. Styrene	0.16	1.0	--- U	--- U	--- U	--- U	--- U
40. Bromoform	0.11	3.0	--- U	--- U	--- U	--- U	--- U
41. 1,1,2,2-Tetrachloroethane	0.16	3.0	--- U	--- U	--- U	--- U	--- U
42. 1,2,3-Trichloropropane	0.06	1.0	--- U	--- U	--- U	--- U	--- U
43. 1,4-Dichlorobenzene	0.21	1.0	--- U	--- U	--- U	--- U	--- U
44. 1,2-Dichlorobenzene	0.13	5.0	--- U	--- U	--- U	--- U	--- U
45. 1,2-Dibromo-3-Chloropropane	0.26	13.0	--- U	--- U	--- U	--- U	--- U
46. Acrylonitrile	1.49	200.0	--- U	--- U	--- U	--- U	--- U
47. trans-1,4-Dichloro-2-Butene	0.14	100.0	--- U	--- U	--- U	--- U	--- U

J = Between MDL and SWSL, U = Below ALL Quanititation 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 (HOLLY GROVE)
MS. JOAN SMYTH
RICHARDSON SMITH GARDNER
14 N. BOYLAN AVENUE
RALEIGH, NC 27603

CLIENT ID: 6037 A

ANALYST: MAO
DATE COLLECTED: 04/08/09
DATE ANALYZED: 04/22/09
DATE REPORTED: 05/08/09

REVIEWED BY: _____

VOLATILE ORGANICS
EPA METHOD 8260B

PARAMETERS, ug/l	MDL	SWSL	MW-17	Trip Blank
1. Chloromethane	0.18	1.0	0.20 J	--- U
2. Vinyl Chloride	0.34	1.0	0.50 J	--- U
3. Bromomethane	0.26	10.0	--- U	--- U
4. Chloroethane	0.29	10.0	0.50 J	--- U
5. Trichlorofluoromethane	0.13	1.0	--- U	--- U
6. 1,1-Dichloroethene	0.14	5.0	--- U	--- U
7. Acetone	1.21	100.0	9.60 J	--- U
8. Iodomethane	0.12	10.0	--- U	--- U
9. Carbon Disulfide	0.14	100.0	0.20 J	--- U
10. Methylene Chloride	0.14	1.0	--- U	--- U
11. trans-1,2-Dichloroethene	0.13	5.0	--- U	--- U
12. 1,1-Dichloroethane	0.16	5.0	13.80	--- U
13. Vinyl Acetate	0.20	50.0	--- U	--- U
14. Cis-1,2-Dichloroethene	0.14	5.0	1.90 J	--- U
15. 2-Butanone	0.85	100.0	--- U	--- U
16. Bromochloromethane	0.11	3.0	--- U	--- U
17. Chloroform	0.13	5.0	--- U	--- U
18. 1,1,1-Trichloroethane	0.11	1.0	--- U	--- U
19. Carbon Tetrachloride	0.13	1.0	--- U	--- U
20. Benzene	0.16	1.0	0.20 J	--- U
21. 1,2-Dichloroethane	0.12	1.0	--- U	--- U
22. Trichloroethene	0.13	1.0	1.00	--- U
23. 1,2-Dichloropropane	0.17	1.0	0.80 J	--- U
24. Bromodichloromethane	0.13	1.0	--- U	--- U
25. Cis-1,3-Dichloropropene	0.17	1.0	--- U	--- U
26. 4-Methyl-2-Pentanone	0.68	100.0	--- U	--- U
27. Toluene	0.13	1.0	--- U	0.20 J
28. trans-1,3-Dichloropropene	0.14	1.0	--- U	--- U
29. 1,1,2-Trichloroethane	0.20	1.0	--- U	--- U
30. Tetrachloroethene	0.16	1.0	0.80 J	--- U
31. 2-Hexanone	1.00	50.0	--- U	--- U
32. Dibromochloromethane	0.14	3.0	--- U	--- U
33. 1,2-Dibromoethane	0.13	1.0	--- U	--- U
34. Chlorobenzene	0.13	3.0	--- U	--- U
35. 1,1,1,2-Tetrachloroethane	0.14	5.0	--- U	--- U
36. Ethylbenzene	0.16	1.0	--- U	--- U
37. Xylenes	0.48	5.0	--- U	--- U
38. Dibromomethane	0.17	10.0	--- U	--- U
39. Styrene	0.16	1.0	--- U	--- U
40. Bromoform	0.11	3.0	--- U	--- U
41. 1,1,2,2-Tetrachloroethane	0.16	3.0	--- U	--- U
42. 1,2,3-Trichloropropane	0.06	1.0	--- U	--- U
43. 1,4-Dichlorobenzene	0.21	1.0	--- U	--- U
44. 1,2-Dichlorobenzene	0.13	5.0	--- U	--- U
45. 1,2-Dibromo-3-Chloropropane	0.26	13.0	--- U	--- U
46. Acrylonitrile	1.49	200.0	--- U	--- U
47. trans-1,4-Dichloro-2-Butene	0.14	100.0	--- 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: 6037 A **Week:** 11

DAVIDSON COUNTY (HOLLY GROVE)
MS. JOAN SMYTH
RICHARDSON SMITH GARDNER
14 N. BOYLAN AVENUE
RALEIGH NC 27603

(919) 828-0577

DISINFECTION: ☐ CHLORINE ☐ UV ☐ NONE ☐ _____

SAMPLE LOCATION	COLLECTION DATE	COLLECTION TIME	TOTAL CHLORINE, mg/l AT COLLECTION	TEMPERATURE, °C AT COLLECTION	# OF CONTAINERS	Metals	EPA 8260B	8260 Dup. 1	8260 Dup. 2
CHLORINE NEUTRALIZED AT COLLECTION									
pH CHECK (LAB)						L2	L2	L2	L2
CONTAINER TYPE, P/G						P	G	G	G
CHEMICAL PRESERVATION						A	E	E	E
SW-1	4/8/09	6:19pm			3	▒	▒	▒	
SW-2	4/8/09	6:53pm			3	▒	▒	▒	
SW-3	4/8/09	7:05pm			3	▒	▒	▒	
MW-15	4/8/09	4:58pm			3	▒	▒	▒	
MW-16	4/8/09	5:31pm			3	▒	▒	▒	
MW-17	4/8/09	5:42pm			4	▒	▒	▒	▒
Trip Blank					2		▒	▒	

PARAMETERS — CHEMICAL PRESERVATION:
A - NONE, B - HNO_3, C - H_2SO_4, D - NAOH, E - HCL, 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) D.M. R.S.

SAMPLES RECEIVED IN LAB AT 3.8 °C

RELINQUISHED BY (SIG.) (SAMPLER)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME
[signature]	4/9/09 9:00	[signature]	4/13/9 10:03
RELINQUISHED BY (SIG.)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME
RELINQUISHED BY (SIG.)	DATE/TIME	RECEIVED BY (SIG.)	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.

FORM #5

№ 178825

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

REC'D MAY 13 2009

ID#: 6037

DAVIDSON COUNTY (HOLLY GROVE)
MS. JOAN SMYTH
RICHARDSON SMITH GARDNER
14 N. BOYLAN AVENUE
RALEIGH ,NC 27603

DATE COLLECTED: 04/08/09
DATE REPORTED : 05/08/09

REVIEWED BY:

PARAMETERS	MDL	SWSL	MW-1A	MW-2	MW-3A	MW-5	MW-6	Analysis Date	Analyst	Method Code
Antimony, ug/l	0.06	6.0	0.2 J	0.1 J	--- U	--- U	0.2 J	04/17/09	LFJ	EPA200.8
Arsenic, ug/l	0.17	10.0	0.8 J	0.7 J	0.2 J	--- U	0.9 J	04/17/09	LFJ	EPA200.8
Barium, ug/l	0.04	100.0	302	170	24.5 J	26.4 J	136	04/17/09	LFJ	EPA200.8
Beryllium, ug/l	0.06	1.0	--- U	--- U	--- U	--- U	0.1 J	04/17/09	LFJ	EPA200.8
Cadmium, ug/l	0.04	1.0	0.1 J	0.2 J	0.1 J	--- U	0.3 J	04/17/09	LFJ	EPA200.8
Cobalt, ug/l	0.02	10.0	8.9 J	10	0.6 J	0.3 J	2.6 J	04/17/09	LFJ	EPA200.8
Copper, ug/l	0.04	10.0	2.5 J	2.4 J	3 J	1.6 J	6.7 J	04/17/09	LFJ	EPA200.8
Total Chromium, ug/l	0.10	10.0	0.4 J	--- U	0.2 J	0.4 J	11	04/17/09	LFJ	EPA200.8
Lead, ug/l	0.04	10.0	0.2 J	0.1 J	0.3 J	0.1 J	3 J	04/17/09	LFJ	EPA200.8
Nickel, ug/l	0.04	50.0	6.4 J	3.6 J	1.6 J	1.3 J	4.6 J	04/17/09	LFJ	EPA200.8
Selenium, ug/l	0.12	10.0	0.5 J	0.8 J	0.4 J	--- U	0.6 J	04/17/09	LFJ	EPA200.8
Silver, ug/l	0.04	10.0	0.1 J	--- U	0.1 J	0.1 J	--- U	04/17/09	LFJ	EPA200.8
Thallium, ug/l	0.03	5.0	--- U	--- U	--- U	--- U	0.1 J	04/17/09	LFJ	EPA200.8
Vanadium, ug/l	0.28	25.0	11.2 J	2 J	3.3 J	2.1 J	16.6 J	04/17/09	LFJ	EPA200.8
Zinc, ug/l	0.14	10.0	4.7 J	5.1 J	1.8 J	3.2 J	28	04/17/09	LFJ	EPA200.8

J = Between MDL and SWSL, U = Below ALL Quanititation 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#: 6037

DAVIDSON COUNTY (HOLLY GROVE)
MS. JOAN SMYTH
RICHARDSON SMITH GARDNER
14 N. BOYLAN AVENUE
RALEIGH ,NC 27603

DATE COLLECTED: 04/08/09
DATE REPORTED : 05/08/09

REVIEWED BY:

PARAMETERS	MDL	SWSL	MW-8	MW-9	MW-10	MW-11	MW-12	Analysis Date	Analyst	Method Code
Antimony, ug/l	0.06	6.0	--- U	0.9 J	0.3 J	0.1 J	0.4 J	04/17/09	LFJ	EPA200.8
Arsenic, ug/l	0.17	10.0	0.8 J	1.7 J	2.4 J	1.3 J	3.3 J	04/17/09	LFJ	EPA200.8
Barium, ug/l	0.04	100.0	49.8 J	197	189	94.5 J	72.8 J	04/17/09	LFJ	EPA200.8
Beryllium, ug/l	0.06	1.0	--- U	0.1 J	0.1 J	--- U	--- U	04/17/09	LFJ	EPA200.8
Cadmium, ug/l	0.04	1.0	0.1 J	0.1 J	0.3 J	0.3 J	0.6 J	04/17/09	LFJ	EPA200.8
Cobalt, ug/l	0.02	10.0	1.2 J	12	7.9 J	2.1 J	0.8 J	04/17/09	LFJ	EPA200.8
Copper, ug/l	0.04	10.0	2.7 J	7.6 J	11	4.4 J	2.3 J	04/17/09	LFJ	EPA200.8
Total Chromium, ug/l	0.10	10.0	4.6 J	4.8 J	1.7 J	02 J	0.3 J	04/17/09	LFJ	EPA200.8
Lead, ug/l	0.04	10.0	0.6 J	0.7 J	1 J	0.2 J	0.9 J	04/17/09	LFJ	EPA200.8
Nickel, ug/l	0.04	50.0	4.5 J	7.3 J	19 J	10 J	9 J	04/17/09	LFJ	EPA200.8
Selenium, ug/l	0.12	10.0	1.2 J	0.8 J	6.6 J	4.6 J	10	04/17/09	LFJ	EPA200.8
Silver, ug/l	0.04	10.0	--- U	0.1 J	--- U	--- U	0.1 J	04/17/09	LFJ	EPA200.8
Thallium, ug/l	0.03	5.0	--- U	--- U	--- U	--- U	0.1 J	04/17/09	LFJ	EPA200.8
Vanadium, ug/l	0.28	25.0	4.3 J	7.6 J	9.9 J	1.3 J	3.7 J	04/17/09	LFJ	EPA200.8
Zinc, ug/l	0.14	10.0	11	18	6 J	7 J	4.7 J	04/17/09	LFJ	EPA200.8

J = Between MDL and SWSL, U = Below ALL Quanititation 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#: 6037

DAVIDSON COUNTY (HOLLY GROVE)
MS. JOAN SMYTH
RICHARDSON SMITH GARDNER
14 N. BOYLAN AVENUE
RALEIGH ,NC 27603

DATE COLLECTED: 04/08/09
DATE REPORTED : 05/08/09

REVIEWED BY:

PARAMETERS	MDL	SWSL	MW-13	MW-14	Analysis Date	Analyst	Method Code
Antimony, ug/l	0.06	6.0	0.3 J	--- U	04/17/09	LFJ	EPA200.8
Arsenic, ug/l	0.17	10.0	6.9 J	--- U	04/17/09	LFJ	EPA200.8
Barium, ug/l	0.04	100.0	331	39.2 J	04/17/09	LFJ	EPA200.8
Beryllium, ug/l	0.06	1.0	--- U	--- U	04/17/09	LFJ	EPA200.8
Cadmium, ug/l	0.04	1.0	0.1 J	0.1 J	04/17/09	LFJ	EPA200.8
Cobalt, ug/l	0.02	10.0	16	0.5 J	04/17/09	LFJ	EPA200.8
Copper, ug/l	0.04	10.0	4.2 J	3.2 J	04/17/09	LFJ	EPA200.8
Total Chromium, ug/l	0.10	10.0	0.7 J	0.3 J	04/17/09	LFJ	EPA200.8
Lead, ug/l	0.04	10.0	0.5 J	0.1 J	04/17/09	LFJ	EPA200.8
Nickel, ug/l	0.04	50.0	24 J	1.4 J	04/17/09	LFJ	EPA200.8
Selenium, ug/l	0.12	10.0	19	0.6 J	04/17/09	LFJ	EPA200.8
Silver, ug/l	0.04	10.0	--- U	--- U	04/17/09	LFJ	EPA200.8
Thallium, ug/l	0.03	5.0	--- U	--- U	04/17/09	LFJ	EPA200.8
Vanadium, ug/l	0.28	25.0	4.7 J	4.5 J	04/17/09	LFJ	EPA200.8
Zinc, ug/l	0.14	10.0	6.7 J	3.2 J	04/17/09	LFJ	EPA200.8

J = Between MDL and SWSL, U = Below ALL Quanititation 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
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CLIENT: DAVIDSON COUNTY (HOLLY GROVE)
MS. JOAN SMYTH
RICHARDSON SMITH GARDNER
14 N. BOYLAN AVENUE
RALEIGH, NC 27603

CLIENT ID: 6037

ANALYST: MAO
DATE COLLECTED: 04/08/09
DATE ANALYZED: 04/22/09
DATE REPORTED: 05/08/09

REVIEWED BY:

VOLATILE ORGANICS
EPA METHOD 8260B

PARAMETERS, ug/l	MDL	SWSL	MW-1A	MW-2	MW-3A	MW-5	MW-6
1. Chloromethane	0.18	1.0	--- U	--- U	--- U	--- U	--- U
2. Vinyl Chloride	0.34	1.0	2.20	3.50	--- U	--- U	--- U
3. Bromomethane	0.26	10.0	--- U	--- U	--- U	--- U	--- U
4. Chloroethane	0.29	10.0	3.20 J	6.10 J	0.60 J	0.30 J	--- U
5. Trichlorofluoromethane	0.13	1.0	--- U	--- U	--- U	--- U	--- U
6. 1,1-Dichloroethene	0.14	5.0	0.20 J	--- U	--- U	--- U	--- U
7. Acetone	1.21	100.0	20.60 J	1.80 J	1.30 J	--- U	51.20 J
8. Iodomethane	0.12	10.0	--- U	--- U	--- U	--- U	--- U
9. Carbon Disulfide	0.14	100.0	--- U	--- U	--- U	0.30 J	--- U
10. Methylene Chloride	0.14	1.0	0.20 J	0.20 J	0.30 J	--- U	0.30 J
11. trans-1,2-Dichloroethene	0.13	5.0	0.40 J	--- U	--- U	--- U	--- U
12. 1,1-Dichloroethane	0.16	5.0	23.50	1.00 J	2.90 J	0.20 J	7.00
13. Vinyl Acetate	0.20	50.0	--- U	--- U	--- U	--- U	--- U
14. Cis-1,2-Dichloroethene	0.14	5.0	34.50	0.20 J	0.20 J	--- U	0.50 J
15. 2-Butanone	0.85	100.0	--- U	--- U	--- U	--- U	--- U
16. Bromochloromethane	0.11	3.0	--- U	--- U	--- U	--- U	--- U
17. Chloroform	0.13	5.0	--- U	--- U	--- U	--- U	--- U
18. 1,1,1-Trichloroethane	0.11	1.0	--- U	--- U	--- U	--- U	--- U
19. Carbon Tetrachloride	0.13	1.0	--- U	--- U	--- U	--- U	--- U
20. Benzene	0.16	1.0	4.90	1.00	--- U	--- U	--- U
21. 1,2-Dichloroethane	0.12	1.0	1.40	--- U	--- U	--- U	--- U
22. Trichloroethene	0.13	1.0	1.30	--- U	0.20 J	--- U	0.40 J
23. 1,2-Dichloropropane	0.17	1.0	2.30	--- U	--- U	--- U	0.40 J
24. Bromodichloromethane	0.13	1.0	--- U	--- U	--- U	--- U	--- U
25. Cis-1,3-Dichloropropene	0.17	1.0	--- U	--- U	--- U	--- U	--- U
26. 4-Methyl-2-Pentanone	0.68	100.0	--- U	--- U	--- U	--- U	--- U
27. Toluene	0.13	1.0	0.20 J	0.20 J	--- U	--- U	0.20 J
28. trans-1,3-Dichloropropene	0.14	1.0	--- U	--- U	--- U	--- U	--- U
29. 1,1,2-Trichloroethane	0.20	1.0	--- U	--- U	--- U	--- U	--- U
30. Tetrachloroethene	0.16	1.0	0.50 J	--- U	--- U	--- U	0.40 J
31. 2-Hexanone	1.00	50.0	--- U	--- U	--- U	--- U	--- U
32. Dibromochloromethane	0.14	3.0	--- U	--- U	--- U	--- U	--- U
33. 1,2-Dibromoethane	0.13	1.0	--- U	--- U	--- U	--- U	--- U
34. Chlorobenzene	0.13	3.0	0.40 J	2.80 J	--- U	--- U	--- U
35. 1,1,1,2-Tetrachloroethane	0.14	5.0	--- U	--- U	--- U	--- U	--- U
36. Ethylbenzene	0.16	1.0	--- U	--- U	--- U	--- U	--- U
37. Xylenes	0.48	5.0	--- U	--- U	--- U	--- U	--- U
38. Dibromomethane	0.17	10.0	--- U	--- U	--- U	--- U	--- U
39. Styrene	0.16	1.0	--- U	--- U	--- U	--- U	--- U
40. Bromoform	0.11	3.0	--- U	--- U	--- U	--- U	--- U
41. 1,1,2,2-Tetrachloroethane	0.16	3.0	--- U	--- U	--- U	--- U	--- U
42. 1,2,3-Trichloropropane	0.06	1.0	--- U	--- U	--- U	--- U	--- U
43. 1,4-Dichlorobenzene	0.21	1.0	3.10	2.00	0.30 J	--- U	--- U
44. 1,2-Dichlorobenzene	0.13	5.0	--- U	--- U	--- U	--- U	--- U
45. 1,2-Dibromo-3-Chloropropane	0.26	13.0	--- U	--- U	--- U	--- U	--- U
46. Acrylonitrile	1.49	200.0	--- U	--- U	--- U	--- U	--- U
47. trans-1,4-Dichloro-2-Butene	0.14	100.0	--- U	--- U	--- U	--- U	--- U

J = Between MDL and SWSL, U = Below ALL Quanititation 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 (HOLLY GROVE)
MS. JOAN SMYTH
RICHARDSON SMITH GARDNER
14 N. BOYLAN AVENUE
RALEIGH, NC 27603

REVIEWED BY:

CLIENT ID: 6037

ANALYST: MAO
DATE COLLECTED: 04/08/09
DATE ANALYZED: 04/22/09
DATE REPORTED: 05/08/09

VOLATILE ORGANICS
EPA METHOD 8260B

PARAMETERS, ug/l	MDL	SWSL	MW-8	MW-9	MW-10	MW-11	MW-12
1. Chloromethane	0.18	1.0	0.50 J	--- U	--- U	0.50 J	--- U
2. Vinyl Chloride	0.34	1.0	0.90 J	0.60 J	--- U	1.10	3.20
3. Bromomethane	0.26	10.0	--- U	--- U	--- U	--- U	--- U
4. Chloroethane	0.29	10.0	2.10 J	1.00 J	0.30 J	--- U	3.80 J
5. Trichlorofluoromethane	0.13	1.0	0.20 J	--- U	--- U	--- U	0.90 J
6. 1,1-Dichloroethene	0.14	5.0	0.50 J	--- U	--- U	--- U	--- U
7. Acetone	1.21	100.0	3.70 J	2.50 J	5.20 J	4.80 J	3.30 J
8. Iodomethane	0.12	10.0	--- U	--- U	--- U	--- U	--- U
9. Carbon Disulfide	0.14	100.0	0.60 J	--- U	--- U	--- U	--- U
10. Methylene Chloride	0.14	1.0	0.30 J	--- U	--- U	0.20 J	0.50 J
11. trans-1,2-Dichloroethene	0.13	5.0	--- U	--- U	--- U	--- U	--- U
12. 1,1-Dichloroethane	0.16	5.0	14.70	0.30 J	--- U	2.80 J	19.10
13. Vinyl Acetate	0.20	50.0	--- U	--- U	--- U	--- U	--- U
14. Cis-1,2-Dichloroethene	0.14	5.0	0.40 J	2.10 J	--- U	0.50 J	0.40 J
15. 2-Butanone	0.85	100.0	--- U	--- U	--- U	--- U	--- U
16. Bromochloromethane	0.11	3.0	--- U	--- U	--- U	--- U	--- U
17. Chloroform	0.13	5.0	--- U	--- U	--- U	--- U	--- U
18. 1,1,1-Trichloroethane	0.11	1.0	--- U	--- U	--- U	--- U	--- U
19. Carbon Tetrachloride	0.13	1.0	--- U	--- U	--- U	--- U	--- U
20. Benzene	0.16	1.0	2.00	1.60	--- U	0.30 J	0.70 J
21. 1,2-Dichloroethane	0.12	1.0	--- U	--- U	--- U	--- U	0.60 J
22. Trichloroethene	0.13	1.0	2.50	--- U	--- U	--- U	0.30 J
23. 1,2-Dichloropropane	0.17	1.0	--- U	--- U	--- U	0.30 J	0.70 J
24. Bromodichloromethane	0.13	1.0	--- U	--- U	--- U	--- U	--- U
25. Cis-1,3-Dichloropropene	0.17	1.0	--- U	--- U	--- U	--- U	--- U
26. 4-Methyl-2-Pentanone	0.68	100.0	--- U	--- U	--- U	--- U	--- U
27. Toluene	0.13	1.0	0.30 J	0.40 J	0.20 J	0.20 J	0.20 J
28. trans-1,3-Dichloropropene	0.14	1.0	--- U	--- U	--- U	--- U	--- U
29. 1,1,2-Trichloroethane	0.20	1.0	--- U	--- U	--- U	--- U	--- U
30. Tetrachloroethene	0.16	1.0	0.20 J	--- U	--- U	--- U	--- U
31. 2-Hexanone	1.00	50.0	--- U	--- U	--- U	--- U	--- U
32. Dibromochloromethane	0.14	3.0	--- U	--- U	--- U	--- U	--- U
33. 1,2-Dibromoethane	0.13	1.0	--- U	--- U	--- U	--- U	--- U
34. Chlorobenzene	0.13	3.0	--- U	3.00	0.90 J	2.90 J	1.60 J
35. 1,1,1,2-Tetrachloroethane	0.14	5.0	--- U	--- U	--- U	--- U	--- U
36. Ethylbenzene	0.16	1.0	--- U	--- U	--- U	--- U	--- U
37. Xylenes	0.48	5.0	--- U	--- U	--- U	--- U	--- U
38. Dibromomethane	0.17	10.0	--- U	--- U	--- U	--- U	--- U
39. Styrene	0.16	1.0	--- U	--- U	--- U	--- U	--- U
40. Bromoform	0.11	3.0	--- U	--- U	--- U	--- U	--- U
41. 1,1,2,2-Tetrachloroethane	0.16	3.0	--- U	--- U	--- U	--- U	--- U
42. 1,2,3-Trichloropropane	0.06	1.0	--- U	--- U	--- U	--- U	--- U
43. 1,4-Dichlorobenzene	0.21	1.0	--- U	3.00	0.40 J	1.50	4.90
44. 1,2-Dichlorobenzene	0.13	5.0	--- U	0.20 J	--- U	0.50 J	0.40 J
45. 1,2-Dibromo-3-Chloropropane	0.26	13.0	--- U	--- U	--- U	--- U	--- U
46. Acrylonitrile	1.49	200.0	--- U	--- U	--- U	--- U	--- U
47. trans-1,4-Dichloro-2-Butene	0.14	100.0	--- U	--- U	--- U	--- U	--- U

J = Between MDL and SWSL, U = Below ALL Quanititation 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 (HOLLY GROVE)
MS. JOAN SMYTH
RICHARDSON SMITH GARDNER
14 N. BOYLAN AVENUE
RALEIGH, NC 27603

CLIENT ID: 6037

ANALYST: MAO
DATE COLLECTED: 04/08/09
DATE ANALYZED: 04/22/09
DATE REPORTED: 05/08/09

REVIEWED BY:

VOLATILE ORGANICS
EPA METHOD 8260B

PARAMETERS, ug/l	MDL	SWSL	MW-13	MW-14
1. Chloromethane	0.18	1.0	--- U	0.20 J
2. Vinyl Chloride	0.34	1.0	0.80 J	--- U
3. Bromomethane	0.26	10.0	--- U	--- U
4. Chloroethane	0.29	10.0	46.00	--- U
5. Trichlorofluoromethane	0.13	1.0	--- U	4.20
6. 1,1-Dichloroethene	0.14	5.0	--- U	--- U
7. Acetone	1.21	100.0	6.80 J	2.20 J
8. Iodomethane	0.12	10.0	--- U	--- U
9. Carbon Disulfide	0.14	100.0	--- U	--- U
10. Methylene Chloride	0.14	1.0	0.20 J	0.30 J
11. trans-1,2-Dichloroethene	0.13	5.0	--- U	--- U
12. 1,1-Dichloroethane	0.16	5.0	10.30	1.90 J
13. Vinyl Acetate	0.20	50.0	--- U	--- U
14. Cis-1,2-Dichloroethene	0.14	5.0	--- U	--- U
15. 2-Butanone	0.85	100.0	--- U	--- U
16. Bromochloromethane	0.11	3.0	--- U	--- U
17. Chloroform	0.13	5.0	--- U	--- U
18. 1,1,1-Trichloroethane	0.11	1.0	--- U	--- U
19. Carbon Tetrachloride	0.13	1.0	--- U	--- U
20. Benzene	0.16	1.0	2.50	--- U
21. 1,2-Dichloroethane	0.12	1.0	0.40 J	--- U
22. Trichloroethene	0.13	1.0	0.20 J	0.20 J
23. 1,2-Dichloropropane	0.17	1.0	--- U	--- U
24. Bromodichloromethane	0.13	1.0	--- U	--- U
25. Cis-1,3-Dichloropropene	0.17	1.0	--- U	--- U
26. 4-Methyl-2-Pentanone	0.68	100.0	--- U	--- U
27. Toluene	0.13	1.0	0.90 J	0.20 J
28. trans-1,3-Dichloropropene	0.14	1.0	--- U	--- U
29. 1,1,2-Trichloroethane	0.20	1.0	--- U	--- U
30. Tetrachloroethene	0.16	1.0	--- U	--- U
31. 2-Hexanone	1.00	50.0	--- U	--- U
32. Dibromochloromethane	0.14	3.0	--- U	--- U
33. 1,2-Dibromoethane	0.13	1.0	--- U	--- U
34. Chlorobenzene	0.13	3.0	8.60	--- U
35. 1,1,1,2-Tetrachloroethane	0.14	5.0	--- U	--- U
36. Ethylbenzene	0.16	1.0	0.30 J	--- U
37. Xylenes	0.48	5.0	1.00 J	--- U
38. Dibromomethane	0.17	10.0	--- U	--- U
39. Styrene	0.16	1.0	--- U	--- U
40. Bromoform	0.11	3.0	--- U	--- U
41. 1,1,2,2-Tetrachloroethane	0.16	3.0	--- U	--- U
42. 1,2,3-Trichloropropane	0.06	1.0	--- U	--- U
43. 1,4-Dichlorobenzene	0.21	1.0	8.40	--- U
44. 1,2-Dichlorobenzene	0.13	5.0	1.40 J	--- U
45. 1,2-Dibromo-3-Chloropropane	0.26	13.0	--- U	--- U
46. Acrylonitrile	1.49	200.0	--- U	--- U
47. trans-1,4-Dichloro-2-Butene	0.14	100.0	--- 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: 6037 **Week:** 11

DAVIDSON COUNTY (HOLLY GROVE)
MS. JOAN SMYTH
RICHARDSON SMITH GARDNER
14 N. BOYLAN AVENUE
RALEIGH NC 27603

(919) 828-0577

DISINFECTION: ☐ CHLORINE ☐ UV ☐ NONE ☐ _____

CHLORINE NEUTRALIZED AT COLLECTION

pH CHECK (LAB): <2 <2 <2 <2

CONTAINER TYPE, P/G: P G G G

CHEMICAL PRESERVATION: A E E E

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

SAMPLE LOCATION	COLLECTION DATE	COLLECTION TIME	TOTAL CHLORINE, mg/l AT COLLECTION	TEMPERATURE, °C AT COLLECTION	# OF CONTAINERS	Metals	EPA 8260B	8260 Dup. 1	8260 Dup. 2
MW-1A	4/8/09	4:49pm			4				
MW-2	4/8/09	5:55pm			3				
MW-3A	4/8/09	6:06pm			3				
MW-5	4/8/09	5:07pm			3				
MW-6	4/8/09	4:35pm			3				
MW-7	removed				3				
MW-8	4/8/09	4:17pm			3				
MW-9	4/8/09	3:35pm			3				
MW-10	4/8/09	3:47pm			3				
MW-11	4/8/09	3:55pm			3				
MW-12	4/8/09	4:05pm			3				

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

CHAIN OF CUSTODY MAINTAINED DURING SHIPMENT/DELIVERY: (Y) N

SAMPLES COLLECTED BY: (Please Print) DM & RS.

SAMPLES RECEIVED IN LAB AT 3.7 °C

RELINQUISHED BY (SIG.) (SAMPLER)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME
[signature]	4/9/09 8:56	[signature]	4/13/09 9:39
RELINQUISHED BY (SIG.)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME
RELINQUISHED BY (SIG.)	DATE/TIME	RECEIVED BY (SIG.)	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.

FORM #5

№ 178827

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: 6037 **Week: 11**

DAVIDSON COUNTY (HOLLY GROVE)
MS. JOAN SMYTH
RICHARDSON SMITH GARDNER
14 N. BOYLAN AVENUE
RALEIGH NC 27603

(919) 828-0577

DISINFECTION: ☐ CHLORINE ☐ UV ☐ NONE ☐ _____

SAMPLE LOCATION	COLLECTION DATE	COLLECTION TIME	TOTAL CHLORINE, mg/l AT COLLECTION	TEMPERATURE, °C AT COLLECTION	# OF CONTAINERS	Metals	EPA 8260B	8260 Dup. 1	8260 Dup. 2
CHLORINE NEUTRALIZED AT COLLECTION									
pH CHECK (LAB)						<2	<2	<2	<2
CONTAINER TYPE, P/G						P	G	G	G
CHEMICAL PRESERVATION						A	E	E	E
MW-13	4/8/09	4:09			3				
MW-14	4/8/09	5:50			3				

PARAMETERS

CHEMICAL PRESERVATION: A - NONE; B - HNO_3; C - H_2SO_4; D - NAOH; E - HCL; 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) DM. RS.

SAMPLES RECEIVED IN LAB AT 3.7 °C

RELINQUISHED BY (SIG.) (SAMPLER)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME
[signature]	4/9/09 8:56	[signature]	4/13/09 9:39
RELINQUISHED BY (SIG.)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME
RELINQUISHED BY (SIG.)	DATE/TIME	RECEIVED BY (SIG.)	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.

FORM #5

№ 178826