DENR USE ONLY: ☐ Paper Report ☐ Electronic Data - Email CD (data loaded: Yes / No) Doc/Event #:

NC DENR
Division of Waste Management - Solid Waste

Environmental Monitoring Reporting Form

Notice: This form and any information attached to it are "Public Records" as defined in NC General Statute 132-1. As such, these documents are available for inspection and examination by any person upon request (NC General Statute 132-6).

Instructions:

- **Prepare one form for each individually monitored unit.**
- **Please type or print legibly.**
- Attach a notification table with values that attain or exceed NC 2L groundwater standards or NC 2B surface water standards. The notification must include a preliminary analysis of the cause and significance of each value. (e.g. naturally occurring, off-site source, pre-existing condition, etc.).
- Attach a notification table of any groundwater or surface water values that equal or exceed the reporting limits.
- Attach a notification table of any methane gas values that attain or exceed explosive gas levels. This includes any structures on or nearby the facility (NCAC 13B .1629 (4)(a)(i).
- Send the original signed and sealed form, any tables, and Electronic Data Deliverable to: Compliance Unit, NCDENR-DWM, Solid Waste Section, 1646 Mail Service Center, Raleigh, NC 27699-1646.

Solid Waste Monitoring Data Submittal Information

Name of entity submitting data (laboratory, consultant, facility owner):

Richardson Smith Gardner and Associates, Inc.

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

Name: Joan A. Smyth, P.G. Phone: 919-828-0577 x 221

E-mail: joan@rsgengineers.com

Facility name:	Facility Address:	Facility Permit #	NC Landfill Rule: (.0500 or .1600)	Actual sampling dates (e.g., October 20-24, 2006)
JohnstonCo. Phase 5 MSW Landfill	County Home Road Smithfield NC	51-02	.1600	October 25 - 26th and November 1, 2010

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 A. Smyth, P.G. — Facility Representative Name (Print)

Senior Hydrogeologist — Title

919-828-0577 x 221 — (Area Code) Telephone Number

Joan A. Smyth — Signature

1/17/11 — Date

Affix NC Licensed/ Professional Geologist Seal

NORTH CAROLINA LICENSED SEAL 1369 GEOLOGIST JOAN A. SMYTH

14 N. Boylan Avenue Raleigh, NC 27603

Facility Representative Address

C0828

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

Revised 6/2009

Johnston County Landfill
Phase 5

Ground Water Monitoring Report

Fall 2010 Semi-annual
Monitoring Event

Johnston County Landfill
Smithfield, North Carolina
NC Solid Waste Permit # 51-03

Prepared for:
Johnston County Department of Public Utilities
309 East Market Street
Smithfield, North Carolina 27577

January 2011

RICHARDSON SMITH GARDNER
& ASSOCIATES
ENGINEERING & GEOLOGICAL
SERVICES

Fall 2010 Ground Water Monitoring Report

Johnston County Landfill
Phase 5
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Prepared for:

Johnston County Department of Public Utilities
309 East Market Street
Smithfield, North Carolina 27577

RSG Project No. **Johnston - 4**

Joan A. Smyth, P.G.
Senior Hydrogeologist

NORTH CAROLINA LICENSED SEAL 1389 GEOLOGIST JOAN A. SMYTH

January 2011

RICHARDSON SMITH GARDNER & ASSOCIATES
ENGINEERING & GEOLOGICAL SERVICES

PRINTED ON 100% RECYCLED PAPER

Johnston County – Phase 5 Lined Landfill
Semi-annual Ground Water Monitoring Report
Fall 2011 Sampling Event

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Appendix B – Laboratory Analytical Report
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1.0 Introduction

Johnston County formerly operated a Subtitle-D landfill under Solid Waste Permit # 51-03 (Phase 5). This report presents the results of the second semi-annual ground water monitoring event for 2010 for Phase 5, conducted on October 25th, 26th, and November 1, 2010. This event was performed to comply with the semi-annual monitoring schedule required by NC Solid Waste Regulations.

The ground water monitoring network for the Phase 5 landfill includes 10 ground water monitoring wells and four leachate lagoon monitoring wells. This report includes summaries of the field procedures, laboratory analyses, statistical analyses, and ground water characterization for the Phase 5 unit. Also included are graphs of the data, and laboratory analytical reports.

2.0 Site Geology

The site is underlain by sediments of the Middendorf Formation which were deposited largely in a deltaic system. According to Geology of the Carolinas (Horton/Zullo, 1991) the formation consists of unfossiliferous, interbedded, thin clay and sand. The stratigraphy tends to be very discontinuous, indicating that the sediment deposits are lenticular. Most of the sediments range from silty clay to a coarse clayey sand and gravel with thin lenses of dense clay. There are occasional concretions of iron oxide minerals which form very hard thin layers within the sand layers. In general, the unconsolidated sediments logged during drilling events at the site consisted of mainly medium to coarse sands with some silts and clays. The Middendorf Formation is underlain by highly weathered metamorphic rocks of the Carolina Slate Belt.

The thickness of the Middendorf Formation is controlled by topography with the bottom being relatively flat-lying at elevations of approximately 170 fmsl. The thickness of the unconsolidated sediment ranges from approximately 65 feet to less than 10 feet in the lower elevations surrounding the landfill.

3.0 Sampling Procedures

The sampling event, performed by trained personnel from Johnston County Landfill, consisted of collecting samples from 10 ground water monitoring wells (MW-5-1, MW-5-2, MW-5-3, MW-5-4, MW-5-5, MW-5-6, MW-5-7, MW-5-8, MW-5-9, and MW-5-10), shown in **Figure 1**. The sampling was conducted in accordance with the approved site Water Quality Monitoring Plan. Also included in the analysis was a trip blank for quality control. Surface water samples were collected from two locations (SW-5-1 and SW-5-2) up and downstream from the landfill unit on Middle Creek.

Sampling methods followed the protocol outlined in the North Carolina Water Quality Monitoring Guidance Document for Solid Waste Facilities (NCDENR, DWM). The depth to water in each well was gauged prior to purging and sampling. Field measurements of pH, specific conductivity, and temperature were obtained from each well. Water table elevations and field parameter results are included in **Tables 1 and 2**, respectively.

All samples were collected by Johnston County personnel in laboratory prepared containers for the specified analytical procedures. Samples were obtained through dedicated Micropurge low flow pumps. Ground water samples were properly preserved, placed on ice, and transported to the laboratory facility, Environment 1, Inc., within the specified holding times for each analysis.

4.0 Field and Laboratory Results

4.1 Laboratory Analysis

Ground water samples were collected from the monitoring network associated with the Phase 5 landfill unit using dedicated low-flow pumps. These samples were analyzed for Appendix I constituents.

4.2 Field and Laboratory Results

All samples were transported to the laboratory facility under proper chain of custody analyzed at the specified DWM Solid Waste Section Limits (SWSL)[1] for Appendix I constituents. Monitoring well boring logs are included in **Appendix A**. The laboratory analytical report is included as **Appendix B**.

Ground water and field measurements included in **Table 2**, remained similar to previous results. The laboratory analysis detected six (6) inorganic constituents in all monitoring wells: arsenic, barium, beryllium, cobalt, lead, and zinc. Of these, three (3) inorganic constituents were found above the 2L standard in all monitoring wells:

- arsenic (MW 5-6);
- cobalt (MW 5-4); and
- lead (MW 5-4 & MW 5-7).

The laboratory analysis detected one (1) organic constituent, 1,2-dichloropropane, in wells MW 5-2 & MW 5-8. In both of these locations, this constituent was found above the 2L standard.

There are currently two surface water monitoring points associated with Phase 5 (SW-5-1, and SW-5-2). No detections were found at the surface monitoring points during this event. The Trip Blank for this event had detections of acetone and methylene chloride.

5.0 Statistical Analysis & Results

5.1 Statistical Analysis

The laboratory analytical results were entered into our statistical database for the site. Data

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

entry and analysis was performed using the Chempoint/Chemstat™ statistical software package developed specifically for RCRA Subtitle D sites (Starpoint Software, Cincinnati, OH). Chemstat follows EPA and DSWM protocols for approved statistical analysis methods for groundwater data.

The data from this monitoring event was added to our existing database for this site and was reviewed to evaluate the most appropriate analysis methods. Initial analysis consisted of a basic review of the data and of time-concentration graphs (**Appendix C**) to determine any major changes or trends in the data. Non-parametric testing methods were used on most wells due to the lack of normality, in the data. Statistical analysis was performed on detected inorganic constituents using MW-5-1 as background well and MW-5-2, MW-5-3, MW-5-4, MW-5-5, MW-5-6, MW-5-7, MW-5-8, MW-5-9 and MW-5-10 as the compliance wells. The statistical analysis reports are summarized in **Table 4**.

The following inorganic constituents were found to be statistically significant:

- lead (MW-5-4 & MW-5-7).

These are highlighted on **Table 4**.

5.2 2L/MCL Statistical Analysis

For wells that showed statistically significant differences from background concentrations, additional analysis was performed. This analysis has recently been required as part of ongoing Assessment monitoring for landfills in North Carolina. To perform the analysis, the respective 2L standard or MCL was determined for each parameter with statistically significant results. Each compliance well with statistical significance was re-analyzed against the lower of the 2L or MCL standard as a Ground Water Protection Standard (GWPS).

This analysis was performed using tolerance interval analysis. Since a smaller subset of wells was analyzed during this step, the compliance well data were retested for normal distribution. If the data were normally distributed, parametric tolerance intervals were constructed for each well and compared to the GWPS for each parameter. For those wells not exhibiting normal distribution, Poisson tolerance intervals were constructed. If the distribution of the data was marginally normal, both tests were run to cross-check the results. All of these cross-checks yielded the same results from both test methods.

The statistical results for this additional analysis are presented in **Table 4**. An upper tolerance limit higher than the GWPS standard was considered to be a statistically significant result. This analysis indicated statistically significant results for:

- lead (MW-5-4 & MW-5-7).

6.0 Ground Water Characterization

A potentiometric surface map was prepared 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 ranged from 0.004 feet/day (MW-5-10) to 0.63 feet/day (MW-5-2). These calculations are included in **Table 1**. The data indicates that ground water is flowing generally to the north toward Middle Creek. 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.

7.0 Ground Water Assessment

During previous events concentrations of 1,2-dichloropropane were detected. 1,2-dichloropropane has several uses, one of which is as a soil fumigant. Due to the historic use of this property for farming, we believe that is the source of this constituent.

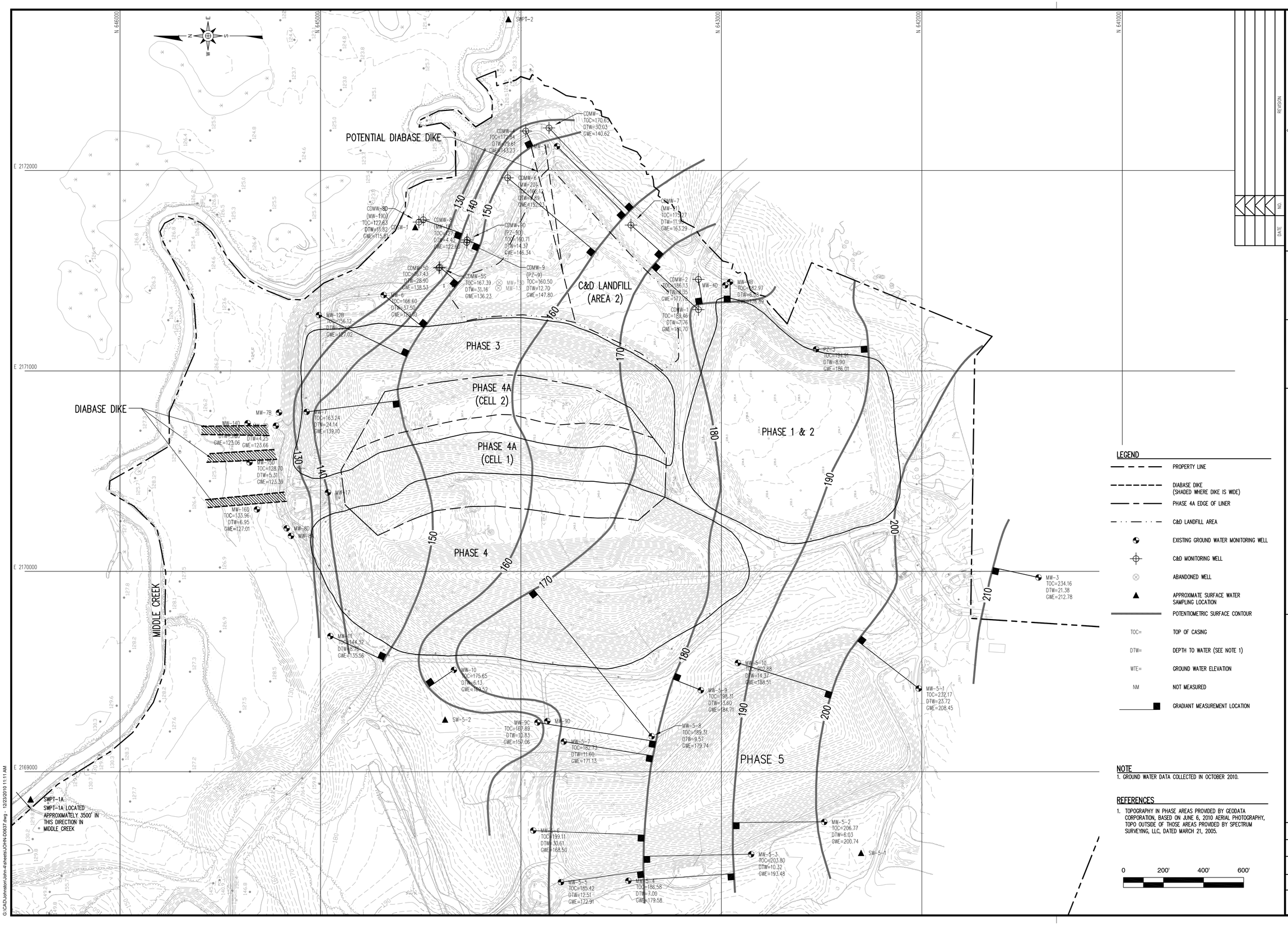
Leachate samples intermittently have had a "J-value" detection of this constituent that is below the Solid Waste Section (SWSL) and orders of magnitude below the detected level in the ground water. During several previous events this constituent has not been detected in leachate at all. Therefore, it is unlikely that the landfill is the source of this impact. Additionally, no other constituent that has been detected in the leachate was found to be present in the samples from these wells. This information further supports the source as historical farming practices.

We will continue to monitor the levels of this constituent during future semi-annual events.

8.0 Conclusions

The results of this monitoring event indicated detection of three constituents; arsenic, cobalt, lead & 1,2-dichloropropane. We believe it to be due to historic farming practices of the site. The next semi-annual sampling event will be performed in spring 2011. These results will be reported upon receipt of the laboratory data and completion of the statistical analyses.

Figures



LEGEND

- PROPERTY LINE
- DIABASE DIKE (SHADED WHERE DIKE IS WIDE)
- PHASE 4A EDGE OF LINER
- C&D LANDFILL AREA
- EXISTING GROUND WATER MONITORING WELL
- C&D MONITORING WELL
- ABANDONED WELL
- APPROXIMATE SURFACE WATER SAMPLING LOCATION
- POTENTIOMETRIC SURFACE CONTOUR
- TOC= TOP OF CASING
- DTW= DEPTH TO WATER (SEE NOTE 1)
- WTE= GROUND WATER ELEVATION
- NM NOT MEASURED
- GRADIANT MEASUREMENT LOCATION

NOTE

1. GROUND WATER DATA COLLECTED IN OCTOBER 2010.

REFERENCES

1. TOPOGRAPHY IN PHASE AREAS PROVIDED BY GEODATA CORPORATION, BASED ON JUNE 6, 2010 AERIAL PHOTOGRAPHY, TOPO OUTSIDE OF THOSE AREAS PROVIDED BY SPECTRUM SURVEYING, LLC, DATED MARCH 21, 2005.

0 200' 400' 600'

NO.	DATE	REVISION

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SEAL

SEAL

PROJECT TITLE:
JOHNSTON COUNTY LANDFILL
SMITHFIELD, NORTH CAROLINA

DRAWING TITLE:
GROUND WATER
POTENTIOMETRIC SURFACE MAP
FALL 2010

DESIGNED BY: D.M.M.	DRAWN BY: C.T.J.
CHECKED BY:	PROJECT NO.: JOHN-4
SCALE: AS SHOWN	DATE: DEC. 2010
FILE NAME: JOHN-D0637	
SHEET NO.	DRAWING NO. FIG. 1

G:\CAD\Johnston\John-4\sheets\JOHN-D0637.dwg - 12/23/2010 11:11 AM

Tables

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Table 1
Johnston County Phase 5 Lined Landfill
Ground Water Elevations & Velocities
10/25/2010

Well	Northing	Easting	TOC Elevation (feet)	Water Level (feet)	GW Elev (feet)	Hyd. Cond. (ft/day)	Porosity (%)	Gradient (ft/ft)	Velocity (ft/day)
MW-5-1	642015.58	2169415.4	232.17	23.72	208.45	2.275	0.2	0.022	0.250
MW-5-2	642487.14	2168749.63	206.77	6.03	200.74	5.247	0.2	0.024	0.630
MW-5-3	642851.56	2168588.27	203.8	10.32	193.48	0.995	0.2	0.025	0.124
MW-5-4	643464.18	2168455.67	186.58	7	179.58	0.465	0.2	0.020	0.047
MW-5-5	643800.44	2168449.11	185.42	12.51	172.91	0.261	0.2	0.017	0.022
MW-5-6	643938.92	2168706.91	199.11	30.61	168.5	0.366	0.2	0.021	0.038
MW-5-7	643786.2	2169150.69	182.73	11.6	171.13	0.422	0.2	0.020	0.042
MW-5-8	643347.86	2169177.25	189.31	9.57	179.74	0.312	0.2	0.010	0.016
MW-5-9	643102.64	2169406.82	198.31	13.6	184.71	0.309	0.2	0.031	0.048
MW-5-10	642917.77	2169543.59	202.88	14.37	188.51	0.037	0.2	0.023	0.004
LL-1	645398.84	2168192.54	na	15.53	na	na	na	na	na
LL-2	645867.44	2168271.33	na	15.39	na	na	na	na	na
LL-3	645957.48	2168106	na	18.68	na	na	na	na	na
LL-4	645781.3	2167851.39	na	8.2	na	na	na	na	na

Notes: Velocity Calculated from V=K*I/n
V = velocity
K = Hydraulic Conductivity
I = Gradient
n = Porosity
Hydraulic Conductivity data from slug testing
Porosity values assumed from Groundwater & Wells (Driscoll)
na = not available

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Table 2
Johnston County Phase 5 Lined Landfill
Field Parameters
10/25/2010

Well Identification #	Static Water Level (ft) * (DTW)	Temperature (°Celsius)	Turbidity (NTU)	pH	Specific Conductivity (uS/cm)
MW – 5-1	23.72	19.33	38.5	4.37	160
MW – 5-2	6.03	18.52	60.3	4.23	343
MW – 5-3	10.32	19.65	35.8	4.5	90
MW – 5-4	7	18.06	605	4.89	53
MW – 5-5	12.51	20.52	3.86	4.78	46
MW – 5-6	30.61	18.91	16.2	5.21	60
MW – 5-7	11.6	18.02	Off-Scale	5.42	47
MW – 5-8	9.57	19.65	7.27	4.95	313
MW – 5-9	13.6	19.25	32.6	4.93	47
MW – 5-10	14.37	18.34	27.6	4.82	51
Phase 5 Direct Leachate	N/A	22.15	173	7.1	6880
Lagoon Lchte.#1	15.53	19.85	1.49	5.45	111
Lagoon Lchte. #2	15.39	18.47	16.1	6.14	213
Lagoon Lchte. #3	18.68	18.61	5.19	5.69	57
Lagoon Lchte. #4	8.2	17.56	7.33	5.83	109
SW5 – 1	N/A	15.81	7.51	6.54	309
SW5 – 2	N/A	15.59	27.6	7.02	171

N/A - Not Analyzed
Data collected by Kevin Shields of Johnston County

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ENGINEERING & GEOLOGICAL SERVICES

Table 3
Johnston County Phase 5 Lined Landfill
Detected Inorganic and Organic Constituents
10/25/2010

Inorganic Constituents

Parameter	SWSL	2L	MW-5-1	MW-5-2	MW-5-3	MW-5-4	MW-5-5	MW-5-6	MW-5-7	MW-5-8	MW-5-9	MW-5-10	SW-5-1	SW-5-2
Antimony	6	1	ND	ND	ND	ND	ND	0.2J	ND	ND	ND	ND	ND	ND
Arsenic	10	10	0.3J	0.2J	0.2J	3.5J	0.2J	**11.4**	2.9J	ND	0.5J	0.2J	0.3J	0.9J
Barium	100	700	**168**	**389**	94J	**253**	32.2J	70.2J	**155**	**574**	31.2J	77.5J	**252**	54.9J
Beryllium	1	4	0.3J	1	0.7J	**2**	0.1J	0.1J	**1**	0.3J	0.1J	0.1J	0.1J	0.1J
Cadmium	1	2	0.1J	0.3J	0.1J	0.3J	0.1J	ND	0.4J	0.1J	0.1J	0.1J	0.1J	ND
Cobalt	10	1	1.8J	4.9J	3.6J	**14**	0.7J	5.8J	2.9J	6.4J	0.9J	6.6J	1.1J	1J
Copper	10	1000	0.5J	1.4J	3.9J	5.4J	0.7J	1.4J	4.8J	0.7J	1.4J	0.6J	0.9J	1.7J
Lead	10	15	3J	5.9J	4J	**29**	2.4J	2.5J	**18**	3.9J	1..1J	2.4J	1.1J	0.6J
Nickel	50	100	2.6J	4.6J	3J	11.7J	0.5J	1J	4.8J	6.4J	0.7J	1.7J	2.2J	2J
Selenium	10	20	ND	0.7J	ND	0.4J	0.6J	ND	0.9J	0.4J	ND	ND	ND	ND
Silver	10	20	ND	0.1J	ND	0.1J	ND	0.1J	0.1J	ND	ND	ND	ND	ND
Total Chromium	10	10	0.4J	0.9J	0.7J	0.8J	0.6J	0.1J	1.9J	ND	1J	0.4J	0.6J	0.6J
Vanadium	25	0.3	1.3J	2.8J	1.5J	3.8J	0.6J	0.5J	6.1J	ND	2.5J	1.9J	1.5J	1.7J
Thallium	5.5	0.28	0.1J	0.2J	0.1J	0.7J	ND	0.1J	0.1J	0.1J	ND	0.1J	0.1J	ND
Zinc	10	1000	1.5J	6.5J	8.1J	**39**	1.8J	2.9J	**33**	4.2J	4.2J	1.8J	4.6J	5.9J

Organic Constituents

Parameter	SWSL	2L	MW-5-1	MW-5-2	MW-5-3	MW-5-4	MW-5-5	MW-5-6	MW-5-7	MW-5-8	MW-5-9	MW-5-10	SW-5-1	SW-5-2
1,1-Dichloroethane	5	6	ND	ND	ND	ND	ND	0.4J	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	1	0.6	ND	**4.5**	0.4J	ND	ND	ND	ND	**6**	ND	ND	ND	ND
Acetone	100	6000	ND	ND	9.2J	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	1	1	ND	ND	ND	ND	ND	0.6J	ND	ND	ND	ND	ND	ND
Cis-1,2-Dichloroethene	5	70	ND	ND	ND	ND	ND	0.6J	ND	ND	ND	ND	ND	ND

ND - Not detected at or above SWSL
Shading - Levels above 2L standard or no 2L standard
Bold Letters - Constituent detected above SWSL
J - Detected constituents below SWSL limit

All SWSLs, 2L Standards and Results are in ug/l.

** Trip Blank had 418 ug/l of Acetone and 7.8 ug/l of Methylene Chloride

RICHARDSON SMITH GARDNER & ASSOCIATES
ENGINEERING & GEOLOGICAL SERVICES

Table 4
Johnston County Phase 5 Landfill
Statistical Analysis Summary
10/25/2010

Location	Parameter	Result	Detection Limit	Test Units	%ND	%CL	Test	Statistically Significant?	2nd statistical Analysis	Test
MW 5-6	Arsenic	11.4	10	ug/l	86.2	78.4	NPTL	N	--	--
MW 5-2	Barium	389	100	ug/l	56.8	78.4	NPTL	N	--	--
MW 5-4	Barium	253	100	ug/l	72.4	78.4	NPTL	N	--	--
MW 5-7	Barium	155	100	ug/l	75.9	78.4	NPTL	N	--	--
MW 5-8	Barium	574	100	ug/l	69	78.4	NPTL	N	--	--
MW 5-4	Beryllium	2	1	ug/l	79.3	78.4	NPTL	N	--	--
MW 5-7	Beryllium	1	1	ug/l	75.9	78.4	NPTL	N	--	--
MW 5-4	Cobalt	14	10	ug/l	75.9	78.4	NPTL	N	--	--
MW 5-4	Lead	29	10	ug/l	75.9	78.4	NPTL	Y	Y	MCL-PTI (1992)
MW 5-7	Lead	18	10	ug/l	62.1	78.4	NPTL	Y	Y	MCL-PTI (1992)
MW 5-4	Zinc	39	10	ug/l	72.4	93.5	NPPL	N	--	--
MW 5-7	Zinc	33	10	ug/l	72.4	93.5	NPPL	N	--	--

Legend:

%ND	Method chosen due to percent non-detects
NPTL	Non-parametricTolerance Limit
NPPL	Non-parametric Prediction Interval

Shading indicates statistical significance.

Notes:
MW-5-1 was used as the background well

By: DM
Date: 12/22/2010

Table 5
Johnston County Phase 5 Lined Landfill
Leachate and Leachate Pond Analyses
10/25/2010

Parameter	Unit	Leachate	Leachate Jun Box	Leachate Lagoon #1	Leachate Lagoon #2	Leachate Lagoon #3	Leachate Lagoon #4
1,1-Dichloroethane	ug/l	0.6J	1.2J	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.7J	0.4J	ND	ND	ND	ND
1,2-Dichloropropane	ug/l	0.5J	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	ug/l	**8.6**	**9.3**	ND	ND	ND	ND
2-Butanone	ug/l	7.4J	9.6J	ND	ND	ND	ND
4-Methyl-2-Pentanone	ug/l	ND	2.3J	ND	ND	ND	ND
Acetone	ug/l	58.3J	28.1J	ND	ND	ND	10.1J
Ammonia Nitrogen as N	ug/l	**352000**	**426000**	NM	NM	NM	NM
Antimony	ug/l	0.8J	1.4J	0.3J	ND	ND	ND
Arsenic	ug/l	**15**	**15**	ND	1.8J	ND	ND
Barium	ug/l	**197**	**505**	12J	11J	14J	1.3J
Benzene	ug/l	**8.4**	**15.7**	ND	ND	ND	ND
Beryllium	ug/l	0.1J	0.1J	0.1J	ND	ND	ND
BOD	ug/l	**28000**	**35000**	NM	NM	NM	NM
Cadmium	ug/l	0.5J	0.8J	ND	ND	ND	ND
Chlorobenzene	ug/l	0.9J	1.4J	ND	ND	ND	ND
Chloroethane	ug/l	0.8J	0.9J	ND	ND	ND	ND
Cis-1,2-Dichloroethene	ug/l	ND	1.6J	ND	ND	ND	ND
Cobalt	ug/l	**11**	8.1J	0.2J	**45**	0.3J	1.1J
COD	ug/l	**792000**	**676000**	NM	NM	NM	NM
Copper	ug/l	3.6J	5.1J	0.2J	0.5J	0.3J	1.6J
Ethylbenzene	ug/l	**4**	**96.3**	ND	ND	ND	ND
Lead	ug/l	0.1J	0.4J	0.1J	0.1J	0.1J	0.2J
Nickel	ug/l	45.1J	**63**	1.1J	4.7J	0.2J	ND
Nitrate Nitrogen as N	ug/l	50J	ND	NM	NM	NM	NM
Selenium	ug/l	ND	ND	3.5J	ND	ND	ND
Silver	ug/l	0.1J	0.2J	0.1J	ND	ND	ND
Styrene	ug/l	ND	**2.9**	ND	ND	ND	ND
Sulfate	ug/l	6700J	5700J	ND	ND	ND	ND
Toluene	ug/l	**2**	**31.3**	NM	NM	NM	NM
Total Phosphorus as P	ug/l	**540**	**1110**	NM	NM	NM	NM
Total Suspended Residue	ug/l	**31000**	**58000**	NM	NM	NM	NM
trans-1,2-Dichloroethene	ug/l	0.3J	0.3J	ND	ND	ND	ND
Vanadium	ug/l	4.5J	8J	0.6J	0.5J	0.8J	1.3J
Vinyl Chloride	ug/l	0.8J	**2.3**	ND	ND	ND	ND
Xylenes	ug/l	**38.1**	**76.2**	ND	ND	ND	ND
Zinc	ug/l	6.4J	7.3J	2.3J	3J	3.1J	8.7J

** Trip Blank had 418 ug/l of Acetone and 7.8 ug/l of Methylene Chloride

Appendix A

Monitoring Well Information

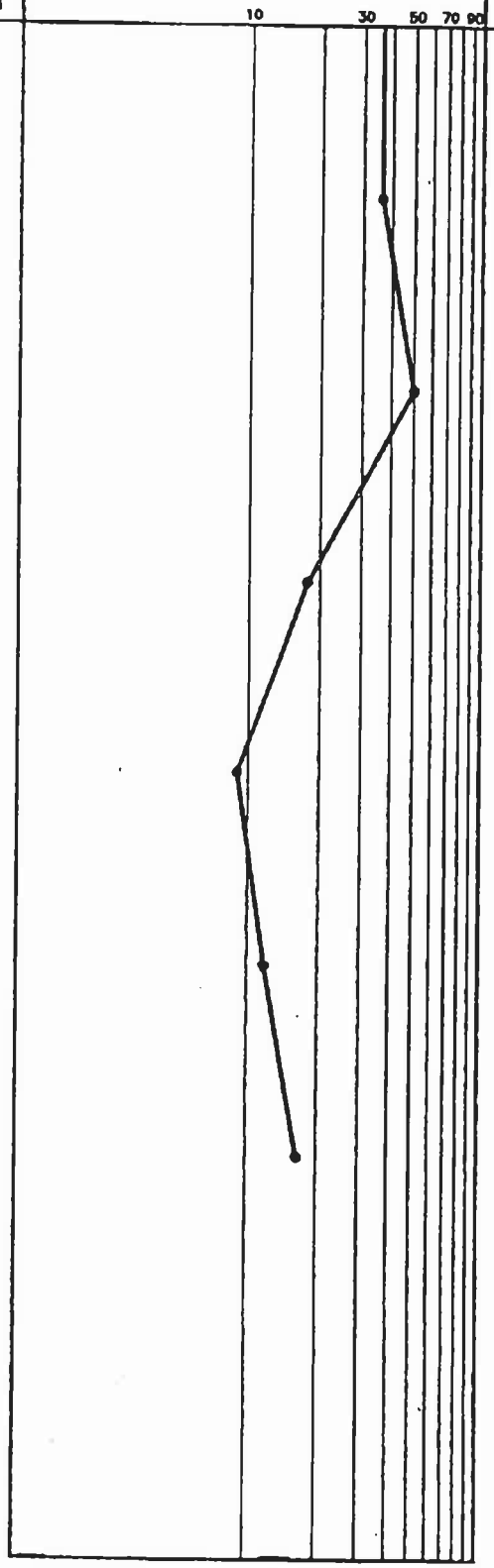
PROJECT:	JOHNSTON COUNTY LANDFILL PHASE 5 MONITOR WELL INSTALLATION	TEST BORING RECORD	DMW 5-1
PROJECT NO.:	1054-95-286A	ELEVATION:	
LOGGED BY:	W. BECKWITH	BORING DEPTH:	30 FEET
DATE DRILLED:	4/16/97	WATER LEVEL:	19.4' ON 4/17/97
DRILL METHOD:	4 ¼" H.S.A.	DRILL RIG:	MUDBUG

NOTES: 2" PVC MONITOR WELL INSTALLED IN BOREHOLE AT COMPLETION OF DRILLING

WELL SCHEMATIC LEGEND: SCREEN INTERVAL, SANDPACK, BENTONITE, GROUT

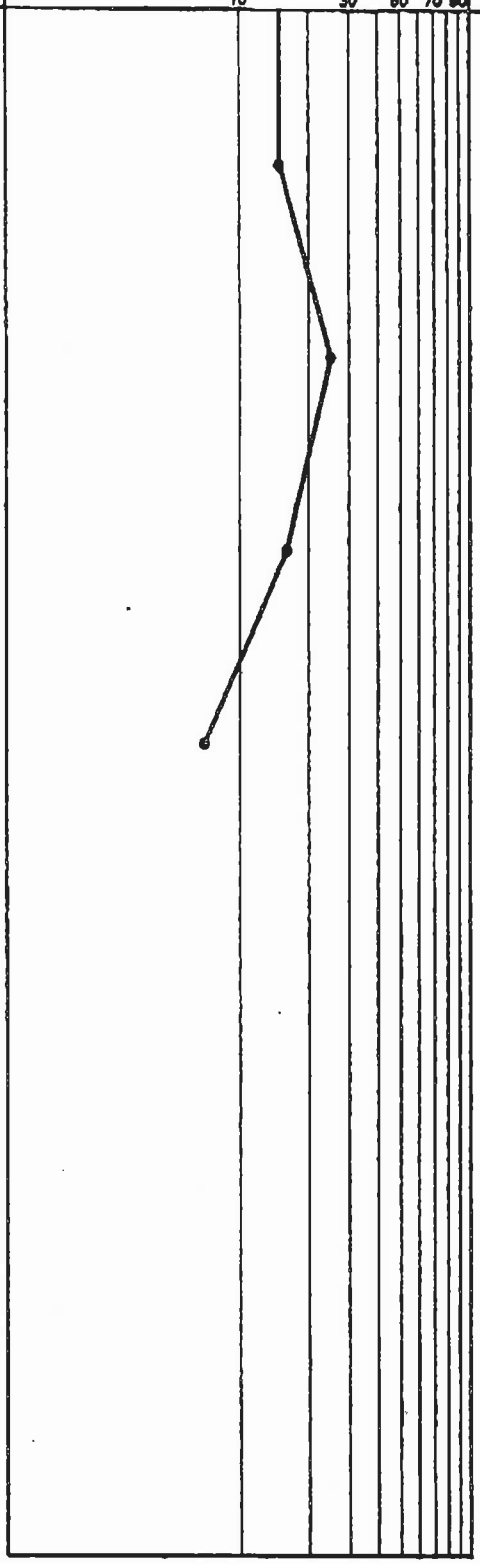
DEPTH (ft)	Soil Description	SAMPLE	BPF
	LOOSE GRAY SILTY FINE TO MEDIUM SAND (SM) PLOWED LAYER		
	LOOSE TAN SILTY FINE TO MEDIUM SAND (SM)		
	DENSE ORANGE BROWN CLAYEY MEDIUM TO COARSE SAND (SC)	SS-1	36
	DENSE ORANGE SILTY FINE TO MEDIUM SAND WITH TRACE OF CLAY (SM)	SS-2	50
		SS-3	18
	LOOSE PINK SILTY WELL GRADED SAND WITH OCCAISIONAL PES GRAVEL (SW-SM)	SS-4	9
	MEDIUM DENSE YELLOW BROWN SILTY WELL GRADED SAND WITH SOME GRAVEL (15-20% UP TO 1/2"ø) (SM-GM) AND WELL-ROUNDED QUARTZ	SS-5	12
	RED SILTY FINE TO COARSE SAND WITH OCCASIONAL PEA GRAVEL (SM) HEAVY IRON STAINING	SS-6	16
	BORING TERMINATED AT 30 FT.		

Standard Penetration Test Data BLOWS/FT



PROJECT: JOHNSTON COUNTY LANDFILL PHASE 5 MONITOR WELL INSTALLATION		TEST BORING RECORD DMW 5-2
PROJECT NO.: 1054-95-286A	ELEVATION:	NOTES: 2" PVC MONITOR WELL INSTALLED IN BOREHOLE AT COMPLETION OF DRILLING
LOGGED BY: W. BECKWITH	BORING DEPTH: 22 FEET	WELL SCHEMATIC LEGEND
DATE DRILLED: 4/22/97	WATER LEVEL: 1.6' ON 4/25/97	SCREEN INTERVAL, SANDPACK, BENTONITE, GROUT
DRILL METHOD: 4 ¼" H.S.A.	DRILL RIG: MOBILE B-57 ATV	

DEPTH (ft)	GRAPHIC LOG	Soil Description	WELL SCHEMATIC	WATER LEVEL	SAMPLE	ELEVATION	Standard Penetration Test Data BLOWS/FT	BPF
		FILL: LOOSE LIGHT BROWN FINE TO MEDIUM GRAINED **SAND** (SP)						
		TOPSOIL: MEDIUM DENSE BLACK SILTY FINE TO COARSE **SAND** WITH SOME ORGANIC MATTER (SM)		W				
		MEDIUM DENSE LIGHT BROWN SLIGHTLY SILTY FINE TO COARSE **SAND** (SW)			SS-1			15
5		IRON CEMENTED CONGLOMERATE						
		VERY STIFF REDDISH BROWN BECOMING GRAY SILTY **CLAY** (CH)			SS-2			25
10		VERY STIFF GRAY SILTY **CLAY** WITH SOME FINE SAND AND OCCAISIONAL QUARTZ GRAVEL (CL-CH)			SS-3			16
15		LOOSE YELLOW BROWN AND GRAY SILTY FINE TO MEDIUM GRAINED **SAND** FINELY LAMINATED (SC)			SS-4			7
20		*BORING TERMINATED AT 22 FT.*						
25								
30								
35								
40								



PROJECT:	JOHNSTON COUNTY LANDFILL PHASE 5 MONITOR WELL INSTALLATION	TEST BORING RECORD	DMW 5-3
PROJECT NO.:	1054-95-286A	ELEVATION:	
LOGGED BY:	W. BECKWITH	BORING DEPTH:	22 FEET
DATE DRILLED:	4/22/97	WATER LEVEL:	7.0' ON 4/25/97
DRILL METHOD:	4 ¼" H.S.A.	DRILL RIG:	MOBILE B-57 ATV

NOTES: 2" PVC MONITOR WELL INSTALLED IN BOREHOLE AT COMPLETION OF DRILLING

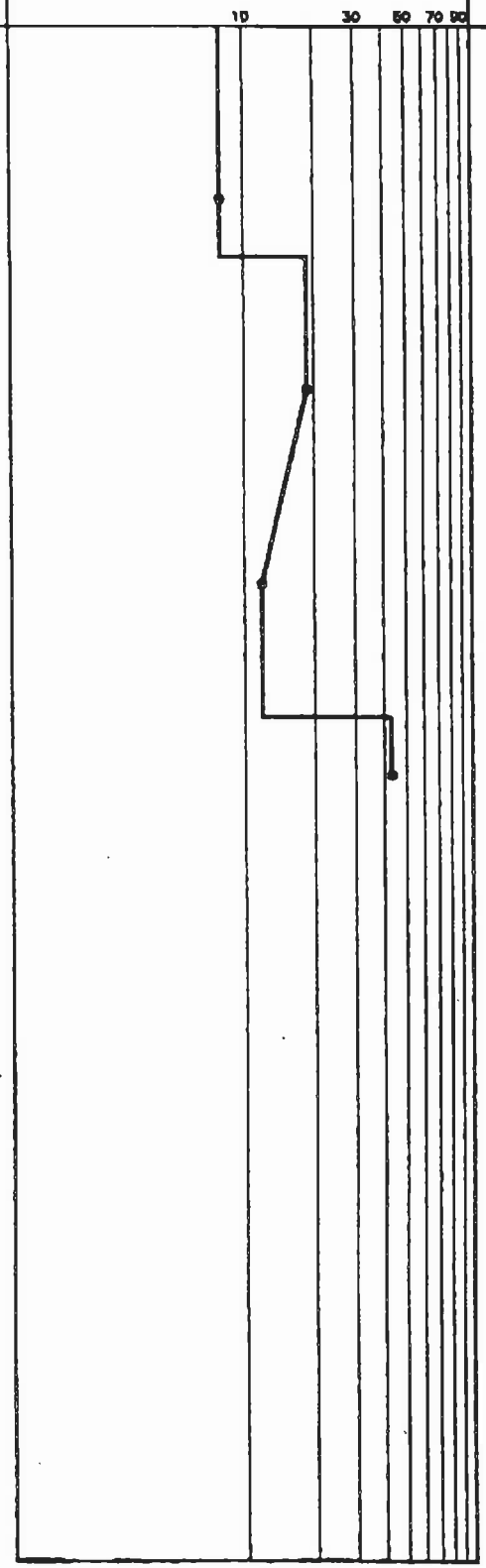
WELL SCHEMATIC LEGEND: SCREEN INTERVAL, SANDPACK, BENTONITE, GROUT

DEPTH (ft)	GRAPHIC LOG	Soil Description	WELL SCHEMATIC	WATER LEVEL	SAMPLE	ELEVATION	Standard Penetration Test Data BLOWS/FT (10, 30, 50, 70, 90)	BPF
		TOPSOIL: GRAY SILTY **SAND** (SM)						
		STIFF REDDISH TAN TO RED AND GRAY SILTY **CLAY** (CL)			SS-1			14
5								
		HARD GRAY SILTY **CLAY** WITH TRACE OF FINE SAND AND OCCAISIONAL GRAVEL BEDS (CL)		▼	SS-2			31
10								
		VERY STIFF RED BROWN AND YELLOW SILTY FINE **SAND** FINELY LAMINATED WITH SILTY CLAY (CL)			SS-3			25
15								
		MEDIUM DENSE LIGHT GRAY AND BROWN SILTY VERY FINE **SAND** WITH CLAY LENSES (SM)			SS-4			13
20								
		BORING TERMINATED AT 22 FT.						
25								
30								
35								
40								

PROJECT: JOHNSTON COUNTY LANDFILL PHASE 5 MONITOR WELL INSTALLATION		TEST BORING RECORD DMW 5-4
PROJECT NO.: 1054-95-286A	ELEVATION:	NOTES: 2" PVC MONITOR WELL INSTALLED IN BOREHOLE AT COMPLETION OF DRILLING
LOGGED BY: W. BECKWITH	BORING DEPTH: 22 FEET	WELL SCHEMATIC LEGEND
DATE DRILLED: 4/22/97	WATER LEVEL: 2.9' ON 4/25/97	SCREEN INTERVAL, SANDPACK, BENTONITE, GROUT
DRILL METHOD: 4 ¼" H.S.A.	DRILL RIG: MOBILE B-57 ATV	

DEPTH (ft)	Soil Description	SAMPLE	BPF
	DARK GRAY SILTY **SAND** (SM)		
	LOOSE GRAY AND TAN CLAYEY **SAND** (SC)	SS-1	8
5			
	MEDIUM DENSE LIGHT GRAY STREAKED WITH YELLOW SILTY FINE TO MEDIUM **SAND** WITH TRACE OF MICA	SS-2	19
10			
	MEDIUM DENSE YELLOW BROWN TO ORANGE STREAKED WITH GRAY SILTY CLAYEY **SAND** (SM-SC)	SS-3	12
15			
	RESIDUUM: HARD YELLOW BROWN TO LIGHT GRAY FINE SANDY CLAYEY **SILT** (ML)	SS-4	44
20			
	BORING TERMINATED AT 22 FT.		
25			
30			
35			
40			

Standard Penetration Test Data BLOWS/FT



PROJECT: JOHNSTON COUNTY LANDFILL PHASE 5 MONITOR WELL INSTALLATION		TEST BORING RECORD DMW 5-5
PROJECT NO.: 1054-95-286A	ELEVATION:	NOTES: 2" PVC MONITOR WELL INSTALLED IN BOREHOLE AT COMPLETION OF DRILLING
LOGGED BY: W. BECKWITH	BORING DEPTH: 22 FEET	WELL SCHEMATIC LEGEND
DATE DRILLED: 4/22/97	WATER LEVEL: 8.1' ON 4/25/97	SCREEN INTERVAL, SANDPACK, BENTONITE, GROUT
DRILL METHOD: 4 ¼" H.S.A.	DRILL RIG: MOBILE B-57 ATV	

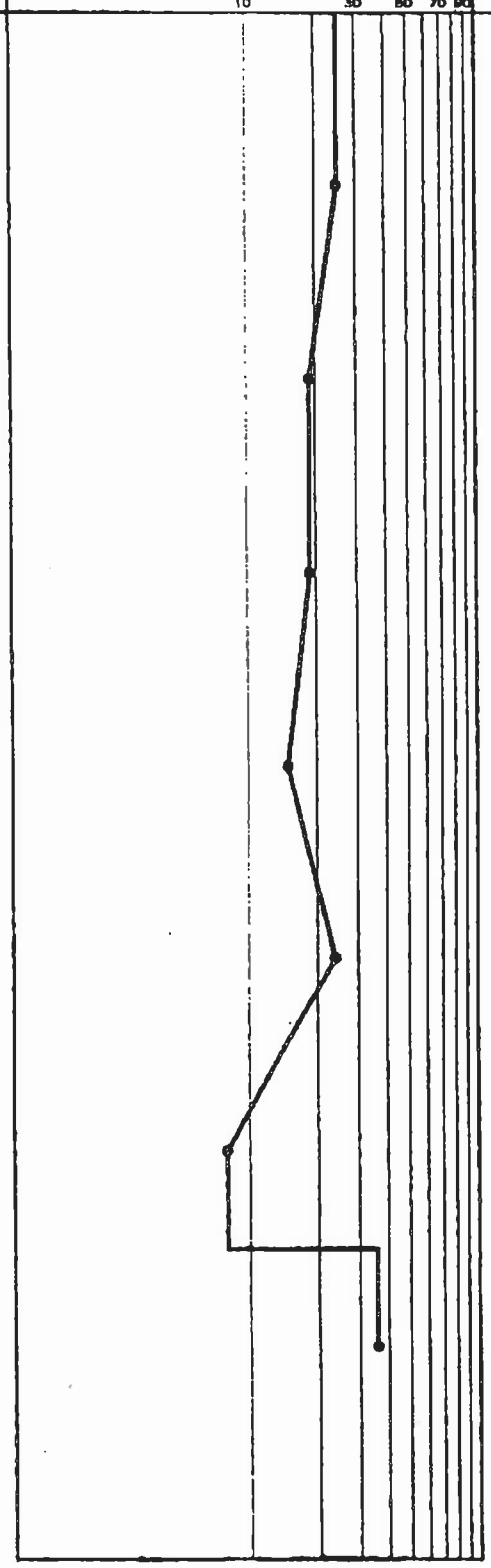
DEPTH (ft)	Soil Description	SAMPLE	Standard Penetration Test Data BLOWS/FT (10, 30, 50, 70, 90)	BPF
	FILL: LOSSE BROWN SILTY **SAND** (SM)			
	MEDIUM DENSE PINKISH GRAY CLAYEY FINE TO MEDIUM **SAND** (SC)	SS-1		18
5				
		SS-2		15
10				
		SS-3		16
15	MEDIUM DENSE LIGHT GRAY AND YELLOW CLAYEY **SAND** (SC)			
	VERY STIFF ORANGE BROWN SILTY **CLAY** WITH ROUNDED QUARTZ GRAVEL UP TO 3/4"ø (CL)	SS-4		27
20	RESIDUUM: VERY STIFF YELLOW **SILT** (ML)			
	BORING TERMINATED AT 22 FT.			
25				
30				
35				
40				

PROJECT:	JOHNSTON COUNTY LANDFILL PHASE 5 MONITOR WELL INSTALLATION	TEST BORING RECORD	DMW 5-6
PROJECT NO.:	1054-95-286A	ELEVATION:	
LOGGED BY:	W. BECKWITH	BORING DEPTH:	39 FEET
DATE DRILLED:	4/22/97	WATER LEVEL:	25.5' ON 4/25/97
DRILL METHOD:	4 ¼" H.S.A.	DRILL RIG:	MOBILE B-57 ATV

NOTES: 2" PVC MONITOR WELL INSTALLED IN BOREHOLE AT COMPLETION OF DRILLING

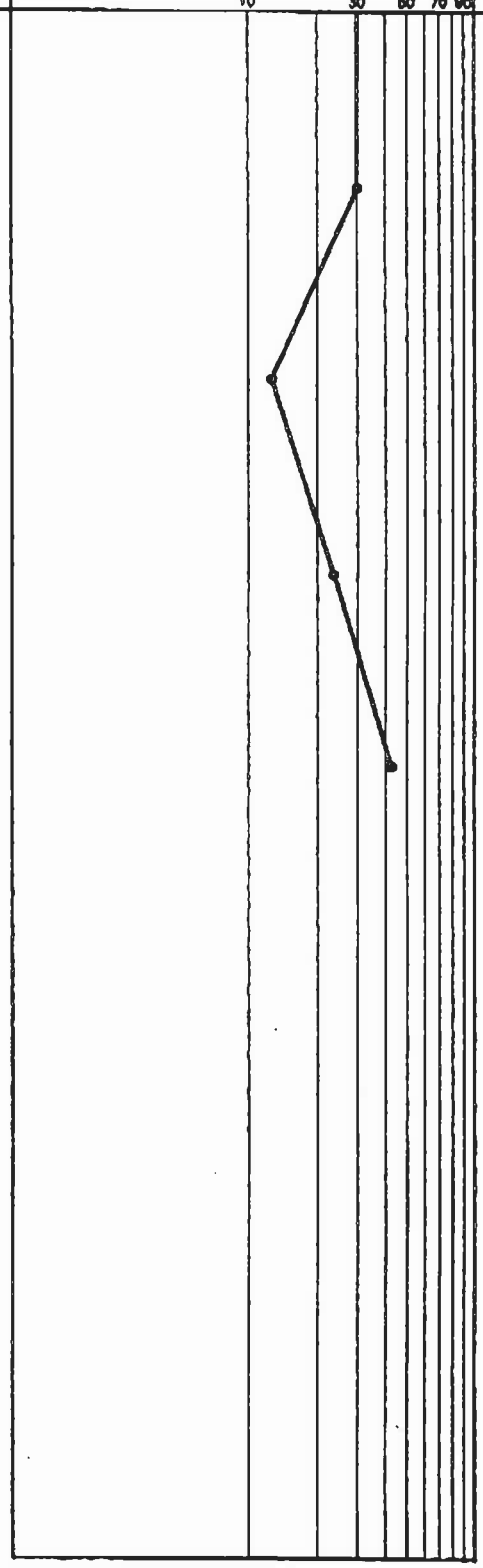
WELL SCHEMATIC LEGEND

DEPTH (ft)	Soil Description	SAMPLE	BPF
	LIGHT GRAY CLAYEY **SAND** (SC)		
	LIGHT GRAY SILTY **CLAY** (CH)		
5	MEDIUM DENSE YELLOW BROWN SLIGHTLY CLAYEY SILTY FINE TO MEDIUM GRAINED **SAND** (SC-SM)	SS-1	25
10	MEDIUM DENSE ORANGE BROWN SILTY FINE TO MEDIUM **SAND** WITH OCCASIONAL 1" THICK CLAY LENSES (SM WITH CL)	SS-2	19
15		SS-3	19
20	MEDIUM DENSE WHITE CLAYEY MEDIUM TO COARSE **SAND** (SC)	SS-4	15
25		SS-5	24
30		SS-6	8
35	HARD YELLOW BROWN AND LIGHT GRAY **SILT** (ML) SHOWS RELICT SLATE STRUCTURE	SS-7	36
40	BORING TERMINATED AT 39 FT.		



PROJECT: JOHNSTON COUNTY LANDFILL PHASE 5 MONITOR WELL INSTALLATION		TEST BORING RECORD DMW 5-7
PROJECT NO.: 1054-95-286A	ELEVATION:	NOTES: 2" PVC MONITOR WELL INSTALLED IN BOREHOLE AT COMPLETION OF DRILLING
LOGGED BY: W. BECKWITH	BORING DEPTH: 23 FEET	WELL SCHEMATIC LEGEND
DATE DRILLED: 4/18/97	WATER LEVEL: 7.0' ON 4/25/97	SCREEN INTERVAL, SANDPACK, BENTONITE, GROUT
DRILL METHOD: 4 1/4" H.S.A.	DRILL RIG: MOBILE B-57 ATV	

DEPTH (M)	GRAPHIC LOG	Soil Description	SAMPLE	BPF
		TOPSOIL: LIGHT GRAY SILTY SAND (SM)		
5		MEDIUM DENSE LIGHT BROWN SILTY FINE SAND WITH SOME WELL-ROUNDED QUARTZ GRAVEL (SM)	SS-1	30
10		MEDIUM DENSE BROWN MEDIUM TO COARSE SAND WITH TRACE OF SILT (SW)	SS-2	13
15		VERY STIFF TAN SILT (ML)	SS-3	24
20		HARD TAN SILT (ML) SHOWS RELICT BEDROCK TEXTURE	SS-4	43
25		BORING TERMINATED AT 23 FT.		
30				
35				
40				



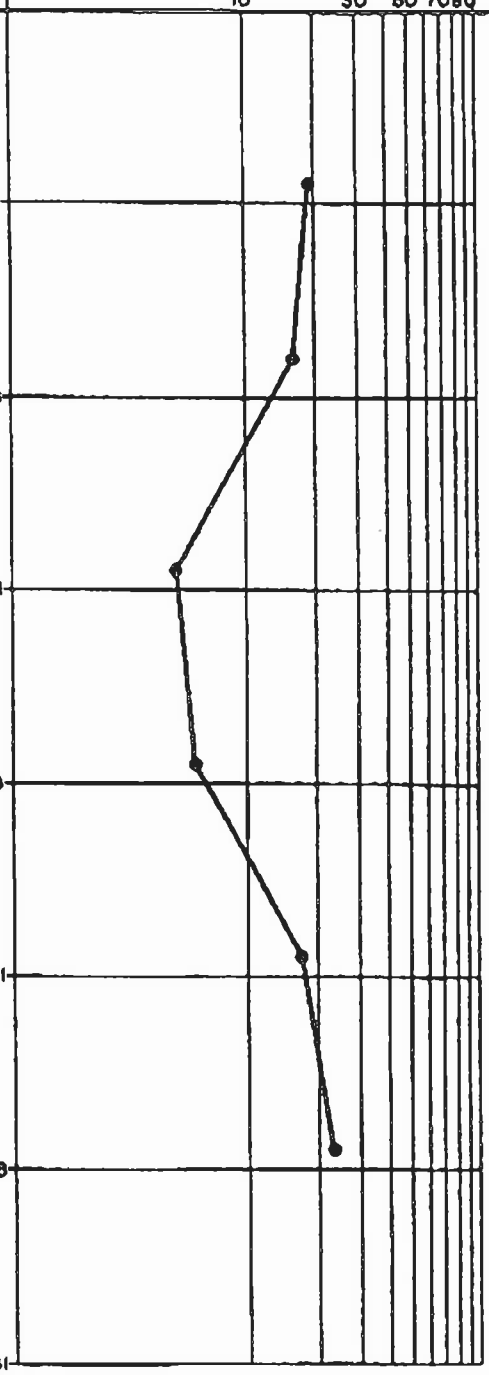
PROJECT: JOHNSTON COUNTY LANDFILL PHASE 5 MONITOR WELL INSTALLATION		TEST BORING RECORD DMW 5-8
PROJECT NO.: 1054-95-286A	ELEVATION:	NOTES: 2" PVC MONITOR WELL INSTALLED IN BOREHOLE AT COMPLETION OF DRILLING
LOGGED BY: W. BECKWITH	BORING DEPTH: 22 FEET	WELL SCHEMATIC LEGEND
DATE DRILLED: 4/21/97	WATER LEVEL: 3.2' ON 4/25/97	SCREEN INTERVAL, SANDPACK, BENTONITE, GROUT
DRILL METHOD: 4 ¼" H.S.A.	DRILL RIG: MOBILE B-57 ATV	

DEPTH (ft)	GRAPHIC LOG	Soil Description	WELL SCHEMATIC	WATER LEVEL	SAMPLE	ELEVATION	Standard Penetration Test Data BLOWS/FT (10, 30, 50, 70, 90)	BPF
		FILL: LOOSE REDDISH TAN SILTY **SAND** (SM)						
		TOPSOIL: LOOSE GRAY SILTY **SAND** (SM)						
		ALLUVIUM: LIGHT TAN FINE TO MEDIUM **SAND** WITH TRACE OF SILT (SP)			SS-1			12
5								
		LOOSE GRAY SILTY FINE TO MEDIUM **SAND** (SM)			SS-2			8
10								
		WHITE YELLOW AND ORANGE SILTY VERY FINE **SAND** WITH OCCASIONAL FINE MICA (SM)			SS-3			10
15								
		REDDISH TAN SILTY WELL GRADED **SAND** WITH OCCASIONAL GRAVEL (SW)						
		LIGHT GRAY TAN FINELY LAMINATED **SILT** (ML)			SS-4			15
20								
		BORING TERMINATED AT 22 FT.						
25								
30								
35								
40								

PROJECT:	Johnston County Landfill Johnston County, NC	TEST BORING RECORD DMW 5-9
PROJECT NO.: 1054-95-266	ELEVATION: 195.53 FEET	NOTES: Monitor Well Installed
LOGGED BY: WJB	BORING DEPTH: 30.0 FEET	
DATE DRILLED: 3-18-95	WATER LEVEL: 10.8/6.65 FEET	
DRILLING METHOD: 3-1/4" I.D. HSA	DRILL RIG: Mobile B-57	

DEPTH (ft)	GRAPHIC LOG	Soil Description	OVM (ppm)	WATER LEVEL	SAMPLE	ELEV.	BPF
		Topsoil					
		Stiff Yellow-Brown Wet Sandy Silty **CLAY** (CL)					
5		Medium Dense to Loose Red-Tan and Yellow-Gray Wet Clayey **SAND** (SC)				191	19
10						186	18
15		Loose Light Gray and Yellow Silty **SAND** (SM)				181	5
20						176	8
		Medium Dense Pink-Tan and Light Gray Silty **SAND** with Trace of Mica (SM)					
25		- with Iron-Cemented Fragments below 26.0'				171	17
30		Stiff to Very Stiff White-Tan Clayey **SILT** with occasional Quartz Fragments (ML-MH)				166	23
35		Boring terminated at 30.0. Groundwater encountered at 10.8' and 6.65' below existing grade at the completion of drilling and 24 hours after completion drilling, respectively.				161	

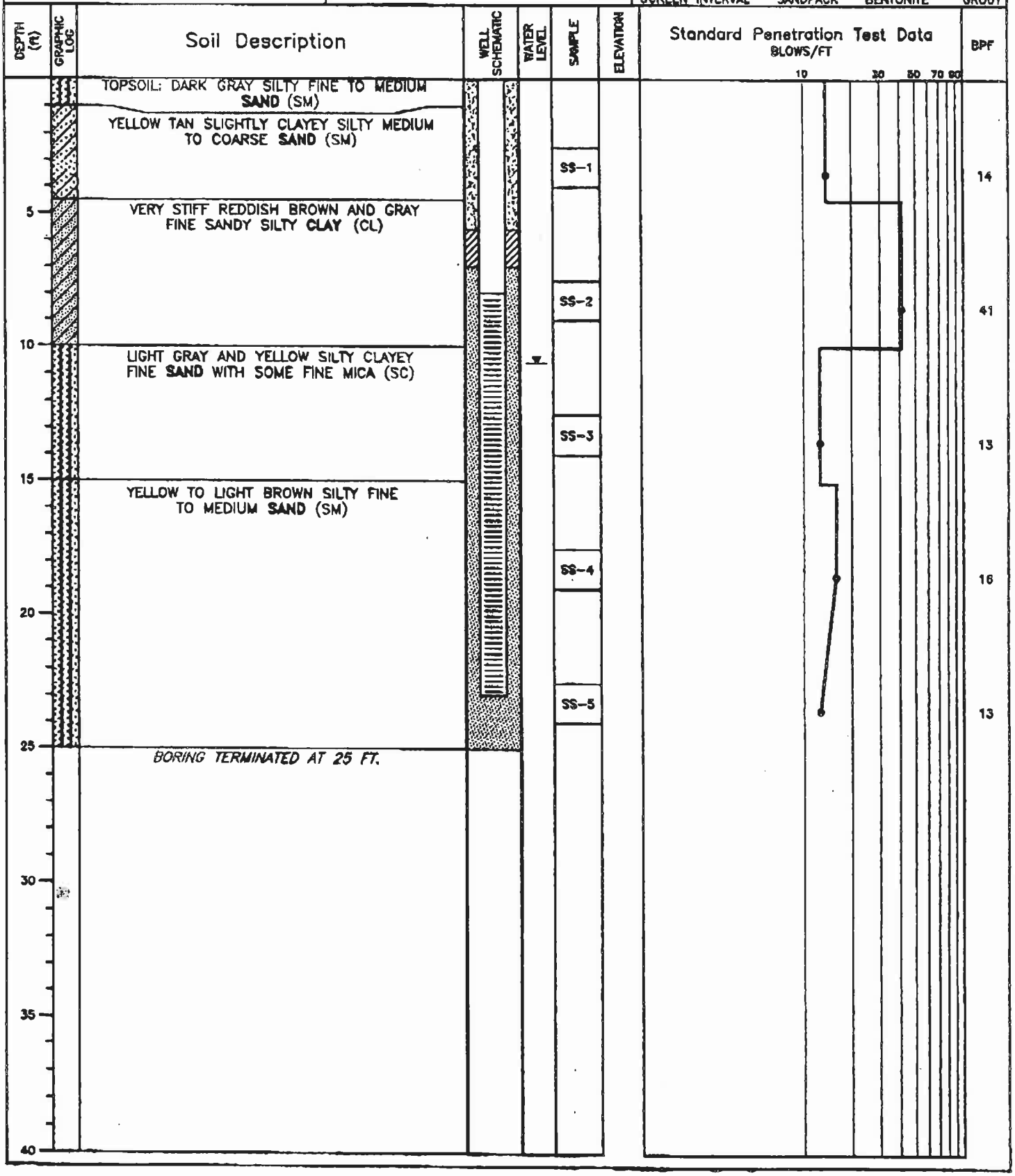
Standard Penetration Test Data (Blows/ft)



S&ME Environmental Services

PROJECT:	JOHNSTON COUNTY LANDFILL PHASE 5 MONITOR WELL INSTALLATION	TEST BORING RECORD DMW 5-10
PROJECT NO.: 1054-95-286A	ELEVATION:	NOTES: 2" PVC MONITOR WELL INSTALLED IN BOREHOLE AT COMPLETION OF DRILLING
LOGGED BY: W. BECKWITH	BORING DEPTH: 25 FEET	WELL SCHEMATIC LEGEND
DATE DRILLED: 4/21/97	WATER LEVEL: 10.6' ON 4/25/97	SCREEN INTERVAL, SANDPACK, BENTONITE, GROUT
DRILL METHOD: 4 ¼" H.S.A.	DRILL RIG: MOBILE B-57 ATV	

DEPTH (ft)	Soil Description	SAMPLE	BPF
	TOPSOIL: DARK GRAY SILTY FINE TO MEDIUM **SAND** (SM)		
	YELLOW TAN SLIGHTLY CLAYEY SILTY MEDIUM TO COARSE **SAND** (SM)	SS-1	14
5	VERY STIFF REDDISH BROWN AND GRAY FINE SANDY SILTY **CLAY** (CL)	SS-2	41
10	LIGHT GRAY AND YELLOW SILTY CLAYEY FINE **SAND** WITH SOME FINE MICA (SC)	SS-3	13
15	YELLOW TO LIGHT BROWN SILTY FINE TO MEDIUM **SAND** (SM)	SS-4	16
20		SS-5	13
25	*BORING TERMINATED AT 25 FT.*		
30			
35			
40			



PROJECT: JOHNSTON COUNTY LANDFILL PHASE 5 MONITOR WELL INSTALLATION		TEST BORING RECORD DLL-I
PROJECT NO.: 1054-95-286A	ELEVATION:	NOTES: 2" PVC MONITOR WELL INSTALLED IN BOREHOLE AT COMPLETION OF DRILLING
LOGGED BY: W. BECKWITH	BORING DEPTH: 23 FEET	WELL SCHEMATIC LEGEND
DATE DRILLED: 4/17/97	WATER LEVEL: 12.2' ON 4/18/97	SCREEN INTERVAL, SANDPACK, BENTONITE, GROUT
DRILL METHOD: 4 ¼" H.S.A.	DRILL RIG: DIETRICH D-100	

DEPTH (ft)	GRAPHIC LOG	Soil Description	WELL SCHEMATIC	WATER LEVEL	SAMPLE	ELEVATION	Standard Penetration Test Data BLOWS/FT (10, 30, 50, 70, 90)	BPF
		LOOSE GRAY SILTY SAND (SM)						
		MEDIUM DENSE ORANGE BROWN CLAYEY FINE SAND (SC)			SS-1			16
5								
		HARD GREEN GRAY SILT (ML) SHOWS RELICT BEDROCK TEXTURE.			SS-2			42
10								
		PARTIALLY WEATHERED ROCK (SLATE) SAMPLED AS GREEN AND BROWN SILT AND SLATE FRAGMENTS		▼	SS-3			50/.42
15								
					SS-4			50/.25
20								
		BORING TERMINATED AT 23 FT.						
25								
30								
35								
40								

PROJECT: JOHNSTON COUNTY LANDFILL PHASE 5 MONITOR WELL INSTALLATION		TEST BORING RECORD DLL-2
PROJECT NO.: 1054-95-286A	ELEVATION:	NOTES: 2" PVC MONITOR WELL INSTALLED IN BOREHOLE AT COMPLETION OF DRILLING
LOGGED BY: W. BECKWITH	BORING DEPTH: 24 FEET	WELL SCHEMATIC LEGEND
DATE DRILLED: 4/17/97	WATER LEVEL: 11.5' ON 4/18/97	SCREEN INTERVAL, SANDPACK, BENTONITE, GROUT
DRILL METHOD: 4 ¼" H.S.A.	DRILL RIG: DIETRICH D-100	

DEPTH (ft)	Soil Description	SAMPLE	BPF
	MEDIUM DENSE TAN CLAYEY FINE SAND WITH OCCAISIONAL SMALL WELL-ROUNDED QUARTZ GRAVEL (SC)		
5		SS-1	11
	HARD REDDISH BROWN SILT WITH WEATHERED SLATE FRAGMENTS (ML)		
	PARTIALLY WEATHERED ROCK (SLATE) SAMPLED AS BLUE GREEN SILT WITH SLATE FRAGMENTS		
10		SS-2	50/.4
15		SS-3	50/.4
20		SS-4	50/.15
	BORING TERMINATED AT 24 FT.		
25			
30			
35			
40			

Standard Penetration Test Data BLOWS/FT (10, 30, 50, 70, 90)

PROJECT: JOHNSTON COUNTY LANDFILL PHASE 5 MONITOR WELL INSTALLATION		TEST BORING RECORD DLL-3
PROJECT NO.: 1054-95-286A	ELEVATION:	NOTES: 2" PVC MONITOR WELL INSTALLED IN BOREHOLE AT COMPLETION OF DRILLING
LOGGED BY: W. BECKWITH	BORING DEPTH: 28 FEET	WELL SCHEMATIC LEGEND
DATE DRILLED: 4/18/97	WATER LEVEL: 15.9 ON 4/21/97	
DRILL METHOD: 4 ¼" H.S.A.	DRILL RIG: MOBILE B-57 ATV	

SCREEN INTERVAL | SANDPACK | BENTONITE | GROUT

DEPTH (ft)	GRAPHIC LOG	Soil Description	WELL SCHEMATIC	WATER LEVEL	SAMPLE	ELEVATION	Standard Penetration Test Data BLOWS/FT (10, 30, 50, 70, 90)	BPF
		LOOSE REDDISH TAN CLAYEY SAND WITH WELL-ROUNDED QUARTZ GRAVEL (SC)						
		STIFF REDDISH BROWN TO TAN SILT (ML)						
5								
		HARD GREEN-TAN SILT (ML) SHOWS RELICT BEDROCK TEXTURE						
10								
15					SS-1			43
20					SS-2			37
		PARTIALLY WEATHERED ROCK (SLATE) SAMPLED AS GREEN TAN SILT WITH SLATE FRAGMENTS			SS-3			50.3
25								
		BORING TERMINATED AT 28 FT.						
30								
35								
40								

PROJECT: JOHNSTON COUNTY LANDFILL PHASE 5 MONITOR WELL INSTALLATION		TEST BORING RECORD DLL-4
PROJECT NO.: 1054-95-286A	ELEVATION:	NOTES: 2" PVC MONITOR WELL INSTALLED IN BOREHOLE AT COMPLETION OF DRILLING
LOGGED BY: W. BECKWITH	BORING DEPTH: 14.5 FEET	WELL SCHEMATIC LEGEND
DATE DRILLED: 4/24/97	WATER LEVEL: 4.0' ON 4/25/97	SCREEN INTERVAL, SANDPACK, BENTONITE, GROUT
DRILL METHOD: 4 1/4" H.S.A.	DRILL RIG: MOBILE B-57 ATV	

DEPTH (ft)	GRAPHIC LOG	Soil Description	WELL SCHEMATIC	WATER LEVEL	SAMPLE	ELEVATION	Standard Penetration Test Data BLOWS/FT (10, 30, 50, 70, 90)	BPF
		STIFF RED BROWN CLAYEY SILT WITH DIABASE COBBLES (ML-CL)						
		STIFF YELLOW TO BROWN SILT WITH DIABASE COBBLES (ML)			SS-1			50/.5
5					SS-2			50/.5
10					SS-3			6
		DIABASE BEDROCK						
15		BORING TERMINATED UPON AUGER REFUSAL AT 14.5 FT.						
20								
25								
30								
35								
40								

Appendix B

Laboratory Analytical Report

Environment 1, Incorporated

Drinking Water ID: 37715
Wastewater ID: 10

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

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

ID#: 6033

JOHNSTON CO. LANDFILL (PHASE 5)
MR. KEVIN SHIELDS
P.O. BOX 2263
SMITHFIELD ,NC 27577

DATE COLLECTED: 10/25/10
DATE REPORTED : 11/15/10

REVIEWED BY:

PARAMETERS	MDL	SWSL	MW5-1	MW5-2	MW5-3	MW5-4	MW5-6	Analysis Date	Analyst	Method Code
Antimony, ug/l	0.22	6.0	--- U	Missing	Missing	--- U	0.2 J	11/01/10	LFJ	EPA200.8
Arsenic, ug/l	0.04	10.0	0.3 J	Missing	Missing	3.5 J	11.4	11/01/10	LFJ	EPA200.8
Barium, ug/l	0.03	100.0	168	Missing	Missing	253	70.2 J	11/01/10	LFJ	EPA200.8
Beryllium, ug/l	0.02	1.0	0.3 J	Missing	Missing	2	0.1 J	11/01/10	LFJ	EPA200.8
Cadmium, ug/l	0.02	1.0	0.1 J	Missing	Missing	0.3 J	--- U	11/01/10	LFJ	EPA200.8
Cobalt, ug/l	0.10	10.0	1.8 J	Missing	Missing	14	5.8 J	11/01/10	LFJ	EPA200.8
Copper, ug/l	0.03	10.0	0.5 J	Missing	Missing	5.4 J	1.4 J	11/01/10	LFJ	EPA200.8
Total Chromium, ug/l	0.03	10.0	0.4 J	Missing	Missing	0.8 J	0.1 J	11/01/10	LFJ	EPA200.8
Lead, ug/l	0.01	10.0	3 J	Missing	Missing	29	2.5 J	11/01/10	LFJ	EPA200.8
Nickel, ug/l	0.05	50.0	2.6 J	Missing	Missing	11.7 J	1 J	11/01/10	LFJ	EPA200.8
Selenium, ug/l	0.32	10.0	--- U	Missing	Missing	0.4 J	--- U	11/01/10	LFJ	EPA200.8
Silver, ug/l	0.03	10.0	--- U	Missing	Missing	0.1 J	0.1 J	11/01/10	LFJ	EPA200.8
Thallium, ug/l	0.05	5.5	0.1 J	Missing	Missing	0.7 J	0.1 J	11/01/10	LFJ	EPA200.8
Vanadium, ug/l	0.03	25.0	1.3 J	Missing	Missing	3.8 J	0.5 J	11/01/10	LFJ	EPA200.8
Zinc, ug/l	0.08	10.0	1.5 J	Missing	Missing	39	2.9 J	11/01/10	LFJ	EPA200.8
8260 (duplicate)	0.08	10.0		Missing	Missing					

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#: 6033

JOHNSTON CO. LANDFILL (PHASE 5)
MR. KEVIN SHIELDS
P.O. BOX 2263
SMITHFIELD ,NC 27577

DATE COLLECTED: 10/25/10
DATE REPORTED : 11/15/10

REVIEWED BY:

PARAMETERS	MDL	SWSL	MW5-7	MW5-8	MW5-9	Surface Water #5-1	Surface Water #5-2	Analysis Date	Analyst	Method Code
Antimony, ug/l	0.22	6.0	--- U	--- U	--- U	--- U	--- U	11/01/10	LFJ	EPA200.8
Arsenic, ug/l	0.04	10.0	2.9 J	--- U	0.5 J	0.3 J	0.9 J	11/01/10	LFJ	EPA200.8
Barium, ug/l	0.03	100.0	155	574	31.2 J	252	54.9 J	11/01/10	LFJ	EPA200.8
Beryllium, ug/l	0.02	1.0	1	0.3 J	0.1 J	0.1 J	0.1 J	11/01/10	LFJ	EPA200.8
Cadmium, ug/l	0.02	1.0	0.4 J	0.1 J	0.1 J	0.1 J	--- U	11/01/10	LFJ	EPA200.8
Cobalt, ug/l	0.10	10.0	2.9 J	6.4 J	0.9 J	1.1 J	1 J	11/01/10	LFJ	EPA200.8
Copper, ug/l	0.03	10.0	4.8 J	0.7 J	1.4 J	0.9 J	1.7 J	11/01/10	LFJ	EPA200.8
Total Chromium, ug/l	0.03	10.0	1.9 J	--- U	1 J	0.6 J	0.6 J	11/01/10	LFJ	EPA200.8
Lead, ug/l	0.01	10.0	18	3.9 J	1..1J	1.1 J	0.6 J	11/01/10	LFJ	EPA200.8
Nickel, ug/l	0.05	50.0	4.8 J	6.4 J	0.7 J	2.2 J	2 J	11/01/10	LFJ	EPA200.8
Selenium, ug/l	0.32	10.0	0.9 J	0.4 J	--- U	--- U	--- U	11/01/10	LFJ	EPA200.8
Silver, ug/l	0.03	10.0	0.1 J	--- U	--- U	--- U	--- U	11/01/10	LFJ	EPA200.8
Thallium, ug/l	0.05	5.5	0.1 J	0.1 J	--- U	0.1 J	--- U	11/01/10	LFJ	EPA200.8
Vanadium, ug/l	0.03	25.0	6.1 J	--- U	2.5 J	1.5 J	1.7 J	11/01/10	LFJ	EPA200.8
Zinc, ug/l	0.08	10.0	33	4.2 J	4.2 J	4.6 J	5.9 J	11/01/10	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#: 6033

JOHNSTON CO. LANDFILL (PHASE 5)
MR. KEVIN SHIELDS
P.O. BOX 2263
SMITHFIELD ,NC 27577

DATE COLLECTED: 10/25/10
DATE REPORTED : 11/15/10

REVIEWED BY:

PARAMETERS	MDL	SWSL	MW-5(10')	Analysis Date	Analyst	Method Code
Antimony, ug/l	0.22	6.0	--- U	11/01/10	LFJ	EPA200.8
Arsenic, ug/l	0.04	10.0	0.2 J	11/01/10	LFJ	EPA200.8
Barium, ug/l	0.03	100.0	77.5 J	11/01/10	LFJ	EPA200.8
Beryllium, ug/l	0.02	1.0	0.1 J	11/01/10	LFJ	EPA200.8
Cadmium, ug/l	0.02	1.0	0.1 J	11/01/10	LFJ	EPA200.8
Cobalt, ug/l	0.10	10.0	6.6 J	11/01/10	LFJ	EPA200.8
Copper, ug/l	0.03	10.0	0.6 J	11/01/10	LFJ	EPA200.8
Total Chromium, ug/l	0.03	10.0	0.4 J	11/01/10	LFJ	EPA200.8
Lead, ug/l	0.01	10.0	2.4 J	11/01/10	LFJ	EPA200.8
Nickel, ug/l	0.05	50.0	1.7 J	11/01/10	LFJ	EPA200.8
Selenium, ug/l	0.32	10.0	--- U	11/01/10	LFJ	EPA200.8
Silver, ug/l	0.03	10.0	--- U	11/01/10	LFJ	EPA200.8
Thallium, ug/l	0.05	5.5	0.1 J	11/01/10	LFJ	EPA200.8
Vanadium, ug/l	0.03	25.0	1.9 J	11/01/10	LFJ	EPA200.8
Zinc, ug/l	0.08	10.0	1.8 J	11/01/10	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: JOHNSTON CO. LANDFILL (PHASE 5)
MR. KEVIN SHIELDS
P.O. BOX 2263
SMITHFIELD, NC 27577

CLIENT ID: 6033

ANALYST: MAO
DATE COLLECTED: 10/25/10
DATE ANALYZED: 11/03/10
DATE REPORTED: 11/15/10

REVIEWED BY:

VOLATILE ORGANICS
EPA METHOD 8260B

PARAMETERS, ug/l	MDL	SWSL	MW5-1	MW5-4	MW5-6	MW5-7	MW5-8
1. Chloromethane	0.77	1.0	--- U	--- U	--- U	--- U	--- U
2. Vinyl Chloride	0.63	1.0	--- U	--- U	--- U	--- U	--- U
3. Bromomethane	0.67	10.0	--- U	--- U	--- U	--- U	--- U
4. Chloroethane	0.48	10.0	--- U	--- U	--- U	--- U	--- U
5. Trichlorofluoromethane	0.24	1.0	--- U	--- U	--- U	--- U	--- U
6. 1,1-Dichloroethene	0.17	5.0	--- U	--- U	--- U	--- U	--- U
7. Acetone	9.06	100.0	--- U	--- U	--- U	--- U	--- U
8. Iodomethane	0.26	10.0	--- U	--- U	--- U	--- U	--- U
9. Carbon Disulfide	0.23	100.0	--- U	--- U	--- U	--- U	--- U
10. Methylene Chloride	0.64	1.0	--- U	--- U	--- U	--- U	--- U
11. trans-1,2-Dichloroethene	0.23	5.0	--- U	--- U	--- U	--- U	--- U
12. 1,1-Dichloroethane	0.20	5.0	--- U	--- U	0.40 J	--- U	--- U
13. Vinyl Acetate	0.20	50.0	--- U	--- U	--- U	--- U	--- U
14. Cis-1,2-Dichloroethene	0.25	5.0	--- U	--- U	0.60 J	--- U	--- U
15. 2-Butanone	2.21	100.0	--- U	--- U	--- U	--- U	--- U
16. Bromochloromethane	0.27	3.0	--- U	--- U	--- U	--- U	--- U
17. Chloroform	0.25	5.0	--- U	--- U	--- U	--- U	--- U
18. 1,1,1-Trichloroethane	0.19	1.0	--- U	--- U	--- U	--- U	--- U
19. Carbon Tetrachloride	0.22	1.0	--- U	--- U	--- U	--- U	--- U
20. Benzene	0.24	1.0	--- U	--- U	0.60 J	--- U	--- U
21. 1,2-Dichloroethane	0.27	1.0	--- U	--- U	--- U	--- U	--- U
22. Trichloroethene	0.23	1.0	--- U	--- U	--- U	--- U	--- U
23. 1,2-Dichloropropane	0.21	1.0	--- U	--- U	--- U	--- U	6.00
24. Bromodichloromethane	0.21	1.0	--- U	--- U	--- U	--- U	--- U
25. Cis-1,3-Dichloropropene	0.24	1.0	--- U	--- U	--- U	--- U	--- U
26. 4-Methyl-2-Pentanone	1.19	100.0	--- U	--- U	--- U	--- U	--- U
27. Toluene	0.23	1.0	--- U	--- U	--- U	--- U	--- U
28. trans-1,3-Dichloropropene	0.28	1.0	--- U	--- U	--- U	--- U	--- U
29. 1,1,2-Trichloroethane	0.25	1.0	--- U	--- U	--- U	--- U	--- U
30. Tetrachloroethene	0.17	1.0	--- U	--- U	--- U	--- U	--- U
31. 2-Hexanone	1.57	50.0	--- U	--- U	--- U	--- U	--- U
32. Dibromochloromethane	0.24	3.0	--- U	--- U	--- U	--- U	--- U
33. 1,2-Dibromoethane	0.26	1.0	--- U	--- U	--- U	--- U	--- U
34. Chlorobenzene	0.30	3.0	--- U	--- U	--- U	--- U	--- U
35. 1,1,1,2-Tetrachloroethane	0.22	5.0	--- U	--- U	--- U	--- U	--- U
36. Ethylbenzene	0.21	1.0	--- U	--- U	--- U	--- U	--- U
37. Xylenes	0.68	5.0	--- U	--- U	--- U	--- U	--- U
38. Dibromomethane	0.28	10.0	--- U	--- U	--- U	--- U	--- U
39. Styrene	0.19	1.0	--- U	--- U	--- U	--- U	--- U
40. Bromoform	0.20	3.0	--- U	--- U	--- U	--- U	--- U
41. 1,1,2,2-Tetrachloroethane	0.26	3.0	--- U	--- U	--- U	--- U	--- U
42. 1,2,3-Trichloropropane	0.43	1.0	--- U	--- U	--- U	--- U	--- U
43. 1,4-Dichlorobenzene	0.39	1.0	--- U	--- U	--- U	--- U	--- U
44. 1,2-Dichlorobenzene	0.32	5.0	--- U	--- U	--- U	--- U	--- U
45. 1,2-Dibromo-3-Chloropropane	0.34	13.0	--- U	--- U	--- U	--- U	--- U
46. Acrylonitrile	2.72	200.0	--- U	--- U	--- U	--- U	--- U
47. trans-1,4-Dichloro-2-Butene	0.42	100.0	--- U	--- U	--- U	--- U	--- U

J = Between MDL and SWSL, U = Below ALL 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: JOHNSTON CO. LANDFILL (PHASE 5)
MR. KEVIN SHIELDS
P.O. BOX 2263
SMITHFIELD, NC 27577

CLIENT ID: 6033

ANALYST: MAO
DATE COLLECTED: 10/25/10
DATE ANALYZED: 11/03/10
DATE REPORTED: 11/15/10

REVIEWED BY:

VOLATILE ORGANICS
EPA METHOD 8260B

PARAMETERS, ug/l	MDL	SWSL	MW5-9	Surface Water #5-1	Surface Water #5-2	MW-5(10')
1. Chloromethane	0.77	1.0	--- U	--- U	--- U	--- U
2. Vinyl Chloride	0.63	1.0	--- U	--- U	--- U	--- U
3. Bromomethane	0.67	10.0	--- U	--- U	--- U	--- U
4. Chloroethane	0.48	10.0	--- U	--- U	--- U	--- U
5. Trichlorofluoromethane	0.24	1.0	--- U	--- U	--- U	--- U
6. 1,1-Dichloroethene	0.17	5.0	--- U	--- U	--- U	--- U
7. Acetone	9.06	100.0	--- U	--- U	--- U	--- U
8. Iodomethane	0.26	10.0	--- U	--- U	--- U	--- U
9. Carbon Disulfide	0.23	100.0	--- U	--- U	--- U	--- U
10. Methylene Chloride	0.64	1.0	--- U	--- U	--- U	--- U
11. trans-1,2-Dichloroethene	0.23	5.0	--- U	--- U	--- U	--- U
12. 1,1-Dichloroethane	0.20	5.0	--- U	--- U	--- U	--- U
13. Vinyl Acetate	0.20	50.0	--- U	--- U	--- U	--- U
14. Cis-1,2-Dichloroethene	0.25	5.0	--- U	--- U	--- U	--- U
15. 2-Butanone	2.21	100.0	--- U	--- U	--- U	--- U
16. Bromochloromethane	0.27	3.0	--- U	--- U	--- U	--- U
17. Chloroform	0.25	5.0	--- U	--- U	--- U	--- U
18. 1,1,1-Trichloroethane	0.19	1.0	--- U	--- U	--- U	--- U
19. Carbon Tetrachloride	0.22	1.0	--- U	--- U	--- U	--- U
20. Benzene	0.24	1.0	--- U	--- U	--- U	--- U
21. 1,2-Dichloroethane	0.27	1.0	--- U	--- U	--- U	--- U
22. Trichloroethene	0.23	1.0	--- U	--- U	--- U	--- U
23. 1,2-Dichloropropane	0.21	1.0	--- U	--- U	--- U	--- U
24. Bromodichloromethane	0.21	1.0	--- U	--- U	--- U	--- U
25. Cis-1,3-Dichloropropene	0.24	1.0	--- U	--- U	--- U	--- U
26. 4-Methyl-2-Pentanone	1.19	100.0	--- U	--- U	--- U	--- U
27. Toluene	0.23	1.0	--- U	--- U	--- U	--- U
28. trans-1,3-Dichloropropene	0.28	1.0	--- U	--- U	--- U	--- U
29. 1,1,2-Trichloroethane	0.25	1.0	--- U	--- U	--- U	--- U
30. Tetrachloroethene	0.17	1.0	--- U	--- U	--- U	--- U
31. 2-Hexanone	1.57	50.0	--- U	--- U	--- U	--- U
32. Dibromochloromethane	0.24	3.0	--- U	--- U	--- U	--- U
33. 1,2-Dibromoethane	0.26	1.0	--- U	--- U	--- U	--- U
34. Chlorobenzene	0.30	3.0	--- U	--- U	--- U	--- U
35. 1,1,1,2-Tetrachloroethane	0.22	5.0	--- U	--- U	--- U	--- U
36. Ethylbenzene	0.21	1.0	--- U	--- U	--- U	--- U
37. Xylenes	0.68	5.0	--- U	--- U	--- U	--- U
38. Dibromomethane	0.28	10.0	--- U	--- U	--- U	--- U
39. Styrene	0.19	1.0	--- U	--- U	--- U	--- U
40. Bromoform	0.20	3.0	--- U	--- U	--- U	--- U
41. 1,1,2,2-Tetrachloroethane	0.26	3.0	--- U	--- U	--- U	--- U
42. 1,2,3-Trichloropropane	0.43	1.0	--- U	--- U	--- U	--- U
43. 1,4-Dichlorobenzene	0.39	1.0	--- U	--- U	--- U	--- U
44. 1,2-Dichlorobenzene	0.32	5.0	--- U	--- U	--- U	--- U
45. 1,2-Dibromo-3-Chloropropane	0.34	13.0	--- U	--- U	--- U	--- U
46. Acrylonitrile	2.72	200.0	--- U	--- U	--- U	--- U
47. trans-1,4-Dichloro-2-Butene	0.42	100.0	--- U	--- U	--- U	--- U

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

- 1 COOLER -

CHAIN OF CUSTODY RECORD

CLIENT: 6033 WEEK: 42

JOHNSTON COUNTY LANDFILL (PHASE 5)
KEVIN J. SHIELDS
P.O. BOX 2263
SMITHFIELD, NC 27577

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
SURFACE WATER #5-1	10/25/10	09:04	N/A	16	3	X	X	X	
SURFACE WATER #5-2		09:43		16	3	X	X	X	
~~[illegible]~~ MW#5-7		10:19		18	3	X	X	X	
MW#5-8		11:01		20	3	X	X	X	
MW#5-9		11:40		19	3	X	X	X	
MW#5-10		12:13		18	3	X	X	X	
MW#5-4		12:49		18	3	X	X	X	
MW#5-6		15:59		19	3	X	X	X	
MW#5-1		16:39		19	4	X	X	X	X
TRIP BLANK									

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) KEVIN J. SHIELDS

SAMPLES RECEIVED IN LAB AT 0.2 °C

RELINQUISHED BY (SIG.) (SAMPLER)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME
[signature]	10/26/10 09:00	[signature]	10/26/10 4:32PM
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

№ 208140

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#: 6033

JOHNSTON CO. LANDFILL (PHASE 5)
MR. KEVIN SHIELDS
P.O. BOX 2263
SMITHFIELD ,NC 27577

DATE COLLECTED: 10/26/10
DATE REPORTED : 11/16/10

REVIEWED BY:

PARAMETERS	MDL	SWSL	MW5-2	MW5-3	Leachate Lag #1	Leachate Lag #2	Leachate Lag #3	Analysis Date	Analyst	Method Code
Antimony, ug/l	0.22	6.0	--- U	--- U	0.3 J	--- U	--- U	11/03/10	LFJ	EPA200.8
Arsenic, ug/l	0.04	10.0	0.2 J	0.2 J	--- U	1.8 J	--- U	11/03/10	LFJ	EPA200.8
Barium, ug/l	0.03	100.0	389	94.0 J	12.0 J	11.0 J	14.0 J	11/03/10	LFJ	EPA200.8
Beryllium, ug/l	0.02	1.0	1	0.7 J	0.1 J	--- U	--- U	11/03/10	LFJ	EPA200.8
Cadmium, ug/l	0.02	1.0	0.3 J	0.1 J	--- U	--- U	--- U	11/03/10	LFJ	EPA200.8
Cobalt, ug/l	0.10	10.0	4.9 J	3.6 J	0.2 J	45	0.3 J	11/03/10	LFJ	EPA200.8
Copper, ug/l	0.03	10.0	1.4 J	3.9 J	0.2 J	0.5 J	0.3 J	11/03/10	LFJ	EPA200.8
Total Chromium, ug/l	0.03	10.0	0.9 J	0.7 J	0.4 J	--- U	0.5 J	11/03/10	LFJ	EPA200.8
Lead, ug/l	0.01	10.0	5.9 J	4.0 J	0.1 J	0.1 J	0.1 J	11/03/10	LFJ	EPA200.8
Nickel, ug/l	0.05	50.0	4.6 J	3.0 J	1.1 J	4.7 J	0.2 J	11/03/10	LFJ	EPA200.8
Selenium, ug/l	0.32	10.0	0.7 J	--- U	3.5 J	--- U	--- U	11/03/10	LFJ	EPA200.8
Silver, ug/l	0.03	10.0	0.1 J	--- U	0.1 J	--- U	--- U	11/03/10	LFJ	EPA200.8
Thallium, ug/l	0.05	5.5	0.2 J	0.1 J	--- U	--- U	--- U	11/03/10	LFJ	EPA200.8
Vanadium, ug/l	0.03	25.0	2.8 J	1.5 J	0.6 J	0.5 J	0.8 J	11/03/10	LFJ	EPA200.8
Zinc, ug/l	0.08	10.0	6.5 J	8.1 J	2.3 J	3.0 J	3.1 J	11/03/10	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#: 6033

JOHNSTON CO. LANDFILL (PHASE 5)
MR. KEVIN SHIELDS
P.O. BOX 2263
SMITHFIELD ,NC 27577

DATE COLLECTED: 10/26/10
DATE REPORTED : 11/16/10

REVIEWED BY:

PARAMETERS	MDL	Leachate SWSLLag #4	Leachate Jun Box	MW-5(5')	Analysis Date	Analyst	Method Code
BOD, mg/l	2.0	2.0	35		10/28/10	MPB	SM5210B
COD, mg/l	10.0	10.0	676		11/08/10	TRB	HACH8000
Total Suspended Residue, mg/l	1.0	1.0	58		10/28/10	HLB	SM2540D
Ammonia Nitrogen as N, mg/l	0.04	0.04	426		11/02/10	ANO	EPA350.1
Nitrate Nitrogen as N, mg/l	0.03	10.0	--- U		10/29/10	MPH	EPA353.2
Total Phosphorus as P, mg/l	0.04	0.04	1.11		11/01/10	MPH	EPA365.4
Sulfate, mg/l	5.0	250.0	5.7 J		11/03/10	TRB	SM426C
Antimony, ug/l	0.22	6.0	--- U	1.4 J	--- U	11/03/10	LFJ	EPA200.8
Arsenic, ug/l	0.04	10.0	--- U		0.2 J	11/03/10	LFJ	EPA200.8
Arsenic, ug/l	0.04	10.0	15			11/12/10	CMF	SM3113B
Barium, ug/l	0.03	100.0	1.3 J	505	32.2 J	11/03/10	LFJ	EPA200.8
Beryllium, ug/l	0.02	1.0	--- U	0.1 J	0.1 J	11/03/10	LFJ	EPA200.8
Cadmium, ug/l	0.02	1.0	--- U	0.8 J	0.1 J	11/03/10	LFJ	EPA200.8
Cobalt, ug/l	0.10	10.0	1.1 J	8.1 J	0.7 J	11/03/10	LFJ	EPA200.8
Copper, ug/l	0.03	10.0	1.6 J	5.1 J	0.7 J	11/03/10	LFJ	EPA200.8
Total Chromium, ug/l	0.03	10.0	0.3 J	8.4 J	0.6 J	11/03/10	LFJ	EPA200.8
Lead, ug/l	0.01	10.0	0.2 J	0.4 J	2.4 J	11/03/10	LFJ	EPA200.8
Nickel, ug/l	0.05	50.0	--- U	63	0.5 J	11/03/10	LFJ	EPA200.8
Selenium, ug/l	0.32	10.0	--- U		0.6 J	11/03/10	LFJ	EPA200.8
Selenium, ug/l	0.32	10.0		--- U		11/11/10	CMF	SM3113B
Silver, ug/l	0.03	10.0	--- U	0.2 J	--- U	11/03/10	LFJ	EPA200.8
Thallium, ug/l	0.05	5.5	--- U	--- U	--- U	11/03/10	LFJ	EPA200.8
Vanadium, ug/l	0.03	25.0	1.3 J	8.0 J	0.6 J	11/03/10	LFJ	EPA200.8
Zinc, ug/l	0.08	10.0	8.7 J	7.3 J	1.8 J	11/03/10	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: JOHNSTON CO. LANDFILL (PHASE 5)
MR. KEVIN SHIELDS
P.O. BOX 2263
SMITHFIELD, NC 27577

CLIENT ID: 6033

ANALYST: MAO
DATE COLLECTED: 10/26/10
DATE REPORTED: 11/16/10

REVIEWED BY: _____

VOLATILE ORGANICS
EPA METHOD 8260B

PARAMETERS, ug/l	MDL	SWSL	Date Analyzed: 11/03/10 MW5-2	11/03/10 MW5-3	11/03/10 Leachate Lag #1	11/03/10 Leachate Lag #2	11/03/10 Leachate Lag #3
1. Chloromethane	0.77	1.0	--- U	--- U	--- U	--- U	--- U
2. Vinyl Chloride	0.63	1.0	--- U	--- U	--- U	--- U	--- U
3. Bromomethane	0.67	10.0	--- U	--- U	--- U	--- U	--- U
4. Chloroethane	0.48	10.0	--- U	--- U	--- U	--- U	--- U
5. Trichlorofluoromethane	0.24	1.0	--- U	--- U	--- U	--- U	--- U
6. 1,1-Dichloroethene	0.17	5.0	--- U	--- U	--- U	--- U	--- U
7. Acetone	9.06	100.0	--- U	9.20 J	--- U	--- U	--- U
8. Iodomethane	0.26	10.0	--- U	--- U	--- U	--- U	--- U
9. Carbon Disulfide	0.23	100.0	--- U	--- U	--- U	--- U	--- U
10. Methylene Chloride	0.64	1.0	--- U	--- U	--- U	--- U	--- U
11. trans-1,2-Dichloroethene	0.23	5.0	--- U	--- U	--- U	--- U	--- U
12. 1,1-Dichloroethane	0.20	5.0	--- U	--- U	--- U	--- U	--- U
13. Vinyl Acetate	0.20	50.0	--- U	--- U	--- U	--- U	--- U
14. Cis-1,2-Dichloroethene	0.25	5.0	--- U	--- U	--- U	--- U	--- U
15. 2-Butanone	2.21	100.0	--- U	--- U	--- U	--- U	--- U
16. Bromochloromethane	0.27	3.0	--- U	--- U	--- U	--- U	--- U
17. Chloroform	0.25	5.0	--- U	--- U	--- U	--- U	--- U
18. 1,1,1-Trichloroethane	0.19	1.0	--- U	--- U	--- U	--- U	--- U
19. Carbon Tetrachloride	0.22	1.0	--- U	--- U	--- U	--- U	--- U
20. Benzene	0.24	1.0	--- U	--- U	--- U	--- U	--- U
21. 1,2-Dichloroethane	0.27	1.0	--- U	--- U	--- U	--- U	--- U
22. Trichloroethene	0.23	1.0	--- U	--- U	--- U	--- U	--- U
23. 1,2-Dichloropropane	0.21	1.0	4.50	0.40 J	--- U	--- U	--- U
24. Bromodichloromethane	0.21	1.0	--- U	--- U	--- U	--- U	--- U
25. Cis-1,3-Dichloropropene	0.24	1.0	--- U	--- U	--- U	--- U	--- U
26. 4-Methyl-2-Pentanone	1.19	100.0	--- U	--- U	--- U	--- U	--- U
27. Toluene	0.23	1.0	--- U	--- U	--- U	--- U	--- U
28. trans-1,3-Dichloropropene	0.28	1.0	--- U	--- U	--- U	--- U	--- U
29. 1,1,2-Trichloroethane	0.25	1.0	--- U	--- U	--- U	--- U	--- U
30. Tetrachloroethene	0.17	1.0	--- U	--- U	--- U	--- U	--- U
31. 2-Hexanone	1.57	50.0	--- U	--- U	--- U	--- U	--- U
32. Dibromochloromethane	0.24	3.0	--- U	--- U	--- U	--- U	--- U
33. 1,2-Dibromoethane	0.26	1.0	--- U	--- U	--- U	--- U	--- U
34. Chlorobenzene	0.30	3.0	--- U	--- U	--- U	--- U	--- U
35. 1,1,1,2-Tetrachloroethane	0.22	5.0	--- U	--- U	--- U	--- U	--- U
36. Ethylbenzene	0.21	1.0	--- U	--- U	--- U	--- U	--- U
37. Xylenes	0.68	5.0	--- U	--- U	--- U	--- U	--- U
38. Dibromomethane	0.28	10.0	--- U	--- U	--- U	--- U	--- U
39. Styrene	0.19	1.0	--- U	--- U	--- U	--- U	--- U
40. Bromoform	0.20	3.0	--- U	--- U	--- U	--- U	--- U
41. 1,1,2,2-Tetrachloroethane	0.26	3.0	--- U	--- U	--- U	--- U	--- U
42. 1,2,3-Trichloropropane	0.43	1.0	--- U	--- U	--- U	--- U	--- U
43. 1,4-Dichlorobenzene	0.39	1.0	--- U	--- U	--- U	--- U	--- U
44. 1,2-Dichlorobenzene	0.32	5.0	--- U	--- U	--- U	--- U	--- U
45. 1,2-Dibromo-3-Chloropropane	0.34	13.0	--- U	--- U	--- U	--- U	--- U
46. Acrylonitrile	2.72	200.0	--- U	--- U	--- U	--- U	--- U
47. trans-1,4-Dichloro-2-Butene	0.42	100.0	--- U	--- U	--- U	--- U	--- U

J = Between MDL and SWSL, U = Below ALL 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: JOHNSTON CO. LANDFILL (PHASE 5)
MR. KEVIN SHIELDS
P.O. BOX 2263
SMITHFIELD, NC 27577

CLIENT ID: 6033

ANALYST: MAO
DATE COLLECTED: 10/26/10
DATE REPORTED: 11/16/10

REVIEWED BY:

VOLATILE ORGANICS
EPA METHOD 8260B

PARAMETERS, ug/l	MDL	SWSL	11/03/10 Leachate Lag #4	11/04/10 Leachate Jun Box	11/03/10 MW-5(5')	11/03/10 Equipment Blank	11/03/10 Trip Blank
	Date Analyzed:						
1. Chloromethane	0.77	1.0	--- U	--- U	--- U	--- U	--- U
2. Vinyl Chloride	0.63	1.0	--- U	2.30	--- U	--- U	--- U
3. Bromomethane	0.67	10.0	--- U	--- U	--- U	--- U	--- U
4. Chloroethane	0.48	10.0	--- U	0.90 J	--- U	--- U	--- U
5. Trichlorofluoromethane	0.24	1.0	--- U	--- U	--- U	--- U	--- U
6. 1,1-Dichloroethene	0.17	5.0	--- U	--- U	--- U	--- U	--- U
7. Acetone	9.06	100.0	10.10 J	28.10 J	--- U	--- U	418.00
8. Iodomethane	0.26	10.0	--- U	--- U	--- U	--- U	--- U
9. Carbon Disulfide	0.23	100.0	--- U	--- U	--- U	--- U	--- U
10. Methylene Chloride	0.64	1.0	--- U	--- U	--- U	--- U	7.80
11. trans-1,2-Dichloroethene	0.23	5.0	--- U	0.30 J	--- U	--- U	--- U
12. 1,1-Dichloroethane	0.20	5.0	--- U	1.20 J	--- U	--- U	--- U
13. Vinyl Acetate	0.20	50.0	--- U	--- U	--- U	--- U	--- U
14. Cis-1,2-Dichloroethene	0.25	5.0	--- U	1.60 J	--- U	--- U	--- U
15. 2-Butanone	2.21	100.0	--- U	9.60 J	--- U	--- U	--- U
16. Bromochloromethane	0.27	3.0	--- U	--- U	--- U	--- U	--- U
17. Chloroform	0.25	5.0	--- U	--- U	--- U	--- U	--- U
18. 1,1,1-Trichloroethane	0.19	1.0	--- U	--- U	--- U	--- U	--- U
19. Carbon Tetrachloride	0.22	1.0	--- U	--- U	--- U	--- U	--- U
20. Benzene	0.24	1.0	--- U	15.70	--- U	--- U	--- U
21. 1,2-Dichloroethane	0.27	1.0	--- U	0.40 J	--- U	--- U	--- U
22. Trichloroethene	0.23	1.0	--- U	--- U	--- U	--- U	--- U
23. 1,2-Dichloropropane	0.21	1.0	--- U	--- U	--- U	--- U	--- U
24. Bromodichloromethane	0.21	1.0	--- U	--- U	--- U	--- U	--- U
25. Cis-1,3-Dichloropropene	0.24	1.0	--- U	--- U	--- U	--- U	--- U
26. 4-Methyl-2-Pentanone	1.19	100.0	--- U	2.30 J	--- U	--- U	--- U
27. Toluene	0.23	1.0	--- U	31.30	--- U	--- U	--- U
28. trans-1,3-Dichloropropene	0.28	1.0	--- U	--- U	--- U	--- U	--- U
29. 1,1,2-Trichloroethane	0.25	1.0	--- U	--- U	--- U	--- U	--- U
30. Tetrachloroethene	0.17	1.0	--- U	--- U	--- U	--- U	--- U
31. 2-Hexanone	1.57	50.0	--- U	--- U	--- U	--- U	--- U
32. Dibromochloromethane	0.24	3.0	--- U	--- U	--- U	--- U	--- U
33. 1,2-Dibromoethane	0.26	1.0	--- U	--- U	--- U	--- U	--- U
34. Chlorobenzene	0.30	3.0	--- U	1.40 J	--- U	--- U	--- U
35. 1,1,1,2-Tetrachloroethane	0.22	5.0	--- U	--- U	--- U	--- U	--- U
36. Ethylbenzene	0.21	1.0	--- U	96.30	--- U	--- U	--- U
37. Xylenes	0.68	5.0	--- U	76.20	--- U	--- U	--- U
38. Dibromomethane	0.28	10.0	--- U	--- U	--- U	--- U	--- U
39. Styrene	0.19	1.0	--- U	2.90	--- U	--- U	--- U
40. Bromoform	0.20	3.0	--- U	--- U	--- U	--- U	--- U
41. 1,1,2,2-Tetrachloroethane	0.26	3.0	--- U	--- U	--- U	--- U	--- U
42. 1,2,3-Trichloropropane	0.43	1.0	--- U	--- U	--- U	--- U	--- U
43. 1,4-Dichlorobenzene	0.39	1.0	--- U	9.30	--- U	--- U	--- U
44. 1,2-Dichlorobenzene	0.32	5.0	--- U	--- U	--- U	--- U	--- U
45. 1,2-Dibromo-3-Chloropropane	0.34	13.0	--- U	--- U	--- U	--- U	--- U
46. Acrylonitrile	2.72	200.0	--- U	--- U	--- U	--- U	--- U
47. trans-1,4-Dichloro-2-Butene	0.42	100.0	--- U	--- U	--- U	--- U	--- U

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

NOTE: Trip blank vial cap was defective, allowing contamination.
Could not reanalyze...only one vial received.

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

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

-1 COOLER-

CHAIN OF CUSTODY RECORD

CLIENT: 6033 WEEK: 42

JOHNSTON COUNTY LANDFILL (PHASE 5)
KEVIN J. SHIELDS
P.O. BOX 2263
SMITHFIELD, NC 27577

(919) 938-4747

DISINFECTION: ☐ CHLORINE ☐ UV ☐ NONE ☐ _____

SAMPLE LOCATION	COLLECTION DATE	COLLECTION TIME	TOTAL CHLORINE, mg/l AT COLLECTION	TEMPERATURE, °C AT COLLECTION	# OF CONTAINERS	BOD	COD	TSS	AMMONIA NITROG.	NITRATE	T. PHOSPHORUS	SULFATE	METALS	EPA 8260B	8260 Dup. 1	8260 Dup. 2	8260 Dup. 3			
CHLORINE NEUTRALIZED AT COLLECTION																				
pH CHECK (LAB)						<2		<2		<2			<2	<2	<2	<2	<2			
CONTAINER TYPE, P/G						P	P	P	P	P	P	P	P	G	G	G	G			
CHEMICAL PRESERVATION						A	C	A	C	A	C	A	A	E	E	E	E			
MW 5-2	10/26/10	09:19	N/A	19	3								X	X	X					
MW 5-3		09:53		20	3								X	X	X					
MW 5-5		10:31		21	3								X	X	X					
LEACHATE LAGOON #1		11:15		20	3								X	X	X					
LEACHATE LAGOON #2		11:51		18	3								X	X	X					
LEACHATE LAGOON #3		12:52		19	3								X	X	X					
LEACHATE LAGOON #4		13:32		18	5								X	X	X	X	X			
LEACHATE JUNC. BOX		14:37		22	10	X	X	X	X	X	X	X	X	X	X					
EQUIPMENT BLANK		16:16		N/A	1									X						
TRIP BLANK		N/A		N/A	1									X						

PARAMETERS

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) KEVIN J. SHIELDS

SAMPLES RECEIVED IN LAB AT 02 °C

RELINQUISHED BY (SIG.) / SAMPLER	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME
[signature]	10/27/10 09:00	[signature]	10/27 4:00
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

№ 208145

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#: 6033 A

JOHNSTON CO. LANDFILL (PHASE 5)
MR. KEVIN SHIELDS
P.O. BOX 2263
SMITHFIELD ,NC 27577

DATE COLLECTED: 11/01/10
DATE REPORTED : 11/22/10

REVIEWED BY:

PARAMETERS	MDL	SWSL	Leachate	Analysis Date	Analyst	Method Code
BOD, mg/l	2.0	2.0	28	11/02/10	TRB	SM5210B
COD, mg/l	10.0	10.0	792	11/08/10	TRB	HACH8000
Total Suspended Residue, mg/l	1.0	1.0	31	11/03/10	HLB	SM2540D
Ammonia Nitrogen as N, mg/l	0.04	0.04	352	11/04/10	TWA	EPA350.1
Nitrate Nitrogen as N, mg/l	0.03	10.0	0.05 J	11/03/10	ANO	EPA353.2
Total Phosphorus as P, mg/l	0.04	0.04	0.54	11/04/10	MPH	EPA365.4
Sulfate, mg/l	5.0	250.0	6.7 J	11/03/10	TRB	SM426C
Antimony, ug/l	0.22	6.0	0.8 J	11/11/10	CMF	EPA200.8
Arsenic, ug/l	0.04	10.0	15	11/11/10	CMF	EPA200.8
Barium, ug/l	0.03	100.0	197	11/11/10	CMF	EPA200.8
Beryllium, ug/l	0.02	1.0	0.1 J	11/11/10	CMF	EPA200.8
Cadmium, ug/l	0.02	1.0	0.5 J	11/11/10	CMF	EPA200.8
Cobalt, ug/l	0.10	10.0	11	11/11/10	CMF	EPA200.8
Copper, ug/l	0.03	10.0	3.6 J	11/11/10	CMF	EPA200.8
Total Chromium, ug/l	0.03	10.0	6.9 J	11/11/10	CMF	EPA200.8
Lead, ug/l	0.01	10.0	0.1 J	11/11/10	CMF	EPA200.8
Nickel, ug/l	0.05	50.0	45.1 J	11/11/10	CMF	EPA200.8
Selenium, ug/l	0.30	10.0	--- U	11/18/10	CMF	SM3113B
Silver, ug/l	0.03	10.0	0.1 J	11/11/10	CMF	EPA200.8
Thallium, ug/l	0.05	5.5	--- U	11/11/10	CMF	EPA200.8
Vanadium, ug/l	0.03	25.0	4.5 J	11/11/10	CMF	EPA200.8
Zinc, ug/l	0.08	10.0	6.4 J	11/11/10	CMF	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: JOHNSTON CO. LANDFILL (PHASE 5)
MR. KEVIN SHIELDS
P.O. BOX 2263
SMITHFIELD, NC 27577

CLIENT ID: 6033 A

ANALYST: MAO
DATE COLLECTED: 11/01/10
DATE ANALYZED: 11/09/10
DATE REPORTED: 11/22/10

REVIEWED BY:

VOLATILE ORGANICS
EPA METHOD 8260B

PARAMETERS, ug/l	MDL	SWSL	Leachate
1. Chloromethane	0.77	1.0	--- U
2. Vinyl Chloride	0.63	1.0	0.80 J
3. Bromomethane	0.67	10.0	--- U
4. Chloroethane	0.48	10.0	0.80 J
5. Trichlorofluoromethane	0.24	1.0	--- U
6. 1,1-Dichloroethene	0.17	5.0	--- U
7. Acetone	9.06	100.0	58.30 J
8. Iodomethane	0.26	10.0	--- U
9. Carbon Disulfide	0.23	100.0	--- U
10. Methylene Chloride	0.64	1.0	--- U
11. trans-1,2-Dichloroethene	0.23	5.0	0.30 J
12. 1,1-Dichloroethane	0.20	5.0	0.60 J
13. Vinyl Acetate	0.20	50.0	--- U
14. Cis-1,2-Dichloroethene	0.25	5.0	--- U
15. 2-Butanone	2.21	100.0	7.40 J
16. Bromochloromethane	0.27	3.0	--- U
17. Chloroform	0.25	5.0	--- U
18. 1,1,1-Trichloroethane	0.19	1.0	--- U
19. Carbon Tetrachloride	0.22	1.0	--- U
20. Benzene	0.24	1.0	8.40
21. 1,2-Dichloroethane	0.27	1.0	0.70 J
22. Trichloroethene	0.23	1.0	--- U
23. 1,2-Dichloropropane	0.21	1.0	0.50 J
24. Bromodichloromethane	0.21	1.0	--- U
25. Cis-1,3-Dichloropropene	0.24	1.0	--- U
26. 4-Methyl-2-Pentanone	1.19	100.0	--- U
27. Toluene	0.23	1.0	2.00
28. trans-1,3-Dichloropropene	0.28	1.0	--- U
29. 1,1,2-Trichloroethane	0.25	1.0	--- U
30. Tetrachloroethene	0.17	1.0	--- U
31. 2-Hexanone	1.57	50.0	--- U
32. Dibromochloromethane	0.24	3.0	--- U
33. 1,2-Dibromoethane	0.26	1.0	--- U
34. Chlorobenzene	0.30	3.0	0.90 J
35. 1,1,1,2-Tetrachloroethane	0.22	5.0	--- U
36. Ethylbenzene	0.21	1.0	4.00
37. Xylenes	0.68	5.0	38.10
38. Dibromomethane	0.28	10.0	--- U
39. Styrene	0.19	1.0	--- U
40. Bromoform	0.20	3.0	--- U
41. 1,1,2,2-Tetrachloroethane	0.26	3.0	--- U
42. 1,2,3-Trichloropropane	0.43	1.0	--- U
43. 1,4-Dichlorobenzene	0.39	1.0	8.60
44. 1,2-Dichlorobenzene	0.32	5.0	--- U
45. 1,2-Dibromo-3-Chloropropane	0.34	13.0	--- U
46. Acrylonitrile	2.72	200.0	--- U
47. trans-1,4-Dichloro-2-Butene	0.42	100.0	--- U

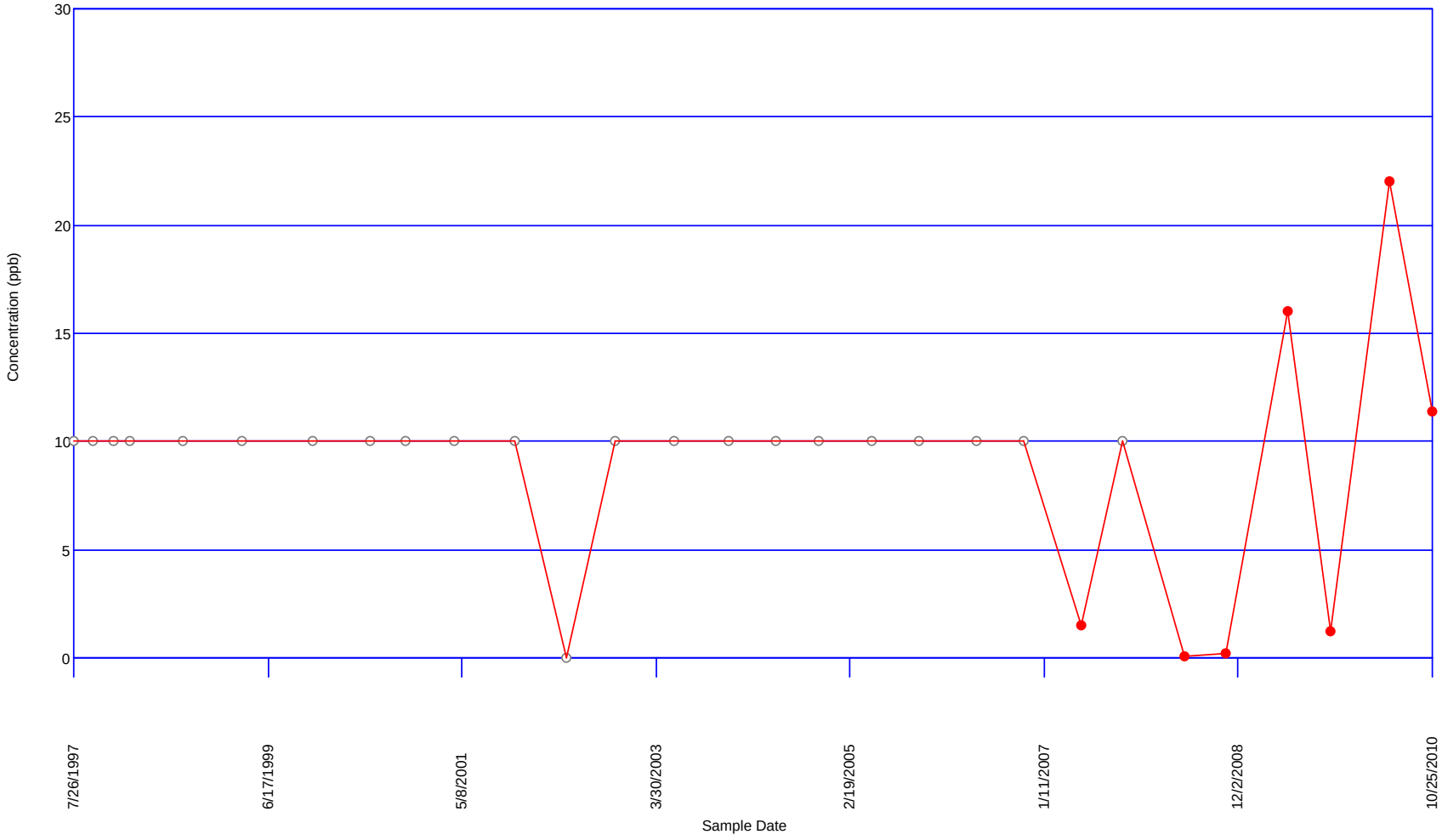
J = Between MDL and SWSL, U = Below ALL Quanititation Limits.

Appendix C

Time Vs. concentration Graphs

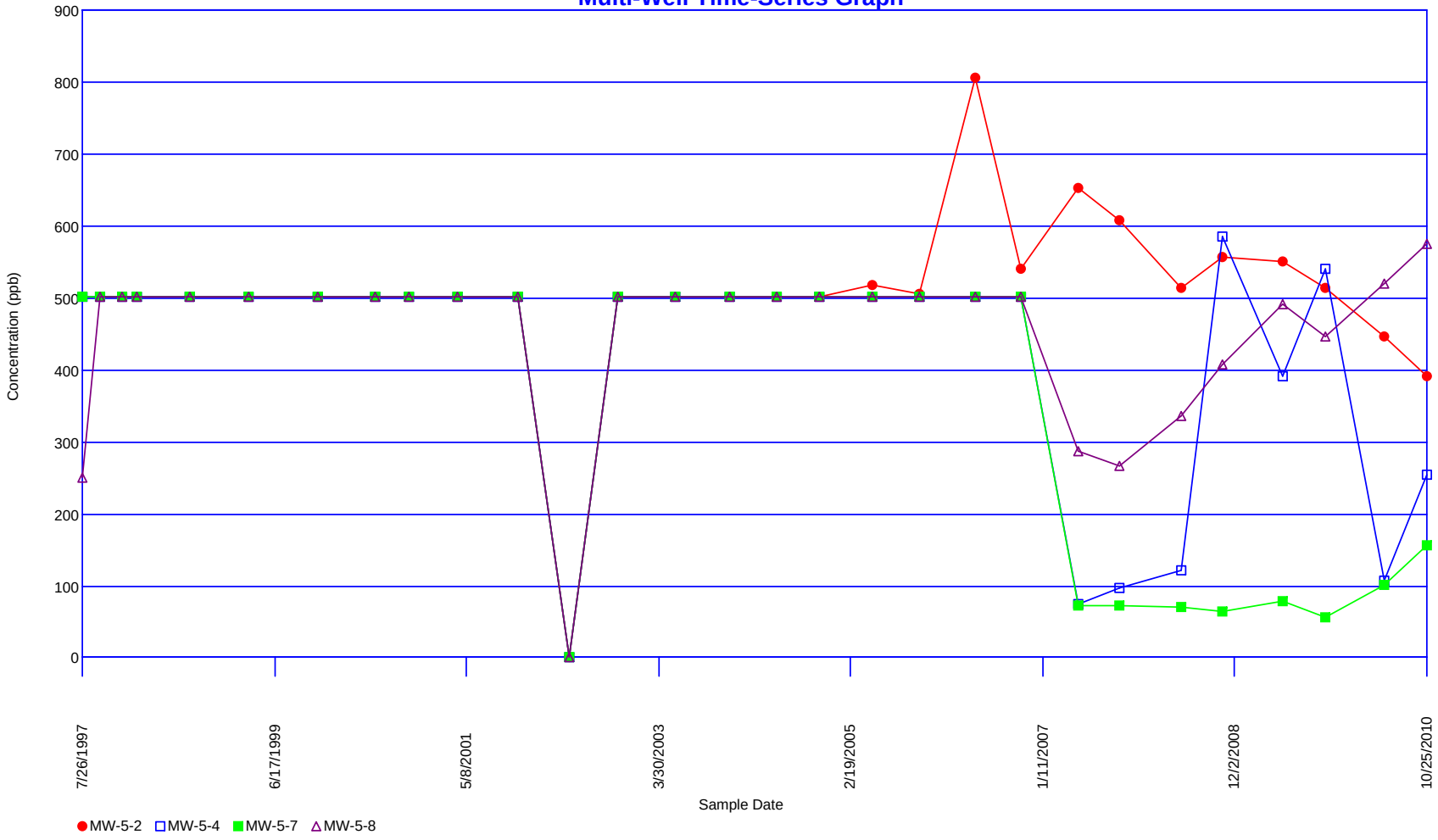
Arsenic

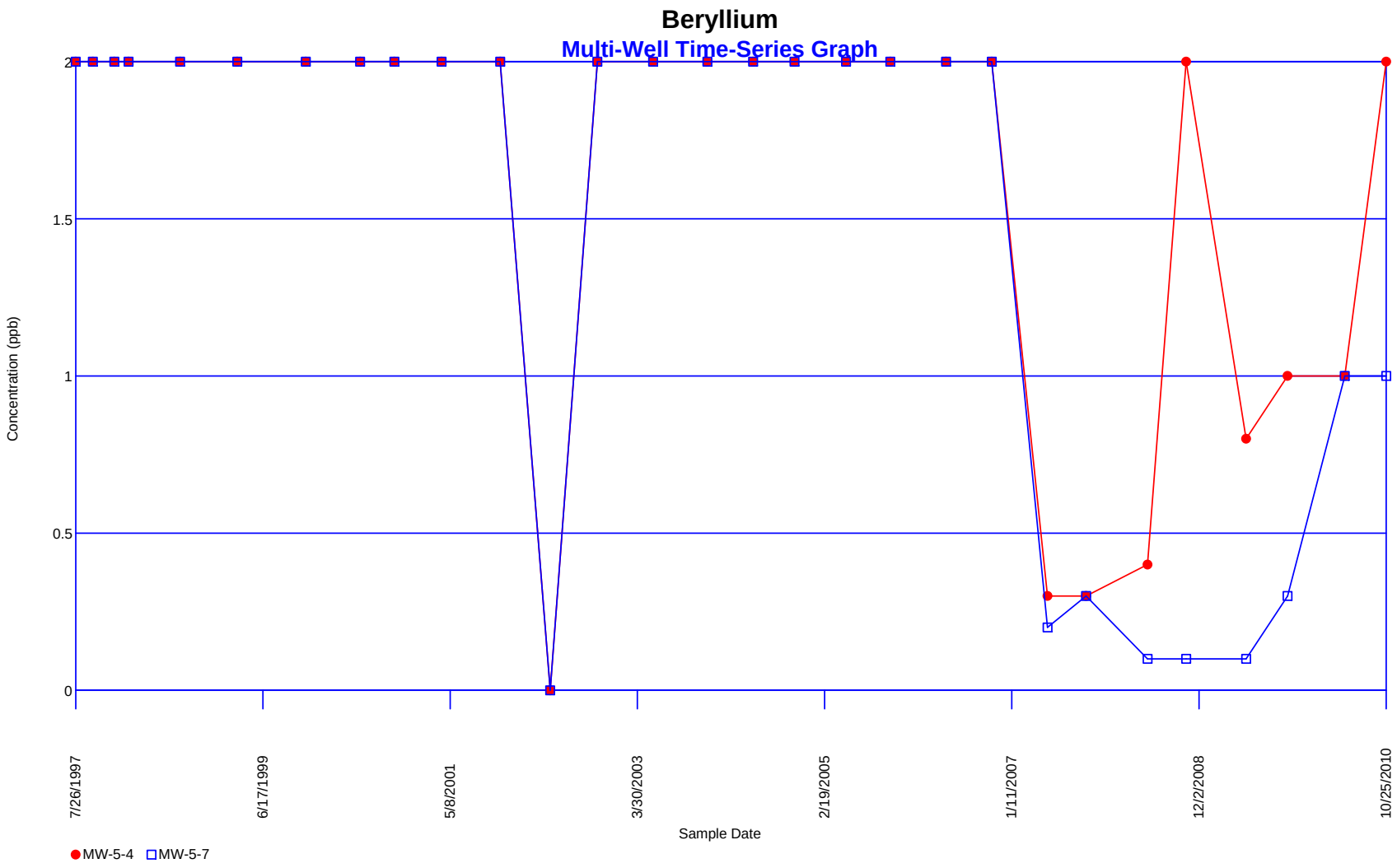
Time-Series Graph of MW-5-6



Barium

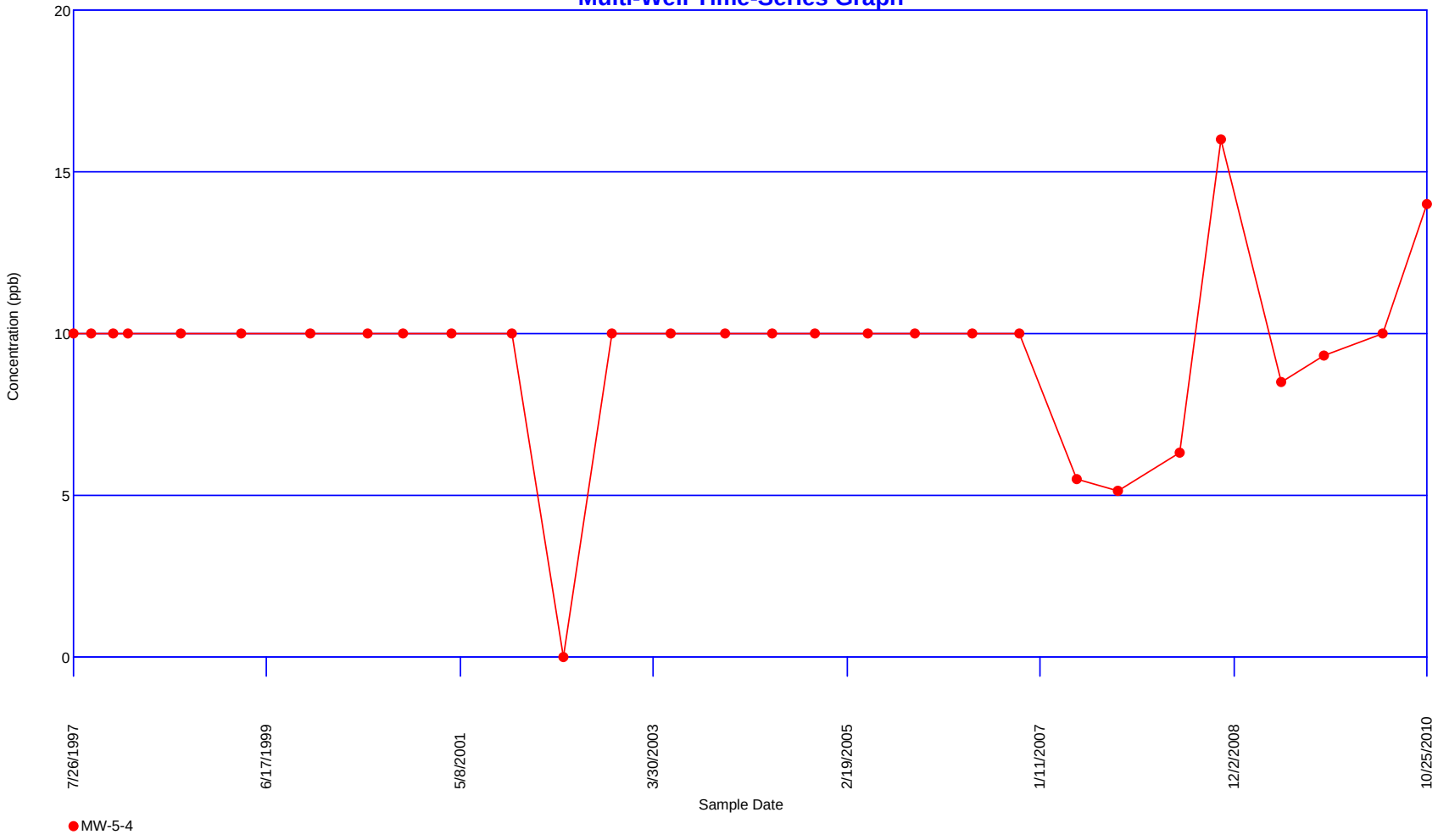
Multi-Well Time-Series Graph

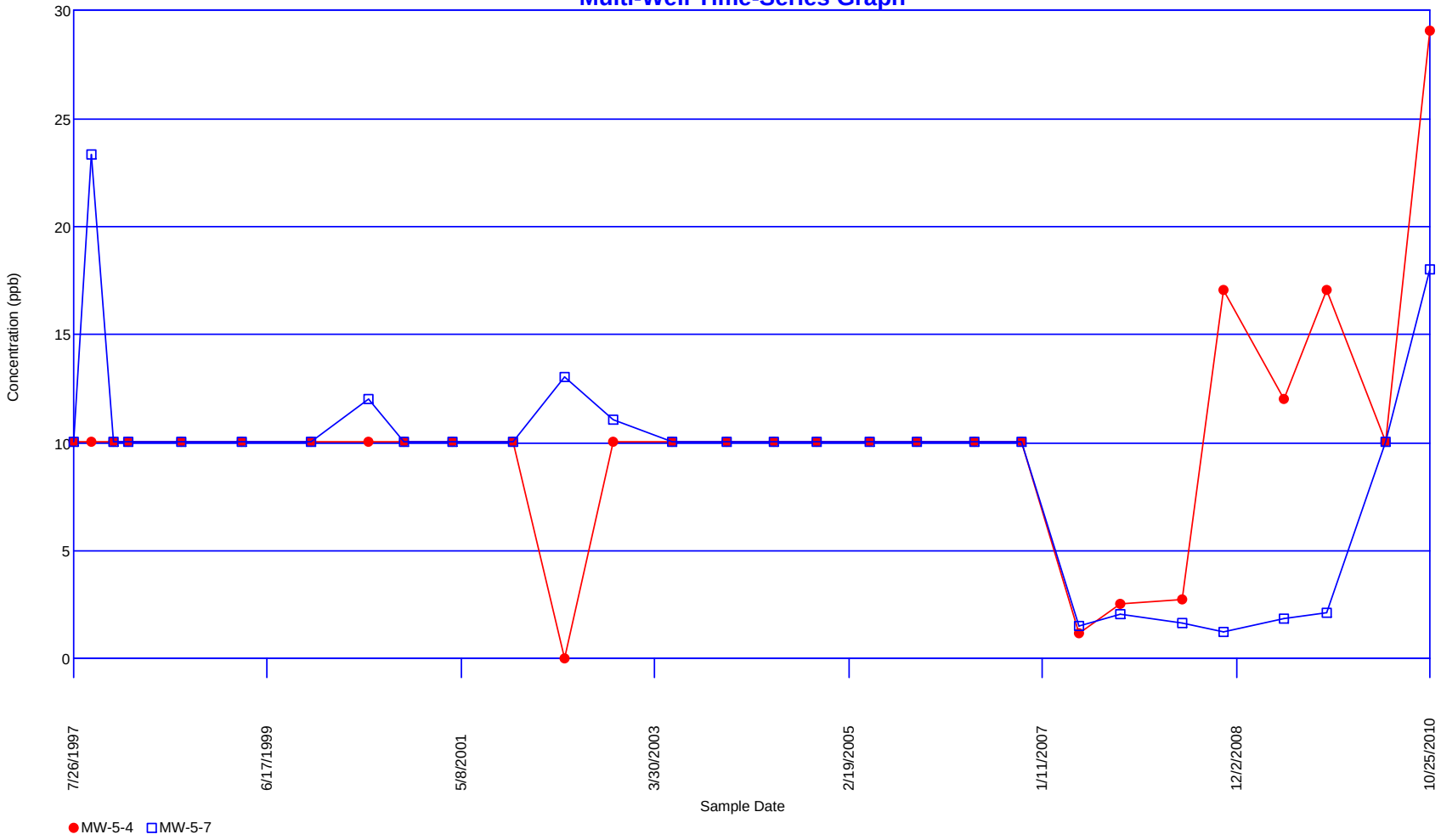



Beryllium
Multi-Well Time-Series Graph
Concentration (ppb)
2
1.5
1
0.5
0
7/26/1997
6/17/1999
5/8/2001
3/30/2003
2/19/2005
1/11/2007
12/2/2008
10/25/2010
Sample Date
MW-5-4
MW-5-7

Cobalt

Multi-Well Time-Series Graph



Lead

Multi-Well Time-Series Graph