BLE INC.

BUNNELL-LAMMONS ENGINEERING, INC.

GEOTECHNICAL, ENVIRONMENTAL AND CONSTRUCTION MATERIALS CONSULTANTS

REPORT OF GROUNDWATER QUALITY RESULTS & STATISTICAL ANALYSIS

FIRST SEMI-ANNUAL SAMPLING EVENT OF 2007

CLOSED FRANCIS FARM LANDFILL
PERMIT NUMBER: 44-03
HAYWOOD COUNTY, NORTH CAROLINA

Prepared for:

HAYWOOD COUNTY SOLID WASTE MANAGEMENT
278 Recycle Road
Clyde, North Carolina 28721

Prepared By:

BUNNELL-LAMMONS ENGINEERING, INC.
6004 Ponder Court
Greenville, South Carolina 29615

January 25, 2008

BLE Project Number J07-1957-03

BLE INC.
BUNNELL-LAMMONS ENGINEERING, INC.
GEOTECHNICAL, ENVIRONMENTAL AND CONSTRUCTION MATERIALS CONSULTANTS

January 25, 2008

Haywood County Solid Waste Management
278 Recycle Road
Clyde, NC 28721

Attention: Mr. Stephen King
Solid Waste Director

Subject: **Report of Groundwater Quality Results & Statistical Analysis**
First Semi-Annual Sampling Event of 2007 (N15)
Closed Francis Farm Landfill
Permit Number: 44-03
Haywood County, North Carolina
BLE Project Number J07-1957-03

Dear Mr. King:

As authorized, Bunnell-Lammons Engineering, Inc. (BLE) has performed the statistical analysis of groundwater quality data obtained from the subject site. The enclosed report describes the work performed and presents the results obtained with our conclusions. The purpose of this work was to statistically compare the laboratory analytical results of groundwater samples from the background monitoring wells to the downgradient monitoring wells at the subject closed municipal solid waste (MSW) landfill in accordance with Title 15A NCAC 13B .1632 (g), (h), and (i). This report of the sampling and statistical analysis has been prepared for submittal to the North Carolina Division of Waste Management (NCDWM) in accordance with Rule 15A NCAC 13B .1632 (j).

We appreciate the opportunity to serve as your hydrogeological consultant on this project and look forward to working with you on future projects. If you have any questions, please contact us at (864) 288-1265.

Sincerely,
BUNNELL-LAMMONS ENGINEERING, INC.

NORTH CAROLINA LICENSED SEAL 2025 GEOLOGIST TREVOR J. BENTON 1/25/08

NORTH CAROLINA LICENSED SEAL 1043 GEOLOGIST MARK S. PREDDY 1/25/08

Trevor J. Benton, P.G.
Project Hydrogeologist
Registered, North Carolina No. 2025

Mark S. Preddy, P.G.
Senior Hydrogeologist
Registered, North Carolina No. 1043

c.c: Mr. Ervin Lane – NC DENR Solid Waste Section, 401 Oberlin Road, Ste. 150, Raleigh, NC 27605

6004 PONDERS COURT
GREENVILLE, SOUTH CAROLINA 29615

PHONE (864) 288-1265
FAX (864) 288-4430

PROJECT INFORMATION

The subject closed municipal solid waste landfill site is located in Haywood County, North Carolina, approximately two miles northeast of Waynesville on Francis Farm Road (Figure 1). The landfill has five groundwater monitoring wells consisting of two upgradient (MW-4 and MW-5) and three downgradient wells (MW-1A, MW-2A, MW-3A). Additionally, there are three surface water sampling locations consisting of one upgradient (SW-1) and two downgradient (SW-2 and Blanton Branch) sampling points.

BLE was retained by Haywood County to prepare the semi-annual sampling reports for 2007. Historical data from multiple sources and in multiple formats had to be gathered and synthesized into this report.

This report presents data from the first semi-annual sampling event in 2007 for the site. The water samples were collected and analyzed as required in North Carolina's regulations for operation of municipal solid waste landfills. Fifteen sampling events (N1 through N15) have been performed between February 1999 and February 2007.

FIELD ACTIVITIES, SAMPLING, AND ANALYSIS

Groundwater and surface water samples were collected for the first semi-annual sampling event (N15) of 2007 by personnel from Pace Analytical Services, Inc. (Pace) of Asheville, North Carolina on February 26. Summary tables of analytical results are attached in Appendix A (groundwater) and Appendix B (surface water). The samples were analyzed in the laboratory for North Carolina's *Appendix I* list of volatile organic compounds (VOCs), the RCRA metals constituents, and in the field for pH, specific conductance, and temperature. A copy of the Pace laboratory and field data is included in Appendix C.

The water level data collected during the groundwater sampling is presented in Table 1. A water table surface elevation contour map is presented as Figure 2 along with generalized groundwater flow

directions. Data required to calculate groundwater flow velocities is currently unavailable for the site. We have recommended to Haywood County that this data be collected and reported in 2008.

SUMMARY OF LABORATORY RESULTS

Concentrations of total barium was detected in each of the monitoring wells and concentrations of total arsenic was detected in MW-2A; however, the detected concentrations were below North Carolina maximum contaminant levels[1] (MCLs). Concentrations of benzene (MW-4), 1,1-dichloroethane (MW-3A and MW-4), cis-1,2-dichloroethene (MW-2A and MW-4), dichloromethane (MW-4), tetrachloroethene (MW-4), and trichloroethene (MW-4) were detected at the site. The concentrations of benzene, dichloromethane, tetrachloroethene, and trichloroethene in MW-4 were detected above North Carolina MCLs. A summary of the detected concentrations is included in Appendix A.

Total barium was detected in each of the surface water samples during sampling event N15; but North Carolina has not established a surface water[2] MCL for this constituent. A summary of the detected concentrations is included in Appendix B.

STATISTICAL METHODS PERFORMED

The purpose of performing statistical analysis of groundwater quality data is to determine if a release of leachate has occurred from the landfill cells to the groundwater at the site. The US EPA has prepared guidance documents for evaluating groundwater quality data, which include the *Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities – Interim Final Guidance* (April 1989) and the *Addendum to the Interim Final Guidance* (July 1992). The procedures and methodology used for data analysis of this project are consistent with these US EPA guidance documents, and meet or exceed the performance criteria specified in the North Carolina solid waste management rules Title

[1] North Carolina Department of Environment and Natural Resources, Classifications of Water Quality Standards, Section 15A NCAC 2L.202, December 1, 2005.

[2] North Carolina Department of Environment and Natural Resources, "Redbook", Surface Waters and Wetlands Standards, Section 15A NCAC 02B.0100, .0200, and .0300, May 1, 2007.

15A NCAC 13B .1632(g-i). Four methods of statistical analysis were performed depending on the number of detected concentrations and the distribution of the data for a specific compound, as follows:

1. If greater than 90% of the data were not detected, Poisson Tolerance Limits were performed. Additionally, Wilcoxon rank-sum tests were performed for those compounds that failed the initial Poisson Tolerance Limits test;

2. If 15% to 90% of the data were not detected, the one-way non-parametric analysis of variance (ANOVA) Kruskal-Wallis rank-sum test was performed;

3. If less than 15% of the data were not detected, and if the data was normally distributed and homogeneous, then one-way parametric ANOVA was performed. If the data were not normally distributed and homogeneous, then a non-parametric type test was used (Kruskal-Wallis);

4. Alternatively, if greater than 50% of the data were not detected, Poisson Prediction Limits may be performed, or if less than 50% of the data were not detected, Normal Prediction Limits may be performed.

SUMMARY OF STATISTICAL RESULTS

The statistical results of the fifteen sampling events summarized on Table 2 and included in Appendix A indicate that:

1. The Poisson Prediction Limit test performed for total arsenic, acetone, carbon disulfide, chloroethane, 1,2-dichlorobenzene, 1,4-dichlorobenzene, 1,2-dichloroethane, 1,1-dichloroethene, cis-1,3-dichloropropene, and toluene did not calculate SSIs; and

2. The Kruskal-Wallis test used for total barium, total cadmium, total chromium, total lead, total mercury, total selenium, total silver, benzene, 1,1-dichloroethane, cis-1,2-dichloroethene, dichloromethane, tetrachloroethene, and trichloroethene did not calculate SSIs. However, multiple VOC detections have been detected in the background wells during the current and historical sampling events for benzene, 1,1-dichloroethane, cis-1,2-dichloroethene, dichloromethane, tetrachloroethene, and trichloroethene.

CONCLUSION

Concentrations of total metals (barium and arsenic) were detected at the site, but none were detected above North Carolina MCLs. Additionally, various VOCs were detected in MW-2A, MW-3A, and

MW-4. The concentrations of benzene, dichloromethane, tetrachloroethene, and trichloroethene in MW-4 were detected above North Carolina MCLs.

In summary, the detected concentrations of total metals are most likely naturally occurring and related to sample turbidity. Metal cations typically adsorb to the surface of platy particles (clay and silt). Therefore, turbidity of the groundwater and surface water samples will relate to detected concentrations of the metal cations. Consequently, the metal concentrations detected should be considered natural background concentrations.

We understand that a Groundwater Assessment and Corrective Measures Plan was submitted and subsequently approved by the NCDWM in 2004 to address the VOC detections in groundwater at the site. However, this plan was not executed due to apparent difficulties in obtaining off-site access for new well installations. We understand that performance of the plan will need to be reevaluated in 2008.

We recommend that sampling continue on a semi-annual basis for the *Appendix I* list of VOCs and RCRA metals constituents.

TABLES

TABLE 1

POTENTIOMETRIC SURFACE DATA
Haywood County Closed Landfill, Francis Farm
Haywood County, North Carolina
BLE Project Number J07-1957-03

Monitoring Well	TOC Elevation	Groundwater Elevation Data								
		8/11/03	2/9/04	8/16/04	2/14/05	9/1/05	2/16/06	2/16/06	8/30/06	2/26/07
MW-1A	2552.59	2508.89	2506.70	2507.02	2506.95	2507.34	2506.96	2506.96	2505.78	2506.14
MW-2A	2505.64	2480.42	2483.85	2479.56	2480.40	2481.87	2481.44	2481.44	2477.90	2479.77
MW-3A	2535.92	2499.12	2500.32	2497.07	2497.94	2499.47	2498.57	2498.57	2494.72	2495.75
MW-4	2651.13	2581.57	2580.78	2580.95	2581.65	2582.06	2582.00	2582.00	2581.73	2580.88
MW-5	2661.25	2584.42	2584.45	2584.95	2585.99	2587.11	2587.76	2587.76	2587.05	2585.81

NOTES:

1. Elevations are in FEET above mean sea level (MSL)
2. *TOC* = top of casing
3. Current water level measurements are from Pace field sampling notes
4. *NP* = Not Present during sampling event
5. Water level data prior to 2003 was not available

Prepared By: TJB
Checked By: MSP

TABLE 2

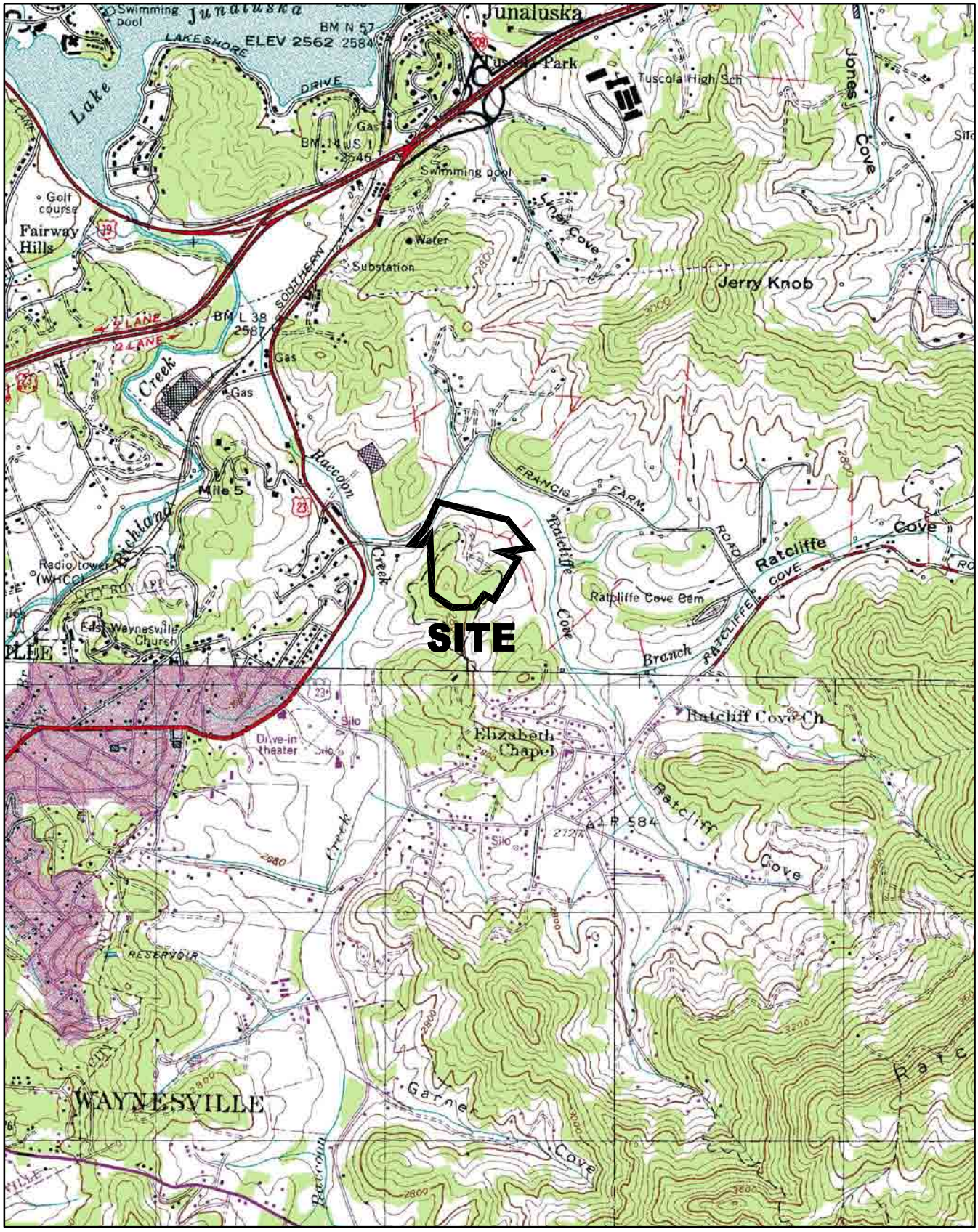
SUMMARY OF STATISTICAL ANALYSIS RESULTS
Haywood County Closed Landfill, Francis Farm
Haywood County, North Carolina
BLE Project Number J07-1957-03

Chemical/ Compound	Percent ND	Primary Statistical Test	Primary Pass/Fail	Secondary Statistical Test	Secondary Pass/Fail	SSI Calculated
Total Arsenic	80%	Poisson Prediction Limits	Pass	-	-	No
Total Barium *	8%	Kruskal-Wallis	Pass	-	-	No
Total Cadmium	65%	Kruskal-Wallis	Pass	-	-	No
Total Chromium	41%	Kruskal-Wallis	Pass	-	-	No
Total Lead	64%	Kruskal-Wallis	Fail	Kruskal-Wallis	Pass	No
Total Mercury	89%	Kruskal-Wallis	Pass	-	-	No
Total Selenium	77%	Kruskal-Wallis	Pass	-	-	No
Total Silver	80%	Kruskal-Wallis	Pass	-	-	No
Acetone	95%	Poisson Prediction Limits	Pass	-	-	No
Benzene	75%	Kruskal-Wallis	Fail	Kruskal-Wallis	Pass	No (multiple historic detections in background wells)
Carbon Disulfide	98%	Poisson Prediction Limits	Pass	-	-	No
Chloroethane	88%	Poisson Prediction Limits	Pass	-	-	No
1,2-Dichlorobenzene	98%	Poisson Prediction Limits	Pass	-	-	No
1,4-Dichlorobenzene	88%	Poisson Prediction Limits	Pass	-	-	No
1,1-Dichloroethane	33%	Kruskal-Wallis	Fail	Kruskal-Wallis	Pass	No (multiple historic detections in background wells)
1,2-Dichloroethane	95%	Poisson Prediction Limits	Pass	-	-	No
1,1-Dichloroethene	98%	Poisson Prediction Limits	Pass	-	-	No
cis-1,2-Dichloroethene	25%	Kruskal-Wallis	Fail	Kruskal-Wallis	Pass	No (multiple historic detections in background wells)
cis-1,3-Dichloropropene	98%	Poisson Prediction Limits	Pass	-	-	No
Dichloromethane	78%	Kruskal-Wallis	Fail	Kruskal-Wallis	Pass	No (multiple historic detections in background wells)
Tetrachloroethene	73%	Kruskal-Wallis	Fail	Kruskal-Wallis	Pass	No (multiple historic detections in background wells)
Toluene	88%	Poisson Prediction Limits	Pass	-	-	No
Trichloroethene	73%	Kruskal-Wallis	Fail	Kruskal-Wallis	Pass	No (multiple historic detections in background wells)

Notes:
1. MCL = *Maximum Contaminant Level*
2. SSI = *Statistically Significant Increase*
3. * = The dataset for total barium was not homogeneous and normally distributed. Therefore, a non-parametric ANOVA testing procedure was used (Kruskal-Wallis) rather than parametric ANOVA.

Prepared By: MSP
Checked By: TJB

FIGURES

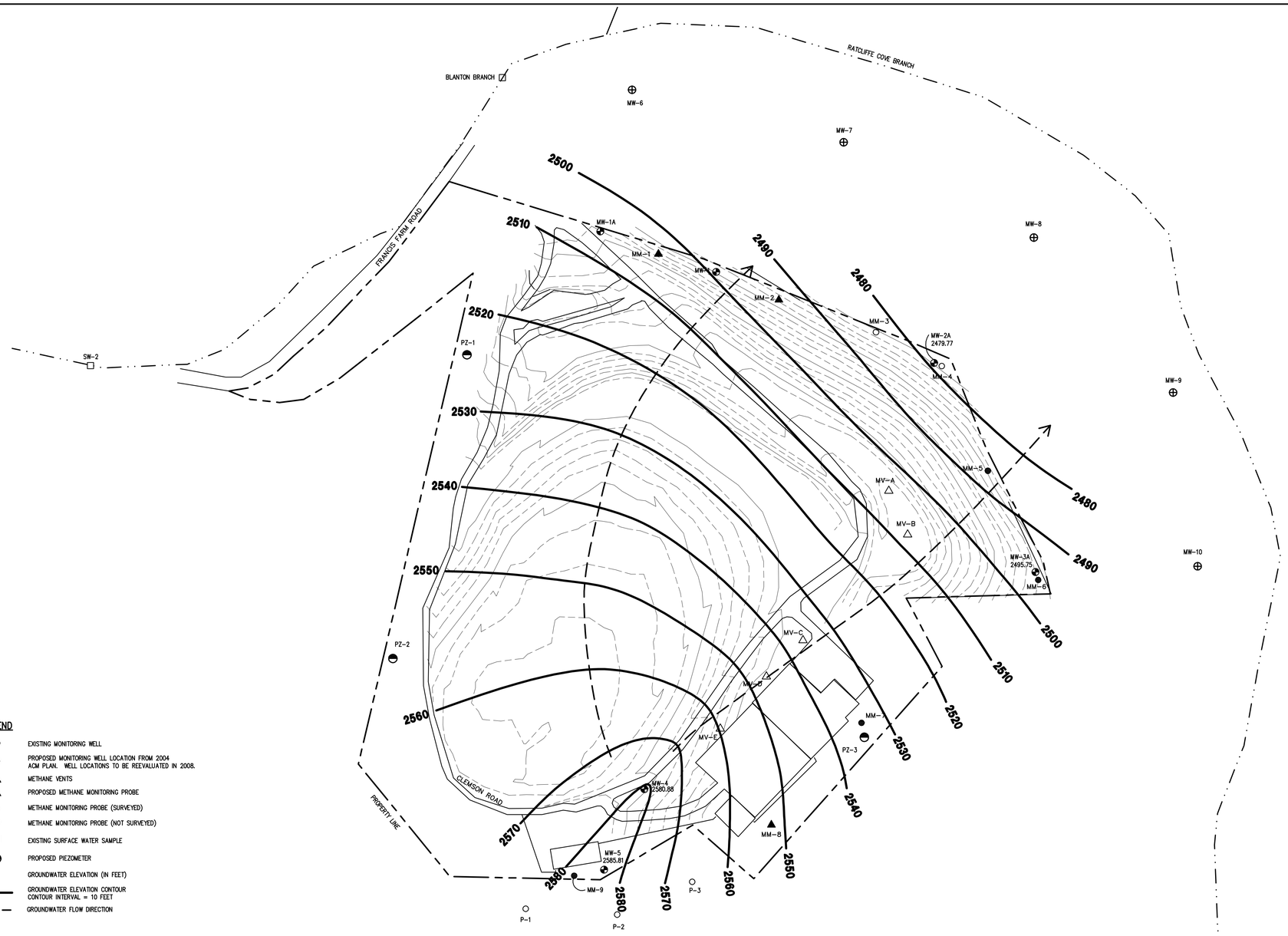


2000 1000 0 2000 4000

APPROXIMATE SCALE IN FEET

REFERENCE:
USGS TOPOGRAPHIC MAP, 7.5 MINUTE SERIES, CLYDE AND WAYNESVILLE, N.C. QUADRANGLES, 1978 AND PHOTOREVISED 1979.

DRAWN: AEH	DATE: 06-20-07	BLE INC. BUNNELL-LAMMONS ENGINEERING, INC. 6004 PONDERS COURT GREENVILLE, SOUTH CAROLINA 29615 PHONE: (864)288-1265 FAX: (864)288-4430	SITE LOCATION MAP HAYWOOD COUNTY LANDFILL CLOSED FRANCIS FARM LANDFILL HAYWOOD COUNTY, NORTH CAROLINA	FIGURE 1
CHECKED: AWA	CAD: HAYWOODFF-SLM			
APPROVED:	JOB NO: J07-1957-03			



LEGEND

- EXISTING MONITORING WELL
- PROPOSED MONITORING WELL LOCATION FROM 2004 ACM PLAN. WELL LOCATIONS TO BE REEVALUATED IN 2008.
- METHANE VENTS
- PROPOSED METHANE MONITORING PROBE
- METHANE MONITORING PROBE (SURVEYED)
- METHANE MONITORING PROBE (NOT SURVEYED)
- EXISTING SURFACE WATER SAMPLE
- PROPOSED PIEZOMETER
- 2506.14 — GROUNDWATER ELEVATION (IN FEET)
- 2540 — GROUNDWATER ELEVATION CONTOUR CONTOUR INTERVAL = 10 FEET
- GROUNDWATER FLOW DIRECTION

NOTE:
WATER LEVELS MEASURED ON FEBRUARY 26, 2007
BY PACE ANALYTICAL SERVICES, INC.

CAUTION:

THIS MAP WAS CREATED BY DIGITIZING THE REFERENCED MAPS. THE MAP FEATURES HAVE NOT BEEN FIELD VERIFIED OR SURVEYED.

100 50 0 100 200
APPROXIMATE SCALE IN FEET

REFERENCS:
1. DRAWING TITLED "PROPOSED ASSESSMENT PLAN" BY MUNICIPAL ENGINEERING IN A REPORT DATED AUGUST 11, 2006.
2. DRAWING TITLED "POTENTIOMETRIC MAP" BY MUNICIPAL ENGINEERING DATED MARCH 19, 2001.

REVISIONS		
No.	DESCRIPTION	BY

DRAWN:	AEH
CHECKED:	TJB
APPROVED:	

DATE:	01-23-08
CAD FILE:	HAYWOODCFF-GWPOTB
JOB NO:	J07-1957-03

BLE INC.
BUNNELL-LAMMONS ENGINEERING, INC.
6004 PONDERS COURT
GREENVILLE, SOUTH CAROLINA 29615
PHONE: (864)288-1265 FAX: (864)288-4430

GROUNDWATER POTENTIOMETRIC MAP - FEBRUARY 26, 2007
CLOSED FRANCIS FARM LANDFILL
HAYWOOD COUNTY, NORTH CAROLINA

FIGURE NO.
2

APPENDICES

APPENDIX A

Summary Tables of Groundwater Analytical Results
Sampling Events N1 Through N15

Closed Francis Farm Landfill - Haywood Co., NC
Groundwater Sampling Event (2-18-1999)

TEST	UNITS	MDL	MCL	MW-4	MW-5A	MW-1A	MW-2	MW-3A	EQUIP. BLANK
pH	pH units (on-site)	-	NE	**6.5**	NS	**5.4**	NS	**6**	NT
Specific Conductance	µmhos/cm (on-site)	1	NE	**72**	NS	**310**	NS	**420**	NT
Temperature	°C (on-site)	-	NE	**12**	NS	**13**	NS	**12**	NT
Turbidity	NTU (on-site)	0.1	NE	NT	NS	NT	NS	NT	NT
Total Antimony (Sb)	µg/l	30	NE	NT	NS	NT	NS	NT	NT
Total Arsenic (As)	µg/l	5	50	ND	NS	ND	NS	ND	ND
Total Barium (Ba)	µg/l	100	2000	**100**	NS	**300**	NS	**400**	ND
Total Beryllium (Be)	µg/l	2	NE	NT	NS	NT	NS	NT	NT
Total Cadmium (Cd)	µg/l	10	1.75	ND	NS	ND	NS	ND	ND
Total Chromium (Cr)	µg/l	20	50	ND	NS	ND	NS	ND	ND
Total Cobalt (Co)	µg/l	10	NE	NT	NS	NT	NS	NT	NT
Total Copper (Cu)	µg/l	200	1000	NT	NS	NT	NS	NT	NT
Total Lead (Pb)	µg/l	100	15	ND	NS	ND	NS	ND	ND
Total Mercury (Hg)	µg/l	0.2	1.05	ND	NS	ND	NS	ND	ND
Total Nickel (Ni)	µg/l	50	100	NT	NS	NT	NS	NT	NT
Total Selenium (Se)	µg/l	5	50	ND	NS	ND	NS	ND	ND
Total Silver (Ag)	µg/l	50	17.5	ND	NS	ND	NS	ND	ND
Total Thallium (Tl)	µg/l	10	NE	NT	NS	NT	NS	NT	NT
Total Vanadium (V)	µg/l	40	NE	NT	NS	NT	NS	NT	ND
Total Zinc (Zn)	µg/l	50	1050	NT	NS	NT	NS	NT	ND
Acetone	µg/l	100	700	NT	NS	NT	NS	NT	NT
Acrylonitrile	µg/l	200	NE	NT	NS	NT	NS	NT	NT
Benzene	µg/l	5	1	NT	NS	NT	NS	NT	NT
Bromochloromethane	µg/l	5	NE	NT	NS	NT	NS	NT	NT
Bromodichloromethane	µg/l	5	0.56	NT	NS	NT	NS	NT	NT
Bromoform	µg/l	5	0.19	NT	NS	NT	NS	NT	NT
Carbon Disulfide	µg/l	100	700	NT	NS	NT	NS	NT	NT
Bromomethane (Methylbromide)	µg/l	10	NE	NT	NS	NT	NS	NT	NT
Carbon tetrachloride	µg/l	10	0.269	NT	NS	NT	NS	NT	NT
Chlorobenzene (mono)	µg/l	5	50	NT	NS	NT	NS	NT	NT
Chloroethane	µg/l	10	2800	NT	NS	NT	NS	NT	NT
Chloroform	µg/l	5	70	NT	NS	NT	NS	NT	NT
Chloromethane (Methylchloride)	µg/l	10	2.6	NT	NS	NT	NS	NT	NT
Dibromochloromethane	µg/l	5	NE	NT	NS	NT	NS	NT	NT
1,2-Dibromo-3-chloropropane; DBCP	µg/l	25	0.025	NT	NS	NT	NS	NT	NT
1,2-Dibromoethane; Ethylene dibromide	µg/l	5	0.00047	NT	NS	NT	NS	NT	NT
Dibromomethane	µg/l	10	NE	NT	NS	NT	NS	NT	NT
1,2-Dichlorobenzene	µg/l	5	24	NT	NS	NT	NS	NT	NT
1,4-Dichlorobenzene	µg/l	5	1.4	NT	NS	NT	NS	NT	NT
trans-1,4-Dichloro-2-butene	µg/l	100	NE	NT	NS	NT	NS	NT	NT
1,1-Dichloroethane	µg/l	5	70	NT	NS	NT	NS	NT	NT
1,2-Dichloroethane	µg/l	5	0.38	NT	NS	NT	NS	NT	NT
1,1-Dichloroethene (-ethylene)	µg/l	5	7	NT	NS	NT	NS	NT	NT
cis-1,2-Dichloroethene (-ethylene)	µg/l	5	70	NT	NS	NT	NS	NT	NT
trans-1,2-Dichloroethene (-ylene)	µg/l	5	100	NT	NS	NT	NS	NT	NT
1,2-Dichloropropane	µg/l	5	0.51	NT	NS	NT	NS	NT	NT
cis-1,3-Dichloropropene (-propylene)	µg/l	10	0.19	NT	NS	NT	NS	NT	NT
trans-1,3-Dichloropropene (-propylene)	µg/l	10	0.19	NT	NS	NT	NS	NT	NT
Ethylbenzene	µg/l	5	550	NT	NS	NT	NS	NT	NT
2-Hexanone	µg/l	50	NE	NT	NS	NT	NS	NT	NT
Iodomethane	µg/l	10	NE	NT	NS	NT	NS	NT	NT
Dichloromethane (Methylene chloride)	µg/l	10	4.6	NT	NS	NT	NS	NT	NT
2-Butanone (Methyl ethyl ketone)	µg/l	100	4200	NT	NS	NT	NS	NT	NT
4-Methyl-2-Pentanone	µg/l	100	NE	NT	NS	NT	NS	NT	NT
Styrene	µg/l	10	100	NT	NS	NT	NS	NT	NT
1,1,1,2-Tetrachloroethane	µg/l	5	NE	NT	NS	NT	NS	NT	NT
1,1,2,2-Tetrachloroethane	µg/l	5	NE	NT	NS	NT	NS	NT	NT
Tetrachloroethene (-ethylene)	µg/l	5	0.7	NT	NS	NT	NS	NT	NT
Toluene	µg/l	5	1000	NT	NS	NT	NS	NT	NT
1,1,1-Trichloroethane	µg/l	5	200	NT	NS	NT	NS	NT	NT
1,1,2-Trichloroethane	µg/l	5	NE	NT	NS	NT	NS	NT	NT
Trichloroethene (-ethylene)	µg/l	5	2.8	NT	NS	NT	NS	NT	NT
Trichlorofluoromethane	µg/l	5	2100	NT	NS	NT	NS	NT	NT
1,2,3-Trichloropropane	µg/l	15	0.005	NT	NS	NT	NS	NT	NT
Vinyl acetate	µg/l	50	NE	NT	NS	NT	NS	NT	NT
Vinyl chloride	µg/l	10	0.015	NT	NS	NT	NS	NT	NT
Xylene	µg/l	5	530	NT	NS	NT	NS	NT	NT

Notes:
MCL = Maximum Contaminant Level, as established in the NCDENR, Classifications of Water Quality Standards Applicable to Groundwaters of North Carolina, Section 15A NCAC 2L.202.
MDL = Laboratory Method Detection Limit
ND = Not Detected at the method detection limit
NS = Not Sampled
NT = Not Tested
NE = Not Established; North Carolina has not established a MCL
NP = Not Present during sampling event
Shaded cells indicated exceedances of MCLs.

Closed Francis Farm Landfill - Haywood Co., NC
Groundwater Sampling Event (8-16-1999)

TEST	UNITS	MDL	MCL	MW-4	MW-5A	MW-1A	MW-2	MW-3A	EQUIP. BLANK
pH	pH units (on-site)	-	NE	**5.5**	NS	**5.3**	NS	**5.7**	NT
Specific Conductance	µmhos/cm (on-site)	1	NE	**100**	NS	**430**	NS	**670**	NT
Temperature	°C (on-site)	-	NE	**15**	NS	**15**	NS	**14**	NT
Turbidity	NTU (on-site)	0.1	NE	NT	NS	NT	NS	NT	NT
Total Antimony (Sb)	µg/l	30	NE	NT	NS	NT	NS	NT	NT
Total Arsenic (As)	µg/l	5	50	ND	NS	ND	NS	ND	ND
Total Barium (Ba)	µg/l	100	2000	**120**	NS	**230**	NS	**260**	ND
Total Beryllium (Be)	µg/l	2	NE	NT	NS	NT	NS	NT	NT
Total Cadmium (Cd)	µg/l	10	1.75	ND	NS	**2.5**	NS	**7.4**	ND
Total Chromium (Cr)	µg/l	20	50	**35**	NS	**61**	NS	**14**	ND
Total Cobalt (Co)	µg/l	10	NE	NT	NS	NT	NS	NT	NT
Total Copper (Cu)	µg/l	200	1000	NT	NS	NT	NS	NT	NT
Total Lead (Pb)	µg/l	100	15	ND	NS	ND	NS	ND	ND
Total Mercury (Hg)	µg/l	0.2	1.05	ND	NS	ND	NS	ND	ND
Total Nickel (Ni)	µg/l	50	100	NT	NS	NT	NS	NT	NT
Total Selenium (Se)	µg/l	5	50	ND	NS	ND	NS	ND	NT
Total Silver (Ag)	µg/l	50	17.5	ND	NS	ND	NS	ND	ND
Total Thallium (Tl)	µg/l	10	NE	NT	NS	NT	NS	NT	NT
Total Vanadium (V)	µg/l	40	NE	NT	NS	NT	NS	NT	ND
Total Zinc (Zn)	µg/l	50	1050	NT	NS	NT	NS	NT	ND
Acetone	µg/l	100	700	NT	NS	NT	NS	NT	NT
Acrylonitrile	µg/l	200	NE	NT	NS	NT	NS	NT	NT
Benzene	µg/l	5	1	NT	NS	NT	NS	NT	NT
Bromochloromethane	µg/l	5	NE	NT	NS	NT	NS	NT	NT
Bromodichloromethane	µg/l	5	0.56	NT	NS	NT	NS	NT	NT
Bromoform	µg/l	5	0.19	NT	NS	NT	NS	NT	NT
Carbon Disulfide	µg/l	100	700	NT	NS	NT	NS	NT	NT
Bromomethane (Methylbromide)	µg/l	10	NE	NT	NS	NT	NS	NT	NT
Carbon tetrachloride	µg/l	10	0.269	NT	NS	NT	NS	NT	NT
Chlorobenzene (mono)	µg/l	5	50	NT	NS	NT	NS	NT	NT
Chloroethane	µg/l	10	2800	NT	NS	NT	NS	NT	NT
Chloroform	µg/l	5	70	NT	NS	NT	NS	NT	NT
Chloromethane (Methylchloride)	µg/l	10	2.6	NT	NS	NT	NS	NT	NT
Dibromochloromethane	µg/l	5	NE	NT	NS	NT	NS	NT	NT
1,2-Dibromo-3-chloropropane; DBCP	µg/l	25	0.025	NT	NS	NT	NS	NT	NT
1,2-Dibromoethane; Ethylene dibromide	µg/l	5	0.00047	NT	NS	NT	NS	NT	NT
Dibromomethane	µg/l	10	NE	NT	NS	NT	NS	NT	NT
1,2-Dichlorobenzene	µg/l	5	24	NT	NS	NT	NS	NT	NT
1,4-Dichlorobenzene	µg/l	5	1.4	NT	NS	NT	NS	NT	NT
trans-1,4-Dichloro-2-butene	µg/l	100	NE	NT	NS	NT	NS	NT	NT
1,1-Dichloroethane	µg/l	5	70	NT	NS	NT	NS	NT	NT
1,2-Dichloroethane	µg/l	5	0.38	NT	NS	NT	NS	NT	NT
1,1-Dichloroethene (-ethylene)	µg/l	5	7	NT	NS	NT	NS	NT	NT
cis-1,2-Dichloroethene (-ethylene)	µg/l	5	70	NT	NS	NT	NS	NT	NT
trans-1,2-Dichloroethene (-ylene)	µg/l	5	100	NT	NS	NT	NS	NT	NT
1,2-Dichloropropane	µg/l	5	0.51	NT	NS	NT	NS	NT	NT
cis-1,3-Dichloropropene (-propylene)	µg/l	10	0.19	NT	NS	NT	NS	NT	NT
trans-1,3-Dichloropropene (-propylene)	µg/l	10	0.19	NT	NS	NT	NS	NT	NT
Ethylbenzene	µg/l	5	550	NT	NS	NT	NS	NT	NT
2-Hexanone	µg/l	50	NE	NT	NS	NT	NS	NT	NT
Iodomethane	µg/l	10	NE	NT	NS	NT	NS	NT	NT
Dichloromethane (Methylene chloride)	µg/l	10	4.6	NT	NS	NT	NS	NT	NT
2-Butanone (Methyl ethyl ketone)	µg/l	100	4200	NT	NS	NT	NS	NT	NT
4-Methyl-2-Pentanone	µg/l	100	NE	NT	NS	NT	NS	NT	NT
Styrene	µg/l	10	100	NT	NS	NT	NS	NT	NT
1,1,1,2-Tetrachloroethane	µg/l	5	NE	NT	NS	NT	NS	NT	NT
1,1,2,2-Tetrachloroethane	µg/l	5	NE	NT	NS	NT	NS	NT	NT
Tetrachloroethene (-ethylene)	µg/l	5	0.7	NT	NS	NT	NS	NT	NT
Toluene	µg/l	5	1000	NT	NS	NT	NS	NT	NT
1,1,1-Trichloroethane	µg/l	5	200	NT	NS	NT	NS	NT	NT
1,1,2-Trichloroethane	µg/l	5	NE	NT	NS	NT	NS	NT	NT
Trichloroethene (-ethylene)	µg/l	5	2.8	NT	NS	NT	NS	NT	NT
Trichlorofluoromethane	µg/l	5	2100	NT	NS	NT	NS	NT	NT
1,2,3-Trichloropropane	µg/l	15	0.005	NT	NS	NT	NS	NT	NT
Vinyl acetate	µg/l	50	NE	NT	NS	NT	NS	NT	NT
Vinyl chloride	µg/l	10	0.015	NT	NS	NT	NS	NT	NT
Xylene	µg/l	5	530	NT	NS	NT	NS	NT	NT

Notes:
MCL = Maximum Contaminant Level, as established in the NCDENR, Classifications of Water Quality Standards Applicable to Groundwaters of North Carolina, Section 15A NCAC 2L.202.
MDL = Laboratory Method Detection Limit
ND = Not Detected at the method detection limit
NS = Not Sampled
NT = Not Tested
NE = Not Established; North Carolina has not established a MCL
NP = Not Present during sampling event
Shaded cells indicated exceedances of MCLs.

Closed Francis Farm Landfill - Haywood Co., NC
Groundwater Sampling Event (2-14-2000)

TEST	UNITS	MDL	MCL	MW-4	MW-5A	MW-1A	MW-2A	MW-3A	EQUIP. BLANK
pH	pH units (on-site)	-	NE	**5**	NS	**5.1**	NS	**6.7**	NT
Specific Conductance	µmhos/cm (on-site)	1	NE	**180**	NS	**300**	NS	**500**	NT
Temperature	°C (on-site)	-	NE	**13**	NS	**13**	NS	**13**	NT
Turbidity	NTU (on-site)	0.1	NE	NT	NS	NT	NS	NT	NT
Total Antimony (Sb)	µg/l	30	NE	NT	NS	NT	NS	NT	NT
Total Arsenic (As)	µg/l	5	50	ND	NS	ND	NS	ND	ND
Total Barium (Ba)	µg/l	100	2000	**150**	NS	**270**	NS	**240**	ND
Total Beryllium (Be)	µg/l	2	NE	NT	NS	NT	NS	NT	NT
Total Cadmium (Cd)	µg/l	10	1.75	**1.4**	NS	**2**	NS	**9.1**	ND
Total Chromium (Cr)	µg/l	20	50	**11**	NS	**7.2**	NS	**5.6**	ND
Total Cobalt (Co)	µg/l	10	NE	NT	NS	NT	NS	NT	NT
Total Copper (Cu)	µg/l	200	1000	NT	NS	NT	NS	NT	NT
Total Lead (Pb)	µg/l	100	15	ND	NS	ND	NS	ND	ND
Total Mercury (Hg)	µg/l	0.2	1.05	ND	NS	ND	NS	ND	ND
Total Nickel (Ni)	µg/l	50	100	NT	NS	NT	NS	NT	NT
Total Selenium (Se)	µg/l	5	50	ND	NS	ND	NS	ND	NT
Total Silver (Ag)	µg/l	50	17.5	ND	NS	**4.3**	NS	**4.9**	ND
Total Thallium (Tl)	µg/l	10	NE	NT	NS	NT	NS	NT	NT
Total Vanadium (V)	µg/l	40	NE	NT	NS	NT	NS	NT	ND
Total Zinc (Zn)	µg/l	50	1050	NT	NS	NT	NS	NT	ND
Acetone	µg/l	100	700	NT	NS	NT	NS	NT	NT
Acrylonitrile	µg/l	200	NE	NT	NS	NT	NS	NT	NT
Benzene	µg/l	5	1	NT	NS	NT	NS	NT	NT
Bromochloromethane	µg/l	5	NE	NT	NS	NT	NS	NT	NT
Bromodichloromethane	µg/l	5	0.56	NT	NS	NT	NS	NT	NT
Bromoform	µg/l	5	0.19	NT	NS	NT	NS	NT	NT
Carbon Disulfide	µg/l	100	700	NT	NS	NT	NS	NT	NT
Bromomethane (Methylbromide)	µg/l	10	NE	NT	NS	NT	NS	NT	NT
Carbon tetrachloride	µg/l	10	0.269	NT	NS	NT	NS	NT	NT
Chlorobenzene (mono)	µg/l	5	50	NT	NS	NT	NS	NT	NT
Chloroethane	µg/l	10	2800	NT	NS	NT	NS	NT	NT
Chloroform	µg/l	5	70	NT	NS	NT	NS	NT	NT
Chloromethane (Methylchloride)	µg/l	10	2.6	NT	NS	NT	NS	NT	NT
Dibromochloromethane	µg/l	5	NE	NT	NS	NT	NS	NT	NT
1,2-Dibromo-3-chloropropane; DBCP	µg/l	25	0.025	NT	NS	NT	NS	NT	NT
1,2-Dibromoethane; Ethylene dibromide	µg/l	5	0.00047	NT	NS	NT	NS	NT	NT
Dibromomethane	µg/l	10	NE	NT	NS	NT	NS	NT	NT
1,2-Dichlorobenzene	µg/l	5	24	NT	NS	NT	NS	NT	NT
1,4-Dichlorobenzene	µg/l	5	1.4	NT	NS	NT	NS	NT	NT
trans-1,4-Dichloro-2-butene	µg/l	100	NE	NT	NS	NT	NS	NT	NT
1,1-Dichloroethane	µg/l	5	70	NT	NS	NT	NS	NT	NT
1,2-Dichloroethane	µg/l	5	0.38	NT	NS	NT	NS	NT	NT
1,1-Dichloroethene (-ethylene)	µg/l	5	7	NT	NS	NT	NS	NT	NT
cis-1,2-Dichloroethene (-ethylene)	µg/l	5	70	NT	NS	NT	NS	NT	NT
trans-1,2-Dichloroethene (-ylene)	µg/l	5	100	NT	NS	NT	NS	NT	NT
1,2-Dichloropropane	µg/l	5	0.51	NT	NS	NT	NS	NT	NT
cis-1,3-Dichloropropene (-propylene)	µg/l	10	0.19	NT	NS	NT	NS	NT	NT
trans-1,3-Dichloropropene (-propylene)	µg/l	10	0.19	NT	NS	NT	NS	NT	NT
Ethylbenzene	µg/l	5	550	NT	NS	NT	NS	NT	NT
2-Hexanone	µg/l	50	NE	NT	NS	NT	NS	NT	NT
Iodomethane	µg/l	10	NE	NT	NS	NT	NS	NT	NT
Dichloromethane (Methylene chloride)	µg/l	10	4.6	NT	NS	NT	NS	NT	NT
2-Butanone (Methyl ethyl ketone)	µg/l	100	4200	NT	NS	NT	NS	NT	NT
4-Methyl-2-Pentanone	µg/l	100	NE	NT	NS	NT	NS	NT	NT
Styrene	µg/l	10	100	NT	NS	NT	NS	NT	NT
1,1,1,2-Tetrachloroethane	µg/l	5	NE	NT	NS	NT	NS	NT	NT
1,1,2,2-Tetrachloroethane	µg/l	5	NE	NT	NS	NT	NS	NT	NT
Tetrachloroethene (-ethylene)	µg/l	5	0.7	NT	NS	NT	NS	NT	NT
Toluene	µg/l	5	1000	NT	NS	NT	NS	NT	NT
1,1,1-Trichloroethane	µg/l	5	200	NT	NS	NT	NS	NT	NT
1,1,2-Trichloroethane	µg/l	5	NE	NT	NS	NT	NS	NT	NT
Trichloroethene (-ethylene)	µg/l	5	2.8	NT	NS	NT	NS	NT	NT
Trichlorofluoromethane	µg/l	5	2100	NT	NS	NT	NS	NT	NT
1,2,3-Trichloropropane	µg/l	15	0.005	NT	NS	NT	NS	NT	NT
Vinyl acetate	µg/l	50	NE	NT	NS	NT	NS	NT	NT
Vinyl chloride	µg/l	10	0.015	NT	NS	NT	NS	NT	NT
Xylene	µg/l	5	530	NT	NS	NT	NS	NT	NT

Notes:
MCL = Maximum Contaminant Level, as established in the NCDENR, Classifications of Water Quality Standards Applicable to Groundwaters of North Carolina, Section 15A NCAC 2L.202.
MDL = Laboratory Method Detection Limit
ND = Not Detected at the method detection limit
NS = Not Sampled
NT = Not Tested
NE = Not Established; North Carolina has not established a MCL
NP = Not Present during sampling event
Shaded cells indicated exceedances of MCLs.

Closed Francis Farm Landfill - Haywood Co., NC
Groundwater Sampling Event (8-14-2000)

TEST	UNITS	MDL	MCL	MW-4A	MW-5	MW-1A	MW-2	MW-3A	EQUIP. BLANK
pH	pH units (on-site)	-	NE	**4.9**	NT	**5.2**	NS	**5.8**	NT
Specific Conductance	µmhos/cm (on-site)	1	NE	**100**	NT	**440**	NS	**600**	NT
Temperature	°C (on-site)	-	NE	**16**	NT	**15**	NS	**14**	NT
Turbidity	NTU (on-site)	0.1	NE	NT	NT	NT	NS	NT	NT
Total Antimony (Sb)	µg/l	30	NE	NT	NT	NT	NS	NT	NT
Total Arsenic (As)	µg/l	5	50	ND	NT	ND	NS	**10**	ND
Total Barium (Ba)	µg/l	100	2000	**180**	NT	**410**	NS	**310**	ND
Total Beryllium (Be)	µg/l	2	NE	NT	NT	NT	NS	NT	NT
Total Cadmium (Cd)	µg/l	10	1.75	**1.3**	NT	**4.9**	NS	**13**	ND
Total Chromium (Cr)	µg/l	20	50	**5.4**	NT	**7.4**	NS	ND	ND
Total Cobalt (Co)	µg/l	10	NE	NT	NT	NT	NS	NT	NT
Total Copper (Cu)	µg/l	200	1000	NT	NT	NT	NS	NT	NT
Total Lead (Pb)	µg/l	100	15	ND	NT	ND	NS	ND	ND
Total Mercury (Hg)	µg/l	0.2	1.05	ND	NT	**0.4**	NS	ND	ND
Total Nickel (Ni)	µg/l	50	100	NT	NT	NT	NS	NT	NT
Total Selenium (Se)	µg/l	5	50	ND	NT	ND	NS	ND	ND
Total Silver (Ag)	µg/l	50	17.5	**4**	NT	**8.9**	NS	**7.8**	**3**
Total Thallium (Tl)	µg/l	10	NE	NT	NT	NT	NS	NT	NT
Total Vanadium (V)	µg/l	40	NE	NT	NT	NT	NS	NT	NT
Total Zinc (Zn)	µg/l	50	1050	NT	NT	NT	NS	NT	NT
Acetone	µg/l	100	700	NT	NT	NT	NS	NT	NT
Acrylonitrile	µg/l	200	NE	NT	NT	NT	NS	NT	NT
Benzene	µg/l	5	1	NT	NT	NT	NS	NT	NT
Bromochloromethane	µg/l	5	NE	NT	NT	NT	NS	NT	NT
Bromodichloromethane	µg/l	5	0.56	NT	NT	NT	NS	NT	NT
Bromoform	µg/l	5	0.19	NT	NT	NT	NS	NT	NT
Carbon Disulfide	µg/l	100	700	NT	NT	NT	NS	NT	NT
Bromomethane (Methylbromide)	µg/l	10	NE	NT	NT	NT	NS	NT	NT
Carbon tetrachloride	µg/l	10	0.269	NT	NT	NT	NS	NT	NT
Chlorobenzene (mono)	µg/l	5	50	NT	NT	NT	NS	NT	NT
Chloroethane	µg/l	10	2800	NT	NT	NT	NS	NT	NT
Chloroform	µg/l	5	70	NT	NT	NT	NS	NT	NT
Chloromethane (Methylchloride)	µg/l	10	2.6	NT	NT	NT	NS	NT	NT
Dibromochloromethane	µg/l	5	NE	NT	NT	NT	NS	NT	NT
1,2-Dibromo-3-chloropropane; DBCP	µg/l	25	0.025	NT	NT	NT	NS	NT	NT
1,2-Dibromoethane; Ethylene dibromide	µg/l	5	0.00047	NT	NT	NT	NS	NT	NT
Dibromomethane	µg/l	10	NE	NT	NT	NT	NS	NT	NT
1,2-Dichlorobenzene	µg/l	5	24	NT	NT	NT	NS	NT	NT
1,4-Dichlorobenzene	µg/l	5	1.4	NT	NT	NT	NS	NT	NT
trans-1,4-Dichloro-2-butene	µg/l	100	NE	NT	NT	NT	NS	NT	NT
1,1-Dichloroethane	µg/l	5	70	NT	NT	NT	NS	NT	NT
1,2-Dichloroethane	µg/l	5	0.38	NT	NT	NT	NS	NT	NT
1,1-Dichloroethene (-ethylene)	µg/l	5	7	NT	NT	NT	NS	NT	NT
cis-1,2-Dichloroethene (-ethylene)	µg/l	5	70	NT	NT	NT	NS	NT	NT
trans-1,2-Dichloroethene (-ylene)	µg/l	5	100	NT	NT	NT	NS	NT	NT
1,2-Dichloropropane	µg/l	5	0.51	NT	NT	NT	NS	NT	NT
cis-1,3-Dichloropropene (-propylene)	µg/l	10	0.19	NT	NT	NT	NS	NT	NT
trans-1,3-Dichloropropene (-propylene)	µg/l	10	0.19	NT	NT	NT	NS	NT	NT
Ethylbenzene	µg/l	5	550	NT	NT	NT	NS	NT	NT
2-Hexanone	µg/l	50	NE	NT	NT	NT	NS	NT	NT
Iodomethane	µg/l	10	NE	NT	NT	NT	NS	NT	NT
Dichloromethane (Methylene chloride)	µg/l	10	4.6	NT	NT	NT	NS	NT	NT
2-Butanone (Methyl ethyl ketone)	µg/l	100	4200	NT	NT	NT	NS	NT	NT
4-Methyl-2-Pentanone	µg/l	100	NE	NT	NT	NT	NS	NT	NT
Styrene	µg/l	10	100	NT	NT	NT	NS	NT	NT
1,1,1,2-Tetrachloroethane	µg/l	5	NE	NT	NT	NT	NS	NT	NT
1,1,2,2-Tetrachloroethane	µg/l	5	NE	NT	NT	NT	NS	NT	NT
Tetrachloroethene (-ethylene)	µg/l	5	0.7	NT	NT	NT	NS	NT	NT
Toluene	µg/l	5	1000	NT	NT	NT	NS	NT	NT
1,1,1-Trichloroethane	µg/l	5	200	NT	NT	NT	NS	NT	NT
1,1,2-Trichloroethane	µg/l	5	NE	NT	NT	NT	NS	NT	NT
Trichloroethene (-ethylene)	µg/l	5	2.8	NT	NT	NT	NS	NT	NT
Trichlorofluoromethane	µg/l	5	2100	NT	NT	NT	NS	NT	NT
1,2,3-Trichloropropane	µg/l	15	0.005	NT	NT	NT	NS	NT	NT
Vinyl acetate	µg/l	50	NE	NT	NT	NT	NS	NT	NT
Vinyl chloride	µg/l	10	0.015	NT	NT	NT	NS	NT	NT
Xylene	µg/l	5	530	NT	NT	NT	NS	NT	NT

Notes:
MCL = Maximum Contaminant Level, as established in the NCDENR, Classifications of Water Quality Standards Applicable to Groundwaters of North Carolina, Section 15A NCAC 2L.202.
MDL = Laboratory Method Detection Limit
ND = Not Detected at the method detection limit
NS = Not Sampled
NT = Not Tested
NE = Not Established; North Carolina has not established a MCL
NP = Not Present during sampling event
Shaded cells indicated exceedances of MCLs.

Closed Francis Farm Landfill - Haywood Co., NC
Groundwater Sampling Event (3-19-2001)

TEST	UNITS	MDL	MCL	MW-4A	MW-5	MW-1A	MW-2A	MW-3A	EQUIP. BLANK
pH	pH units (on-site)	-	NE	5.4	5.8	6.0	6.2	6.1	NT
Specific Conductance	µmhos/cm (on-site)	1	NE	98	130	350	550	470	NT
Temperature	°C (on-site)	-	NE	14	12.1	13	13	13	NT
Turbidity	NTU (on-site)	0.1	NE	NT	NT	NT	NT	NT	NT
Total Antimony (Sb)	µg/l	30	NE	NT	NT	NT	NT	NT	NT
Total Arsenic (As)	µg/l	5	50	ND	11	ND	ND	ND	ND
Total Barium (Ba)	µg/l	100	2000	120	2000	340	830	310	ND
Total Beryllium (Be)	µg/l	2	NE	NT	NT	NT	NT	NT	NT
Total Cadmium (Cd)	µg/l	10	1.75	ND	18	2.6	12	6.9	ND
Total Chromium (Cr)	µg/l	20	50	5.2	140	12	32	7.7	ND
Total Cobalt (Co)	µg/l	10	NE	NT	NT	NT	NT	NT	NT
Total Copper (Cu)	µg/l	200	1000	NT	NT	NT	NT	NT	NT
Total Lead (Pb)	µg/l	100	15	ND	38	ND	16	ND	ND
Total Mercury (Hg)	µg/l	0.2	1.05	ND	ND	ND	0.2	ND	ND
Total Nickel (Ni)	µg/l	50	100	NT	NT	NT	NT	NT	NT
Total Selenium (Se)	µg/l	5	50	ND	ND	ND	ND	ND	NT
Total Silver (Ag)	µg/l	50	17.5	ND	ND	ND	6.6	4.7	ND
Total Thallium (Tl)	µg/l	10	NE	NT	NT	NT	NT	NT	NT
Total Vanadium (V)	µg/l	40	NE	NT	NT	NT	NT	NT	ND
Total Zinc (Zn)	µg/l	50	1050	NT	NT	NT	NT	NT	ND
Acetone	µg/l	100	700	NT	NT	NT	NT	NT	NT
Acrylonitrile	µg/l	200	NE	NT	NT	NT	NT	NT	NT
Benzene	µg/l	5	1	NT	NT	NT	NT	NT	NT
Bromochloromethane	µg/l	5	NE	NT	NT	NT	NT	NT	NT
Bromodichloromethane	µg/l	5	0.56	NT	NT	NT	NT	NT	NT
Bromoform	µg/l	5	0.19	NT	NT	NT	NT	NT	NT
Carbon Disulfide	µg/l	100	700	NT	NT	NT	NT	NT	NT
Bromomethane (Methylbromide)	µg/l	10	NE	NT	NT	NT	NT	NT	NT
Carbon tetrachloride	µg/l	10	0.269	NT	NT	NT	NT	NT	NT
Chlorobenzene (mono)	µg/l	5	50	NT	NT	NT	NT	NT	NT
Chloroethane	µg/l	10	2800	NT	NT	NT	NT	NT	NT
Chloroform	µg/l	5	70	NT	NT	NT	NT	NT	NT
Chloromethane (Methylchloride)	µg/l	10	2.6	NT	NT	NT	NT	NT	NT
Dibromochloromethane	µg/l	5	NE	NT	NT	NT	NT	NT	NT
1,2-Dibromo-3-chloropropane; DBCP	µg/l	25	0.025	NT	NT	NT	NT	NT	NT
1,2-Dibromoethane; Ethylene dibromide	µg/l	5	0.00047	NT	NT	NT	NT	NT	NT
Dibromomethane	µg/l	10	NE	NT	NT	NT	NT	NT	NT
1,2-Dichlorobenzene	µg/l	5	24	NT	NT	NT	NT	NT	NT
1,4-Dichlorobenzene	µg/l	5	1.4	NT	NT	NT	NT	NT	NT
trans-1,4-Dichloro-2-butene	µg/l	100	NE	NT	NT	NT	NT	NT	NT
1,1-Dichloroethane	µg/l	5	70	NT	NT	NT	NT	NT	NT
1,2-Dichloroethane	µg/l	5	0.38	NT	NT	NT	NT	NT	NT
1,1-Dichloroethene (-ethylene)	µg/l	5	7	NT	NT	NT	NT	NT	NT
cis-1,2-Dichloroethene (-ethylene)	µg/l	5	70	NT	NT	NT	NT	NT	NT
trans-1,2-Dichloroethene (-ylene)	µg/l	5	100	NT	NT	NT	NT	NT	NT
1,2-Dichloropropane	µg/l	5	0.51	NT	NT	NT	NT	NT	NT
cis-1,3-Dichloropropene (-propylene)	µg/l	10	0.19	NT	NT	NT	NT	NT	NT
trans-1,3-Dichloropropene (-propylene)	µg/l	10	0.19	NT	NT	NT	NT	NT	NT
Ethylbenzene	µg/l	5	550	NT	NT	NT	NT	NT	NT
2-Hexanone	µg/l	50	NE	NT	NT	NT	NT	NT	NT
Iodomethane	µg/l	10	NE	NT	NT	NT	NT	NT	NT
Dichloromethane (Methylene chloride)	µg/l	10	4.6	NT	NT	NT	NT	NT	NT
2-Butanone (Methyl ethyl ketone)	µg/l	100	4200	NT	NT	NT	NT	NT	NT
4-Methyl-2-Pentanone	µg/l	100	NE	NT	NT	NT	NT	NT	NT
Styrene	µg/l	10	100	NT	NT	NT	NT	NT	NT
1,1,1,2-Tetrachloroethane	µg/l	5	NE	NT	NT	NT	NT	NT	NT
1,1,2,2-Tetrachloroethane	µg/l	5	NE	NT	NT	NT	NT	NT	NT
Tetrachloroethene (-ethylene)	µg/l	5	0.7	NT	NT	NT	NT	NT	NT
Toluene	µg/l	5	1000	NT	NT	NT	NT	NT	NT
1,1,1-Trichloroethane	µg/l	5	200	NT	NT	NT	NT	NT	NT
1,1,2-Trichloroethane	µg/l	5	NE	NT	NT	NT	NT	NT	NT
Trichloroethene (-ethylene)	µg/l	5	2.8	NT	NT	NT	NT	NT	NT
Trichlorofluoromethane	µg/l	5	2100	NT	NT	NT	NT	NT	NT
1,2,3-Trichloropropane	µg/l	15	0.005	NT	NT	NT	NT	NT	NT
Vinyl acetate	µg/l	50	NE	NT	NT	NT	NT	NT	NT
Vinyl chloride	µg/l	10	0.015	NT	NT	NT	NT	NT	NT
Xylene	µg/l	5	530	NT	NT	NT	NT	NT	NT

Notes:
MCL = Maximum Contaminant Level, as established in the NCDENR, Classifications of Water Quality Standards Applicable to Groundwaters of North Carolina, Section 15A NCAC 2L.202.
MDL = Laboratory Method Detection Limit
ND = Not Detected at the method detection limit
NS = Not Sampled
NT = Not Tested
NE = Not Established; North Carolina has not established a MCL
NP = Not Present during sampling event
Shaded cells indicated exceedances of MCLs.

Closed Francis Farm Landfill - Haywood Co., NC
Groundwater Sampling Event (8-27-2002)

TEST	UNITS	MDL	MCL	MW-4	MW-5	MW-1A	MW-2A	MW-3A	EQUIP. BLANK
pH	pH units (on-site)	-	NE	**5.5**	**5.83**	**5.9**	**5.92**	NT	NT
Specific Conductance	µmhos/cm (on-site)	1	NE	**110**	**170**	**331**	**460**	NT	NT
Temperature	°C (on-site)	-	NE	**16.2**	**14.4**	**16.5**	**17.8**	NT	NT
Turbidity	NTU (on-site)	0.1	NE	NT	NT	NT	NT	NT	NT
Total Antimony (Sb)	µg/l	30	NE	NT	NT	NT	NT	NT	NT
Total Arsenic (As)	µg/l	5	50	**5.8**	**25**	ND	**23**	NT	ND
Total Barium (Ba)	µg/l	100	2000	**150**	**2800**	**250**	**2700**	NT	ND
Total Beryllium (Be)	µg/l	2	NE	NT	NT	NT	NT	NT	NT
Total Cadmium (Cd)	µg/l	10	1.75	ND	**21**	ND	**25**	NT	ND
Total Chromium (Cr)	µg/l	20	50	**5.4**	**210**	ND	**130**	NT	ND
Total Cobalt (Co)	µg/l	10	NE	NT	NT	NT	NT	NT	NT
Total Copper (Cu)	µg/l	200	1000	NT	NT	NT	NT	NT	NT
Total Lead (Pb)	µg/l	100	15	ND	**47**	ND	**31**	NT	ND
Total Mercury (Hg)	µg/l	0.2	1.05	ND	ND	ND	ND	NT	ND
Total Nickel (Ni)	µg/l	50	100	ND	ND	ND	ND	NT	ND
Total Selenium (Se)	µg/l	5	50	NT	NT	NT	NT	NT	NT
Total Silver (Ag)	µg/l	50	17.5	ND	ND	ND	ND	NT	ND
Total Thallium (Tl)	µg/l	10	NE	NT	NT	NT	NT	NT	NT
Total Vanadium (V)	µg/l	40	NE	NT	NT	NT	NT	NT	NT
Total Zinc (Zn)	µg/l	50	1050	NT	NT	NT	NT	NT	NT
Acetone	µg/l	100	700	NT	NT	NT	NT	NT	NT
Acrylonitrile	µg/l	200	NE	NT	NT	NT	NT	NT	NT
Benzene	µg/l	5	1	NT	NT	NT	NT	NT	NT
Bromochloromethane	µg/l	5	NE	NT	NT	NT	NT	NT	NT
Bromodichloromethane	µg/l	5	0.56	NT	NT	NT	NT	NT	NT
Bromoform	µg/l	5	0.19	NT	NT	NT	NT	NT	NT
Carbon Disulfide	µg/l	100	700	NT	NT	NT	NT	NT	NT
Bromomethane (Methylbromide)	µg/l	10	NE	NT	NT	NT	NT	NT	NT
Carbon tetrachloride	µg/l	10	0.269	NT	NT	NT	NT	NT	NT
Chlorobenzene (mono)	µg/l	5	50	NT	NT	NT	NT	NT	NT
Chloroethane	µg/l	10	2800	NT	NT	NT	NT	NT	NT
Chloroform	µg/l	5	70	NT	NT	NT	NT	NT	NT
Chloromethane (Methylchloride)	µg/l	10	2.6	NT	NT	NT	NT	NT	NT
Dibromochloromethane	µg/l	5	NE	NT	NT	NT	NT	NT	NT
1,2-Dibromo-3-chloropropane; DBCP	µg/l	25	0.025	NT	NT	NT	NT	NT	NT
1,2-Dibromoethane; Ethylene dibromide	µg/l	5	0.00047	NT	NT	NT	NT	NT	NT
Dibromomethane	µg/l	10	NE	NT	NT	NT	NT	NT	NT
1,2-Dichlorobenzene	µg/l	5	24	NT	NT	NT	NT	NT	NT
1,4-Dichlorobenzene	µg/l	5	1.4	NT	NT	NT	NT	NT	NT
trans-1,4-Dichloro-2-butene	µg/l	100	NE	NT	NT	NT	NT	NT	NT
1,1-Dichloroethane	µg/l	5	70	NT	NT	NT	NT	NT	NT
1,2-Dichloroethane	µg/l	5	0.38	NT	NT	NT	NT	NT	NT
1,1-Dichloroethene (-ethylene)	µg/l	5	7	NT	NT	NT	NT	NT	NT
cis-1,2-Dichloroethene (-ethylene)	µg/l	5	70	NT	NT	NT	NT	NT	NT
trans-1,2-Dichloroethene (-ylene)	µg/l	5	100	NT	NT	NT	NT	NT	NT
1,2-Dichloropropane	µg/l	5	0.51	NT	NT	NT	NT	NT	NT
cis-1,3-Dichloropropene (-propylene)	µg/l	10	0.19	NT	NT	NT	NT	NT	NT
trans-1,3-Dichloropropene (-propylene)	µg/l	10	0.19	NT	NT	NT	NT	NT	NT
Ethylbenzene	µg/l	5	550	NT	NT	NT	NT	NT	NT
2-Hexanone	µg/l	50	NE	NT	NT	NT	NT	NT	NT
Iodomethane	µg/l	10	NE	NT	NT	NT	NT	NT	NT
Dichloromethane (Methylene chloride)	µg/l	10	4.6	NT	NT	NT	NT	NT	NT
2-Butanone (Methyl ethyl ketone)	µg/l	100	4200	NT	NT	NT	NT	NT	NT
4-Methyl-2-Pentanone	µg/l	100	NE	NT	NT	NT	NT	NT	NT
Styrene	µg/l	10	100	NT	NT	NT	NT	NT	NT
1,1,1,2-Tetrachloroethane	µg/l	5	NE	NT	NT	NT	NT	NT	NT
1,1,2,2-Tetrachloroethane	µg/l	5	NE	NT	NT	NT	NT	NT	NT
Tetrachloroethene (-ethylene)	µg/l	5	0.7	NT	NT	NT	NT	NT	NT
Toluene	µg/l	5	1000	NT	NT	NT	NT	NT	NT
1,1,1-Trichloroethane	µg/l	5	200	NT	NT	NT	NT	NT	NT
1,1,2-Trichloroethane	µg/l	5	NE	NT	NT	NT	NT	NT	NT
Trichloroethene (-ethylene)	µg/l	5	2.8	NT	NT	NT	NT	NT	NT
Trichlorofluoromethane	µg/l	5	2100	NT	NT	NT	NT	NT	NT
1,2,3-Trichloropropane	µg/l	15	0.005	NT	NT	NT	NT	NT	NT
Vinyl acetate	µg/l	50	NE	NT	NT	NT	NT	NT	NT
Vinyl chloride	µg/l	10	0.015	NT	NT	NT	NT	NT	NT
Xylene	µg/l	5	530	NT	NT	NT	NT	NT	NT

Notes:
MCL = Maximum Contaminant Level, as established in the NCDENR, Classifications of Water Quality Standards Applicable to Groundwaters of North Carolina, Section 15A NCAC 2L.202.
MDL = Laboratory Method Detection Limit
ND = Not Detected at the method detection limit
NS = Not Sampled
NT = Not Tested
NE = Not Established; North Carolina has not established a MCL
NP = Not Present during sampling event
Shaded cells indicated exceedances of MCLs.

Closed Francis Farm Landfill - Haywood Co., NC
Groundwater Sampling Event (2-24-2003)

TEST	UNITS	MDL	MCL	MW-4	MW-5	MW-1A	MW-2A	MW-3A	EQUIP. BLANK
pH	pH units (on-site)	-	NE	5.21	5.59	5.85	6.1	6.15	NT
Specific Conductance	µmhos/cm (on-site)	1	NE	99	165	351	417	380	NT
Temperature	°C (on-site)	-	NE	13.1	12.2	13.7	13	13.7	NT
Turbidity	NTU (on-site)	0.1	NE	NT	NT	NT	NT	NT	NT
Total Antimony (Sb)	µg/l	30	NE	NT	NT	NT	NT	NT	NT
Total Arsenic (As)	µg/l	5	50	ND	23	ND	16	ND	ND
Total Barium (Ba)	µg/l	100	2000	150	2500	310	1800	330	ND
Total Beryllium (Be)	µg/l	2	NE	NT	NT	NT	NT	NT	NT
Total Cadmium (Cd)	µg/l	10	1.75	ND	19	21	22	6.2	ND
Total Chromium (Cr)	µg/l	20	50	ND	200	5.1	79	14	ND
Total Cobalt (Co)	µg/l	10	NE	NT	NT	NT	NT	NT	NT
Total Copper (Cu)	µg/l	200	1000	NT	NT	NT	NT	NT	NT
Total Lead (Pb)	µg/l	100	15	ND	41	ND	27	ND	ND
Total Mercury (Hg)	µg/l	0.2	1.05	NT	NT	NT	NT	NT	NT
Total Nickel (Ni)	µg/l	50	100	NT	NT	NT	NT	NT	NT
Total Selenium (Se)	µg/l	5	50	NT	NT	NT	NT	NT	NT
Total Silver (Ag)	µg/l	50	17.5	4.1	ND	7.3	3.5	8.5	3.3
Total Thallium (Tl)	µg/l	10	NE	NT	NT	NT	NT	NT	NT
Total Vanadium (V)	µg/l	40	NE	NT	NT	NT	NT	NT	NT
Total Zinc (Zn)	µg/l	50	1050	NT	NT	NT	NT	NT	NT
Acetone	µg/l	100	700	NT	NT	NT	NT	NT	NT
Acrylonitrile	µg/l	200	NE	NT	NT	NT	NT	NT	NT
Benzene	µg/l	5	1	NT	NT	NT	NT	NT	NT
Bromochloromethane	µg/l	5	NE	NT	NT	NT	NT	NT	NT
Bromodichloromethane	µg/l	5	0.56	NT	NT	NT	NT	NT	NT
Bromoform	µg/l	5	0.19	NT	NT	NT	NT	NT	NT
Carbon Disulfide	µg/l	100	700	NT	NT	NT	NT	NT	NT
Bromomethane (Methylbromide)	µg/l	10	NE	NT	NT	NT	NT	NT	NT
Carbon tetrachloride	µg/l	10	0.269	NT	NT	NT	NT	NT	NT
Chlorobenzene (mono)	µg/l	5	50	NT	NT	NT	NT	NT	NT
Chloroethane	µg/l	10	2800	NT	NT	NT	NT	NT	NT
Chloroform	µg/l	5	70	NT	NT	NT	NT	NT	NT
Chloromethane (Methylchloride)	µg/l	10	2.6	NT	NT	NT	NT	NT	NT
Dibromochloromethane	µg/l	5	NE	NT	NT	NT	NT	NT	NT
1,2-Dibromo-3-chloropropane; DBCP	µg/l	25	0.025	NT	NT	NT	NT	NT	NT
1,2-Dibromoethane; Ethylene dibromide	µg/l	5	0.00047	NT	NT	NT	NT	NT	NT
Dibromomethane	µg/l	10	NE	NT	NT	NT	NT	NT	NT
1,2-Dichlorobenzene	µg/l	5	24	NT	NT	NT	NT	NT	NT
1,4-Dichlorobenzene	µg/l	5	1.4	NT	NT	NT	NT	NT	NT
trans-1,4-Dichloro-2-butene	µg/l	100	NE	NT	NT	NT	NT	NT	NT
1,1-Dichloroethane	µg/l	5	70	NT	NT	NT	NT	NT	NT
1,2-Dichloroethane	µg/l	5	0.38	NT	NT	NT	NT	NT	NT
1,1-Dichloroethene (-ethylene)	µg/l	5	7	NT	NT	NT	NT	NT	NT
cis-1,2-Dichloroethene (-ethylene)	µg/l	5	70	NT	NT	NT	NT	NT	NT
trans-1,2-Dichloroethene (-ylene)	µg/l	5	100	NT	NT	NT	NT	NT	NT
1,2-Dichloropropane	µg/l	5	0.51	NT	NT	NT	NT	NT	NT
cis-1,3-Dichloropropene (-propylene)	µg/l	10	0.19	NT	NT	NT	NT	NT	NT
trans-1,3-Dichloropropene (-propylene)	µg/l	10	0.19	NT	NT	NT	NT	NT	NT
Ethylbenzene	µg/l	5	550	NT	NT	NT	NT	NT	NT
2-Hexanone	µg/l	50	NE	NT	NT	NT	NT	NT	NT
Iodomethane	µg/l	10	NE	NT	NT	NT	NT	NT	NT
Dichloromethane (Methylene chloride)	µg/l	10	4.6	NT	NT	NT	NT	NT	NT
2-Butanone (Methyl ethyl ketone)	µg/l	100	4200	NT	NT	NT	NT	NT	NT
4-Methyl-2-Pentanone	µg/l	100	NE	NT	NT	NT	NT	NT	NT
Styrene	µg/l	10	100	NT	NT	NT	NT	NT	NT
1,1,1,2-Tetrachloroethane	µg/l	5	NE	NT	NT	NT	NT	NT	NT
1,1,2,2-Tetrachloroethane	µg/l	5	NE	NT	NT	NT	NT	NT	NT
Tetrachloroethene (-ethylene)	µg/l	5	0.7	NT	NT	NT	NT	NT	NT
Toluene	µg/l	5	1000	NT	NT	NT	NT	NT	NT
1,1,1-Trichloroethane	µg/l	5	200	NT	NT	NT	NT	NT	NT
1,1,2-Trichloroethane	µg/l	5	NE	NT	NT	NT	NT	NT	NT
Trichloroethene (-ethylene)	µg/l	5	2.8	NT	NT	NT	NT	NT	NT
Trichlorofluoromethane	µg/l	5	2100	NT	NT	NT	NT	NT	NT
1,2,3-Trichloropropane	µg/l	15	0.005	NT	NT	NT	NT	NT	NT
Vinyl acetate	µg/l	50	NE	NT	NT	NT	NT	NT	NT
Vinyl chloride	µg/l	10	0.015	NT	NT	NT	NT	NT	NT
Xylene	µg/l	5	530	NT	NT	NT	NT	NT	NT

Notes:
MCL = Maximum Contaminant Level, as established in the NCDENR, Classifications of Water Quality Standards Applicable to Groundwaters of North Carolina, Section 15A NCAC 2L.202.
MDL = Laboratory Method Detection Limit
ND = Not Detected at the method detection limit
NS = Not Sampled
NT = Not Tested
NE = Not Established; North Carolina has not established a MCL
NP = Not Present during sampling event
Shaded cells indicated exceedances of MCLs.

Closed Francis Farm Landfill - Haywood Co., NC
Groundwater Sampling Event (8-11-2003)

TEST	UNITS	MDL	MCL	MW-4	MW-5	MW-1A	MW-2A	MW-3A	EQUIP. BLANK
pH	pH units (on-site)	-	NE	5.69	5.89	6.27	6.34	6.28	NT
Specific Conductance	µmhos/cm (on-site)	1	NE	100	189	5.25	580	510	NT
Temperature	°C (on-site)	-	NE	16.4	15.2	16.9	14	14	NT
Turbidity	NTU (on-site)	0.1	NE	NT	NT	NT	NT	NT	NT
Total Antimony (Sb)	µg/l	30	NE	NT	NT	NT	NT	NT	NT
Total Arsenic (As)	µg/l	5	50	ND	9.9	ND	6.5	ND	ND
Total Barium (Ba)	µg/l	5	2000	150	1200	530	950	350	ND
Total Beryllium (Be)	µg/l	2	NE	NT	NT	NT	NT	NT	NT
Total Cadmium (Cd)	µg/l	1	1.75	ND	ND	2	3.1	ND	ND
Total Chromium (Cr)	µg/l	2	50	81	81	19	38	6.7	ND
Total Cobalt (Co)	µg/l	10	NE	NT	NT	NT	NT	NT	NT
Total Copper (Cu)	µg/l	200	1000	NT	NT	NT	NT	NT	NT
Total Lead (Pb)	µg/l	5	15	30	30	10	28	17	ND
Total Mercury (Hg)	µg/l	0.2	1.05	ND	ND	ND	ND	ND	ND
Total Nickel (Ni)	µg/l	50	100	NT	NT	NT	NT	NT	NT
Total Selenium (Se)	µg/l	5	50	ND	ND	ND	7.3	ND	ND
Total Silver (Ag)	µg/l	2	17.5	ND	ND	ND	ND	ND	ND
Total Thallium (Tl)	µg/l	10	NE	NT	NT	NT	NT	NT	NT
Total Vanadium (V)	µg/l	40	NE	NT	NT	NT	NT	NT	NT
Total Zinc (Zn)	µg/l	50	1050	NT	NT	NT	NT	NT	NT
Acetone	µg/l	10	700	ND	ND	ND	ND	ND	ND
Acrylonitrile	µg/l	25	NE	ND	ND	ND	ND	ND	ND
Benzene	µg/l	5	1	7.2	9	ND	ND	ND	ND
Bromochloromethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND
Bromodichloromethane	µg/l	5	0.56	ND	ND	ND	ND	ND	ND
Bromoform	µg/l	5	0.19	ND	ND	ND	ND	ND	ND
Carbon Disulfide	µg/l	10	700	ND	ND	ND	ND	ND	ND
Bromomethane (Methylbromide)	µg/l	5	NE	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	µg/l	5	0.269	ND	ND	ND	ND	ND	ND
Chlorobenzene (mono)	µg/l	5	50	ND	ND	ND	ND	ND	ND
Chloroethane	µg/l	10	2800	52	33	20	11	ND	ND
Chloroform	µg/l	5	70	ND	ND	ND	ND	ND	ND
Chloromethane (Methylchloride)	µg/l	5	2.6	ND	ND	ND	ND	ND	ND
Dibromochloromethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane; DBCP	µg/l	5	0.025	ND	ND	ND	ND	ND	ND
1,2-Dibromoethane; Ethylene dibromide	µg/l	5	0.00047	ND	ND	ND	ND	ND	ND
Dibromomethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	µg/l	5	24	ND	ND	ND	22	ND	ND
1,4-Dichlorobenzene	µg/l	5	1.4	ND	ND	ND	ND	ND	ND
trans-1,4-Dichloro-2-butene	µg/l	5	NE	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	µg/l	5	70	22	23	8.8	5.2	10	ND
1,2-Dichloroethane	µg/l	5	0.38	ND	ND	ND	ND	5	ND
1,1-Dichloroethene (-ethylene)	µg/l	5	7	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene (-ethylene)	µg/l	5	70	16	21	13	50	5.6	ND
trans-1,2-Dichloroethene (-ylene)	µg/l	5	100	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	µg/l	5	0.51	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene (-propylene)	µg/l	5	0.19	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene (-propylene)	µg/l	5	0.19	ND	ND	ND	ND	ND	ND
Ethylbenzene	µg/l	5	550	ND	ND	ND	ND	ND	ND
2-Hexanone	µg/l	10	NE	ND	ND	ND	ND	ND	ND
Iodomethane	µg/l	10	NE	ND	ND	ND	ND	ND	ND
Dichloromethane (Methylene chloride)	µg/l	5	4.6	ND	21	ND	ND	ND	ND
2-Butanone (Methyl ethyl ketone)	µg/l	10	4200	ND	ND	ND	ND	ND	ND
4-Methyl-2-Pentanone	µg/l	10	NE	ND	ND	ND	ND	ND	ND
Styrene	µg/l	5	100	ND	ND	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND
Tetrachloroethene (-ethylene)	µg/l	5	0.7	ND	8.9	ND	ND	ND	ND
Toluene	µg/l	5	1000	ND	ND	ND	ND	4500	ND
1,1,1-Trichloroethane	µg/l	5	200	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND
Trichloroethene (-ethylene)	µg/l	5	2.8	5.6	11	ND	ND	ND	ND
Trichlorofluoromethane	µg/l	10	2100	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	µg/l	5	0.005	ND	ND	ND	ND	ND	ND
Vinyl acetate	µg/l	10	NE	ND	ND	ND	ND	ND	ND
Vinyl chloride	µg/l	5	0.015	ND	ND	ND	ND	ND	ND
Xylene	µg/l	10	530	ND	ND	ND	ND	ND	ND

Notes:
MCL = Maximum Contaminant Level, as established in the NCDENR, Classifications of Water Quality Standards Applicable to Groundwaters of North Carolina, Section 15A NCAC 2L.202.
MDL = Laboratory Method Detection Limit
ND = Not Detected at the method detection limit
NS = Not Sampled
NT = Not Tested
NE = Not Established; North Carolina has not established a MCL
NP = Not Present during sampling event
Shaded cells indicated exceedances of MCLs.

Closed Francis Farm Landfill - Haywood Co., NC
Groundwater Sampling Event (2-9-2004)

TEST	UNITS	MDL	MCL	MW-4	MW-5	MW-1A	MW-2A	MW-3A	EQUIP. BLANK
pH	pH units (on-site)	-	NE	**5.54**	**5.4**	**5.91**	**6.06**	**5.95**	NT
Specific Conductance	µmhos/cm (on-site)	1	NE	**99**	**165**	**322**	**349**	**259**	NT
Temperature	°C (on-site)	-	NE	**12.1**	**11.8**	**13.5**	**12.4**	**12**	NT
Turbidity	NTU (on-site)	0.1	NE	NT	NT	NT	NT	NT	NT
Total Antimony (Sb)	µg/l	30	NE	NT	NT	NT	NT	NT	NT
Total Arsenic (As)	µg/l	5	50	ND	**8.3**	ND	ND	ND	ND
Total Barium (Ba)	µg/l	5	2000	**120**	**890**	**260**	**370**	**310**	ND
Total Beryllium (Be)	µg/l	2	NE	NT	NT	NT	NT	NT	NT
Total Cadmium (Cd)	µg/l	1	1.75	ND	ND	ND	ND	ND	ND
Total Chromium (Cr)	µg/l	2	50	ND	**57**	ND	**2.1**	**4.9**	ND
Total Cobalt (Co)	µg/l	10	NE	NT	NT	NT	NT	NT	NT
Total Copper (Cu)	µg/l	200	1000	NT	NT	NT	NT	NT	NT
Total Lead (Pb)	µg/l	5	15	ND	**18**	ND	**9.4**	**7.4**	ND
Total Mercury (Hg)	µg/l	0.2	1.05	ND	ND	ND	ND	ND	ND
Total Nickel (Ni)	µg/l	50	100	ND	ND	ND	ND	ND	ND
Total Selenium (Se)	µg/l	5	50	ND	ND	**6.9**	**13**	**16**	ND
Total Silver (Ag)	µg/l	2	17.5	ND	ND	ND	ND	ND	ND
Total Thallium (Tl)	µg/l	10	NE	NT	NT	NT	NT	NT	NT
Total Vanadium (V)	µg/l	40	NE	NT	NT	NT	NT	NT	NT
Total Zinc (Zn)	µg/l	50	1050	NT	NT	NT	NT	NT	NT
Acetone	µg/l	10	700	ND	ND	ND	**25**	ND	ND
Acrylonitrile	µg/l	25	NE	ND	ND	ND	ND	ND	ND
Benzene	µg/l	5	1	**14**	ND	ND	ND	ND	ND
Bromochloromethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND
Bromodichloromethane	µg/l	5	0.56	ND	ND	ND	ND	ND	ND
Bromoform	µg/l	5	0.19	ND	ND	ND	ND	ND	ND
Carbon Disulfide	µg/l	10	700	ND	ND	**12**	ND	ND	ND
Bromomethane (Methylbromide)	µg/l	5	NE	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	µg/l	5	0.269	ND	ND	ND	ND	ND	ND
Chlorobenzene (mono)	µg/l	5	50	ND	ND	ND	ND	ND	ND
Chloroethane	µg/l	10	2800	ND	ND	ND	ND	ND	ND
Chloroform	µg/l	5	70	ND	ND	ND	ND	ND	ND
Chloromethane (Methylchloride)	µg/l	5	2.6	ND	ND	ND	ND	ND	ND
Dibromochloromethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane; DBCP	µg/l	5	0.025	ND	ND	ND	ND	ND	ND
1,2-Dibromoethane; Ethylene dibromide	µg/l	5	0.00047	ND	ND	ND	ND	ND	ND
Dibromomethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	µg/l	5	24	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	µg/l	5	1.4	ND	ND	ND	**5.9**	ND	ND
trans-1,4-Dichloro-2-butene	µg/l	5	NE	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	µg/l	5	70	**40**	ND	**6.2**	ND	**8.2**	ND
1,2-Dichloroethane	µg/l	5	0.38	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene (-ethylene)	µg/l	5	7	ND	**11**	ND	ND	ND	ND
cis-1,2-Dichloroethene (-ethylene)	µg/l	5	70	**24**	ND	**11**	**7.6**	ND	ND
trans-1,2-Dichloroethene (-ylene)	µg/l	5	100	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	µg/l	5	0.51	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene (-propylene)	µg/l	5	0.19	ND	**8.1**	ND	ND	ND	ND
trans-1,3-Dichloropropene (-propylene)	µg/l	5	0.19	ND	ND	ND	ND	ND	ND
Ethylbenzene	µg/l	5	550	ND	ND	ND	ND	ND	ND
2-Hexanone	µg/l	10	NE	ND	ND	ND	ND	ND	ND
Iodomethane	µg/l	10	NE	ND	ND	ND	ND	ND	ND
Dichloromethane (Methylene chloride)	µg/l	5	4.6	ND	**8.7**	ND	ND	ND	ND
2-Butanone (Methyl ethyl ketone)	µg/l	10	4200	ND	ND	ND	ND	ND	ND
4-Methyl-2-Pentanone	µg/l	10	NE	ND	ND	ND	ND	ND	ND
Styrene	µg/l	5	100	ND	ND	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND
Tetrachloroethene (-ethylene)	µg/l	5	0.7	**9.6**	**6.2**	ND	ND	ND	ND
Toluene	µg/l	5	1000	ND	ND	ND	ND	**34**	ND
1,1,1-Trichloroethane	µg/l	5	200	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND
Trichloroethene (-ethylene)	µg/l	5	2.8	**13**	**6.2**	ND	ND	ND	ND
Trichlorofluoromethane	µg/l	10	2100	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	µg/l	5	0.005	ND	ND	ND	ND	ND	ND
Vinyl acetate	µg/l	10	NE	ND	ND	ND	ND	ND	ND
Vinyl chloride	µg/l	5	0.015	ND	ND	ND	ND	ND	ND
Xylene	µg/l	10	530	ND	ND	ND	ND	ND	ND

Notes:
MCL = Maximum Contaminant Level, as established in the NCDENR, Classifications of Water Quality Standards Applicable to Groundwaters of North Carolina, Section 15A NCAC 2L.202.
MDL = Laboratory Method Detection Limit
ND = Not Detected at the method detection limit
NS = Not Sampled
NT = Not Tested
NE = Not Established; North Carolina has not established a MCL
NP = Not Present during sampling event
Shaded cells indicated exceedances of MCLs.

Closed Francis Farm Landfill - Haywood Co., NC
Groundwater Sampling Event (8-16-2004)

TEST	UNITS	MDL	MCL	MW-4	MW-5	MW-1A	MW-2A	MW-3A	EQUIP. BLANK
pH	pH units (on-site)	-	NE	5.64	5.84	6.14	6.14	6.15	NT
Specific Conductance	µmhos/cm (on-site)	1	NE	115	170	345	465	410	NT
Temperature	°C (on-site)	-	NE	17.3	15.3	16.9	13.5	14.1	NT
Turbidity	NTU (on-site)	0.1	NE	NT	NT	NT	NT	NT	NT
Total Antimony (Sb)	µg/l	30	NE	NT	NT	NT	NT	NT	NT
Total Arsenic (As)	µg/l	5	50	ND	6.1	ND	ND	ND	ND
Total Barium (Ba)	µg/l	5	2000	140	1100	280	300	310	ND
Total Beryllium (Be)	µg/l	2	NE	NT	NT	NT	NT	NT	NT
Total Cadmium (Cd)	µg/l	1	1.75	ND	ND	ND	ND	ND	ND
Total Chromium (Cr)	µg/l	2	50	3.3	52	4	2.8	2	ND
Total Cobalt (Co)	µg/l	10	NE	NT	NT	NT	NT	NT	NT
Total Copper (Cu)	µg/l	200	1000	NT	NT	NT	NT	NT	NT
Total Lead (Pb)	µg/l	5	15	ND	23	ND	11	9.4	ND
Total Mercury (Hg)	µg/l	0.2	1.05	0.3	ND	1.4	3.5	0.6	0.7
Total Nickel (Ni)	µg/l	50	100	NT	NT	NT	NT	NT	NT
Total Selenium (Se)	µg/l	5	50	ND	ND	5.5	ND	ND	ND
Total Silver (Ag)	µg/l	2	17.5	ND	ND	ND	ND	ND	ND
Total Thallium (Tl)	µg/l	10	NE	NT	NT	NT	NT	NT	NT
Total Vanadium (V)	µg/l	40	NE	NT	NT	NT	NT	NT	NT
Total Zinc (Zn)	µg/l	50	1050	NT	NT	NT	NT	NT	NT
Acetone	µg/l	100	700	ND	ND	ND	ND	ND	ND
Acrylonitrile	µg/l	200	NE	ND	ND	ND	ND	ND	ND
Benzene	µg/l	5	1	13	6.1	ND	ND	ND	ND
Bromochloromethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND
Bromodichloromethane	µg/l	5	0.56	ND	ND	ND	ND	ND	ND
Bromoform	µg/l	5	0.19	ND	ND	ND	ND	ND	ND
Carbon Disulfide	µg/l	100	700	ND	ND	ND	ND	ND	ND
Bromomethane (Methylbromide)	µg/l	10	NE	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	µg/l	10	0.269	ND	ND	ND	ND	ND	ND
Chlorobenzene (mono)	µg/l	5	50	ND	ND	ND	ND	ND	ND
Chloroethane	µg/l	10	2800	ND	ND	ND	ND	ND	ND
Chloroform	µg/l	5	70	ND	ND	ND	ND	ND	ND
Chloromethane (Methylchloride)	µg/l	10	2.6	ND	ND	ND	ND	ND	ND
Dibromochloromethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane; DBCP	µg/l	25	0.025	ND	ND	ND	ND	ND	ND
1,2-Dibromoethane; Ethylene dibromide	µg/l	5	0.00047	ND	ND	ND	ND	ND	ND
Dibromomethane	µg/l	10	NE	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	µg/l	5	24	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	µg/l	5	1.4	ND	ND	ND	11	ND	ND
trans-1,4-Dichloro-2-butene	µg/l	100	NE	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	µg/l	5	70	38	12	ND	ND	12	ND
1,2-Dichloroethane	µg/l	5	0.38	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene (-ethylene)	µg/l	5	7	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene (-ethylene)	µg/l	5	70	29	15	9.7	12	ND	ND
trans-1,2-Dichloroethene (-ylene)	µg/l	5	100	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	µg/l	5	0.51	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene (-propylene)	µg/l	10	0.19	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene (-propylene)	µg/l	10	0.19	ND	ND	ND	ND	ND	ND
Ethylbenzene	µg/l	5	550	ND	ND	ND	ND	ND	ND
2-Hexanone	µg/l	50	NE	ND	ND	ND	ND	ND	ND
Iodomethane	µg/l	10	NE	ND	ND	ND	ND	ND	ND
Dichloromethane (Methylene chloride)	µg/l	10	4.6	6.1	ND	ND	ND	ND	ND
2-Butanone (Methyl ethyl ketone)	µg/l	100	4200	ND	ND	ND	ND	ND	ND
4-Methyl-2-Pentanone	µg/l	100	NE	ND	ND	ND	ND	ND	ND
Styrene	µg/l	10	100	ND	ND	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND
Tetrachloroethene (-ethylene)	µg/l	5	0.7	7.9	5.8	ND	ND	ND	ND
Toluene	µg/l	5	1000	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	µg/l	5	200	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND
Trichloroethene (-ethylene)	µg/l	5	2.8	10	5.5	ND	ND	ND	ND
Trichlorofluoromethane	µg/l	5	2100	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	µg/l	15	0.005	ND	ND	ND	ND	ND	ND
Vinyl acetate	µg/l	50	NE	ND	ND	ND	ND	ND	ND
Vinyl chloride	µg/l	10	0.015	ND	ND	ND	ND	ND	ND
Xylene	µg/l	5	530	ND	ND	ND	ND	ND	ND

Notes:
MCL = Maximum Contaminant Level, as established in the NCDENR, Classifications of Water Quality Standards Applicable to Groundwaters of North Carolina, Section 15A NCAC 2L.202.
MDL = Laboratory Method Detection Limit
ND = Not Detected at the method detection limit
NS = Not Sampled
NT = Not Tested
NE = Not Established; North Carolina has not established a MCL
NP = Not Present during sampling event
Shaded cells indicated exceedances of MCLs.

Closed Francis Farm Landfill - Haywood Co., NC
Groundwater Sampling Event (2-14-2005)

TEST	UNITS	MDL	MCL	MW-4	MW-5	MW-1A	MW-2A	MW-3A	EQUIP. BLANK
pH	pH units (on-site)	-	NE	5.38	5.6	6.09	6.06	6.07	NT
Specific Conductance	µmhos/cm (on-site)	1	NE	95	131	270	360	278	NT
Temperature	°C (on-site)	-	NE	11.3	11.3	12.3	13.3	12.8	NT
Turbidity	NTU (on-site)	0.1	NE	NT	NT	NT	NT	NT	NT
Total Antimony (Sb)	µg/l	30	NE	NT	NT	NT	NT	NT	NT
Total Arsenic (As)	µg/l	5	50	ND	6.2	ND	ND	ND	ND
Total Barium (Ba)	µg/l	5	2000	160	520	310	300	300	ND
Total Beryllium (Be)	µg/l	2	NE	NT	NT	NT	NT	NT	NT
Total Cadmium (Cd)	µg/l	1	1.75	ND	ND	2.4	7	4	ND
Total Chromium (Cr)	µg/l	2	50	4.1	11	7.6	18	12	ND
Total Cobalt (Co)	µg/l	10	NE	NT	NT	NT	NT	NT	NT
Total Copper (Cu)	µg/l	200	1000	NT	NT	NT	NT	NT	NT
Total Lead (Pb)	µg/l	5	15	ND	7.9	ND	ND	ND	ND
Total Mercury (Hg)	µg/l	0.2	1.05	ND	ND	ND	ND	ND	ND
Total Nickel (Ni)	µg/l	50	100	NT	NT	NT	NT	NT	NT
Total Selenium (Se)	µg/l	5	50	5.3	ND	16	39	24	5.8
Total Silver (Ag)	µg/l	2	17.5	ND	ND	ND	5.8	3.6	ND
Total Thallium (Tl)	µg/l	10	NE	NT	NT	NT	NT	NT	NT
Total Vanadium (V)	µg/l	40	NE	NT	NT	NT	NT	NT	NT
Total Zinc (Zn)	µg/l	50	1050	NT	NT	NT	NT	NT	NT
Acetone	µg/l	100	700	53	ND	ND	ND	ND	ND
Acrylonitrile	µg/l	200	NE	ND	ND	ND	ND	ND	ND
Benzene	µg/l	5	1	20	7.1	ND	ND	ND	ND
Bromochloromethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND
Bromodichloromethane	µg/l	5	0.56	ND	ND	ND	ND	ND	ND
Bromoform	µg/l	5	0.19	ND	ND	ND	ND	ND	ND
Carbon Disulfide	µg/l	100	700	ND	ND	ND	ND	ND	ND
Bromomethane (Methylbromide)	µg/l	10	NE	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	µg/l	10	0.269	ND	ND	ND	ND	ND	ND
Chlorobenzene (mono)	µg/l	5	50	ND	ND	ND	ND	ND	ND
Chloroethane	µg/l	10	2800	16	ND	ND	ND	ND	ND
Chloroform	µg/l	5	70	ND	ND	ND	ND	ND	ND
Chloromethane (Methylchloride)	µg/l	10	2.6	ND	ND	ND	ND	ND	ND
Dibromochloromethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane; DBCP	µg/l	25	0.025	ND	ND	ND	ND	ND	ND
1,2-Dibromoethane; Ethylene dibromide	µg/l	5	0.00047	ND	ND	ND	ND	ND	ND
Dibromomethane	µg/l	10	NE	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	µg/l	5	24	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	µg/l	5	1.4	ND	ND	ND	14	ND	ND
trans-1,4-Dichloro-2-butene	µg/l	100	NE	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	µg/l	5	70	70	15	5.5	ND	11	ND
1,2-Dichloroethane	µg/l	5	0.38	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene (-ethylene)	µg/l	5	7	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene (-ethylene)	µg/l	5	70	48	20	10	26	6	ND
trans-1,2-Dichloroethene (-ylene)	µg/l	5	100	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	µg/l	5	0.51	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene (-propylene)	µg/l	10	0.19	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene (-propylene)	µg/l	10	0.19	ND	ND	ND	ND	ND	ND
Ethylbenzene	µg/l	5	550	ND	ND	ND	ND	ND	ND
2-Hexanone	µg/l	50	NE	ND	ND	ND	ND	ND	ND
Iodomethane	µg/l	10	NE	ND	ND	ND	ND	ND	ND
Dichloromethane (Methylene chloride)	µg/l	10	4.6	12	12	ND	ND	ND	ND
2-Butanone (Methyl ethyl ketone)	µg/l	100	4200	ND	ND	ND	ND	ND	ND
4-Methyl-2-Pentanone	µg/l	100	NE	ND	ND	ND	ND	ND	ND
Styrene	µg/l	10	100	ND	ND	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND
Tetrachloroethene (-ethylene)	µg/l	5	0.7	15	6.4	ND	ND	ND	ND
Toluene	µg/l	5	1000	ND	ND	ND	ND	6.5	ND
1,1,1-Trichloroethane	µg/l	5	200	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND
Trichloroethene (-ethylene)	µg/l	5	2.8	17	7	ND	ND	ND	ND
Trichlorofluoromethane	µg/l	5	2100	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	µg/l	15	0.005	ND	ND	ND	ND	ND	ND
Vinyl acetate	µg/l	50	NE	ND	ND	ND	ND	ND	ND
Vinyl chloride	µg/l	10	0.015	ND	ND	ND	ND	ND	ND
Xylene	µg/l	5	530	ND	ND	ND	ND	ND	ND

Notes:
MCL = Maximum Contaminant Level, as established in the NCDENR, Classifications of Water Quality Standards Applicable to Groundwaters of North Carolina, Section 15A NCAC 2L.202.
MDL = Laboratory Method Detection Limit
ND = Not Detected at the method detection limit
NS = Not Sampled
NT = Not Tested
NE = Not Established; North Carolina has not established a MCL
NP = Not Present during sampling event
Shaded cells indicated exceedances of MCLs.

Closed Francis Farm Landfill - Haywood Co., NC
Groundwater Sampling Event (9-1-2005)

TEST	UNITS	MDL	MCL	MW-4	MW-5	MW-1A	MW-2A	MW-3A	EQUIP. BLANK
pH	pH units (on-site)	-	NE	**5.58**	**5.63**	**6.21**	**6.42**	**6.45**	NT
Specific Conductance	µmhos/cm (on-site)	1	NE	**122**	**150**	**355**	**485**	**300**	NT
Temperature	°C (on-site)	-	NE	**15.2**	**13.7**	**16**	**13.7**	**14**	NT
Turbidity	NTU (on-site)	0.1	NE	NT	NT	NT	NT	NT	NT
Total Antimony (Sb)	µg/l	30	NE	NT	NT	NT	NT	NT	NT
Total Arsenic (As)	µg/l	5	50	ND	ND	ND	ND	ND	ND
Total Barium (Ba)	µg/l	5	2000	**140**	**330**	**280**	**280**	**210**	ND
Total Beryllium (Be)	µg/l	2	NE	NT	NT	NT	NT	NT	NT
Total Cadmium (Cd)	µg/l	1	1.75	ND	ND	ND	ND	ND	ND
Total Chromium (Cr)	µg/l	2	50	ND	ND	ND	ND	ND	ND
Total Cobalt (Co)	µg/l	10	NE	NT	NT	NT	NT	NT	NT
Total Copper (Cu)	µg/l	200	1000	NT	NT	NT	NT	NT	NT
Total Lead (Pb)	µg/l	5	15	ND	ND	ND	**14**	**7.4**	ND
Total Mercury (Hg)	µg/l	0.2	1.05	**0.2**	ND	ND	ND	ND	ND
Total Nickel (Ni)	µg/l	50	100	NT	NT	NT	NT	NT	NT
Total Selenium (Se)	µg/l	5	50	**6.9**	ND	**10**	**8.9**	**9.5**	ND
Total Silver (Ag)	µg/l	2	17.5	ND	ND	ND	ND	ND	ND
Total Thallium (Tl)	µg/l	10	NE	NT	NT	NT	NT	NT	NT
Total Vanadium (V)	µg/l	40	NE	NT	NT	NT	NT	NT	NT
Total Zinc (Zn)	µg/l	50	1050	NT	NT	NT	NT	NT	NT
Acetone	µg/l	10	700	ND	ND	ND	ND	ND	ND
Acrylonitrile	µg/l	25	NE	ND	ND	ND	ND	ND	ND
Benzene	µg/l	5	1	13	ND	ND	ND	ND	ND
Bromochloromethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND
Bromodichloromethane	µg/l	5	0.56	ND	ND	ND	ND	ND	ND
Bromoform	µg/l	5	0.19	ND	ND	ND	ND	ND	ND
Carbon Disulfide	µg/l	10	700	ND	ND	ND	ND	ND	ND
Bromomethane (Methylbromide)	µg/l	5	NE	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	µg/l	5	0.269	ND	ND	ND	ND	ND	ND
Chlorobenzene (mono)	µg/l	5	50	ND	ND	ND	ND	ND	ND
Chloroethane	µg/l	10	2800	ND	ND	ND	ND	ND	ND
Chloroform	µg/l	5	70	ND	ND	ND	ND	ND	ND
Chloromethane (Methylchloride)	µg/l	5	2.6	ND	ND	ND	ND	ND	ND
Dibromochloromethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane; DBCP	µg/l	5	0.025	ND	ND	ND	ND	ND	ND
1,2-Dibromoethane; Ethylene dibromide	µg/l	5	0.00047	ND	ND	ND	ND	ND	ND
Dibromomethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	µg/l	5	24	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	µg/l	5	1.4	ND	ND	ND	13	ND	ND
trans-1,4-Dichloro-2-butene	µg/l	5	NE	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	µg/l	5	70	**42**	**10**	**6.3**	ND	**8.6**	ND
1,2-Dichloroethane	µg/l	5	0.38	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene (-ethylene)	µg/l	5	7	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene (-ethylene)	µg/l	5	70	**31**	**13**	**11**	**27**	**9.4**	ND
trans-1,2-Dichloroethene (-ylene)	µg/l	5	100	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	µg/l	5	0.51	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene (-propylene)	µg/l	5	0.19	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene (-propylene)	µg/l	5	0.19	ND	ND	ND	ND	ND	ND
Ethylbenzene	µg/l	5	550	ND	ND	ND	ND	ND	ND
2-Hexanone	µg/l	10	NE	ND	ND	ND	ND	ND	ND
Iodomethane	µg/l	10	NE	ND	ND	ND	ND	ND	ND
Dichloromethane (Methylene chloride)	µg/l	5	4.6	7.3	7.4	ND	ND	ND	ND
2-Butanone (Methyl ethyl ketone)	µg/l	10	4200	ND	ND	ND	ND	ND	ND
4-Methyl-2-Pentanone	µg/l	10	NE	ND	ND	ND	ND	ND	ND
Styrene	µg/l	5	100	ND	ND	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND
Tetrachloroethene (-ethylene)	µg/l	5	0.7	9	5.4	ND	ND	ND	ND
Toluene	µg/l	5	1000	ND	ND	ND	ND	**120**	ND
1,1,1-Trichloroethane	µg/l	5	200	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND
Trichloroethene (-ethylene)	µg/l	5	2.8	11	ND	ND	ND	ND	ND
Trichlorofluoromethane	µg/l	10	2100	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	µg/l	5	0.005	ND	ND	ND	ND	ND	ND
Vinyl acetate	µg/l	10	NE	ND	ND	ND	ND	ND	ND
Vinyl chloride	µg/l	5	0.015	ND	ND	ND	ND	ND	ND
Xylene	µg/l	10	530	ND	ND	ND	ND	ND	ND

Notes:
MCL = Maximum Contaminant Level, as established in the NCDENR, Classifications of Water Quality Standards Applicable to Groundwaters of North Carolina, Section 15A NCAC 2L.202.
MDL = Laboratory Method Detection Limit
ND = Not Detected at the method detection limit
NS = Not Sampled
NT = Not Tested
NE = Not Established; North Carolina has not established a MCL
NP = Not Present during sampling event
Shaded cells indicated exceedances of MCLs.

Closed Francis Farm Landfill - Haywood Co., NC
Groundwater Sampling Event (2-16-2006)

TEST	UNITS	MDL	MCL	MW-4	MW-5	MW-1A	MW-2A	MW-3A	EQUIP. BLANK
pH	pH units (on-site)	-	NE	**5.71**	**5.65**	**6.03**	**6.16**	**6.35**	NT
Specific Conductance	µmhos/cm (on-site)	1	NE	**181**	**168**	**460**	**590**	**380**	NT
Temperature	°C (on-site)	-	NE	**15.1**	**12.4**	**13.8**	**13.3**	**13.3**	NT
Turbidity	NTU (on-site)	0.1	NE	NT	NT	NT	NT	NT	NT
Total Antimony (Sb)	µg/l	30	NE	NT	NT	NT	NT	NT	NT
Total Arsenic (As)	µg/l	5	50	ND	ND	ND	ND	ND	ND
Total Barium (Ba)	µg/l	5	2000	ND	ND	ND	ND	ND	ND
Total Beryllium (Be)	µg/l	2	NE	NT	NT	NT	NT	NT	NT
Total Cadmium (Cd)	µg/l	1	1.75	ND	ND	ND	ND	ND	ND
Total Chromium (Cr)	µg/l	2	50	ND	**16**	ND	ND	ND	ND
Total Cobalt (Co)	µg/l	10	NE	NT	NT	NT	NT	NT	NT
Total Copper (Cu)	µg/l	200	1000	NT	NT	NT	NT	NT	NT
Total Lead (Pb)	µg/l	5	15	ND	ND	ND	ND	ND	ND
Total Mercury (Hg)	µg/l	0.2	1.05	ND	ND	ND	ND	ND	ND
Total Nickel (Ni)	µg/l	50	100	NT	NT	NT	NT	NT	NT
Total Selenium (Se)	µg/l	5	50	ND	ND	ND	ND	ND	ND
Total Silver (Ag)	µg/l	2	17.5	ND	ND	ND	ND	ND	ND
Total Thallium (Tl)	µg/l	10	NE	NT	NT	NT	NT	NT	NT
Total Vanadium (V)	µg/l	40	NE	NT	NT	NT	NT	NT	NT
Total Zinc (Zn)	µg/l	50	1050	NT	NT	NT	NT	NT	NT
Acetone	µg/l	10	700	ND	ND	ND	ND	ND	ND
Acrylonitrile	µg/l	25	NE	ND	ND	ND	ND	ND	ND
Benzene	µg/l	5	1	ND	ND	ND	ND	ND	ND
Bromochloromethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND
Bromodichloromethane	µg/l	5	0.56	ND	ND	ND	ND	ND	ND
Bromoform	µg/l	5	0.19	ND	ND	ND	ND	ND	ND
Carbon Disulfide	µg/l	10	700	ND	ND	ND	ND	ND	ND
Bromomethane (Methylbromide)	µg/l	5	NE	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	µg/l	5	0.269	ND	ND	ND	ND	ND	ND
Chlorobenzene (mono)	µg/l	5	50	ND	ND	ND	ND	ND	ND
Chloroethane	µg/l	10	2800	ND	ND	ND	ND	ND	ND
Chloroform	µg/l	5	70	ND	ND	ND	ND	ND	ND
Chloromethane (Methylchloride)	µg/l	5	2.6	ND	ND	ND	ND	ND	ND
Dibromochloromethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane; DBCP	µg/l	5	0.025	ND	ND	ND	ND	ND	ND
1,2-Dibromoethane; Ethylene dibromide	µg/l	5	0.00047	ND	ND	ND	ND	ND	ND
Dibromomethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	µg/l	5	24	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	µg/l	5	1.4	ND	ND	ND	**10**	ND	ND
trans-1,4-Dichloro-2-butene	µg/l	5	NE	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	µg/l	5	70	ND	**7.1**	ND	ND	**13**	ND
1,2-Dichloroethane	µg/l	5	0.38	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene (-ethylene)	µg/l	5	7	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene (-ethylene)	µg/l	5	70	ND	**7.4**	ND	**17**	ND	ND
trans-1,2-Dichloroethene (-ylene)	µg/l	5	100	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	µg/l	5	0.51	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene (-propylene)	µg/l	5	0.19	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene (-propylene)	µg/l	5	0.19	ND	ND	ND	ND	ND	ND
Ethylbenzene	µg/l	5	550	ND	ND	ND	ND	ND	ND
2-Hexanone	µg/l	10	NE	ND	ND	ND	ND	ND	ND
Iodomethane	µg/l	10	NE	ND	ND	ND	ND	ND	ND
Dichloromethane (Methylene chloride)	µg/l	5	4.6	ND	ND	ND	ND	ND	ND
2-Butanone (Methyl ethyl ketone)	µg/l	10	4200	ND	ND	ND	ND	ND	ND
4-Methyl-2-Pentanone	µg/l	10	NE	ND	ND	ND	ND	ND	ND
Styrene	µg/l	5	100	ND	ND	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND
Tetrachloroethene (-ethylene)	µg/l	5	0.7	ND	ND	ND	ND	ND	ND
Toluene	µg/l	5	1000	ND	ND	ND	ND	**6.5**	ND
1,1,1-Trichloroethane	µg/l	5	200	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND
Trichloroethene (-ethylene)	µg/l	5	2.8	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane	µg/l	10	2100	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	µg/l	5	0.005	ND	ND	ND	ND	ND	ND
Vinyl acetate	µg/l	10	NE	ND	ND	ND	ND	ND	ND
Vinyl chloride	µg/l	5	0.015	ND	ND	ND	ND	ND	ND
Xylene	µg/l	10	530	ND	ND	ND	ND	ND	ND

Notes:
MCL = Maximum Contaminant Level, as established in the NCDENR, Classifications of Water Quality Standards Applicable to Groundwaters of North Carolina, Section 15A NCAC 2L.202.
MDL = Laboratory Method Detection Limit
ND = Not Detected at the method detection limit
NS = Not Sampled
NT = Not Tested
NE = Not Established; North Carolina has not established a MCL
NP = Not Present during sampling event
Shaded cells indicated exceedances of MCLs.

Closed Francis Farm Landfill - Haywood Co., NC
Groundwater Sampling Event (8-30-2006)

TEST	UNITS	MDL	MCL	MW-4	MW-5	MW-1A	MW-2A	MW-3A	EQUIP. BLANK
pH	pH units (on-site)	-	NE	**5.62**	**5.95**	**5.9**	**6.44**	**6.29**	NT
Specific Conductance	µmhos/cm (on-site)	1	NE	**177**	**213**	**409**	**642**	**545**	NT
Temperature	°C (on-site)	-	NE	**16.5**	**15.4**	**18.3**	**14.7**	**15.4**	NT
Turbidity	NTU (on-site)	0.1	NE	NT	NT	NT	NT	NT	NT
Total Antimony (Sb)	µg/l	30	NE	NT	NT	NT	NT	NT	NT
Total Arsenic (As)	µg/l	5	50	ND	ND	ND	ND	ND	ND
Total Barium (Ba)	µg/l	5	2000	**160**	**250**	**290**	**220**	**240**	ND
Total Beryllium (Be)	µg/l	2	NE	NT	NT	NT	NT	NT	NT
Total Cadmium (Cd)	µg/l	1	1.75	ND	ND	ND	ND	ND	ND
Total Chromium (Cr)	µg/l	2	50	ND	ND	ND	ND	ND	ND
Total Cobalt (Co)	µg/l	10	NE	NT	NT	NT	NT	NT	NT
Total Copper (Cu)	µg/l	200	1000	NT	NT	NT	NT	NT	NT
Total Lead (Pb)	µg/l	5	15	**7.6**	**6.5**	**5.2**	**5.7**	ND	ND
Total Mercury (Hg)	µg/l	0.2	1.05	ND	ND	ND	ND	ND	NT
Total Nickel (Ni)	µg/l	50	100	NT	NT	NT	NT	NT	NT
Total Selenium (Se)	µg/l	5	50	ND	ND	ND	ND	ND	ND
Total Silver (Ag)	µg/l	2	17.5	ND	ND	ND	ND	ND	ND
Total Thallium (Tl)	µg/l	10	NE	NT	NT	NT	NT	NT	NT
Total Vanadium (V)	µg/l	40	NE	NT	NT	NT	NT	NT	NT
Total Zinc (Zn)	µg/l	50	1050	NT	NT	NT	NT	NT	NT
Acetone	µg/l	25	700	ND	ND	ND	ND	ND	ND
Acrylonitrile	µg/l	25	NE	ND	ND	ND	ND	ND	ND
Benzene	µg/l	5	1	**16**	ND	ND	ND	ND	ND
Bromochloromethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND
Bromodichloromethane	µg/l	5	0.56	ND	ND	ND	ND	ND	ND
Bromoform	µg/l	5	0.19	ND	ND	ND	ND	ND	ND
Carbon Disulfide	µg/l	10	700	ND	ND	ND	ND	ND	ND
Bromomethane (Methylbromide)	µg/l	5	NE	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	µg/l	5	0.269	ND	ND	ND	ND	ND	ND
Chlorobenzene (mono)	µg/l	5	50	ND	ND	ND	ND	ND	ND
Chloroethane	µg/l	10	2800	ND	ND	ND	ND	ND	ND
Chloroform	µg/l	5	70	ND	ND	ND	ND	ND	ND
Chloromethane (Methylchloride)	µg/l	5	2.6	ND	ND	ND	ND	ND	ND
Dibromochloromethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane; DBCP	µg/l	5	0.025	ND	ND	ND	ND	ND	ND
1,2-Dibromoethane; Ethylene dibromide	µg/l	5	0.00047	ND	ND	ND	ND	ND	ND
Dibromomethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	µg/l	5	24	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	µg/l	5	1.4	ND	ND	ND	ND	ND	ND
trans-1,4-Dichloro-2-butene	µg/l	5	NE	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	µg/l	5	70	**42**	**5.7**	ND	**7.6**	**23**	ND
1,2-Dichloroethane	µg/l	5	0.38	ND	ND	ND	ND	**5**	ND
1,1-Dichloroethene (-ethylene)	µg/l	5	7	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene (-ethylene)	µg/l	5	70	**34**	ND	**6.8**	**16**	**5.8**	ND
trans-1,2-Dichloroethene (-ylene)	µg/l	5	100	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	µg/l	5	0.51	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene (-propylene)	µg/l	5	0.19	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene (-propylene)	µg/l	5	0.19	ND	ND	ND	ND	ND	ND
Ethylbenzene	µg/l	5	550	ND	ND	ND	ND	ND	ND
2-Hexanone	µg/l	10	NE	ND	ND	ND	ND	ND	ND
Iodomethane	µg/l	10	NE	ND	ND	ND	ND	ND	ND
Dichloromethane (Methylene chloride)	µg/l	5	4.6	**17**	ND	ND	ND	ND	ND
2-Butanone (Methyl ethyl ketone)	µg/l	10	4200	ND	ND	ND	ND	ND	ND
4-Methyl-2-Pentanone	µg/l	10	NE	ND	ND	ND	ND	ND	ND
Styrene	µg/l	5	100	ND	ND	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND
Tetrachloroethene (-ethylene)	µg/l	5	0.7	**8.3**	ND	ND	ND	ND	ND
Toluene	µg/l	5	1000	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	µg/l	5	200	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND
Trichloroethene (-ethylene)	µg/l	5	2.8	**11**	ND	ND	ND	ND	ND
Trichlorofluoromethane	µg/l	10	2100	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	µg/l	5	0.005	ND	ND	ND	ND	ND	ND
Vinyl acetate	µg/l	10	NE	ND	ND	ND	ND	ND	ND
Vinyl chloride	µg/l	5	0.015	ND	ND	ND	ND	ND	ND
Xylene	µg/l	10	530	ND	ND	ND	ND	ND	ND

Notes:
MCL = Maximum Contaminant Level, as established in the NCDENR, Classifications of Water Quality Standards Applicable to Groundwaters of North Carolina, Section 15A NCAC 2L.202.
MDL = Laboratory Method Detection Limit
ND = Not Detected at the method detection limit
NS = Not Sampled
NT = Not Tested
NE = Not Established; North Carolina has not established a MCL
NP = Not Present during sampling event
Shaded cells indicated exceedances of MCLs.

Closed Francis Farm Landfill - Haywood Co., NC
Groundwater Sampling Event (2-26-2007)

TEST	UNITS	MDL	MCL	MW-4	MW-5	MW-1A	MW-2A	MW-3A	EQUIP. BLANK
pH	pH units (on-site)	-	NE	**6.14**	**5.36**	**6.07**	**6.6**	**6.29**	NT
Specific Conductance	µmhos/cm (on-site)	1	NE	**175**	**180**	**388**	**756**	**548**	NT
Temperature	°C (on-site)	-	NE	**13.8**	**12.2**	**14.1**	**12.1**	**13.1**	NT
Turbidity	NTU (on-site)	0.1	NE	NT	NT	NT	NT	NT	NT
Total Antimony (Sb)	µg/l	30	NE	NT	NT	NT	NT	NT	NT
Total Arsenic (As)	µg/l	5	50	ND	ND	ND	**5.9**	ND	NT
Total Barium (Ba)	µg/l	5	2000	**140**	**280**	**210**	**240**	**300**	NT
Total Beryllium (Be)	µg/l	2	NE	NT	NT	NT	NT	NT	NT
Total Cadmium (Cd)	µg/l	1	1.75	ND	ND	ND	ND	ND	NT
Total Chromium (Cr)	µg/l	5	50	ND	ND	ND	ND	ND	NT
Total Cobalt (Co)	µg/l	10	NE	NT	NT	NT	NT	NT	NT
Total Copper (Cu)	µg/l	200	1000	NT	NT	NT	NT	NT	NT
Total Lead (Pb)	µg/l	5	15	ND	ND	ND	ND	ND	NT
Total Mercury (Hg)	µg/l	0.2	1.05	ND	ND	ND	ND	ND	NT
Total Nickel (Ni)	µg/l	50	100	NT	NT	NT	NT	NT	NT
Total Selenium (Se)	µg/l	10	50	ND	ND	ND	ND	ND	NT
Total Silver (Ag)	µg/l	5	17.5	ND	ND	ND	ND	ND	NT
Total Thallium (Tl)	µg/l	10	NE	NT	NT	NT	NT	NT	NT
Total Vanadium (V)	µg/l	40	NE	NT	NT	NT	NT	NT	NT
Total Zinc (Zn)	µg/l	50	1050	NT	NT	NT	NT	NT	NT
Acetone	µg/l	25	700	ND	ND	ND	ND	ND	ND
Acrylonitrile	µg/l	25	NE	ND	ND	ND	ND	ND	ND
Benzene	µg/l	5	1	**15**	ND	ND	ND	ND	ND
Bromochloromethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND
Bromodichloromethane	µg/l	5	0.56	ND	ND	ND	ND	ND	ND
Bromoform	µg/l	5	0.19	ND	ND	ND	ND	ND	ND
Carbon Disulfide	µg/l	10	700	ND	ND	ND	ND	ND	ND
Bromomethane (Methylbromide)	µg/l	5	NE	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	µg/l	5	0.269	ND	ND	ND	ND	ND	ND
Chlorobenzene (mono)	µg/l	5	50	ND	ND	ND	ND	ND	ND
Chloroethane	µg/l	10	2800	ND	ND	ND	ND	ND	ND
Chloroform	µg/l	5	70	ND	ND	ND	ND	ND	ND
Chloromethane (Methylchloride)	µg/l	5	2.6	ND	ND	ND	ND	ND	ND
Dibromochloromethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane; DBCP	µg/l	5	0.025	ND	ND	ND	ND	ND	ND
1,2-Dibromoethane; Ethylene dibromide	µg/l	5	0.00047	ND	ND	ND	ND	ND	ND
Dibromomethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	µg/l	5	24	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	µg/l	5	1.4	ND	ND	ND	ND	ND	ND
trans-1,4-Dichloro-2-butene	µg/l	5	NE	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	µg/l	5	70	**36**	ND	ND	ND	**17**	ND
1,2-Dichloroethane	µg/l	5	0.38	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene (-ethylene)	µg/l	5	7	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene (-ethylene)	µg/l	5	70	**30**	ND	ND	**12**	ND	ND
trans-1,2-Dichloroethene (-ylene)	µg/l	5	100	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	µg/l	5	0.51	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene (-propylene)	µg/l	5	0.19	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene (-propylene)	µg/l	5	0.19	ND	ND	ND	ND	ND	ND
Ethylbenzene	µg/l	5	550	ND	ND	ND	ND	ND	ND
2-Hexanone	µg/l	10	NE	ND	ND	ND	ND	ND	ND
Iodomethane	µg/l	10	NE	ND	ND	ND	ND	ND	ND
Dichloromethane (Methylene chloride)	µg/l	5	4.6	**15**	ND	ND	ND	ND	ND
2-Butanone (Methyl ethyl ketone)	µg/l	10	4200	ND	ND	ND	ND	ND	ND
4-Methyl-2-Pentanone	µg/l	10	NE	ND	ND	ND	ND	ND	ND
Styrene	µg/l	5	100	ND	ND	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND
Tetrachloroethene (-ethylene)	µg/l	5	0.7	**8.5**	ND	ND	ND	ND	ND
Toluene	µg/l	5	1000	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	µg/l	5	200	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND
Trichloroethene (-ethylene)	µg/l	5	2.8	**11**	ND	ND	ND	ND	ND
Trichlorofluoromethane	µg/l	10	2100	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	µg/l	5	0.005	ND	ND	ND	ND	ND	ND
Vinyl acetate	µg/l	10	NE	ND	ND	ND	ND	ND	ND
Vinyl chloride	µg/l	5	0.015	ND	ND	ND	ND	ND	ND
Xylene	µg/l	10	530	ND	ND	ND	ND	ND	ND

Notes:
MCL = Maximum Contaminant Level, as established in the NCDENR, Classifications of Water Quality Standards Applicable to Groundwaters of North Carolina, Section 15A NCAC 2L.202.
MDL = Laboratory Method Detection Limit
ND = Not Detected at the method detection limit
NS = Not Sampled
NT = Not Tested
NE = Not Established; North Carolina has not established a MCL
NP = Not Present during sampling event
Shaded cells indicated exceedances of MCLs.

APPENDIX B

Summary Tables of Surface Water Analytical Results
Sampling Events N1 Through N15

Closed Francis Farm Landfill - Haywood Co., NC
Surface Water Sampling Event (2-18-1999)

TEST	UNITS	MDL	MCL	SW-1	SW-2	Blanton Branch
pH	pH units (on-site)	-	<6.0; >8.5	7	7	6.7
Specific Conductance	µmhos/cm (on-site)	1	NE	32	41	75
Temperature	°C (on-site)	-	29	9.4	10	12
Turbidity	NTU (on-site)	0.1	50	NT	NT	NT
Total Antimony (Sb)	µg/l	30	NE	NT	NT	NT
Total Arsenic (As)	µg/l	10	50	ND	ND	ND
Total Barium (Ba)	µg/l	500	NE	ND	ND	ND
Total Beryllium (Be)	µg/l	2	6.5	NT	NT	NT
Total Cadmium (Cd)	µg/l	1	2	ND	ND	ND
Total Chromium (Cr)	µg/l	10	50	ND	ND	ND
Total Cobalt (Co)	µg/l	10	NE	NT	NT	NT
Total Copper (Cu)	µg/l	200	NE	NT	NT	NT
Total Lead (Pb)	µg/l	10	25	ND	ND	ND
Total Nickel (Ni)	µg/l	50	88	NT	ND	NT
Total Selenium (Se)	µg/l	20	5	ND	ND	ND
Total Silver (Ag)	µg/l	10	NE	ND	ND	ND
Total Thallium (Tl)	µg/l	10	NE	NT	NT	NT
Total Zinc (Zn)	µg/l	50	NE	NT	NT	NT
Mercury	µg/l	0.2	0.012	ND	ND	ND
Acetone	µg/l	100	NE	NT	NT	NT
Acrylonitrile	µg/l	200	NE	NT	NT	NT
Benzene	µg/l	5	51	NT	NT	NT
Bromochloromethane	µg/l	5	NE	NT	NT	NT
Bromodichloromethane	µg/l	5	NE	NT	NT	NT
Bromoform	µg/l	5	NE	NT	NT	NT
Carbon Disulfide	µg/l	100	NE	NT	NT	NT
Bromomethane (Methylbromide)	µg/l	10	NE	NT	NT	NT
Carbon tetrachloride	µg/l	10	0.3	NT	NT	NT
Chlorobenzene (mono)	µg/l	5	50	NT	NT	NT
Chloroethane	µg/l	10	NE	NT	NT	NT
Chloroform	µg/l	5	0.19	NT	NT	NT
Chloromethane (Methylchloride)	µg/l	10	NE	NT	NT	NT
Dibromochloromethane	µg/l	5	NE	NT	NT	NT
1,2-Dibromo-3-chloropropane; DBCP	µg/l	25	0.025	NT	NT	NT
1,2-Dibromoethane; Ethylene dibromide	µg/l	5	0.0004	NT	NT	NT
Dibromomethane	µg/l	10	NE	NT	NT	NT
1,2-Dichlorobenzene	µg/l	5	620	NT	NT	NT
1,4-Dichlorobenzene	µg/l	5	75	NT	NT	NT
trans-1,4-Dichloro-2butene	µg/l	100	NE	NT	NT	NT
1,1-Dichloroethane	µg/l	5	700	NT	NT	NT
1,2-Dichloroethane	µg/l	5	0.38	NT	NT	NT
1,1-Dichloroethene (-ethylene)	µg/l	5	7	NT	NT	NT
cis-1,2-Dichloroethene (-ethylene)	µg/l	5	70	NT	NT	NT
trans-1,2-Dichloroethene (-ylene)	µg/l	5	70	NT	NT	NT
1,2-Dichloropropane	µg/l	5	0.56	NT	NT	NT
cis-1,3-Dichloropropene (-propylene)	µg/l	10	NE	NT	NT	NT
trans-1,3-Dichloropropene (-propylene)	µg/l	10	NE	NT	NT	NT
Ethylbenzene	µg/l	5	29	NT	NT	NT
2-Hexanone	µg/l	50	NE	NT	NT	NT
Iodomethane	µg/l	10	NE	NT	NT	NT
Dichloromethane (Methylene chloride)	µg/l	10	5	NT	NT	NT
2-Butanone (Methyl ethyl ketone)	µg/l	100	170	NT	NT	NT
4-Methyl-2-Pentanone	µg/l	100	NE	NT	NT	NT
Styrene	µg/l	10	100	NT	NT	NT
1,1,1,2-Tetrachloroethane	µg/l	5	NE	NT	NT	NT
1,1,2,2-Tetrachloroethane	µg/l	5	NE	NT	NT	NT
Tetrachloroethene (-ethylene)	µg/l	5	0.7	NT	NT	NT
Toluene	µg/l	5	1000	NT	NT	NT
1,1,1-Trichloroethane	µg/l	5	200	NT	NT	NT
1,1,2-Trichloroethane	µg/l	5	NE	NT	NT	NT
Trichloroethene (-ethylene)	µg/l	5	2.8	NT	NT	NT
Trichlorofluoromethane	µg/l	5	2100	NT	NT	NT
1,2,3-Trichloropropane	µg/l	15	NE	NT	NT	NT
Vinyl acetate	µg/l	50	NE	NT	NT	NT
Vinyl chloride	µg/l	10	0.015	NT	NT	NT
Xylene	µg/l	5	530	NT	NT	NT

Notes:
MCL = Maximum Contaminant Level, as established in the NCDENR, "Redbook" Surface Waters and Wetlands Standards Section 15A NCAC 02B.0100, .0200, and .0300.
MDL = Laboratory Method Detection Limit
ND = Not Detected at the method detection limit
NS = Not Sampled
NT = Not Tested
NE = Not Established; North Carolina has not established a MCL
NP = Not Present during sampling event
Shaded cells indicated exceedances of MCLs.

Closed Francis Farm Landfill - Haywood Co., NC
Surface Water Sampling Event (8-16-1999)

TEST	UNITS	MDL	MCL	SW-1	SW-2	Blanton Branch
pH	pH units (on-site)	-	<6.0; >8.5	6.2	6.3	6.3
Specific Conductance	µmhos/cm (on-site)	1	NE	60	80	100
Temperature	°C (on-site)	-	29	19	21	22
Turbidity	NTU (on-site)	0.1	50	NT	NT	NT
Total Antimony (Sb)	µg/l	30	NE	NT	NT	NT
Total Arsenic (As)	µg/l	10	50	ND	ND	ND
Total Barium (Ba)	µg/l	500	NE	29	29	29
Total Beryllium (Be)	µg/l	2	6.5	NT	NT	NT
Total Cadmium (Cd)	µg/l	1	2	ND	ND	ND
Total Chromium (Cr)	µg/l	10	50	ND	ND	ND
Total Cobalt (Co)	µg/l	10	NE	NT	NT	NT
Total Copper (Cu)	µg/l	200	NE	NT	NT	NT
Total Lead (Pb)	µg/l	10	25	ND	ND	ND
Total Nickel (Ni)	µg/l	50	88	NT	NT	NT
Total Selenium (Se)	µg/l	20	5	ND	ND	ND
Total Silver (Ag)	µg/l	10	NE	ND	ND	ND
Total Thallium (Tl)	µg/l	10	NE	NT	NT	NT
Total Zinc (Zn)	µg/l	50	NE	NT	NT	NT
Mercury	µg/l	0.2	0.012	ND	ND	ND
Acetone	µg/l	100	NE	NT	NT	NT
Acrylonitrile	µg/l	200	NE	NT	NT	NT
Benzene	µg/l	5	51	NT	NT	NT
Bromochloromethane	µg/l	5	NE	NT	NT	NT
Bromoform	µg/l	5	NE	NT	NT	NT
Bromofrom	µg/l	5	NE	NT	NT	NT
Carbon Disulfide	µg/l	100	NE	NT	NT	NT
Bromomethane (Methylbromide)	µg/l	10	NE	NT	NT	NT
Carbon tetrachloride	µg/l	10	0.3	NT	NT	NT
Chlorobenzene (mono)	µg/l	5	50	NT	NT	NT
Chloroethane	µg/l	10	NE	NT	NT	NT
Chloroform	µg/l	5	0.19	NT	NT	NT
Chloromethane (Methylchloride)	µg/l	10	NE	NT	NT	NT
Dibromochloromethane	µg/l	5	NE	NT	NT	NT
1,2-Dibromo-3-chloropropane; DBCP	µg/l	25	0.025	NT	NT	NT
1,2-Dibromoethane; Ethylene dibromide	µg/l	5	0.0004	NT	NT	NT
Dibromomethane	µg/l	10	NE	NT	NT	NT
1,2-Dichlorobenzene	µg/l	5	620	NT	NT	NT
1,4-Dichlorobenzene	µg/l	5	75	NT	NT	NT
trans-1,4-Dichloro-2butene	µg/l	100	NE	NT	NT	NT
1,1-Dichloroethane	µg/l	5	700	NT	NT	NT
1,2-Dichloroethane	µg/l	5	0.38	NT	NT	NT
1,1-Dichloroethene (-ethylene)	µg/l	5	7	NT	NT	NT
cis-1,2-Dichloroethene (-ethylene)	µg/l	5	70	NT	NT	NT
trans-1,2-Dichloroethene (-ylene)	µg/l	5	70	NT	NT	NT
1,2-Dichloropropane	µg/l	5	0.56	NT	NT	NT
cis-1,3-Dichloropropene (-propylene)	µg/l	10	NE	NT	NT	NT
trans-1,3-Dichloropropene (-propylene)	µg/l	10	NE	NT	NT	NT
Ethylbenzene	µg/l	5	29	NT	NT	NT
2-Hexanone	µg/l	50	NE	NT	NT	NT
Iodomethane	µg/l	10	NE	NT	NT	NT
Dichloromethane (Methylene chloride)	µg/l	10	5	NT	NT	NT
2-Butanone (Methyl ethyl ketone)	µg/l	100	170	NT	NT	NT
4-Methyl-2-Pentanone	µg/l	100	NE	NT	NT	NT
Styrene	µg/l	10	100	NT	NT	NT
1,1,1,2-Tetrachloroethane	µg/l	5	NE	NT	NT	NT
1,1,2,2-Tetrachloroethane	µg/l	5	NE	NT	NT	NT
Tetrachloroethene (-ethylene)	µg/l	5	0.7	NT	NT	NT
Toluene	µg/l	5	1000	NT	NT	NT
1,1,1-Trichloroethane	µg/l	5	200	NT	NT	NT
1,1,2-Trichloroethane	µg/l	5	NE	NT	NT	NT
Trichloroethene (-ethylene)	µg/l	5	2.8	NT	NT	NT
Trichlorofluoromethane	µg/l	5	2100	NT	NT	NT
1,2,3-Trichloropropane	µg/l	15	NE	NT	NT	NT
Vinyl acetate	µg/l	50	NE	NT	NT	NT
Vinyl chloride	µg/l	10	0.015	NT	NT	NT
Xylene	µg/l	5	530	NT	NT	NT

Notes:
MCL = Maximum Contaminant Level, as established in the NCDENR, "Redbook" Surface Waters and Wetlands Standards Section 15A NCAC 02B.0100, .0200, and .0300.
MDL = Laboratory Method Detection Limit
ND = Not Detected at the method detection limit
NS = Not Sampled
NT = Not Tested
NE = Not Established; North Carolina has not established a MCL
NP = Not Present during sampling event
Shaded cells indicated exceedances of MCLs.

Closed Francis Farm Landfill - Haywood Co., NC
Surface Water Sampling Event (2-14-2000)

TEST	UNITS	MDL	MCL	SW-1	SW-2	Blanton Branch
pH	pH units (on-site)	-	<6.0; >8.5	6.2	6.2	6.4
Specific Conductance	µmhos/cm (on-site)	1	NE	55	70	110
Temperature	°C (on-site)	-	29	10	10	9
Turbidity	NTU (on-site)	0.1	50	NT	NT	NT
Total Antimony (Sb)	µg/l	30	NE	NT	NT	NT
Total Arsenic (As)	µg/l	10	50	ND	ND	ND
Total Barium (Ba)	µg/l	500	NE	43	69	56
Total Beryllium (Be)	µg/l	2	6.5	NT	NT	NT
Total Cadmium (Cd)	µg/l	1	2	ND	ND	ND
Total Chromium (Cr)	µg/l	10	50	ND	7.5	ND
Total Cobalt (Co)	µg/l	10	NE	NT	NT	NT
Total Copper (Cu)	µg/l	200	NE	NT	NT	NT
Total Lead (Pb)	µg/l	10	25	ND	ND	ND
Total Nickel (Ni)	µg/l	50	88	NT	ND	NT
Total Selenium (Se)	µg/l	20	5	ND	ND	ND
Total Silver (Ag)	µg/l	10	NE	ND	ND	ND
Total Thallium (Tl)	µg/l	10	NE	NT	NT	NT
Total Zinc (Zn)	µg/l	50	NE	NT	NT	NT
Mercury	µg/l	0.2	0.012	ND	ND	ND
Acetone	µg/l	100	NE	NT	NT	NT
Acrylonitrile	µg/l	200	NE	NT	NT	NT
Benzene	µg/l	5	51	NT	NT	NT
Bromochloromethane	µg/l	5	NE	NT	NT	NT
Bromodichloromethane	µg/l	5	NE	NT	NT	NT
Bromoform	µg/l	5	NE	NT	NT	NT
Carbon Disulfide	µg/l	100	NE	NT	NT	NT
Bromomethane (Methylbromide)	µg/l	10	NE	NT	NT	NT
Carbon tetrachloride	µg/l	10	0.3	NT	NT	NT
Chlorobenzene (mono)	µg/l	5	50	NT	NT	NT
Chloroethane	µg/l	10	NE	NT	NT	NT
Chloroform	µg/l	5	0.19	NT	NT	NT
Chloromethane (Methylchloride)	µg/l	10	NE	NT	NT	NT
Dibromochloromethane	µg/l	5	NE	NT	NT	NT
1,2-Dibromo-3-chloropropane; DBCP	µg/l	25	0.025	NT	NT	NT
1,2-Dibromoethane; Ethylene dibromide	µg/l	5	0.0004	NT	NT	NT
Dibromomethane	µg/l	10	NE	NT	NT	NT
1,2-Dichlorobenzene	µg/l	5	620	NT	NT	NT
1,4-Dichlorobenzene	µg/l	5	75	NT	NT	NT
trans-1,4-Dichloro-2butene	µg/l	100	NE	NT	NT	NT
1,1-Dichloroethane	µg/l	5	700	NT	NT	NT
1,2-Dichloroethane	µg/l	5	0.38	NT	NT	NT
1,1-Dichloroethene (-ethylene)	µg/l	5	7	NT	NT	NT
cis-1,2-Dichloroethene (-ethylene)	µg/l	5	70	NT	NT	NT
trans-1,2-Dichloroethene (-ylene)	µg/l	5	70	NT	NT	NT
1,2-Dichloropropane	µg/l	5	0.56	NT	NT	NT
cis-1,3-Dichloropropene (-propylene)	µg/l	10	NE	NT	NT	NT
trans-1,3-Dichloropropene (-propylene)	µg/l	10	NE	NT	NT	NT
Ethylbenzene	µg/l	5	29	NT	NT	NT
2-Hexanone	µg/l	50	NE	NT	NT	NT
Iodomethane	µg/l	10	NE	NT	NT	NT
Dichloromethane (Methylene chloride)	µg/l	10	5	NT	NT	NT
2-Butanone (Methyl ethyl ketone)	µg/l	100	170	NT	NT	NT
4-Methyl-2-Pentanone	µg/l	100	NE	NT	NT	NT
Styrene	µg/l	10	100	NT	NT	NT
1,1,1,2-Tetrachloroethane	µg/l	5	NE	NT	NT	NT
1,1,2,2-Tetrachloroethane	µg/l	5	NE	NT	NT	NT
Tetrachloroethene (-ethylene)	µg/l	5	0.7	NT	NT	NT
Toluene	µg/l	5	1000	NT	NT	NT
1,1,1-Trichloroethane	µg/l	5	200	NT	NT	NT
1,1,2-Trichloroethane	µg/l	5	NE	NT	NT	NT
Trichloroethene (-ethylene)	µg/l	5	2.8	NT	NT	NT
Trichlorofluoromethane	µg/l	5	2100	NT	NT	NT
1,2,3-Trichloropropane	µg/l	15	NE	NT	NT	NT
Vinyl acetate	µg/l	50	NE	NT	NT	NT
Vinyl chloride	µg/l	10	0.015	NT	NT	NT
Xylene	µg/l	5	530	NT	NT	NT

Notes:
MCL = Maximum Contaminant Level, as established in the NCDENR, "Redbook" Surface Waters and Wetlands Standards Section 15A NCAC 02B.0100, .0200, and .0300.
MDL = Laboratory Method Detection Limit
ND = Not Detected at the method detection limit
NS = Not Sampled
NT = Not Tested
NE = Not Established; North Carolina has not established a MCL
NP = Not Present during sampling event
Shaded cells indicated exceedances of MCLs.

Closed Francis Farm Landfill - Haywood Co., NC
Surface Water Sampling Event (8-14-2000)

TEST	UNITS	MDL	MCL	SW-1	SW-2	Blanton Branch
pH	pH units (on-site)	-	<6.0; >8.5	**6.4**	**6.8**	**6.6**
Specific Conductance	µmhos/cm (on-site)	1	NE	**52**	**78**	**110**
Temperature	°C (on-site)	-	29	**17**	**19**	**20**
Turbidity	NTU (on-site)	0.1	50	NT	NT	NT
Total Antimony (Sb)	µg/l	30	NE	NT	NT	NT
Total Arsenic (As)	µg/l	10	50	ND	ND	ND
Total Barium (Ba)	µg/l	500	NE	**28**	**35**	**36**
Total Beryllium (Be)	µg/l	2	6.5	NT	NT	NT
Total Cadmium (Cd)	µg/l	1	2	ND	ND	ND
Total Chromium (Cr)	µg/l	10	50	ND	ND	ND
Total Cobalt (Co)	µg/l	10	NE	NT	NT	NT
Total Copper (Cu)	µg/l	200	NE	NT	NT	NT
Total Lead (Pb)	µg/l	10	25	ND	ND	ND
Total Nickel (Ni)	µg/l	50	88	NT	NT	NT
Total Selenium (Se)	µg/l	20	5	ND	ND	ND
Total Silver (Ag)	µg/l	10	NE	**18**	**12**	**9.6**
Total Thallium (Tl)	µg/l	10	NE	NT	NT	NT
Total Zinc (Zn)	µg/l	50	NE	NT	NT	NT
Mercury	µg/l	0.2	0.012	ND	ND	ND
Acetone	µg/l	100	NE	NT	NT	NT
Acrylonitrile	µg/l	200	NE	NT	NT	NT
Benzene	µg/l	5	51	NT	NT	NT
Bromochloromethane	µg/l	5	NE	NT	NT	NT
Bromodichloromethane	µg/l	5	NE	NT	NT	NT
Bromoform	µg/l	5	NE	NT	NT	NT
Carbon Disulfide	µg/l	100	NE	NT	NT	NT
Bromomethane (Methylbromide)	µg/l	10	NE	NT	NT	NT
Carbon tetrachloride	µg/l	10	0.3	NT	NT	NT
Chlorobenzene (mono)	µg/l	5	50	NT	NT	NT
Chloroethane	µg/l	10	NE	NT	NT	NT
Chloroform	µg/l	5	0.19	NT	NT	NT
Chloromethane (Methylchloride)	µg/l	10	NE	NT	NT	NT
Dibromochloromethane	µg/l	5	NE	NT	NT	NT
1,2-Dibromo-3-chloropropane; DBCP	µg/l	25	0.025	NT	NT	NT
1,2-Dibromoethane; Ethylene dibromide	µg/l	5	0.0004	NT	NT	NT
Dibromomethane	µg/l	10	NE	NT	NT	NT
1,2-Dichlorobenzene	µg/l	5	620	NT	NT	NT
1,4-Dichlorobenzene	µg/l	5	75	NT	NT	NT
trans-1,4-Dichloro-2butene	µg/l	100	NE	NT	NT	NT
1,1-Dichloroethane	µg/l	5	700	NT	NT	NT
1,2-Dichloroethane	µg/l	5	0.38	NT	NT	NT
1,1-Dichloroethene (-ethylene)	µg/l	5	7	NT	NT	NT
cis-1,2-Dichloroethene (-ethylene)	µg/l	5	70	NT	NT	NT
trans-1,2-Dichloroethene (-ylene)	µg/l	5	70	NT	NT	NT
1,2-Dichloropropane	µg/l	5	0.56	NT	NT	NT
cis-1,3-Dichloropropene (-propylene)	µg/l	10	NE	NT	NT	NT
trans-1,3-Dichloropropene (-propylene)	µg/l	10	NE	NT	NT	NT
Ethylbenzene	µg/l	5	29	NT	NT	NT
2-Hexanone	µg/l	50	NE	NT	NT	NT
Iodomethane	µg/l	10	NE	NT	NT	NT
Dichloromethane (Methylene chloride)	µg/l	10	5	NT	NT	NT
2-Butanone (Methyl ethyl ketone)	µg/l	100	170	NT	NT	NT
4-Methyl-2-Pentanone	µg/l	100	NE	NT	NT	NT
Styrene	µg/l	10	100	NT	NT	NT
1,1,1,2-Tetrachloroethane	µg/l	5	NE	NT	NT	NT
1,1,2,2-Tetrachloroethane	µg/l	5	NE	NT	NT	NT
Tetrachloroethene (-ethylene)	µg/l	5	0.7	NT	NT	NT
Toluene	µg/l	5	1000	NT	NT	NT
1,1,1-Trichloroethane	µg/l	5	200	NT	NT	NT
1,1,2-Trichloroethane	µg/l	5	NE	NT	NT	NT
Trichloroethene (-ethylene)	µg/l	5	2.8	NT	NT	NT
Trichlorofluoromethane	µg/l	5	2100	NT	NT	NT
1,2,3-Trichloropropane	µg/l	15	NE	NT	NT	NT
Vinyl acetate	µg/l	50	NE	NT	NT	NT
Vinyl chloride	µg/l	10	0.015	NT	NT	NT
Xylene	µg/l	5	530	NT	NT	NT

Notes:
MCL = Maximum Contaminant Level, as established in the NCDENR, "Redbook" Surface Waters and Wetlands Standards Section 15A NCAC 02B.0100, .0200, and .0300.
MDL = Laboratory Method Detection Limit
ND = Not Detected at the method detection limit
NS = Not Sampled
NT = Not Tested
NE = Not Established; North Carolina has not established a MCL
NP = Not Present during sampling event
Shaded cells indicated exceedances of MCLs.

Closed Francis Farm Landfill - Haywood Co., NC
Surface Water Sampling Event (3-19-2001)

TEST	UNITS	MDL	MCL	SW-1	SW-2	Blanton Branch
pH	pH units (on-site)	-	<6.0; >8.5	6.3	6.9	7
Specific Conductance	µmhos/cm (on-site)	1	NE	40	52	110
Temperature	°C (on-site)	-	29	10.8	9.7	9.6
Turbidity	NTU (on-site)	0.1	50	NT	NT	NT
Total Antimony (Sb)	µg/l	30	NE	NT	NT	NT
Total Arsenic (As)	µg/l	10	50	ND	ND	ND
Total Barium (Ba)	µg/l	500	NE	32	32	30
Total Beryllium (Be)	µg/l	2	6.5	NT	NT	ND
Total Cadmium (Cd)	µg/l	1	2	ND	ND	ND
Total Chromium (Cr)	µg/l	10	50	ND	ND	ND
Total Cobalt (Co)	µg/l	10	NE	NT	NT	ND
Total Copper (Cu)	µg/l	200	NE	NT	NT	NT
Total Lead (Pb)	µg/l	10	25	ND	ND	ND
Total Nickel (Ni)	µg/l	50	88	NT	ND	ND
Total Selenium (Se)	µg/l	20	5	ND	ND	ND
Total Silver (Ag)	µg/l	10	NE	ND	ND	ND
Total Thallium (Tl)	µg/l	10	NE	NT	NT	NT
Total Zinc (Zn)	µg/l	50	NE	NT	NT	NT
Mercury	µg/l	0.2	0.012	ND	ND	ND
Acetone	µg/l	100	NE	NT	NT	NT
Acrylonitrile	µg/l	200	NE	NT	NT	NT
Benzene	µg/l	5	51	NT	NT	NT
Bromochloromethane	µg/l	5	NE	NT	NT	NT
Bromodichloromethane	µg/l	5	NE	NT	NT	NT
Bromoform	µg/l	5	NE	NT	NT	NT
Carbon Disulfide	µg/l	100	NE	NT	NT	NT
Bromomethane (Methylbromide)	µg/l	10	NE	NT	NT	NT
Carbon tetrachloride	µg/l	10	0.3	NT	NT	NT
Chlorobenzene (mono)	µg/l	5	50	NT	NT	NT
Chloroethane	µg/l	10	NE	NT	NT	NT
Chloroform	µg/l	5	0.19	NT	NT	NT
Chloromethane (Methylchloride)	µg/l	10	NE	NT	NT	NT
Dibromochloromethane	µg/l	5	NE	NT	NT	NT
1,2-Dibromo-3-chloropropane; DBCP	µg/l	25	0.025	NT	NT	NT
1,2-Dibromoethane; Ethylene dibromide	µg/l	5	0.0004	NT	NT	NT
Dibromomethane	µg/l	10	NE	NT	NT	NT
1,2-Dichlorobenzene	µg/l	5	620	NT	NT	NT
1,4-Dichlorobenzene	µg/l	5	75	NT	NT	NT
trans-1,4-Dichloro-2butene	µg/l	100	NE	NT	NT	NT
1,1-Dichloroethane	µg/l	5	700	NT	NT	NT
1,2-Dichloroethane	µg/l	5	0.38	NT	NT	NT
1,1-Dichloroethene (-ethylene)	µg/l	5	7	NT	NT	NT
cis-1,2-Dichloroethene (-ethylene)	µg/l	5	70	NT	NT	NT
trans-1,2-Dichloroethene (-ylene)	µg/l	5	70	NT	NT	NT
1,2-Dichloropropane	µg/l	5	0.56	NT	NT	NT
cis-1,3-Dichloropropene (-propylene)	µg/l	10	NE	NT	NT	NT
trans-1,3-Dichloropropene (-propylene)	µg/l	10	NE	NT	NT	NT
Ethylbenzene	µg/l	5	29	NT	NT	NT
2-Hexanone	µg/l	50	NE	NT	NT	NT
Iodomethane	µg/l	10	NE	NT	NT	NT
Dichloromethane (Methylene chloride)	µg/l	10	5	NT	NT	NT
2-Butanone (Methyl ethyl ketone)	µg/l	100	170	NT	NT	NT
4-Methyl-2-Pentanone	µg/l	100	NE	NT	NT	NT
Styrene	µg/l	10	100	NT	NT	NT
1,1,1,2-Tetrachloroethane	µg/l	5	NE	NT	NT	NT
1,1,2,2-Tetrachloroethane	µg/l	5	NE	NT	NT	NT
Tetrachloroethene (-ethylene)	µg/l	5	0.7	NT	NT	NT
Toluene	µg/l	5	1000	NT	NT	NT
1,1,1-Trichloroethane	µg/l	5	200	NT	NT	NT
1,1,2-Trichloroethane	µg/l	5	NE	NT	NT	NT
Trichloroethene (-ethylene)	µg/l	5	2.8	NT	NT	NT
Trichlorofluoromethane	µg/l	5	2100	NT	NT	NT
1,2,3-Trichloropropane	µg/l	15	NE	NT	NT	NT
Vinyl acetate	µg/l	50	NE	NT	NT	NT
Vinyl chloride	µg/l	10	0.015	NT	NT	NT
Xylene	µg/l	5	530	NT	NT	NT

Notes:
MCL = Maximum Contaminant Level, as established in the NCDENR, "Redbook" Surface Waters and Wetlands Standards Section 15A NCAC 02B.0100, .0200, and .0300.
MDL = Laboratory Method Detection Limit
ND = Not Detected at the method detection limit
NS = Not Sampled
NT = Not Tested
NE = Not Established; North Carolina has not established a MCL
NP = Not Present during sampling event
Shaded cells indicated exceedances of MCLs.

Closed Francis Farm Landfill - Haywood Co., NC
Surface Water Sampling Event (8-27-2002)

TEST	UNITS	MDL	MCL	SW-1	SW-2	Blanton Branch
pH	pH units (on-site)	-	<6.0; >8.5	6.37	6.84	6.8
Specific Conductance	µmhos/cm (on-site)	1	NE	55	80	149
Temperature	°C (on-site)	-	29	18.5	20	22.6
Turbidity	NTU (on-site)	0.1	50	NT	NT	NT
Total Antimony (Sb)	µg/l	30	NE	NT	NT	NT
Total Arsenic (As)	µg/l	10	50	ND	ND	ND
Total Barium (Ba)	µg/l	500	NE	ND	49	71
Total Beryllium (Be)	µg/l	2	6.5	NT	NT	NT
Total Cadmium (Cd)	µg/l	1	2	ND	ND	ND
Total Chromium (Cr)	µg/l	10	50	ND	ND	ND
Total Cobalt (Co)	µg/l	10	NE	NT	NT	NT
Total Copper (Cu)	µg/l	200	NE	NT	NT	NT
Total Lead (Pb)	µg/l	10	25	ND	ND	ND
Total Nickel (Ni)	µg/l	50	88	NT	NT	NT
Total Selenium (Se)	µg/l	20	5	ND	ND	ND
Total Silver (Ag)	µg/l	10	NE	ND	ND	ND
Total Thallium (Tl)	µg/l	10	NE	NT	NT	NT
Total Zinc (Zn)	µg/l	50	NE	NT	NT	NT
Mercury	µg/l	0.2	0.012	ND	ND	ND
Acetone	µg/l	100	NE	NT	NT	NT
Acrylonitrile	µg/l	200	NE	NT	NT	NT
Benzene	µg/l	5	51	NT	NT	NT
Bromochloromethane	µg/l	5	NE	NT	NT	NT
Bromodichloromethane	µg/l	5	NE	NT	NT	NT
Bromoform	µg/l	5	NE	NT	NT	NT
Carbon Disulfide	µg/l	100	NE	NT	NT	NT
Bromomethane (Methylbromide)	µg/l	10	NE	NT	NT	NT
Carbon tetrachloride	µg/l	10	0.3	NT	NT	NT
Chlorobenzene (mono)	µg/l	5	50	NT	NT	NT
Chloroethane	µg/l	10	NE	NT	NT	NT
Chloroform	µg/l	5	0.19	NT	NT	NT
Chloromethane (Methylchloride)	µg/l	10	NE	NT	NT	NT
Dibromochloromethane	µg/l	5	NE	NT	NT	NT
1,2-Dibromo-3-chloropropane; DBCP	µg/l	25	0.025	NT	NT	NT
1,2-Dibromoethane; Ethylene dibromide	µg/l	5	0.0004	NT	NT	NT
Dibromomethane	µg/l	10	NE	NT	NT	NT
1,2-Dichlorobenzene	µg/l	5	620	NT	NT	NT
1,4-Dichlorobenzene	µg/l	5	75	NT	NT	NT
trans-1,4-Dichloro-2butene	µg/l	100	NE	NT	NT	NT
1,1-Dichloroethane	µg/l	5	700	NT	NT	NT
1,2-Dichloroethane	µg/l	5	0.38	NT	NT	NT
1,1-Dichloroethene (-ethylene)	µg/l	5	7	NT	NT	NT
cis-1,2-Dichloroethene (-ethylene)	µg/l	5	70	NT	NT	NT
trans-1,2-Dichloroethene (-ylene)	µg/l	5	70	NT	NT	NT
1,2-Dichloropropane	µg/l	5	0.56	NT	NT	NT
cis-1,3-Dichloropropene (-propylene)	µg/l	10	NE	NT	NT	NT
trans-1,3-Dichloropropene (-propylene)	µg/l	10	NE	NT	NT	NT
Ethylbenzene	µg/l	5	29	NT	NT	NT
2-Hexanone	µg/l	50	NE	NT	NT	NT
Iodomethane	µg/l	10	NE	NT	NT	NT
Dichloromethane (Methylene chloride)	µg/l	10	5	NT	NT	NT
2-Butanone (Methyl ethyl ketone)	µg/l	100	170	NT	NT	NT
4-Methyl-2-Pentanone	µg/l	100	NE	NT	NT	NT
Styrene	µg/l	10	100	NT	NT	NT
1,1,1,2-Tetrachloroethane	µg/l	5	NE	NT	NT	NT
1,1,2,2-Tetrachloroethane	µg/l	5	NE	NT	NT	NT
Tetrachloroethene (-ethylene)	µg/l	5	0.7	NT	NT	NT
Toluene	µg/l	5	1000	NT	NT	NT
1,1,1-Trichloroethane	µg/l	5	200	NT	NT	NT
1,1,2-Trichloroethane	µg/l	5	NE	NT	NT	NT
Trichloroethene (-ethylene)	µg/l	5	2.8	NT	NT	NT
Trichlorofluoromethane	µg/l	5	2100	NT	NT	NT
1,2,3-Trichloropropane	µg/l	15	NE	NT	NT	NT
Vinyl acetate	µg/l	50	NE	NT	NT	NT
Vinyl chloride	µg/l	10	0.015	NT	NT	NT
Xylene	µg/l	5	530	NT	NT	NT

Notes:
MCL = Maximum Contaminant Level, as established in the NCDENR, "Redbook" Surface Waters and Wetlands Standards Section 15A NCAC 02B.0100, .0200, and .0300.
MDL = Laboratory Method Detection Limit
ND = Not Detected at the method detection limit
NS = Not Sampled
NT = Not Tested
NE = Not Established; North Carolina has not established a MCL
NP = Not Present during sampling event
Shaded cells indicated exceedances of MCLs.

Closed Francis Farm Landfill - Haywood Co., NC
Surface Water Sampling Event (2-24-2003)

TEST	UNITS	MDL	MCL	SW-1	SW-2	Blanton Branch
pH	pH units (on-site)	-	<6.0; >8.5	7.05	6.84	6.8
Specific Conductance	µmhos/cm (on-site)	1	NE	41	50	110
Temperature	°C (on-site)	-	29	11.6	12.2	13
Turbidity	NTU (on-site)	0.1	50	NT	NT	NT
Total Antimony (Sb)	µg/l	30	NE	NT	NT	NT
Total Arsenic (As)	µg/l	10	50	ND	ND	ND
Total Barium (Ba)	µg/l	500	NE	35	42	45
Total Beryllium (Be)	µg/l	2	6.5	NT	NT	NT
Total Cadmium (Cd)	µg/l	1	2	ND	ND	ND
Total Chromium (Cr)	µg/l	10	50	ND	ND	ND
Total Cobalt (Co)	µg/l	10	NE	NT	NT	NT
Total Copper (Cu)	µg/l	200	NE	NT	NT	NT
Total Lead (Pb)	µg/l	10	25	ND	ND	ND
Total Nickel (Ni)	µg/l	50	88	NT	NT	NT
Total Selenium (Se)	µg/l	20	5	ND	ND	ND
Total Silver (Ag)	µg/l	10	NE	2.9	4.4	4.1
Total Thallium (Tl)	µg/l	10	NE	NT	NT	NT
Total Zinc (Zn)	µg/l	50	NE	NT	NT	NT
Mercury	µg/l	0.2	0.012	ND	ND	ND
Acetone	µg/l	100	NE	NT	NT	NT
Acrylonitrile	µg/l	200	NE	NT	NT	NT
Benzene	µg/l	5	51	NT	NT	NT
Bromochloromethane	µg/l	5	NE	NT	NT	NT
Bromodichloromethane	µg/l	5	NE	NT	NT	NT
Bromoform	µg/l	5	NE	NT	NT	NT
Carbon Disulfide	µg/l	100	NE	NT	NT	NT
Bromomethane (Methylbromide)	µg/l	10	NE	NT	NT	NT
Carbon tetrachloride	µg/l	10	0.3	NT	NT	NT
Chlorobenzene (mono)	µg/l	5	50	NT	NT	NT
Chloroethane	µg/l	10	NE	NT	NT	NT
Chloroform	µg/l	5	0.19	NT	NT	NT
Chloromethane (Methylchloride)	µg/l	10	NE	NT	NT	NT
Dibromochloromethane	µg/l	5	NE	NT	NT	NT
1,2-Dibromo-3-chloropropane; DBCP	µg/l	25	0.025	NT	NT	NT
1,2-Dibromoethane; Ethylene dibromide	µg/l	5	0.0004	NT	NT	NT
Dibromomethane	µg/l	10	NE	NT	NT	NT
1,2-Dichlorobenzene	µg/l	5	620	NT	NT	NT
1,4-Dichlorobenzene	µg/l	5	75	NT	NT	NT
trans-1,4-Dichloro-2butene	µg/l	100	NE	NT	NT	NT
1,1-Dichloroethane	µg/l	5	700	NT	NT	NT
1,2-Dichloroethane	µg/l	5	0.38	NT	NT	NT
1,1-Dichloroethene (-ethylene)	µg/l	5	7	NT	NT	NT
cis-1,2-Dichloroethene (-ethylene)	µg/l	5	70	NT	NT	NT
trans-1,2-Dichloroethene (-ylene)	µg/l	5	70	NT	NT	NT
1,2-Dichloropropane	µg/l	5	0.56	NT	NT	NT
cis-1,3-Dichloropropene (-propylene)	µg/l	10	NE	NT	NT	NT
trans-1,3-Dichloropropene (-propylene)	µg/l	10	NE	NT	NT	NT
Ethylbenzene	µg/l	5	29	NT	NT	NT
2-Hexanone	µg/l	50	NE	NT	NT	NT
Iodomethane	µg/l	10	NE	NT	NT	NT
Dichloromethane (Methylene chloride)	µg/l	10	5	NT	NT	NT
2-Butanone (Methyl ethyl ketone)	µg/l	100	170	NT	NT	NT
4-Methyl-2-Pentanone	µg/l	100	NE	NT	NT	NT
Styrene	µg/l	10	100	NT	NT	NT
1,1,1,2-Tetrachloroethane	µg/l	5	NE	NT	NT	NT
1,1,2,2-Tetrachloroethane	µg/l	5	NE	NT	NT	NT
Tetrachloroethene (-ethylene)	µg/l	5	0.7	NT	NT	NT
Toluene	µg/l	5	1000	NT	NT	NT
1,1,1-Trichloroethane	µg/l	5	200	NT	NT	NT
1,1,2-Trichloroethane	µg/l	5	NE	NT	NT	NT
Trichloroethene (-ethylene)	µg/l	5	2.8	NT	NT	NT
Trichlorofluoromethane	µg/l	5	2100	NT	NT	NT
1,2,3-Trichloropropane	µg/l	15	NE	NT	NT	NT
Vinyl acetate	µg/l	50	NE	NT	NT	NT
Vinyl chloride	µg/l	10	0.015	NT	NT	NT
Xylene	µg/l	5	530	NT	NT	NT

Notes:
MCL = Maximum Contaminant Level, as established in the NCDENR, "Redbook" Surface Waters and Wetlands Standards Section 15A NCAC 02B.0100, .0200, and .0300.
MDL = Laboratory Method Detection Limit
ND = Not Detected at the method detection limit
NS = Not Sampled
NT = Not Tested
NE = Not Established; North Carolina has not established a MCL
NP = Not Present during sampling event
Shaded cells indicated exceedances of MCLs.

Closed Francis Farm Landfill - Haywood Co., NC
Surface Water Sampling Event (8-11-2003)

TEST	UNITS	MDL	MCL	SW-1	SW-2	Blanton Branch
pH	pH units (on-site)	-	<6.0; >8.5	7.24	7.15	7.1
Specific Conductance	µmhos/cm (on-site)	1	NE	51	75	111
Temperature	°C (on-site)	-	29	19	21.6	23
Turbidity	NTU (on-site)	0.1	50	NT	NT	NT
Total Antimony (Sb)	µg/l	30	NE	NT	NT	NT
Total Arsenic (As)	µg/l	10	50	ND	ND	ND
Total Barium (Ba)	µg/l	500	NE	29	45	28
Total Beryllium (Be)	µg/l	2	6.5	NT	NT	NT
Total Cadmium (Cd)	µg/l	1	2	ND	ND	ND
Total Chromium (Cr)	µg/l	10	50	ND	2.6	ND
Total Cobalt (Co)	µg/l	10	NE	NT	NT	NT
Total Copper (Cu)	µg/l	200	NE	NT	NT	NT
Total Lead (Pb)	µg/l	10	25	ND	ND	ND
Total Nickel (Ni)	µg/l	50	88	NT	NT	NT
Total Selenium (Se)	µg/l	20	5	ND	ND	ND
Total Silver (Ag)	µg/l	10	NE	ND	ND	ND
Total Thallium (Tl)	µg/l	10	NE	NT	NT	NT
Total Zinc (Zn)	µg/l	50	NE	NT	NT	NT
Mercury	µg/l	0.2	0.012	ND	ND	ND
Acetone	µg/l	100	NE	ND	ND	ND
Acrylonitrile	µg/l	200	NE	ND	ND	ND
Benzene	µg/l	5	51	ND	ND	ND
Bromochloromethane	µg/l	5	NE	ND	ND	ND
Bromodichloromethane	µg/l	5	NE	ND	ND	ND
Bromoform	µg/l	5	NE	ND	ND	ND
Carbon Disulfide	µg/l	100	NE	ND	ND	ND
Bromomethane (Methylbromide)	µg/l	10	NE	ND	ND	ND
Carbon tetrachloride	µg/l	10	0.3	ND	ND	ND
Chlorobenzene (mono)	µg/l	5	50	ND	ND	ND
Chloroethane	µg/l	10	NE	ND	ND	ND
Chloroform	µg/l	5	0.19	ND	ND	ND
Chloromethane (Methylchloride)	µg/l	10	NE	ND	ND	ND
Dibromochloromethane	µg/l	5	NE	ND	ND	ND
1,2-Dibromo-3-chloropropane; DBCP	µg/l	25	0.025	ND	ND	ND
1,2-Dibromoethane; Ethylene dibromide	µg/l	5	0.0004	ND	ND	ND
Dibromomethane	µg/l	10	NE	ND	ND	ND
1,2-Dichlorobenzene	µg/l	5	620	ND	ND	ND
1,4-Dichlorobenzene	µg/l	5	75	ND	ND	ND
trans-1,4-Dichloro-2butene	µg/l	100	NE	ND	ND	ND
1,1-Dichloroethane	µg/l	5	700	ND	ND	ND
1,2-Dichloroethane	µg/l	5	0.38	ND	ND	ND
1,1-Dichloroethene (-ethylene)	µg/l	5	7	ND	ND	ND
cis-1,2-Dichloroethene (-ethylene)	µg/l	5	70	ND	ND	ND
trans-1,2-Dichloroethene (-ylene)	µg/l	5	70	ND	ND	ND
1,2-Dichloropropane	µg/l	5	0.56	ND	ND	ND
cis-1,3-Dichloropropene (-propylene)	µg/l	10	NE	ND	ND	ND
trans-1,3-Dichloropropene (-propylene)	µg/l	10	NE	ND	ND	ND
Ethylbenzene	µg/l	5	29	ND	ND	ND
2-Hexanone	µg/l	50	NE	ND	ND	ND
Iodomethane	µg/l	10	NE	ND	ND	ND
Dichloromethane (Methylene chloride)	µg/l	10	5	ND	ND	ND
2-Butanone (Methyl ethyl ketone)	µg/l	100	170	ND	ND	ND
4-Methyl-2-Pentanone	µg/l	100	NE	ND	ND	ND
Styrene	µg/l	10	100	ND	ND	ND
1,1,1,2-Tetrachloroethane	µg/l	5	NE	ND	ND	ND
1,1,2,2-Tetrachloroethane	µg/l	5	NE	ND	ND	ND
Tetrachloroethene (-ethylene)	µg/l	5	0.7	ND	ND	ND
Toluene	µg/l	5	1000	ND	ND	ND
1,1,1-Trichloroethane	µg/l	5	200	ND	ND	ND
1,1,2-Trichloroethane	µg/l	5	NE	ND	ND	ND
Trichloroethene (-ethylene)	µg/l	5	2.8	ND	ND	ND
Trichlorofluoromethane	µg/l	5	2100	ND	ND	ND
1,2,3-Trichloropropane	µg/l	15	NE	ND	ND	ND
Vinyl acetate	µg/l	50	NE	ND	ND	ND
Vinyl chloride	µg/l	10	0.015	ND	ND	ND
Xylene	µg/l	5	530	ND	ND	ND

Notes:
MCL = Maximum Contaminant Level, as established in the NCDENR, "Redbook" Surface Waters and Wetlands Standards Section 15A NCAC 02B.0100, .0200, and .0300.
MDL = Laboratory Method Detection Limit
ND = Not Detected at the method detection limit
NS = Not Sampled
NT = Not Tested
NE = Not Established; North Carolina has not established a MCL
NP = Not Present during sampling event
Shaded cells indicated exceedances of MCLs.

Closed Francis Farm Landfill - Haywood Co., NC
Surface Water Sampling Event (2-9-2004)

TEST	UNITS	MDL	MCL	SW-1	SW-2	Blanton Branch
pH	pH units (on-site)	-	<6.0; >8.5	6.22	6.71	6.38
Specific Conductance	µmhos/cm (on-site)	1	NE	39	42	80
Temperature	°C (on-site)	-	29	7.8	7.8	8.1
Turbidity	NTU (on-site)	0.1	50	NT	NT	NT
Total Antimony (Sb)	µg/l	30	NE	NT	NT	NT
Total Arsenic (As)	µg/l	10	50	ND	ND	ND
Total Barium (Ba)	µg/l	500	NE	30	37	34
Total Beryllium (Be)	µg/l	2	6.5	NT	NT	NT
Total Cadmium (Cd)	µg/l	1	2	ND	ND	ND
Total Chromium (Cr)	µg/l	10	50	ND	ND	ND
Total Cobalt (Co)	µg/l	10	NE	NT	NT	NT
Total Copper (Cu)	µg/l	200	NE	NT	NT	NT
Total Lead (Pb)	µg/l	10	25	ND	ND	ND
Total Nickel (Ni)	µg/l	50	88	NT	NT	NT
Total Selenium (Se)	µg/l	20	5	ND	ND	ND
Total Silver (Ag)	µg/l	10	NE	ND	ND	ND
Total Thallium (Tl)	µg/l	10	NE	NT	NT	NT
Total Zinc (Zn)	µg/l	50	NE	NT	NT	NT
Mercury	µg/l	0.2	0.012	ND	ND	ND
Acetone	µg/l	100	NE	ND	ND	14
Acrylonitrile	µg/l	200	NE	ND	ND	ND
Benzene	µg/l	5	51	ND	ND	ND
Bromochloromethane	µg/l	5	NE	ND	ND	ND
Bromodichloromethane	µg/l	5	NE	ND	ND	ND
Bromoform	µg/l	5	NE	ND	ND	ND
Carbon Disulfide	µg/l	100	NE	ND	ND	ND
Bromomethane (Methylbromide)	µg/l	10	NE	ND	ND	ND
Carbon tetrachloride	µg/l	10	0.3	ND	ND	ND
Chlorobenzene (mono)	µg/l	5	50	ND	ND	ND
Chloroethane	µg/l	10	NE	ND	ND	ND
Chloroform	µg/l	5	0.19	ND	ND	ND
Chloromethane (Methylchloride)	µg/l	10	NE	ND	ND	ND
Dibromochloromethane	µg/l	5	NE	ND	ND	ND
1,2-Dibromo-3-chloropropane; DBCP	µg/l	25	0.025	ND	ND	ND
1,2-Dibromoethane; Ethylene dibromide	µg/l	5	0.0004	ND	ND	ND
Dibromomethane	µg/l	10	NE	ND	ND	ND
1,2-Dichlorobenzene	µg/l	5	620	ND	ND	ND
1,4-Dichlorobenzene	µg/l	5	75	ND	ND	ND
trans-1,4-Dichloro-2butene	µg/l	100	NE	ND	ND	ND
1,1-Dichloroethane	µg/l	5	700	ND	ND	ND
1,2-Dichloroethane	µg/l	5	0.38	ND	ND	ND
1,1-Dichloroethene (-ethylene)	µg/l	5	7	ND	ND	ND
cis-1,2-Dichloroethene (-ethylene)	µg/l	5	70	ND	ND	ND
trans-1,2-Dichloroethene (-ylene)	µg/l	5	70	ND	ND	ND
1,2-Dichloropropane	µg/l	5	0.56	ND	ND	ND
cis-1,3-Dichloropropene (-propylene)	µg/l	10	NE	ND	ND	ND
trans-1,3-Dichloropropene (-propylene)	µg/l	10	NE	ND	ND	ND
Ethylbenzene	µg/l	5	29	ND	ND	ND
2-Hexanone	µg/l	50	NE	ND	ND	ND
Iodomethane	µg/l	10	NE	ND	ND	ND
Dichloromethane (Methylene chloride)	µg/l	10	5	ND	ND	ND
2-Butanone (Methyl ethyl ketone)	µg/l	100	170	ND	ND	ND
4-Methyl-2-Pentanone	µg/l	100	NE	ND	ND	ND
Styrene	µg/l	10	100	ND	ND	ND
1,1,1,2-Tetrachloroethane	µg/l	5	NE	ND	ND	ND
1,1,2,2-Tetrachloroethane	µg/l	5	NE	ND	ND	ND
Tetrachloroethene (-ethylene)	µg/l	5	0.7	ND	ND	ND
Toluene	µg/l	5	1000	ND	ND	ND
1,1,1-Trichloroethane	µg/l	5	200	ND	ND	ND
1,1,2-Trichloroethane	µg/l	5	NE	ND	ND	ND
Trichloroethene (-ethylene)	µg/l	5	2.8	ND	ND	ND
Trichlorofluoromethane	µg/l	5	2100	ND	ND	ND
1,2,3-Trichloropropane	µg/l	15	NE	ND	ND	ND
Vinyl acetate	µg/l	50	NE	ND	ND	ND
Vinyl chloride	µg/l	10	0.015	ND	ND	ND
Xylene	µg/l	5	530	ND	ND	ND

Notes:
MCL = Maximum Contaminant Level, as established in the NCDENR, "Redbook" Surface Waters and Wetlands Standards Section 15A NCAC 02B.0100, .0200, and .0300.
MDL = Laboratory Method Detection Limit
ND = Not Detected at the method detection limit
NS = Not Sampled
NT = Not Tested
NE = Not Established; North Carolina has not established a MCL
NP = Not Present during sampling event
Shaded cells indicated exceedances of MCLs.

Closed Francis Farm Landfill - Haywood Co., NC
Surface Water Sampling Event (8-16-2004)

TEST	UNITS	MDL	MCL	SW-1	SW-2	Blanton Branch
pH	pH units (on-site)	-	<6.0; >8.5	6.98	7.11	6.8
Specific Conductance	µmhos/cm (on-site)	1	NE	59	80	125
Temperature	°C (on-site)	-	29	19.4	22.3	24.8
Turbidity	NTU (on-site)	0.1	50	NT	NT	NT
Total Antimony (Sb)	µg/l	30	NE	NT	NT	NT
Total Arsenic (As)	µg/l	10	50	ND	ND	ND
Total Barium (Ba)	µg/l	500	NE	34	40	43
Total Beryllium (Be)	µg/l	2	6.5	NT	NT	NT
Total Cadmium (Cd)	µg/l	1	2	ND	ND	ND
Total Chromium (Cr)	µg/l	10	50	ND	ND	ND
Total Cobalt (Co)	µg/l	10	NE	NT	NT	NT
Total Copper (Cu)	µg/l	200	NE	NT	NT	NT
Total Lead (Pb)	µg/l	10	25	ND	ND	ND
Total Nickel (Ni)	µg/l	50	88	NT	NT	NT
Total Selenium (Se)	µg/l	20	5	ND	ND	ND
Total Silver (Ag)	µg/l	10	NE	ND	ND	ND
Total Thallium (Tl)	µg/l	10	NE	NT	NT	NT
Total Zinc (Zn)	µg/l	50	NE	NT	NT	NT
Mercury	µg/l	0.2	0.012	0.25	0.67	0.29
Acetone	µg/l	100	NE	ND	ND	ND
Acrylonitrile	µg/l	200	NE	ND	ND	ND
Benzene	µg/l	5	51	ND	ND	ND
Bromochloromethane	µg/l	5	NE	ND	ND	ND
Bromodichloromethane	µg/l	5	NE	ND	ND	ND
Bromoform	µg/l	5	NE	ND	ND	ND
Carbon Disulfide	µg/l	100	NE	ND	ND	ND
Bromomethane (Methylbromide)	µg/l	10	NE	ND	ND	ND
Carbon tetrachloride	µg/l	10	0.3	ND	ND	ND
Chlorobenzene (mono)	µg/l	5	50	ND	ND	ND
Chloroethane	µg/l	10	NE	ND	ND	ND
Chloroform	µg/l	5	0.19	ND	ND	ND
Chloromethane (Methylchloride)	µg/l	10	NE	ND	ND	ND
Dibromochloromethane	µg/l	5	NE	ND	ND	ND
1,2-Dibromo-3-chloropropane; DBCP	µg/l	25	0.025	ND	ND	ND
1,2-Dibromoethane; Ethylene dibromide	µg/l	5	0.0004	ND	ND	ND
Dibromomethane	µg/l	10	NE	ND	ND	ND
1,2-Dichlorobenzene	µg/l	5	620	ND	ND	ND
1,4-Dichlorobenzene	µg/l	5	75	ND	ND	ND
trans-1,4-Dichloro-2butene	µg/l	100	NE	ND	ND	ND
1,1-Dichloroethane	µg/l	5	700	ND	ND	ND
1,2-Dichloroethane	µg/l	5	0.38	ND	ND	ND
1,1-Dichloroethene (-ethylene)	µg/l	5	7	ND	ND	ND
cis-1,2-Dichloroethene (-ethylene)	µg/l	5	70	ND	ND	ND
trans-1,2-Dichloroethene (-ylene)	µg/l	5	70	ND	ND	ND
1,2-Dichloropropane	µg/l	5	0.56	ND	ND	ND
cis-1,3-Dichloropropene (-propylene)	µg/l	10	NE	ND	ND	ND
trans-1,3-Dichloropropene (-propylene)	µg/l	10	NE	ND	ND	ND
Ethylbenzene	µg/l	5	29	ND	ND	ND
2-Hexanone	µg/l	50	NE	ND	ND	ND
Iodomethane	µg/l	10	NE	ND	ND	ND
Dichloromethane (Methylene chloride)	µg/l	10	5	ND	ND	ND
2-Butanone (Methyl ethyl ketone)	µg/l	100	170	ND	ND	ND
4-Methyl-2-Pentanone	µg/l	100	NE	ND	ND	ND
Styrene	µg/l	10	100	ND	ND	ND
1,1,1,2-Tetrachloroethane	µg/l	5	NE	ND	ND	ND
1,1,2,2-Tetrachloroethane	µg/l	5	NE	ND	ND	ND
Tetrachloroethene (-ethylene)	µg/l	5	0.7	ND	ND	ND
Toluene	µg/l	5	1000	ND	ND	ND
1,1,1-Trichloroethane	µg/l	5	200	ND	ND	ND
1,1,2-Trichloroethane	µg/l	5	NE	ND	ND	ND
Trichloroethene (-ethylene)	µg/l	5	2.8	ND	ND	ND
Trichlorofluoromethane	µg/l	5	2100	ND	ND	ND
1,2,3-Trichloropropane	µg/l	15	NE	ND	ND	ND
Vinyl acetate	µg/l	50	NE	ND	ND	ND
Vinyl chloride	µg/l	10	0.015	ND	ND	ND
Xylene	µg/l	5	530	ND	ND	ND

Notes:
MCL = Maximum Contaminant Level, as established in the NCDENR, "Redbook" Surface Waters and Wetlands Standards Section 15A NCAC 02B.0100, .0200, and .0300.
MDL = Laboratory Method Detection Limit
ND = Not Detected at the method detection limit
NS = Not Sampled
NT = Not Tested
NE = Not Established; North Carolina has not established a MCL
NP = Not Present during sampling event
Shaded cells indicated exceedances of MCLs.

Closed Francis Farm Landfill - Haywood Co., NC
Surface Water Sampling Event (2-14-2005)

TEST	UNITS	MDL	MCL	SW-1	SW-2	Blanton Branch
pH	pH units (on-site)	-	<6.0; >8.5	8.06	7.32	7.97
Specific Conductance	µmhos/cm (on-site)	1	NE	38	120	45
Temperature	°C (on-site)	-	29	8.2	10.7	9.3
Turbidity	NTU (on-site)	0.1	50	NT	NT	NT
Total Antimony (Sb)	µg/l	30	NE	NT	NT	NT
Total Arsenic (As)	µg/l	10	50	ND	ND	ND
Total Barium (Ba)	µg/l	500	NE	35	52	52
Total Beryllium (Be)	µg/l	2	6.5	NT	NT	NT
Total Cadmium (Cd)	µg/l	1	2	ND	ND	ND
Total Chromium (Cr)	µg/l	10	50	ND	5.6	3.7
Total Cobalt (Co)	µg/l	10	NE	NT	NT	NT
Total Copper (Cu)	µg/l	200	NE	NT	NT	NT
Total Lead (Pb)	µg/l	10	25	ND	ND	ND
Total Nickel (Ni)	µg/l	50	88	NT	NT	NT
Total Selenium (Se)	µg/l	20	5	8.6	ND	5.5
Total Silver (Ag)	µg/l	10	NE	ND	ND	ND
Total Thallium (Tl)	µg/l	10	NE	NT	NT	NT
Total Zinc (Zn)	µg/l	50	NE	NT	NT	NT
Mercury	µg/l	0.2	0.012	ND	ND	ND
Acetone	µg/l	100	NE	ND	ND	ND
Acrylonitrile	µg/l	200	NE	ND	ND	ND
Benzene	µg/l	5	51	ND	ND	ND
Bromochloromethane	µg/l	5	NE	ND	ND	ND
Bromodichloromethane	µg/l	5	NE	ND	ND	ND
Bromoform	µg/l	5	NE	ND	ND	ND
Carbon Disulfide	µg/l	100	NE	ND	ND	ND
Bromomethane (Methylbromide)	µg/l	10	NE	ND	ND	ND
Carbon tetrachloride	µg/l	10	0.3	ND	ND	ND
Chlorobenzene (mono)	µg/l	5	50	ND	ND	ND
Chloroethane	µg/l	10	NE	ND	ND	ND
Chloroform	µg/l	5	0.19	ND	ND	ND
Chloromethane (Methylchloride)	µg/l	10	NE	ND	ND	ND
Dibromochloromethane	µg/l	5	NE	ND	ND	ND
1,2-Dibromo-3-chloropropane; DBCP	µg/l	25	0.025	ND	ND	ND
1,2-Dibromoethane; Ethylene dibromide	µg/l	5	0.0004	ND	ND	ND
Dibromomethane	µg/l	10	NE	ND	ND	ND
1,2-Dichlorobenzene	µg/l	5	620	ND	ND	ND
1,4-Dichlorobenzene	µg/l	5	75	ND	ND	ND
trans-1,4-Dichloro-2butene	µg/l	100	NE	ND	ND	ND
1,1-Dichloroethane	µg/l	5	700	ND	ND	ND
1,2-Dichloroethane	µg/l	5	0.38	ND	ND	ND
1,1-Dichloroethene (-ethylene)	µg/l	5	7	ND	ND	ND
cis-1,2-Dichloroethene (-ethylene)	µg/l	5	70	ND	ND	ND
trans-1,2-Dichloroethene (-ylene)	µg/l	5	70	ND	ND	ND
1,2-Dichloropropane	µg/l	5	0.56	ND	ND	ND
cis-1,3-Dichloropropene (-propylene)	µg/l	10	NE	ND	ND	ND
trans-1,3-Dichloropropene (-propylene)	µg/l	10	NE	ND	ND	ND
Ethylbenzene	µg/l	5	29	ND	ND	ND
2-Hexanone	µg/l	50	NE	ND	ND	ND
Iodomethane	µg/l	10	NE	ND	ND	ND
Dichloromethane (Methylene chloride)	µg/l	10	5	ND	ND	ND
2-Butanone (Methyl ethyl ketone)	µg/l	100	170	ND	ND	ND
4-Methyl-2-Pentanone	µg/l	100	NE	ND	ND	ND
Styrene	µg/l	10	100	ND	ND	ND
1,1,1,2-Tetrachloroethane	µg/l	5	NE	ND	ND	ND
1,1,2,2-Tetrachloroethane	µg/l	5	NE	ND	ND	ND
Tetrachloroethene (-ethylene)	µg/l	5	0.7	ND	ND	ND
Toluene	µg/l	5	1000	ND	ND	ND
1,1,1-Trichloroethane	µg/l	5	200	ND	ND	ND
1,1,2-Trichloroethane	µg/l	5	NE	ND	ND	ND
Trichloroethene (-ethylene)	µg/l	5	2.8	ND	ND	ND
Trichlorofluoromethane	µg/l	5	2100	ND	ND	ND
1,2,3-Trichloropropane	µg/l	15	NE	ND	ND	ND
Vinyl acetate	µg/l	50	NE	ND	ND	ND
Vinyl chloride	µg/l	10	0.015	ND	ND	ND
Xylene	µg/l	5	530	ND	ND	ND

Notes:
MCL = Maximum Contaminant Level, as established in the NCDENR, "Redbook" Surface Waters and Wetlands Standards Section 15A NCAC 02B.0100, .0200, and .0300.
MDL = Laboratory Method Detection Limit
ND = Not Detected at the method detection limit
NS = Not Sampled
NT = Not Tested
NE = Not Established; North Carolina has not established a MCL
NP = Not Present during sampling event
Shaded cells indicated exceedances of MCLs.

Closed Francis Farm Landfill - Haywood Co., NC
Surface Water Sampling Event (9-1-2005)

TEST	UNITS	MDL	MCL	SW-1	SW-2	Blanton Branch
pH	pH units (on-site)	-	<6.0; >8.5	7.21	7.13	7.5
Specific Conductance	µmhos/cm (on-site)	1	NE	61	78	120
Temperature	°C (on-site)	-	29	19.8	22.6	24.1
Turbidity	NTU (on-site)	0.1	50	NT	NT	NT
Total Antimony (Sb)	µg/l	30	NE	NT	NT	NT
Total Arsenic (As)	µg/l	10	50	ND	ND	ND
Total Barium (Ba)	µg/l	500	NE	41	48	41
Total Beryllium (Be)	µg/l	2	6.5	NT	NT	NT
Total Cadmium (Cd)	µg/l	1	2	ND	ND	ND
Total Chromium (Cr)	µg/l	10	50	ND	ND	ND
Total Cobalt (Co)	µg/l	10	NE	NT	NT	NT
Total Copper (Cu)	µg/l	200	NE	NT	NT	NT
Total Lead (Pb)	µg/l	10	25	ND	ND	ND
Total Nickel (Ni)	µg/l	50	88	NT	NT	NT
Total Selenium (Se)	µg/l	20	5	ND	ND	ND
Total Silver (Ag)	µg/l	10	NE	ND	ND	ND
Total Thallium (Tl)	µg/l	10	NE	NT	NT	NT
Total Zinc (Zn)	µg/l	50	NE	NT	NT	NT
Mercury	µg/l	0.2	0.012	ND	ND	ND
Acetone	µg/l	100	NE	ND	ND	ND
Acrylonitrile	µg/l	200	NE	ND	ND	ND
Benzene	µg/l	5	51	ND	ND	ND
Bromochloromethane	µg/l	5	NE	ND	ND	ND
Bromodichloromethane	µg/l	5	NE	ND	ND	ND
Bromoform	µg/l	5	NE	ND	ND	ND
Carbon Disulfide	µg/l	100	NE	ND	ND	ND
Bromomethane (Methylbromide)	µg/l	10	NE	ND	ND	ND
Carbon tetrachloride	µg/l	10	0.3	ND	ND	ND
Chlorobenzene (mono)	µg/l	5	50	ND	ND	ND
Chloroethane	µg/l	10	NE	ND	ND	ND
Chloroform	µg/l	5	0.19	ND	ND	ND
Chloromethane (Methylchloride)	µg/l	10	NE	ND	ND	ND
Dibromochloromethane	µg/l	5	NE	ND	ND	ND
1,2-Dibromo-3-chloropropane; DBCP	µg/l	25	0.025	ND	ND	ND
1,2-Dibromoethane; Ethylene dibromide	µg/l	5	0.0004	ND	ND	ND
Dibromomethane	µg/l	10	NE	ND	ND	ND
1,2-Dichlorobenzene	µg/l	5	620	ND	ND	ND
1,4-Dichlorobenzene	µg/l	5	75	ND	ND	ND
trans-1,4-Dichloro-2butene	µg/l	100	NE	ND	ND	ND
1,1-Dichloroethane	µg/l	5	700	ND	ND	ND
1,2-Dichloroethane	µg/l	5	0.38	ND	ND	ND
1,1-Dichloroethene (-ethylene)	µg/l	5	7	ND	ND	ND
cis-1,2-Dichloroethene (-ethylene)	µg/l	5	70	ND	ND	ND
trans-1,2-Dichloroethene (-ylene)	µg/l	5	70	ND	ND	ND
1,2-Dichloropropane	µg/l	5	0.56	ND	ND	ND
cis-1,3-Dichloropropene (-propylene)	µg/l	10	NE	ND	ND	ND
trans-1,3-Dichloropropene (-propylene)	µg/l	10	NE	ND	ND	ND
Ethylbenzene	µg/l	5	29	ND	ND	ND
2-Hexanone	µg/l	50	NE	ND	ND	ND
Iodomethane	µg/l	10	NE	ND	ND	ND
Dichloromethane (Methylene chloride)	µg/l	10	5	ND	ND	ND
2-Butanone (Methyl ethyl ketone)	µg/l	100	170	ND	ND	ND
4-Methyl-2-Pentanone	µg/l	100	NE	ND	ND	ND
Styrene	µg/l	10	100	ND	ND	ND
1,1,1,2-Tetrachloroethane	µg/l	5	NE	ND	ND	ND
1,1,2,2-Tetrachloroethane	µg/l	5	NE	ND	ND	ND
Tetrachloroethene (-ethylene)	µg/l	5	0.7	ND	ND	ND
Toluene	µg/l	5	1000	ND	ND	ND
1,1,1-Trichloroethane	µg/l	5	200	ND	ND	ND
1,1,2-Trichloroethane	µg/l	5	NE	ND	ND	ND
Trichloroethene (-ethylene)	µg/l	5	2.8	ND	ND	ND
Trichlorofluoromethane	µg/l	5	2100	ND	ND	ND
1,2,3-Trichloropropane	µg/l	15	NE	ND	ND	ND
Vinyl acetate	µg/l	50	NE	ND	ND	ND
Vinyl chloride	µg/l	10	0.015	ND	ND	ND
Xylene	µg/l	5	530	ND	ND	ND

Notes:
MCL = Maximum Contaminant Level, as established in the NCDENR, "Redbook" Surface Waters and Wetlands Standards Section 15A NCAC 02B.0100, .0200, and .0300.
MDL = Laboratory Method Detection Limit
ND = Not Detected at the method detection limit
NS = Not Sampled
NT = Not Tested
NE = Not Established; North Carolina has not established a MCL
NP = Not Present during sampling event
Shaded cells indicated exceedances of MCLs.

Closed Francis Farm Landfill - Haywood Co., NC
Surface Water Sampling Event (2-16-2006)

TEST	UNITS	MDL	MCL	SW-1	SW-2	Blanton Branch
pH	pH units (on-site)	-	<6.0; >8.5	NT	NT	NT
Specific Conductance	µmhos/cm (on-site)	1	NE	NT	NT	NT
Temperature	°C (on-site)	-	29	NT	NT	NT
Turbidity	NTU (on-site)	0.1	50	NT	NT	NT
Total Antimony (Sb)	µg/l	30	NE	NT	NT	NT
Total Arsenic (As)	µg/l	10	50	ND	ND	ND
Total Barium (Ba)	µg/l	500	NE	ND	ND	ND
Total Beryllium (Be)	µg/l	2	6.5	NT	NT	NT
Total Cadmium (Cd)	µg/l	1	2	ND	ND	ND
Total Chromium (Cr)	µg/l	10	50	ND	ND	ND
Total Cobalt (Co)	µg/l	10	NE	NT	NT	NT
Total Copper (Cu)	µg/l	200	NE	NT	NT	NT
Total Lead (Pb)	µg/l	10	25	ND	ND	ND
Total Nickel (Ni)	µg/l	50	88	NT	NT	NT
Total Selenium (Se)	µg/l	20	5	ND	ND	ND
Total Silver (Ag)	µg/l	10	NE	ND	ND	ND
Total Thallium (Tl)	µg/l	10	NE	NT	NT	NT
Total Zinc (Zn)	µg/l	50	NE	NT	NT	NT
Mercury	µg/l	0.2	0.012	ND	ND	ND
Acetone	µg/l	100	NE	ND	ND	ND
Acrylonitrile	µg/l	200	NE	ND	ND	ND
Benzene	µg/l	5	51	ND	ND	ND
Bromochloromethane	µg/l	5	NE	ND	ND	ND
Bromodichloromethane	µg/l	5	NE	ND	ND	ND
Bromoform	µg/l	5	NE	ND	ND	ND
Carbon Disulfide	µg/l	100	NE	ND	ND	ND
Bromomethane (Methylbromide)	µg/l	10	NE	ND	ND	ND
Carbon tetrachloride	µg/l	10	0.3	ND	ND	ND
Chlorobenzene (mono)	µg/l	5	50	ND	ND	ND
Chloroethane	µg/l	10	NE	ND	ND	ND
Chloroform	µg/l	5	0.19	ND	ND	ND
Chloromethane (Methylchloride)	µg/l	10	NE	ND	ND	ND
Dibromochloromethane	µg/l	5	NE	ND	ND	ND
1,2-Dibromo-3-chloropropane; DBCP	µg/l	25	0.025	ND	ND	ND
1,2-Dibromoethane; Ethylene dibromide	µg/l	5	0.0004	ND	ND	ND
Dibromomethane	µg/l	10	NE	ND	ND	ND
1,2-Dichlorobenzene	µg/l	5	620	ND	ND	ND
1,4-Dichlorobenzene	µg/l	5	75	ND	ND	ND
trans-1,4-Dichloro-2butene	µg/l	100	NE	ND	ND	ND
1,1-Dichloroethane	µg/l	5	700	ND	ND	ND
1,2-Dichloroethane	µg/l	5	0.38	ND	ND	ND
1,1-Dichloroethene (-ethylene)	µg/l	5	7	ND	ND	ND
cis-1,2-Dichloroethene (-ethylene)	µg/l	5	70	ND	ND	ND
trans-1,2-Dichloroethene (-ylene)	µg/l	5	70	ND	ND	ND
1,2-Dichloropropane	µg/l	5	0.56	ND	ND	ND
cis-1,3-Dichloropropene (-propylene)	µg/l	10	NE	ND	ND	ND
trans-1,3-Dichloropropene (-propylene)	µg/l	10	NE	ND	ND	ND
Ethylbenzene	µg/l	5	29	ND	ND	ND
2-Hexanone	µg/l	50	NE	ND	ND	ND
Iodomethane	µg/l	10	NE	ND	ND	ND
Dichloromethane (Methylene chloride)	µg/l	10	5	ND	ND	ND
2-Butanone (Methyl ethyl ketone)	µg/l	100	170	ND	ND	ND
4-Methyl-2-Pentanone	µg/l	100	NE	ND	ND	ND
Styrene	µg/l	10	100	ND	ND	ND
1,1,1,2-Tetrachloroethane	µg/l	5	NE	ND	ND	ND
1,1,2,2-Tetrachloroethane	µg/l	5	NE	ND	ND	ND
Tetrachloroethene (-ethylene)	µg/l	5	0.7	ND	ND	ND
Toluene	µg/l	5	1000	ND	ND	ND
1,1,1-Trichloroethane	µg/l	5	200	ND	ND	ND
1,1,2-Trichloroethane	µg/l	5	NE	ND	ND	ND
Trichloroethene (-ethylene)	µg/l	5	2.8	ND	ND	ND
Trichlorofluoromethane	µg/l	5	2100	ND	ND	ND
1,2,3-Trichloropropane	µg/l	15	NE	ND	ND	ND
Vinyl acetate	µg/l	50	NE	ND	ND	ND
Vinyl chloride	µg/l	10	0.015	ND	ND	ND
Xylene	µg/l	5	530	ND	ND	ND

Notes:
MCL = Maximum Contaminant Level, as established in the NCDENR, "Redbook" Surface Waters and Wetlands Standards Section 15A NCAC 02B.0100, .0200, and .0300.
MDL = Laboratory Method Detection Limit
ND = Not Detected at the method detection limit
NS = Not Sampled
NT = Not Tested
NE = Not Established; North Carolina has not established a MCL
NP = Not Present during sampling event
Shaded cells indicated exceedances of MCLs.

Closed Francis Farm Landfill - Haywood Co., NC
Surface Water Sampling Event (8-30-2006)

TEST	UNITS	MDL	MCL	SW-1	SW-2	Blanton Branch
pH	pH units (on-site)	-	<6.0; >8.5	7.12	7.33	7.05
Specific Conductance	µmhos/cm (on-site)	1	NE	75	96	134
Temperature	°C (on-site)	-	29	21.3	26.2	27.6
Turbidity	NTU (on-site)	0.1	50	NT	NT	NT
Total Antimony (Sb)	µg/l	30	NE	NT	NT	NT
Total Arsenic (As)	µg/l	10	50	ND	ND	ND
Total Barium (Ba)	µg/l	500	NE	33	37	48
Total Beryllium (Be)	µg/l	2	6.5	NT	NT	NT
Total Cadmium (Cd)	µg/l	1	2	ND	ND	ND
Total Chromium (Cr)	µg/l	10	50	ND	ND	ND
Total Cobalt (Co)	µg/l	10	NE	NT	NT	NT
Total Copper (Cu)	µg/l	200	NE	NT	NT	NT
Total Lead (Pb)	µg/l	10	25	ND	ND	ND
Total Nickel (Ni)	µg/l	50	88	NT	NT	NT
Total Selenium (Se)	µg/l	20	5	ND	ND	ND
Total Silver (Ag)	µg/l	10	NE	ND	ND	ND
Total Thallium (Tl)	µg/l	10	NE	NT	NT	NT
Total Zinc (Zn)	µg/l	50	NE	NT	NT	NT
Mercury	µg/l	0.2	0.012	ND	ND	ND
Acetone	µg/l	100	NE	ND	ND	ND
Acrylonitrile	µg/l	200	NE	ND	ND	ND
Benzene	µg/l	5	51	ND	ND	ND
Bromochloromethane	µg/l	5	NE	ND	ND	ND
Bromodichloromethane	µg/l	5	NE	ND	ND	ND
Bromoform	µg/l	5	NE	ND	ND	ND
Carbon Disulfide	µg/l	100	NE	ND	ND	ND
Bromomethane (Methylbromide)	µg/l	10	NE	ND	ND	ND
Carbon tetrachloride	µg/l	10	0.3	ND	ND	ND
Chlorobenzene (mono)	µg/l	5	50	ND	ND	ND
Chloroethane	µg/l	10	NE	ND	ND	ND
Chloroform	µg/l	5	0.19	ND	ND	ND
Chloromethane (Methylchloride)	µg/l	10	NE	ND	ND	ND
Dibromochloromethane	µg/l	5	NE	ND	ND	ND
1,2-Dibromo-3-chloropropane; DBCP	µg/l	25	0.025	ND	ND	ND
1,2-Dibromoethane; Ethylene dibromide	µg/l	5	0.0004	ND	ND	ND
Dibromomethane	µg/l	10	NE	ND	ND	ND
1,2-Dichlorobenzene	µg/l	5	620	ND	ND	ND
1,4-Dichlorobenzene	µg/l	5	75	ND	ND	ND
trans-1,4-Dichloro-2butene	µg/l	100	NE	ND	ND	ND
1,1-Dichloroethane	µg/l	5	700	ND	ND	ND
1,2-Dichloroethane	µg/l	5	0.38	ND	ND	ND
1,1-Dichloroethene (-ethylene)	µg/l	5	7	ND	ND	ND
cis-1,2-Dichloroethene (-ethylene)	µg/l	5	70	ND	ND	ND
trans-1,2-Dichloroethene (-ylene)	µg/l	5	70	ND	ND	ND
1,2-Dichloropropane	µg/l	5	0.56	ND	ND	ND
cis-1,3-Dichloropropene (-propylene)	µg/l	10	NE	ND	ND	ND
trans-1,3-Dichloropropene (-propylene)	µg/l	10	NE	ND	ND	ND
Ethylbenzene	µg/l	5	29	ND	ND	ND
2-Hexanone	µg/l	50	NE	ND	ND	ND
Iodomethane	µg/l	10	NE	ND	ND	ND
Dichloromethane (Methylene chloride)	µg/l	10	5	ND	ND	ND
2-Butanone (Methyl ethyl ketone)	µg/l	100	170	ND	ND	ND
4-Methyl-2-Pentanone	µg/l	100	NE	ND	ND	ND
Styrene	µg/l	10	100	ND	ND	ND
1,1,1,2-Tetrachloroethane	µg/l	5	NE	ND	ND	ND
1,1,2,2-Tetrachloroethane	µg/l	5	NE	ND	ND	ND
Tetrachloroethene (-ethylene)	µg/l	5	0.7	ND	ND	ND
Toluene	µg/l	5	1000	ND	ND	ND
1,1,1-Trichloroethane	µg/l	5	200	ND	ND	ND
1,1,2-Trichloroethane	µg/l	5	NE	ND	ND	ND
Trichloroethene (-ethylene)	µg/l	5	2.8	ND	ND	ND
Trichlorofluoromethane	µg/l	5	2100	ND	ND	ND
1,2,3-Trichloropropane	µg/l	15	NE	ND	ND	ND
Vinyl acetate	µg/l	50	NE	ND	ND	ND
Vinyl chloride	µg/l	10	0.015	ND	ND	ND
Xylene	µg/l	5	530	ND	ND	ND

Notes:
MCL = Maximum Contaminant Level, as established in the NCDENR, "Redbook" Surface Waters and Wetlands Standards Section 15A NCAC 02B.0100, .0200, and .0300.
MDL = Laboratory Method Detection Limit
ND = Not Detected at the method detection limit
NS = Not Sampled
NT = Not Tested
NE = Not Established; North Carolina has not established a MCL
NP = Not Present during sampling event
Shaded cells indicated exceedances of MCLs.

Closed Francis Farm Landfill - Haywood Co., NC
Surface Water Sampling Event (2-26-2007)

TEST	UNITS	MDL	MCL	SW-1	SW-2	Blanton Branch
pH	pH units (on-site)	-	<6.0; >8.5	7.18	7.36	7.36
Specific Conductance	µmhos/cm (on-site)	1	NE	62	206	91
Temperature	°C (on-site)	-	29	12.3	12.3	12.6
Turbidity	NTU (on-site)	0.1	50	NT	NT	NT
Total Antimony (Sb)	µg/l	30	NE	NT	NT	NT
Total Arsenic (As)	µg/l	5	50	ND	ND	ND
Total Barium (Ba)	µg/l	5	NE	34	36	36
Total Beryllium (Be)	µg/l	2	6.5	NT	NT	NT
Total Cadmium (Cd)	µg/l	1	2	ND	ND	ND
Total Chromium (Cr)	µg/l	5	50	ND	ND	ND
Total Cobalt (Co)	µg/l	10	NE	NT	NT	NT
Total Copper (Cu)	µg/l	200	NE	NT	NT	NT
Total Lead (Pb)	µg/l	5	25	ND	ND	ND
Total Nickel (Ni)	µg/l	50	88	NT	NT	NT
Total Selenium (Se)	µg/l	10	5	ND	ND	ND
Total Silver (Ag)	µg/l	5	NE	ND	ND	ND
Total Thallium (Tl)	µg/l	10	NE	NT	NT	NT
Total Zinc (Zn)	µg/l	50	NE	NT	NT	NT
Mercury	µg/l	0.2	0.012	ND	ND	ND
Acetone	µg/l	25	NE	ND	ND	ND
Acrylonitrile	µg/l	25	NE	ND	ND	ND
Benzene	µg/l	5	51	ND	ND	ND
Bromochloromethane	µg/l	5	NE	ND	ND	ND
Bromodichloromethane	µg/l	5	NE	ND	ND	ND
Bromoform	µg/l	5	NE	ND	ND	ND
Carbon Disulfide	µg/l	10	NE	ND	ND	ND
Bromomethane (Methylbromide)	µg/l	5	NE	ND	ND	ND
Carbon tetrachloride	µg/l	5	0.3	ND	ND	ND
Chlorobenzene (mono)	µg/l	5	50	ND	ND	ND
Chloroethane	µg/l	10	NE	ND	ND	ND
Chloroform	µg/l	5	0.19	ND	ND	ND
Chloromethane (Methylchloride)	µg/l	5	NE	ND	ND	ND
Dibromochloromethane	µg/l	5	NE	ND	ND	ND
1,2-Dibromo-3-chloropropane; DBCP	µg/l	5	0.025	ND	ND	ND
1,2-Dibromoethane; Ethylene dibromide	µg/l	5	0.0004	ND	ND	ND
Dibromomethane	µg/l	5	NE	ND	ND	ND
1,2-Dichlorobenzene	µg/l	5	620	ND	ND	ND
1,4-Dichlorobenzene	µg/l	5	75	ND	ND	ND
trans-1,4-Dichloro-2butene	µg/l	5	NE	ND	ND	ND
1,1-Dichloroethane	µg/l	5	700	ND	ND	ND
1,2-Dichloroethane	µg/l	5	0.38	ND	ND	ND
1,1-Dichloroethene (-ethylene)	µg/l	5	7	ND	ND	ND
cis-1,2-Dichloroethene (-ethylene)	µg/l	5	70	ND	ND	ND
trans-1,2-Dichloroethene (-ylene)	µg/l	5	70	ND	ND	ND
1,2-Dichloropropane	µg/l	5	0.56	ND	ND	ND
cis-1,3-Dichloropropene (-propylene)	µg/l	5	NE	ND	ND	ND
trans-1,3-Dichloropropene (-propylene)	µg/l	5	NE	ND	ND	ND
Ethylbenzene	µg/l	5	29	ND	ND	ND
2-Hexanone	µg/l	10	NE	ND	ND	ND
Iodomethane	µg/l	10	NE	ND	ND	ND
Dichloromethane (Methylene chloride)	µg/l	5	5	ND	ND	ND
2-Butanone (Methyl ethyl ketone)	µg/l	10	170	ND	ND	ND
4-Methyl-2-Pentanone	µg/l	10	NE	ND	ND	ND
Styrene	µg/l	5	100	ND	ND	ND
1,1,1,2-Tetrachloroethane	µg/l	5	NE	ND	ND	ND
1,1,2,2-Tetrachloroethane	µg/l	5	NE	ND	ND	ND
Tetrachloroethene (-ethylene)	µg/l	5	0.7	ND	ND	ND
Toluene	µg/l	5	1000	ND	ND	ND
1,1,1-Trichloroethane	µg/l	5	200	ND	ND	ND
1,1,2-Trichloroethane	µg/l	5	NE	ND	ND	ND
Trichloroethene (-ethylene)	µg/l	5	2.8	ND	ND	ND
Trichlorofluoromethane	µg/l	10	2100	ND	ND	ND
1,2,3-Trichloropropane	µg/l	5	NE	ND	ND	ND
Vinyl acetate	µg/l	10	NE	ND	ND	ND
Vinyl chloride	µg/l	5	0.015	ND	ND	ND
Xylene	µg/l	10	530	ND	ND	ND

Notes:
MCL = Maximum Contaminant Level, as established in the NCDENR, "Redbook" Surface Waters and Wetlands Standards Section 15A NCAC 02B.0100, .0200, and .0300.
MDL = Laboratory Method Detection Limit
ND = Not Detected at the method detection limit
NS = Not Sampled
NT = Not Tested
NE = Not Established; North Carolina has not established a MCL
NP = Not Present during sampling event
Shaded cells indicated exceedances of MCLs.

APPENDIX C

Laboratory Analytical Results

Sampling Event
February 26, 2007

Pace Analytical™
www.pacelabs.com

Pace Analytical Services, Inc.
9800 Kincey Avenue, Suite 100
Huntersville, NC 28078
Phone: 704.875.9092
Fax: 704.875.9091

May 23, 2007

Mr. Stephen King
Haywood County Solid Waste Mgt
278 Recycle Road
Clyde, NC 28721

RE: Lab Project Number: 92138920
Client Project ID: Francis Farm Landfill

Dear Mr. King:

Enclosed are the analytical results for sample(s) received by the laboratory on February 26, 2007. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

Inorganic Wet Chemistry and Metals Analyses were performed at our Pace Asheville laboratory and Organic testing was performed at our Pace Charlotte laboratory unless otherwise footnoted.

If you have any questions concerning this report please feel free to contact me.

Sincerely,

Tom R. Williams

Tom Williams
tom.williams@pacelabs.com
(828) 254-7176
Project Manager

Enclosures

Pace Analytical
www.pacelabs.com

Pace Analytical Services, Inc.
9800 Kincey Avenue, Suite 100
Huntersville, NC 28078
Phone: 704.875.9092
Fax: 704.875.9091

Lab Project Number: 92138920
Client Project ID: Francis Farm Landfill

Lab Sample No: 928057330 | Project Sample Number: 92138920-001 | Date Collected: 02/26/07 13:30
Client Sample ID: MW-1A | Matrix: Water | Date Received: 02/26/07 17:00

Parameters	Results	Units	Report Limit	Analyzed	By	CAS No.	Qual	RegLmt
Field Services								
Monitoring Well Data	Method:							
Collected By	MPS			03/05/07	MPS			
Collected Date	2-26-07			03/05/07	MPS			
Collected Time	13:30			03/05/07	MPS			
Field pH	6.07			03/05/07	MPS			
Field Specific Conductance	388			03/05/07	MPS			
Field Temperature	14.1			03/05/07	MPS			
Static Water Level	46.45			03/05/07	MPS			
Metals								
Metals by Trace ICP	Prep/Method: EPA 3010 / EPA 6010							
Arsenic	ND	ug/l	5.0	03/04/07 17:35	JDA1	7440-38-2		
Barium	210	ug/l	5.0	03/04/07 17:35	JDA1	7440-39-3		
Cadmium	ND	ug/l	1.0	03/04/07 17:35	JDA1	7440-43-9		
Chromium	ND	ug/l	5.0	03/04/07 17:35	JDA1	7440-47-3		
Lead	ND	ug/l	5.0	03/04/07 17:35	JDA1	7439-92-1		
Selenium	ND	ug/l	10.	03/04/07 17:35	JDA1	7782-49-2		
Silver	ND	ug/l	5.0	03/04/07 17:35	JDA1	7440-22-4		
Date Digested	03/02/07 11:45			03/02/07 11:45				
Mercury, CVAAS, in Water	Method: EPA 7470							
Mercury	ND	ug/l	0.20	02/28/07 13:08	ALV	7439-97-6		
GC/MS Volatiles								
GC/MS VOCs by 8260	Method: EPA 8260							
Acetone	ND	ug/l	25.	03/04/07 14:46	MCK	67-64-1		
Acrylonitrile	ND	ug/l	25.	03/04/07 14:46	MCK	107-13-1		
Benzene	ND	ug/l	5.0	03/04/07 14:46	MCK	71-43-2		
Bromobenzene	ND	ug/l	5.0	03/04/07 14:46	MCK	108-86-1		
Bromochloromethane	ND	ug/l	5.0	03/04/07 14:46	MCK	74-97-5		
Bromodichloromethane	ND	ug/l	5.0	03/04/07 14:46	MCK	75-27-4		
Bromoform	ND	ug/l	5.0	03/04/07 14:46	MCK	75-25-2		
Bromomethane	ND	ug/l	5.0	03/04/07 14:46	MCK	74-83-9		
2-Butanone (MEK)	ND	ug/l	10.	03/04/07 14:46	MCK	78-93-3		
Carbon disulfide	ND	ug/l	10.	03/04/07 14:46	MCK	75-15-0		
Carbon tetrachloride	ND	ug/l	5.0	03/04/07 14:46	MCK	56-23-5		
Chlorobenzene	ND	ug/l	5.0	03/04/07 14:46	MCK	108-90-7		
Chloroethane	ND	ug/l	10.	03/04/07 14:46	MCK	75-00-3		

Asheville Certification IDs
NC Wastewater 40
NC Drinking Water 37712
SC Environmental 99030
FL NELAP E87648

REPORT OF LABORATORY ANALYSIS
This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, Inc.

Charlotte Certification IDs
NC Wastewater 12
NC Drinking Water 37706
SC 99006
FL NELAP E87627

Pace Analytical
www.pacelabs.com

Pace Analytical Services, Inc.
9800 Kincey Avenue, Suite 100
Huntersville, NC 28078
Phone: 704.875.9092
Fax: 704.875.9091

Lab Project Number: 92138920
Client Project ID: Francis Farm Landfill

Lab Sample No: 928057330 | Project Sample Number: 92138920-001 | Date Collected: 02/26/07 13:30
Client Sample ID: MW-1A | Matrix: Water | Date Received: 02/26/07 17:00

Parameters	Results	Units	Report Limit	Analyzed	By	CAS No.	Qual	RegLmt
Chloroform	ND	ug/l	5.0	03/04/07 14:46	MCK	67-66-3		
Chloromethane	ND	ug/l	5.0	03/04/07 14:46	MCK	74-87-3		
1,2-Dibromo-3-chloropropane	ND	ug/l	5.0	03/04/07 14:46	MCK	96-12-8		
Dibromochloromethane	ND	ug/l	5.0	03/04/07 14:46	MCK	124-48-1		
1,2-Dibromoethane (EDB)	ND	ug/l	5.0	03/04/07 14:46	MCK	106-93-4		
Dibromomethane	ND	ug/l	5.0	03/04/07 14:46	MCK	74-95-3		
1,2-Dichlorobenzene	ND	ug/l	5.0	03/04/07 14:46	MCK	95-50-1		
1,4-Dichlorobenzene	ND	ug/l	5.0	03/04/07 14:46	MCK	106-46-7		
trans-1,4-Dichloro-2-butene	ND	ug/l	5.0	03/04/07 14:46	MCK	110-57-6		
1,1-Dichloroethane	ND	ug/l	5.0	03/04/07 14:46	MCK	75-34-3		
1,2-Dichloroethane	ND	ug/l	5.0	03/04/07 14:46	MCK	107-06-2		
1,2-Dichloroethene (Total)	ND	ug/l	5.0	03/04/07 14:46	MCK	540-59-0		
1,1-Dichloroethene	ND	ug/l	5.0	03/04/07 14:46	MCK	75-35-4		
cis-1,2-Dichloroethene	ND	ug/l	5.0	03/04/07 14:46	MCK	156-59-2		
trans-1,2-Dichloroethene	ND	ug/l	5.0	03/04/07 14:46	MCK	156-60-5		
1,2-Dichloropropane	ND	ug/l	5.0	03/04/07 14:46	MCK	78-87-5		
cis-1,3-Dichloropropene	ND	ug/l	5.0	03/04/07 14:46	MCK	10061-01-5		
trans-1,3-Dichloropropene	ND	ug/l	5.0	03/04/07 14:46	MCK	10061-02-6		
Ethylbenzene	ND	ug/l	5.0	03/04/07 14:46	MCK	100-41-4		
2-Hexanone	ND	ug/l	10.	03/04/07 14:46	MCK	591-78-6		
Iodomethane	ND	ug/l	10.	03/04/07 14:46	MCK	74-88-4		
Methylene chloride	ND	ug/l	5.0	03/04/07 14:46	MCK	75-09-2		
4-Methyl-2-pentanone (MIBK)	ND	ug/l	10.	03/04/07 14:46	MCK	108-10-1		
Styrene	ND	ug/l	5.0	03/04/07 14:46	MCK	100-42-5		
1,1,1,2-Tetrachloroethane	ND	ug/l	5.0	03/04/07 14:46	MCK	630-20-6		
1,1,2,2-Tetrachloroethane	ND	ug/l	5.0	03/04/07 14:46	MCK	79-34-5		
Tetrachloroethene	ND	ug/l	5.0	03/04/07 14:46	MCK	127-18-4		
Toluene	ND	ug/l	5.0	03/04/07 14:46	MCK	108-88-3		
1,1,1-Trichloroethane	ND	ug/l	5.0	03/04/07 14:46	MCK	71-55-6		
1,1,2-Trichloroethane	ND	ug/l	5.0	03/04/07 14:46	MCK	79-00-5		
Trichloroethene	ND	ug/l	5.0	03/04/07 14:46	MCK	79-01-6		
Trichlorofluoromethane	ND	ug/l	10.	03/04/07 14:46	MCK	75-69-4		
1,2,3-Trichloropropane	ND	ug/l	5.0	03/04/07 14:46	MCK	96-18-4		
Vinyl acetate	ND	ug/l	10.	03/04/07 14:46	MCK	108-05-4		
Vinyl chloride	ND	ug/l	5.0	03/04/07 14:46	MCK	75-01-4		
Xylene (Total)	ND	ug/l	10.	03/04/07 14:46	MCK	1330-20-7		
m&p-Xylene	ND	ug/l	10.	03/04/07 14:46	MCK			
o-Xylene	ND	ug/l	5.0	03/04/07 14:46	MCK	95-47-6		
Toluene-d8 (S)	98	%		03/04/07 14:46	MCK	2037-26-5		

Asheville Certification IDs
NC Wastewater 40
NC Drinking Water 37712
SC Environmental 99030
FL NELAP E87648

REPORT OF LABORATORY ANALYSIS
This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, Inc.

Charlotte Certification IDs
NC Wastewater 12
NC Drinking Water 37706
SC 99006
FL NELAP E87627

Pace Analytical Services, Inc.
9800 Kincey Avenue, Suite 100
Huntersville, NC 28078
Phone: 704.875.9092
Fax: 704.875.9091

Lab Project Number: 92138920
Client Project ID: Francis Farm Landfill

Lab Sample No: 928057330 Project Sample Number: 92138920-001 Date Collected: 02/26/07 13:30
Client Sample ID: MW-1A Matrix: Water Date Received: 02/26/07 17:00

Parameters	Results	Units	Report Limit	Analyzed	By	CAS No.	Qual	RegLmt
4-Bromofluorobenzene (S)	110	%		03/04/07 14:46	MCK	460-00-4		
Dibromofluoromethane (S)	97	%		03/04/07 14:46	MCK	1868-53-7		
1,2-Dichloroethane-d4 (S)	114	%		03/04/07 14:46	MCK	17060-07-0		

Asheville Certification IDs
NC Wastewater 40
NC Drinking Water 37712
SC Environmental 99030
FL NELAP E87648

REPORT OF LABORATORY ANALYSIS
This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, Inc.

Charlotte Certification IDs
NC Wastewater 12
NC Drinking Water 37706
SC 99006
FL NELAP E87627

Pace Analytical
www.pacelabs.com

Pace Analytical Services, Inc.
9800 Kincey Avenue, Suite 100
Huntersville, NC 28078
Phone: 704.875.9092
Fax: 704.875.9091

Lab Project Number: 92138920
Client Project ID: Francis Farm Landfill

Lab Sample No: 928057348 | Project Sample Number: 92138920-002 | Date Collected: 02/26/07 14:40
Client Sample ID: MW-2A | Matrix: Water | Date Received: 02/26/07 17:00

Parameters	Results	Units	Report Limit	Analyzed	By	CAS No.	Qual	RegLmt
Field Services								
Monitoring Well Data	Method:							
Collected By	MPS			03/05/07	MPS			
Collected Date	2-26-07			03/05/07	MPS			
Collected Time	14:40			03/05/07	MPS			
Field pH	6.60			03/05/07	MPS			
Field Specific Conductance	756			03/05/07	MPS			
Field Temperature	12.1			03/05/07	MPS			
Static Water Level	25.87			03/05/07	MPS			
Metals								
Metals by Trace ICP	Prep/Method: EPA 3010 / EPA 6010							
Arsenic	5.9	ug/l	5.0	03/04/07 17:41	JDA1	7440-38-2		
Barium	240	ug/l	5.0	03/04/07 17:41	JDA1	7440-39-3		
Cadmium	ND	ug/l	1.0	03/04/07 17:41	JDA1	7440-43-9		
Chromium	ND	ug/l	5.0	03/04/07 17:41	JDA1	7440-47-3		
Lead	ND	ug/l	5.0	03/04/07 17:41	JDA1	7439-92-1		
Selenium	ND	ug/l	10.	03/04/07 17:41	JDA1	7782-49-2		
Silver	ND	ug/l	5.0	03/04/07 17:41	JDA1	7440-22-4		
Date Digested	03/02/07 11:45			03/02/07 11:45				
Mercury, CVAAS, in Water	Method: EPA 7470							
Mercury	ND	ug/l	0.20	02/28/07 13:10	ALV	7439-97-6		
GC/MS Volatiles								
GC/MS VOCs by 8260	Method: EPA 8260							
Acetone	ND	ug/l	25.	03/04/07 15:02	MCK	67-64-1		
Acrylonitrile	ND	ug/l	25.	03/04/07 15:02	MCK	107-13-1		
Benzene	ND	ug/l	5.0	03/04/07 15:02	MCK	71-43-2		
Bromobenzene	ND	ug/l	5.0	03/04/07 15:02	MCK	108-86-1		
Bromochloromethane	ND	ug/l	5.0	03/04/07 15:02	MCK	74-97-5		
Bromodichloromethane	ND	ug/l	5.0	03/04/07 15:02	MCK	75-27-4		
Bromoform	ND	ug/l	5.0	03/04/07 15:02	MCK	75-25-2		
Bromomethane	ND	ug/l	5.0	03/04/07 15:02	MCK	74-83-9		
2-Butanone (MEK)	ND	ug/l	10.	03/04/07 15:02	MCK	78-93-3		
Carbon disulfide	ND	ug/l	10.	03/04/07 15:02	MCK	75-15-0		
Carbon tetrachloride	ND	ug/l	5.0	03/04/07 15:02	MCK	56-23-5		
Chlorobenzene	ND	ug/l	5.0	03/04/07 15:02	MCK	108-90-7		
Chloroethane	ND	ug/l	10.	03/04/07 15:02	MCK	75-00-3		

Asheville Certification IDs
NC Wastewater 40
NC Drinking Water 37712
SC Environmental 99030
FL NELAP E87648

REPORT OF LABORATORY ANALYSIS
This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, Inc.

Charlotte Certification IDs
NC Wastewater 12
NC Drinking Water 37706
SC 99006
FL NELAP E87627

Pace Analytical
www.pacelabs.com

Pace Analytical Services, Inc.
9800 Kincey Avenue, Suite 100
Huntersville, NC 28078
Phone: 704.875.9092
Fax: 704.875.9091

Lab Project Number: 92138920
Client Project ID: Francis Farm Landfill

Lab Sample No: 928057348 | Project Sample Number: 92138920-002 | Date Collected: 02/26/07 14:40
Client Sample ID: MW-2A | Matrix: Water | Date Received: 02/26/07 17:00

Parameters	Results	Units	Report Limit	Analyzed	By	CAS No.	Qual	RegLmt
Chloroform	ND	ug/l	5.0	03/04/07 15:02	MCK	67-66-3		
Chloromethane	ND	ug/l	5.0	03/04/07 15:02	MCK	74-87-3		
1,2-Dibromo-3-chloropropane	ND	ug/l	5.0	03/04/07 15:02	MCK	96-12-8		
Dibromochloromethane	ND	ug/l	5.0	03/04/07 15:02	MCK	124-48-1		
1,2-Dibromoethane (EDB)	ND	ug/l	5.0	03/04/07 15:02	MCK	106-93-4		
Dibromomethane	ND	ug/l	5.0	03/04/07 15:02	MCK	74-95-3		
1,2-Dichlorobenzene	ND	ug/l	5.0	03/04/07 15:02	MCK	95-50-1		
1,4-Dichlorobenzene	ND	ug/l	5.0	03/04/07 15:02	MCK	106-46-7		
trans-1,4-Dichloro-2-butene	ND	ug/l	5.0	03/04/07 15:02	MCK	110-57-6		
1,1-Dichloroethane	ND	ug/l	5.0	03/04/07 15:02	MCK	75-34-3		
1,2-Dichloroethane	ND	ug/l	5.0	03/04/07 15:02	MCK	107-06-2		
1,2-Dichloroethene (Total)	13.	ug/l	5.0	03/04/07 15:02	MCK	540-59-0		
1,1-Dichloroethene	ND	ug/l	5.0	03/04/07 15:02	MCK	75-35-4		
cis-1,2-Dichloroethene	12.	ug/l	5.0	03/04/07 15:02	MCK	156-59-2		
trans-1,2-Dichloroethene	ND	ug/l	5.0	03/04/07 15:02	MCK	156-60-5		
1,2-Dichloropropane	ND	ug/l	5.0	03/04/07 15:02	MCK	78-87-5		
cis-1,3-Dichloropropene	ND	ug/l	5.0	03/04/07 15:02	MCK	10061-01-5		
trans-1,3-Dichloropropene	ND	ug/l	5.0	03/04/07 15:02	MCK	10061-02-6		
Ethylbenzene	ND	ug/l	5.0	03/04/07 15:02	MCK	100-41-4		
2-Hexanone	ND	ug/l	10.	03/04/07 15:02	MCK	591-78-6		
Iodomethane	ND	ug/l	10.	03/04/07 15:02	MCK	74-88-4		
Methylene chloride	ND	ug/l	5.0	03/04/07 15:02	MCK	75-09-2		
4-Methyl-2-pentanone (MIBK)	ND	ug/l	10.	03/04/07 15:02	MCK	108-10-1		
Styrene	ND	ug/l	5.0	03/04/07 15:02	MCK	100-42-5		
1,1,1,2-Tetrachloroethane	ND	ug/l	5.0	03/04/07 15:02	MCK	630-20-6		
1,1,2,2-Tetrachloroethane	ND	ug/l	5.0	03/04/07 15:02	MCK	79-34-5		
Tetrachloroethene	ND	ug/l	5.0	03/04/07 15:02	MCK	127-18-4		
Toluene	ND	ug/l	5.0	03/04/07 15:02	MCK	108-88-3		
1,1,1-Trichloroethane	ND	ug/l	5.0	03/04/07 15:02	MCK	71-55-6		
1,1,2-Trichloroethane	ND	ug/l	5.0	03/04/07 15:02	MCK	79-00-5		
Trichloroethene	ND	ug/l	5.0	03/04/07 15:02	MCK	79-01-6		
Trichlorofluoromethane	ND	ug/l	10.	03/04/07 15:02	MCK	75-69-4		
1,2,3-Trichloropropane	ND	ug/l	5.0	03/04/07 15:02	MCK	96-18-4		
Vinyl acetate	ND	ug/l	10.	03/04/07 15:02	MCK	108-05-4		
Vinyl chloride	ND	ug/l	5.0	03/04/07 15:02	MCK	75-01-4		
Xylene (Total)	ND	ug/l	10.	03/04/07 15:02	MCK	1330-20-7		
m&p-Xylene	ND	ug/l	10.	03/04/07 15:02	MCK			
o-Xylene	ND	ug/l	5.0	03/04/07 15:02	MCK	95-47-6		
Toluene-d8 (S)	99	%		03/04/07 15:02	MCK	2037-26-5		

Asheville Certification IDs
NC Wastewater 40
NC Drinking Water 37712
SC Environmental 99030
FL NELAP E87648

REPORT OF LABORATORY ANALYSIS
This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, Inc.

Charlotte Certification IDs
NC Wastewater 12
NC Drinking Water 37706
SC 99006
FL NELAP E87627

Pace Analytical Services, Inc.
9800 Kincey Avenue, Suite 100
Huntersville, NC 28078
Phone: 704.875.9092
Fax: 704.875.9091

Lab Project Number: 92138920
Client Project ID: Francis Farm Landfill

Lab Sample No: 928057348 Project Sample Number: 92138920-002 Date Collected: 02/26/07 14:40
Client Sample ID: MW-2A Matrix: Water Date Received: 02/26/07 17:00

Parameters	Results	Units	Report Limit	Analyzed	By	CAS No.	Qual	RegLmt
4-Bromofluorobenzene (S)	107	%		03/04/07 15:02	MCK	460-00-4		
Dibromofluoromethane (S)	98	%		03/04/07 15:02	MCK	1868-53-7		
1,2-Dichloroethane-d4 (S)	112	%		03/04/07 15:02	MCK	17060-07-0		

Asheville Certification IDs
NC Wastewater 40
NC Drinking Water 37712
SC Environmental 99030
FL NELAP E87648

REPORT OF LABORATORY ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Charlotte Certification IDs
NC Wastewater 12
NC Drinking Water 37706
SC 99006
FL NELAP E87627

Pace Analytical
www.pacelabs.com

Pace Analytical Services, Inc.
9800 Kincey Avenue, Suite 100
Huntersville, NC 28078
Phone: 704.875.9092
Fax: 704.875.9091

Lab Project Number: 92138920
Client Project ID: Francis Farm Landfill

Lab Sample No: 928057355 | Project Sample Number: 92138920-003 | Date Collected: 02/26/07 14:10
Client Sample ID: MW-3A | Matrix: Water | Date Received: 02/26/07 17:00

Parameters	Results	Units	Report Limit	Analyzed	By	CAS No.	Qual	RegLmt
Field Services								
Monitoring Well Data	Method:							
Collected By	MPS			03/07/07	MPS			
Collected Date	2-26-07			03/07/07	MPS			
Collected Time	14:10			03/07/07	MPS			
Field pH	6.29			03/07/07	MPS			
Field Specific Conductance	548			03/07/07	MPS			
Field Temperature	13.1			03/07/07	MPS			
Static Water Level	40.17			03/07/07	MPS			
Metals								
Metals by Trace ICP	Prep/Method: EPA 3010 / EPA 6010							
Arsenic	ND	ug/l	5.0	03/04/07 17:47	JDA1	7440-38-2		
Barium	300	ug/l	5.0	03/04/07 17:47	JDA1	7440-39-3		
Cadmium	ND	ug/l	1.0	03/04/07 17:47	JDA1	7440-43-9		
Chromium	ND	ug/l	5.0	03/04/07 17:47	JDA1	7440-47-3		
Lead	ND	ug/l	5.0	03/04/07 17:47	JDA1	7439-92-1		
Selenium	ND	ug/l	10.	03/04/07 17:47	JDA1	7782-49-2		
Silver	ND	ug/l	5.0	03/04/07 17:47	JDA1	7440-22-4		
Date Digested	03/02/07 11:45			03/02/07 11:45				
Mercury, CVAAS, in Water	Method: EPA 7470							
Mercury	ND	ug/l	0.20	02/28/07 13:13	ALV	7439-97-6		
GC/MS Volatiles								
GC/MS VOCs by 8260	Method: EPA 8260							
Acetone	ND	ug/l	25.	03/04/07 15:18	MCK	67-64-1		
Acrylonitrile	ND	ug/l	25.	03/04/07 15:18	MCK	107-13-1		
Benzene	ND	ug/l	5.0	03/04/07 15:18	MCK	71-43-2		
Bromobenzene	ND	ug/l	5.0	03/04/07 15:18	MCK	108-86-1		
Bromochloromethane	ND	ug/l	5.0	03/04/07 15:18	MCK	74-97-5		
Bromodichloromethane	ND	ug/l	5.0	03/04/07 15:18	MCK	75-27-4		
Bromoform	ND	ug/l	5.0	03/04/07 15:18	MCK	75-25-2		
Bromomethane	ND	ug/l	5.0	03/04/07 15:18	MCK	74-83-9		
2-Butanone (MEK)	ND	ug/l	10.	03/04/07 15:18	MCK	78-93-3		
Carbon disulfide	ND	ug/l	10.	03/04/07 15:18	MCK	75-15-0		
Carbon tetrachloride	ND	ug/l	5.0	03/04/07 15:18	MCK	56-23-5		
Chlorobenzene	ND	ug/l	5.0	03/04/07 15:18	MCK	108-90-7		
Chloroethane	ND	ug/l	10.	03/04/07 15:18	MCK	75-00-3		

Asheville Certification IDs
NC Wastewater 40
NC Drinking Water 37712
SC Environmental 99030
FL NELAP E87648

REPORT OF LABORATORY ANALYSIS
This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, Inc.

Charlotte Certification IDs
NC Wastewater 12
NC Drinking Water 37706
SC 99006
FL NELAP E87627

Pace Analytical™
www.pacelabs.com

Pace Analytical Services, Inc.
9800 Kincey Avenue, Suite 100
Huntersville, NC 28078
Phone: 704.875.9092
Fax: 704.875.9091

Lab Project Number: 92138920
Client Project ID: Francis Farm Landfill

Lab Sample No: 928057355 | Project Sample Number: 92138920-003 | Date Collected: 02/26/07 14:10
Client Sample ID: MW-3A | Matrix: Water | Date Received: 02/26/07 17:00

Parameters	Results	Units	Report Limit	Analyzed	By	CAS No.	Qual	RegLmt
Chloroform	ND	ug/l	5.0	03/04/07 15:18	MCK	67-66-3		
Chloromethane	ND	ug/l	5.0	03/04/07 15:18	MCK	74-87-3		
1,2-Dibromo-3-chloropropane	ND	ug/l	5.0	03/04/07 15:18	MCK	96-12-8		
Dibromochloromethane	ND	ug/l	5.0	03/04/07 15:18	MCK	124-48-1		
1,2-Dibromoethane (EDB)	ND	ug/l	5.0	03/04/07 15:18	MCK	106-93-4		
Dibromomethane	ND	ug/l	5.0	03/04/07 15:18	MCK	74-95-3		
1,2-Dichlorobenzene	ND	ug/l	5.0	03/04/07 15:18	MCK	95-50-1		
1,4-Dichlorobenzene	ND	ug/l	5.0	03/04/07 15:18	MCK	106-46-7		
trans-1,4-Dichloro-2-butene	ND	ug/l	5.0	03/04/07 15:18	MCK	110-57-6		
1,1-Dichloroethane	17.	ug/l	5.0	03/04/07 15:18	MCK	75-34-3		
1,2-Dichloroethane	ND	ug/l	5.0	03/04/07 15:18	MCK	107-06-2		
1,2-Dichloroethene (Total)	ND	ug/l	5.0	03/04/07 15:18	MCK	540-59-0		
1,1-Dichloroethene	ND	ug/l	5.0	03/04/07 15:18	MCK	75-35-4		
cis-1,2-Dichloroethene	ND	ug/l	5.0	03/04/07 15:18	MCK	156-59-2		
trans-1,2-Dichloroethene	ND	ug/l	5.0	03/04/07 15:18	MCK	156-60-5		
1,2-Dichloropropane	ND	ug/l	5.0	03/04/07 15:18	MCK	78-87-5		
cis-1,3-Dichloropropene	ND	ug/l	5.0	03/04/07 15:18	MCK	10061-01-5		
trans-1,3-Dichloropropene	ND	ug/l	5.0	03/04/07 15:18	MCK	10061-02-6		
Ethylbenzene	ND	ug/l	5.0	03/04/07 15:18	MCK	100-41-4		
2-Hexanone	ND	ug/l	10.	03/04/07 15:18	MCK	591-78-6		
Iodomethane	ND	ug/l	10.	03/04/07 15:18	MCK	74-88-4		
Methylene chloride	ND	ug/l	5.0	03/04/07 15:18	MCK	75-09-2		
4-Methyl-2-pentanone (MIBK)	ND	ug/l	10.	03/04/07 15:18	MCK	108-10-1		
Styrene	ND	ug/l	5.0	03/04/07 15:18	MCK	100-42-5		
1,1,1,2-Tetrachloroethane	ND	ug/l	5.0	03/04/07 15:18	MCK	630-20-6		
1,1,2,2-Tetrachloroethane	ND	ug/l	5.0	03/04/07 15:18	MCK	79-34-5		
Tetrachloroethene	ND	ug/l	5.0	03/04/07 15:18	MCK	127-18-4		
Toluene	ND	ug/l	5.0	03/04/07 15:18	MCK	108-88-3		
1,1,1-Trichloroethane	ND	ug/l	5.0	03/04/07 15:18	MCK	71-55-6		
1,1,2-Trichloroethane	ND	ug/l	5.0	03/04/07 15:18	MCK	79-00-5		
Trichloroethene	ND	ug/l	5.0	03/04/07 15:18	MCK	79-01-6		
Trichlorofluoromethane	ND	ug/l	10.	03/04/07 15:18	MCK	75-69-4		
1,2,3-Trichloropropane	ND	ug/l	5.0	03/04/07 15:18	MCK	96-18-4		
Vinyl acetate	ND	ug/l	10.	03/04/07 15:18	MCK	108-05-4		
Vinyl chloride	ND	ug/l	5.0	03/04/07 15:18	MCK	75-01-4		
Xylene (Total)	ND	ug/l	10.	03/04/07 15:18	MCK	1330-20-7		
m&p-Xylene	ND	ug/l	10.	03/04/07 15:18	MCK			
o-Xylene	ND	ug/l	5.0	03/04/07 15:18	MCK	95-47-6		
Toluene-d8 (S)	99	%		03/04/07 15:18	MCK	2037-26-5		

Asheville Certification IDs
NC Wastewater 40
NC Drinking Water 37712
SC Environmental 99030
FL NELAP E87648

REPORT OF LABORATORY ANALYSIS
This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, Inc.

Charlotte Certification IDs
NC Wastewater 12
NC Drinking Water 37706
SC 99006
FL NELAP E87627

Pace Analytical™
www.pacelabs.com

Pace Analytical Services, Inc.
9800 Kincey Avenue, Suite 100
Huntersville, NC 28078
Phone: 704.875.9092
Fax: 704.875.9091

F

Lab Project Number: 92138920
Client Project ID: Francis Farm Landfill

Lab Sample No: 928057355 | Project Sample Number: 92138920-003 | Date Collected: 02/26/07 14:10
Client Sample ID: MW-3A | Matrix: Water | Date Received: 02/26/07 17:00

Parameters	Results	Units	Report Limit	Analyzed	By	CAS No.	Qual	RegLmt
4-Bromofluorobenzene (S)	111	%		03/04/07 15:18	MCK	460-00-4		
Dibromofluoromethane (S)	96	%		03/04/07 15:18	MCK	1868-53-7		
1,2-Dichloroethane-d4 (S)	110	%		03/04/07 15:18	MCK	17060-07-0		

Asheville Certification IDs
NC Wastewater 40
NC Drinking Water 37712
SC Environmental 99030
FL NELAP E87648

REPORT OF LABORATORY ANALYSIS
This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, Inc.

Charlotte Certification IDs
NC Wastewater 12
NC Drinking Water 37706
SC 99006
FL NELAP E87627

Pace Analytical
www.pacelabs.com

Pace Analytical Services, Inc.
9800 Kincey Avenue, Suite 100
Huntersville, NC 28078
Phone: 704.875.9092
Fax: 704.875.9091

Lab Project Number: 92138920
Client Project ID: Francis Farm Landfill

Lab Sample No: 928057363 | Project Sample Number: 92138920-004 | Date Collected: 02/26/07 13:15
Client Sample ID: MW-4 | Matrix: Water | Date Received: 02/26/07 17:00

Parameters	Results	Units	Report Limit	Analyzed	By	CAS No.	Qual	RegLmt
Field Services								
Monitoring Well Data	Method:							
Collected By	MPS			03/07/07	MPS			
Collected Date	2-26-07			03/07/07	MPS			
Collected Time	13;15			03/07/07	MPS			
Field pH	6.14			03/07/07	MPS			
Field Specific Conductance	175			03/07/07	MPS			
Field Temperature	13.8			03/07/07	MPS			
Static Water Level	70.25			03/07/07	MPS			
Metals								
Metals by Trace ICP	Prep/Method: EPA 3010 / EPA 6010							
Arsenic	ND	ug/l	5.0	03/04/07 17:53	JDA1	7440-38-2		
Barium	140	ug/l	5.0	03/04/07 17:53	JDA1	7440-39-3		
Cadmium	ND	ug/l	1.0	03/04/07 17:53	JDA1	7440-43-9		
Chromium	ND	ug/l	5.0	03/04/07 17:53	JDA1	7440-47-3		
Lead	ND	ug/l	5.0	03/04/07 17:53	JDA1	7439-92-1		
Selenium	ND	ug/l	10.	03/04/07 17:53	JDA1	7782-49-2		
Silver	ND	ug/l	5.0	03/04/07 17:53	JDA1	7440-22-4		
Date Digested	03/02/07 11:45			03/02/07 11:45				
Mercury, CVAAS, in Water	Method: EPA 7470							
Mercury	ND	ug/l	0.20	02/28/07 13:15	ALV	7439-97-6		
GC/MS Volatiles								
GC/MS VOCs by 8260	Method: EPA 8260							
Acetone	ND	ug/l	25.	03/04/07 15:34	MCK	67-64-1		
Acrylonitrile	ND	ug/l	25.	03/04/07 15:34	MCK	107-13-1		
Benzene	15.	ug/l	5.0	03/04/07 15:34	MCK	71-43-2		
Bromobenzene	ND	ug/l	5.0	03/04/07 15:34	MCK	108-86-1		
Bromochloromethane	ND	ug/l	5.0	03/04/07 15:34	MCK	74-97-5		
Bromodichloromethane	ND	ug/l	5.0	03/04/07 15:34	MCK	75-27-4		
Bromoform	ND	ug/l	5.0	03/04/07 15:34	MCK	75-25-2		
Bromomethane	ND	ug/l	5.0	03/04/07 15:34	MCK	74-83-9		
2-Butanone (MEK)	ND	ug/l	10.	03/04/07 15:34	MCK	78-93-3		
Carbon disulfide	ND	ug/l	10.	03/04/07 15:34	MCK	75-15-0		
Carbon tetrachloride	ND	ug/l	5.0	03/04/07 15:34	MCK	56-23-5		
Chlorobenzene	ND	ug/l	5.0	03/04/07 15:34	MCK	108-90-7		
Chloroethane	ND	ug/l	10.	03/04/07 15:34	MCK	75-00-3		

Asheville Certification IDs
NC Wastewater 40
NC Drinking Water 37712
SC Environmental 99030
FL NELAP E87648

REPORT OF LABORATORY ANALYSIS
This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, Inc.

Charlotte Certification IDs
NC Wastewater 12
NC Drinking Water 37706
SC 99006
FL NELAP E87627

Pace Analytical™
www.pacelabs.com

Pace Analytical Services, Inc.
9800 Kincey Avenue, Suite 100
Huntersville, NC 28078
Phone: 704.875.9092
Fax: 704.875.9091

F

Lab Project Number: 92138920
Client Project ID: Francis Farm Landfill

Lab Sample No: 928057363 | Project Sample Number: 92138920-004 | Date Collected: 02/26/07 13:15
Client Sample ID: MW-4 | Matrix: Water | Date Received: 02/26/07 17:00

Parameters	Results	Units	Report Limit	Analyzed	By	CAS No.	Qual	RegLmt
Chloroform	ND	ug/l	5.0	03/04/07 15:34	MCK	67-66-3		
Chloromethane	ND	ug/l	5.0	03/04/07 15:34	MCK	74-87-3		
1,2-Dibromo-3-chloropropane	ND	ug/l	5.0	03/04/07 15:34	MCK	96-12-8		
Dibromochloromethane	ND	ug/l	5.0	03/04/07 15:34	MCK	124-48-1		
1,2-Dibromoethane (EDB)	ND	ug/l	5.0	03/04/07 15:34	MCK	106-93-4		
Dibromomethane	ND	ug/l	5.0	03/04/07 15:34	MCK	74-95-3		
1,2-Dichlorobenzene	ND	ug/l	5.0	03/04/07 15:34	MCK	95-50-1		
1,4-Dichlorobenzene	ND	ug/l	5.0	03/04/07 15:34	MCK	106-46-7		
trans-1,4-Dichloro-2-butene	ND	ug/l	5.0	03/04/07 15:34	MCK	110-57-6		
1,1-Dichloroethane	36.	ug/l	5.0	03/04/07 15:34	MCK	75-34-3		
1,2-Dichloroethane	ND	ug/l	5.0	03/04/07 15:34	MCK	107-06-2		
1,2-Dichloroethene (Total)	30.	ug/l	5.0	03/04/07 15:34	MCK	540-59-0		
1,1-Dichloroethene	ND	ug/l	5.0	03/04/07 15:34	MCK	75-35-4		
cis-1,2-Dichloroethene	30.	ug/l	5.0	03/04/07 15:34	MCK	156-59-2		
trans-1,2-Dichloroethene	ND	ug/l	5.0	03/04/07 15:34	MCK	156-60-5		
1,2-Dichloropropane	ND	ug/l	5.0	03/04/07 15:34	MCK	78-87-5		
cis-1,3-Dichloropropene	ND	ug/l	5.0	03/04/07 15:34	MCK	10061-01-5		
trans-1,3-Dichloropropene	ND	ug/l	5.0	03/04/07 15:34	MCK	10061-02-6		
Ethylbenzene	ND	ug/l	5.0	03/04/07 15:34	MCK	100-41-4		
2-Hexanone	ND	ug/l	10.	03/04/07 15:34	MCK	591-78-6		
Iodomethane	ND	ug/l	10.	03/04/07 15:34	MCK	74-88-4		
Methylene chloride	15.	ug/l	5.0	03/04/07 15:34	MCK	75-09-2		
4-Methyl-2-pentanone (MIBK)	ND	ug/l	10.	03/04/07 15:34	MCK	108-10-1		
Styrene	ND	ug/l	5.0	03/04/07 15:34	MCK	100-42-5		
1,1,1,2-Tetrachloroethane	ND	ug/l	5.0	03/04/07 15:34	MCK	630-20-6		
1,1,2,2-Tetrachloroethane	ND	ug/l	5.0	03/04/07 15:34	MCK	79-34-5		
Tetrachloroethene	8.5	ug/l	5.0	03/04/07 15:34	MCK	127-18-4		
Toluene	ND	ug/l	5.0	03/04/07 15:34	MCK	108-88-3		
1,1,1-Trichloroethane	ND	ug/l	5.0	03/04/07 15:34	MCK	71-55-6		
1,1,2-Trichloroethane	ND	ug/l	5.0	03/04/07 15:34	MCK	79-00-5		
Trichloroethene	11.	ug/l	5.0	03/04/07 15:34	MCK	79-01-6		
Trichlorofluoromethane	ND	ug/l	10.	03/04/07 15:34	MCK	75-69-4		
1,2,3-Trichloropropane	ND	ug/l	5.0	03/04/07 15:34	MCK	96-18-4		
Vinyl acetate	ND	ug/l	10.	03/04/07 15:34	MCK	108-05-4		
Vinyl chloride	ND	ug/l	5.0	03/04/07 15:34	MCK	75-01-4		
Xylene (Total)	ND	ug/l	10.	03/04/07 15:34	MCK	1330-20-7		
m&p-Xylene	ND	ug/l	10.	03/04/07 15:34	MCK			
o-Xylene	ND	ug/l	5.0	03/04/07 15:34	MCK	95-47-6		
Toluene-d8 (S)	97	%		03/04/07 15:34	MCK	2037-26-5		

Asheville Certification IDs
NC Wastewater 40
NC Drinking Water 37712
SC Environmental 99030
FL NELAP E87648

REPORT OF LABORATORY ANALYSIS
This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, Inc.

Charlotte Certification IDs
NC Wastewater 12
NC Drinking Water 37706
SC 99006
FL NELAP E87627

Pace Analytical™
www.pacelabs.com

Pace Analytical Services, Inc.
9800 Kincey Avenue, Suite 100
Huntersville, NC 28078
Phone: 704.875.9092
Fax: 704.875.9091

Lab Project Number: 92138920
Client Project ID: Francis Farm Landfill

Lab Sample No: 928057363 Project Sample Number: 92138920-004 Date Collected: 02/26/07 13:15
Client Sample ID: MW-4 Matrix: Water Date Received: 02/26/07 17:00

Parameters	Results	Units	Report Limit	Analyzed	By	CAS No.	Qual	RegLmt
4-Bromofluorobenzene (S)	110	%		03/04/07 15:34	MCK	460-00-4		
Dibromofluoromethane (S)	97	%		03/04/07 15:34	MCK	1868-53-7		
1,2-Dichloroethane-d4 (S)	114	%		03/04/07 15:34	MCK	17060-07-0		

Asheville Certification IDs
NC Wastewater 40
NC Drinking Water 37712
SC Environmental 99030
FL NELAP E87648

REPORT OF LABORATORY ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Charlotte Certification IDs
NC Wastewater 12
NC Drinking Water 37706
SC 99006
FL NELAP E87627

Pace Analytical™
www.pacelabs.com

Pace Analytical Services, Inc.
9800 Kincey Avenue, Suite 100
Huntersville, NC 28078
Phone: 704.875.9092
Fax: 704.875.9091

Lab Project Number: 92138920
Client Project ID: Francis Farm Landfill

Lab Sample No: 928057371 | Project Sample Number: 92138920-005 | Date Collected: 02/26/07 12:55
Client Sample ID: MW-5 | Matrix: Water | Date Received: 02/26/07 17:00

Parameters	Results	Units	Report Limit	Analyzed	By	CAS No.	Qual	RegLmt
Field Services								
Monitoring Well Data	Method:							
Collected By	MPS			03/07/07	MPS			
Collected Date	2-26-07			03/07/07	MPS			
Collected Time	12:55			03/07/07	MPS			
Field pH	5.36			03/07/07	MPS			
Field Specific Conductance	180			03/07/07	MPS			
Field Temperature	12.2			03/07/07	MPS			
Static Water Level	75.44			03/07/07	MPS			
Metals								
Metals by Trace ICP	Prep/Method: EPA 3010 / EPA 6010							
Arsenic	ND	ug/l	5.0	03/04/07 17:58	JDA1	7440-38-2		
Barium	280	ug/l	5.0	03/04/07 17:58	JDA1	7440-39-3		
Cadmium	ND	ug/l	1.0	03/04/07 17:58	JDA1	7440-43-9		
Chromium	ND	ug/l	5.0	03/04/07 17:58	JDA1	7440-47-3		
Lead	ND	ug/l	5.0	03/04/07 17:58	JDA1	7439-92-1		
Selenium	ND	ug/l	10.	03/04/07 17:58	JDA1	7782-49-2		
Silver	ND	ug/l	5.0	03/04/07 17:58	JDA1	7440-22-4		
Date Digested	03/02/07 11:45			03/02/07 11:45				
Mercury, CVAAS, in Water	Method: EPA 7470							
Mercury	ND	ug/l	0.20	02/28/07 13:18	ALV	7439-97-6		
GC/MS Volatiles								
GC/MS VOCs by 8260	Method: EPA 8260							
Acetone	ND	ug/l	25.	03/04/07 15:50	MCK	67-64-1		
Acrylonitrile	ND	ug/l	25.	03/04/07 15:50	MCK	107-13-1		
Benzene	ND	ug/l	5.0	03/04/07 15:50	MCK	71-43-2		
Bromobenzene	ND	ug/l	5.0	03/04/07 15:50	MCK	108-86-1		
Bromochloromethane	ND	ug/l	5.0	03/04/07 15:50	MCK	74-97-5		
Bromodichloromethane	ND	ug/l	5.0	03/04/07 15:50	MCK	75-27-4		
Bromoform	ND	ug/l	5.0	03/04/07 15:50	MCK	75-25-2		
Bromomethane	ND	ug/l	5.0	03/04/07 15:50	MCK	74-83-9		
2-Butanone (MEK)	ND	ug/l	10.	03/04/07 15:50	MCK	78-93-3		
Carbon disulfide	ND	ug/l	10.	03/04/07 15:50	MCK	75-15-0		
Carbon tetrachloride	ND	ug/l	5.0	03/04/07 15:50	MCK	56-23-5		
Chlorobenzene	ND	ug/l	5.0	03/04/07 15:50	MCK	108-90-7		
Chloroethane	ND	ug/l	10.	03/04/07 15:50	MCK	75-00-3		

Asheville Certification IDs
NC Wastewater 40
NC Drinking Water 37712
SC Environmental 99030
FL NELAP E87648

REPORT OF LABORATORY ANALYSIS
This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, Inc.

Charlotte Certification IDs
NC Wastewater 12
NC Drinking Water 37706
SC 99006
FL NELAP E87627

Pace Analytical™
www.pacelabs.com

Pace Analytical Services, Inc.
9800 Kincey Avenue, Suite 100
Huntersville, NC 28078
Phone: 704.875.9092
Fax: 704.875.9091

Lab Project Number: 92138920
Client Project ID: Francis Farm Landfill

Lab Sample No: 928057371 | Project Sample Number: 92138920-005 | Date Collected: 02/26/07 12:55
Client Sample ID: MW-5 | Matrix: Water | Date Received: 02/26/07 17:00

Parameters	Results	Units	Report Limit	Analyzed	By	CAS No.	Qual	RegLmt
Chloroform	ND	ug/l	5.0	03/04/07 15:50	MCK	67-66-3		
Chloromethane	ND	ug/l	5.0	03/04/07 15:50	MCK	74-87-3		
1,2-Dibromo-3-chloropropane	ND	ug/l	5.0	03/04/07 15:50	MCK	96-12-8		
Dibromochloromethane	ND	ug/l	5.0	03/04/07 15:50	MCK	124-48-1		
1,2-Dibromoethane (EDB)	ND	ug/l	5.0	03/04/07 15:50	MCK	106-93-4		
Dibromomethane	ND	ug/l	5.0	03/04/07 15:50	MCK	74-95-3		
1,2-Dichlorobenzene	ND	ug/l	5.0	03/04/07 15:50	MCK	95-50-1		
1,4-Dichlorobenzene	ND	ug/l	5.0	03/04/07 15:50	MCK	106-46-7		
trans-1,4-Dichloro-2-butene	ND	ug/l	5.0	03/04/07 15:50	MCK	110-57-6		
1,1-Dichloroethane	ND	ug/l	5.0	03/04/07 15:50	MCK	75-34-3		
1,2-Dichloroethane	ND	ug/l	5.0	03/04/07 15:50	MCK	107-06-2		
1,2-Dichloroethene (Total)	ND	ug/l	5.0	03/04/07 15:50	MCK	540-59-0		
1,1-Dichloroethene	ND	ug/l	5.0	03/04/07 15:50	MCK	75-35-4		
cis-1,2-Dichloroethene	ND	ug/l	5.0	03/04/07 15:50	MCK	156-59-2		
trans-1,2-Dichloroethene	ND	ug/l	5.0	03/04/07 15:50	MCK	156-60-5		
1,2-Dichloropropane	ND	ug/l	5.0	03/04/07 15:50	MCK	78-87-5		
cis-1,3-Dichloropropene	ND	ug/l	5.0	03/04/07 15:50	MCK	10061-01-5		
trans-1,3-Dichloropropene	ND	ug/l	5.0	03/04/07 15:50	MCK	10061-02-6		
Ethylbenzene	ND	ug/l	5.0	03/04/07 15:50	MCK	100-41-4		
2-Hexanone	ND	ug/l	10.	03/04/07 15:50	MCK	591-78-6		
Iodomethane	ND	ug/l	10.	03/04/07 15:50	MCK	74-88-4		
Methylene chloride	ND	ug/l	5.0	03/04/07 15:50	MCK	75-09-2		
4-Methyl-2-pentanone (MIBK)	ND	ug/l	10.	03/04/07 15:50	MCK	108-10-1		
Styrene	ND	ug/l	5.0	03/04/07 15:50	MCK	100-42-5		
1,1,1,2-Tetrachloroethane	ND	ug/l	5.0	03/04/07 15:50	MCK	630-20-6		
1,1,2,2-Tetrachloroethane	ND	ug/l	5.0	03/04/07 15:50	MCK	79-34-5		
Tetrachloroethene	ND	ug/l	5.0	03/04/07 15:50	MCK	127-18-4		
Toluene	ND	ug/l	5.0	03/04/07 15:50	MCK	108-88-3		
1,1,1-Trichloroethane	ND	ug/l	5.0	03/04/07 15:50	MCK	71-55-6		
1,1,2-Trichloroethane	ND	ug/l	5.0	03/04/07 15:50	MCK	79-00-5		
Trichloroethene	ND	ug/l	5.0	03/04/07 15:50	MCK	79-01-6		
Trichlorofluoromethane	ND	ug/l	10.	03/04/07 15:50	MCK	75-69-4		
1,2,3-Trichloropropane	ND	ug/l	5.0	03/04/07 15:50	MCK	96-18-4		
Vinyl acetate	ND	ug/l	10.	03/04/07 15:50	MCK	108-05-4		
Vinyl chloride	ND	ug/l	5.0	03/04/07 15:50	MCK	75-01-4		
Xylene (Total)	ND	ug/l	10.	03/04/07 15:50	MCK	1330-20-7		
m&p-Xylene	ND	ug/l	10.	03/04/07 15:50	MCK			
o-Xylene	ND	ug/l	5.0	03/04/07 15:50	MCK	95-47-6		
Toluene-d8 (S)	92	%		03/04/07 15:50	MCK	2037-26-5		

Asheville Certification IDs
NC Wastewater 40
NC Drinking Water 37712
SC Environmental 99030
FL NELAP E87648

REPORT OF LABORATORY ANALYSIS
This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, Inc.

Charlotte Certification IDs
NC Wastewater 12
NC Drinking Water 37706
SC 99006
FL NELAP E87627

Pace Analytical™
www.pacelabs.com

Pace Analytical Services, Inc.
9800 Kincey Avenue, Suite 100
Huntersville, NC 28078
Phone: 704.875.9092
Fax: 704.875.9091

Lab Project Number: 92138920
Client Project ID: Francis Farm Landfill

Lab Sample No: 928057371 Project Sample Number: 92138920-005 Date Collected: 02/26/07 12:55
Client Sample ID: MW-5 Matrix: Water Date Received: 02/26/07 17:00

Parameters	Results	Units	Report Limit	Analyzed	By	CAS No.	Qual	RegLmt
4-Bromofluorobenzene (S)	107	%		03/04/07 15:50	MCK	460-00-4		
Dibromofluoromethane (S)	96	%		03/04/07 15:50	MCK	1868-53-7		
1,2-Dichloroethane-d4 (S)	111	%		03/04/07 15:50	MCK	17060-07-0		

Asheville Certification IDs
NC Wastewater 40
NC Drinking Water 37712
SC Environmental 99030
FL NELAP E87648

REPORT OF LABORATORY ANALYSIS
This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, Inc.

Charlotte Certification IDs
NC Wastewater 12
NC Drinking Water 37706
SC 99006
FL NELAP E87627

Pace Analytical™
www.pacelabs.com

Pace Analytical Services, Inc.
9800 Kincey Avenue, Suite 100
Huntersville, NC 28078
Phone: 704.875.9092
Fax: 704.875.9091

F

Lab Project Number: 92138920
Client Project ID: Francis Farm Landfill

Lab Sample No: 928057389 | Project Sample Number: 92138920-006 | Date Collected: 02/26/07 15:40
Client Sample ID: SW-1 | Matrix: Water | Date Received: 02/26/07 17:00

Parameters	Results	Units	Report Limit	Analyzed	By	CAS No.	Qual	RegLmt
Field Services								
Monitoring Well Data	Method:							
Collected By	MPS			03/07/07	MPS			
Collected Date	2-26-07			03/07/07	MPS			
Collected Time	15:40			03/07/07	MPS			
Field pH	7.18			03/07/07	MPS			
Field Specific Conductance	62			03/07/07	MPS			
Field Temperature	12.3			03/07/07	MPS			
Metals								
Metals by Trace ICP	Prep/Method: EPA 3010 / EPA 6010							
Arsenic	ND	ug/l	5.0	03/06/07 23:48	SHB	7440-38-2		
Barium	34.	ug/l	5.0	03/06/07 23:48	SHB	7440-39-3		
Cadmium	ND	ug/l	1.0	03/06/07 23:48	SHB	7440-43-9		
Chromium	ND	ug/l	5.0	03/06/07 23:48	SHB	7440-47-3		
Lead	ND	ug/l	5.0	03/06/07 23:48	SHB	7439-92-1		
Selenium	ND	ug/l	10.	03/06/07 23:48	SHB	7782-49-2		
Silver	ND	ug/l	5.0	03/06/07 23:48	SHB	7440-22-4		
Date Digested	03/02/07 11:45			03/02/07 11:45				
Mercury, CVAAS, in Water	Method: EPA 7470							
Mercury	ND	ug/l	0.20	02/28/07 13:20	ALV	7439-97-6		
GC/MS Volatiles								
GC/MS VOCs by 8260	Method: EPA 8260							
Acetone	ND	ug/l	25.	03/04/07 16:07	MCK	67-64-1		
Acrylonitrile	ND	ug/l	25.	03/04/07 16:07	MCK	107-13-1		
Benzene	ND	ug/l	5.0	03/04/07 16:07	MCK	71-43-2		
Bromobenzene	ND	ug/l	5.0	03/04/07 16:07	MCK	108-86-1		
Bromochloromethane	ND	ug/l	5.0	03/04/07 16:07	MCK	74-97-5		
Bromodichloromethane	ND	ug/l	5.0	03/04/07 16:07	MCK	75-27-4		
Bromoform	ND	ug/l	5.0	03/04/07 16:07	MCK	75-25-2		
Bromomethane	ND	ug/l	5.0	03/04/07 16:07	MCK	74-83-9		
2-Butanone (MEK)	ND	ug/l	10.	03/04/07 16:07	MCK	78-93-3		
Carbon disulfide	ND	ug/l	10.	03/04/07 16:07	MCK	75-15-0		
Carbon tetrachloride	ND	ug/l	5.0	03/04/07 16:07	MCK	56-23-5		
Chlorobenzene	ND	ug/l	5.0	03/04/07 16:07	MCK	108-90-7		
Chloroethane	ND	ug/l	10.	03/04/07 16:07	MCK	75-00-3		
Chloroform	ND	ug/l	5.0	03/04/07 16:07	MCK	67-66-3		

Asheville Certification IDs
NC Wastewater 40
NC Drinking Water 37712
SC Environmental 99030
FL NELAP E87648

REPORT OF LABORATORY ANALYSIS
This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, Inc.

Charlotte Certification IDs
NC Wastewater 12
NC Drinking Water 37706
SC 99006
FL NELAP E87627

Pace Analytical™
www.pacelabs.com

Pace Analytical Services, Inc.
9800 Kincey Avenue, Suite 100
Huntersville, NC 28078
Phone: 704.875.9092
Fax: 704.875.9091

Lab Project Number: 92138920
Client Project ID: Francis Farm Landfill

Lab Sample No: 928057389 | Project Sample Number: 92138920-006 | Date Collected: 02/26/07 15:40
Client Sample ID: SW-1 | Matrix: Water | Date Received: 02/26/07 17:00

Parameters	Results	Units	Report Limit	Analyzed	By	CAS No.	Qual	RegLmt
Chloromethane	ND	ug/l	5.0	03/04/07 16:07	MCK	74-87-3		
1,2-Dibromo-3-chloropropane	ND	ug/l	5.0	03/04/07 16:07	MCK	96-12-8		
Dibromochloromethane	ND	ug/l	5.0	03/04/07 16:07	MCK	124-48-1		
1,2-Dibromoethane (EDB)	ND	ug/l	5.0	03/04/07 16:07	MCK	106-93-4		
Dibromomethane	ND	ug/l	5.0	03/04/07 16:07	MCK	74-95-3		
1,2-Dichlorobenzene	ND	ug/l	5.0	03/04/07 16:07	MCK	95-50-1		
1,4-Dichlorobenzene	ND	ug/l	5.0	03/04/07 16:07	MCK	106-46-7		
trans-1,4-Dichloro-2-butene	ND	ug/l	5.0	03/04/07 16:07	MCK	110-57-6		
1,1-Dichloroethane	ND	ug/l	5.0	03/04/07 16:07	MCK	75-34-3		
1,2-Dichloroethane	ND	ug/l	5.0	03/04/07 16:07	MCK	107-06-2		
1,2-Dichloroethene (Total)	ND	ug/l	5.0	03/04/07 16:07	MCK	540-59-0		
1,1-Dichloroethene	ND	ug/l	5.0	03/04/07 16:07	MCK	75-35-4		
cis-1,2-Dichloroethene	ND	ug/l	5.0	03/04/07 16:07	MCK	156-59-2		
trans-1,2-Dichloroethene	ND	ug/l	5.0	03/04/07 16:07	MCK	156-60-5		
1,2-Dichloropropane	ND	ug/l	5.0	03/04/07 16:07	MCK	78-87-5		
cis-1,3-Dichloropropene	ND	ug/l	5.0	03/04/07 16:07	MCK	10061-01-5		
trans-1,3-Dichloropropene	ND	ug/l	5.0	03/04/07 16:07	MCK	10061-02-6		
Ethylbenzene	ND	ug/l	5.0	03/04/07 16:07	MCK	100-41-4		
2-Hexanone	ND	ug/l	10.	03/04/07 16:07	MCK	591-78-6		
Iodomethane	ND	ug/l	10.	03/04/07 16:07	MCK	74-88-4		
Methylene chloride	ND	ug/l	5.0	03/04/07 16:07	MCK	75-09-2		
4-Methyl-2-pentanone (MIBK)	ND	ug/l	10.	03/04/07 16:07	MCK	108-10-1		
Styrene	ND	ug/l	5.0	03/04/07 16:07	MCK	100-42-5		
1,1,1,2-Tetrachloroethane	ND	ug/l	5.0	03/04/07 16:07	MCK	630-20-6		
1,1,2,2-Tetrachloroethane	ND	ug/l	5.0	03/04/07 16:07	MCK	79-34-5		
Tetrachloroethene	ND	ug/l	5.0	03/04/07 16:07	MCK	127-18-4		
Toluene	ND	ug/l	5.0	03/04/07 16:07	MCK	108-88-3		
1,1,1-Trichloroethane	ND	ug/l	5.0	03/04/07 16:07	MCK	71-55-6		
1,1,2-Trichloroethane	ND	ug/l	5.0	03/04/07 16:07	MCK	79-00-5		
Trichloroethene	ND	ug/l	5.0	03/04/07 16:07	MCK	79-01-6		
Trichlorofluoromethane	ND	ug/l	10.	03/04/07 16:07	MCK	75-69-4		
1,2,3-Trichloropropane	ND	ug/l	5.0	03/04/07 16:07	MCK	96-18-4		
Vinyl acetate	ND	ug/l	10.	03/04/07 16:07	MCK	108-05-4		
Vinyl chloride	ND	ug/l	5.0	03/04/07 16:07	MCK	75-01-4		
Xylene (Total)	ND	ug/l	10.	03/04/07 16:07	MCK	1330-20-7		
m&p-Xylene	ND	ug/l	10.	03/04/07 16:07	MCK			
o-Xylene	ND	ug/l	5.0	03/04/07 16:07	MCK	95-47-6		
Toluene-d8 (S)	100	%		03/04/07 16:07	MCK	2037-26-5		
4-Bromofluorobenzene (S)	106	%		03/04/07 16:07	MCK	460-00-4		

Asheville Certification IDs
NC Wastewater 40
NC Drinking Water 37712
SC Environmental 99030
FL NELAP E87648

REPORT OF LABORATORY ANALYSIS
This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, Inc.

Charlotte Certification IDs
NC Wastewater 12
NC Drinking Water 37706
SC 99006
FL NELAP E87627

Pace Analytical Services, Inc.
9800 Kincey Avenue, Suite 100
Huntersville, NC 28078
Phone: 704.875.9092
Fax: 704.875.9091

Lab Project Number: 92138920
Client Project ID: Francis Farm Landfill

Lab Sample No: 928057389 Project Sample Number: 92138920-006 Date Collected: 02/26/07 15:40
Client Sample ID: SW-1 Matrix: Water Date Received: 02/26/07 17:00

Parameters	Results	Units	Report Limit	Analyzed	By	CAS No.	Qual	RegLmt
Dibromofluoromethane (S)	99	%		03/04/07 16:07	MCK	1868-53-7		
1,2-Dichloroethane-d4 (S)	112	%		03/04/07 16:07	MCK	17060-07-0		

Asheville Certification IDs
NC Wastewater 40
NC Drinking Water 37712
SC Environmental 99030
FL NELAP E87648

REPORT OF LABORATORY ANALYSIS
This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, Inc.

Charlotte Certification IDs
NC Wastewater 12
NC Drinking Water 37706
SC 99006
FL NELAP E87627

Pace Analytical
www.pacelabs.com

Pace Analytical Services, Inc.
9800 Kincey Avenue, Suite 100
Huntersville, NC 28078
Phone: 704.875.9092
Fax: 704.875.9091

Lab Project Number: 92138920
Client Project ID: Francis Farm Landfill

Lab Sample No: 928057397 | Project Sample Number: 92138920-007 | Date Collected: 02/26/07 15:30
Client Sample ID: SW-2 | Matrix: Water | Date Received: 02/26/07 17:00

Parameters	Results	Units	Report Limit	Analyzed	By	CAS No.	Qual	RegLmt
Field Services								
Monitoring Well Data	Method:							
Collected By	MPS			03/07/07	MPS			
Collected Date	2-26-07			03/07/07	MPS			
Collected Time	15:30			03/07/07	MPS			
Field pH	7.36			03/07/07	MPS			
Field Specific Conductance	206			03/07/07	MPS			
Field Temperature	12.3			03/07/07	MPS			
Metals								
Metals by Trace ICP	Prep/Method: EPA 3010 / EPA 6010							
Arsenic	ND	ug/l	5.0	03/06/07 23:58	SHB	7440-38-2		
Barium	36.	ug/l	5.0	03/06/07 23:58	SHB	7440-39-3		
Cadmium	ND	ug/l	1.0	03/06/07 23:58	SHB	7440-43-9		
Chromium	ND	ug/l	5.0	03/06/07 23:58	SHB	7440-47-3		
Lead	ND	ug/l	5.0	03/06/07 23:58	SHB	7439-92-1		
Selenium	ND	ug/l	10.	03/06/07 23:58	SHB	7782-49-2		
Silver	ND	ug/l	5.0	03/06/07 23:58	SHB	7440-22-4		
Date Digested	03/02/07 11:45			03/02/07 11:45				
Mercury, CVAAS, in Water	Method: EPA 7470							
Mercury	ND	ug/l	0.20	03/01/07 12:07	ALV	7439-97-6		
GC/MS Volatiles								
GC/MS VOCs by 8260	Method: EPA 8260							
Acetone	ND	ug/l	25.	03/04/07 16:23	MCK	67-64-1		
Acrylonitrile	ND	ug/l	25.	03/04/07 16:23	MCK	107-13-1		
Benzene	ND	ug/l	5.0	03/04/07 16:23	MCK	71-43-2		
Bromobenzene	ND	ug/l	5.0	03/04/07 16:23	MCK	108-86-1		
Bromochloromethane	ND	ug/l	5.0	03/04/07 16:23	MCK	74-97-5		
Bromodichloromethane	ND	ug/l	5.0	03/04/07 16:23	MCK	75-27-4		
Bromoform	ND	ug/l	5.0	03/04/07 16:23	MCK	75-25-2		
Bromomethane	ND	ug/l	5.0	03/04/07 16:23	MCK	74-83-9		
2-Butanone (MEK)	ND	ug/l	10.	03/04/07 16:23	MCK	78-93-3		
Carbon disulfide	ND	ug/l	10.	03/04/07 16:23	MCK	75-15-0		
Carbon tetrachloride	ND	ug/l	5.0	03/04/07 16:23	MCK	56-23-5		
Chlorobenzene	ND	ug/l	5.0	03/04/07 16:23	MCK	108-90-7		
Chloroethane	ND	ug/l	10.	03/04/07 16:23	MCK	75-00-3		
Chloroform	ND	ug/l	5.0	03/04/07 16:23	MCK	67-66-3		

Asheville Certification IDs
NC Wastewater 40
NC Drinking Water 37712
SC Environmental 99030
FL NELAP E87648

REPORT OF LABORATORY ANALYSIS
This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, Inc.

Charlotte Certification IDs
NC Wastewater 12
NC Drinking Water 37706
SC 99006
FL NELAP E87627

Pace Analytical™
www.pacelabs.com

Pace Analytical Services, Inc.
9800 Kincey Avenue, Suite 100
Huntersville, NC 28078
Phone: 704.875.9092
Fax: 704.875.9091

Lab Project Number: 92138920
Client Project ID: Francis Farm Landfill

Lab Sample No: 928057397 | Project Sample Number: 92138920-007 | Date Collected: 02/26/07 15:30
Client Sample ID: SW-2 | Matrix: Water | Date Received: 02/26/07 17:00

Parameters	Results	Units	Report Limit	Analyzed	By	CAS No.	Qual	ReqLmt
Chloromethane	ND	ug/l	5.0	03/04/07 16:23	MCK	74-87-3		
1,2-Dibromo-3-chloropropane	ND	ug/l	5.0	03/04/07 16:23	MCK	96-12-8		
Dibromochloromethane	ND	ug/l	5.0	03/04/07 16:23	MCK	124-48-1		
1,2-Dibromoethane (EDB)	ND	ug/l	5.0	03/04/07 16:23	MCK	106-93-4		
Dibromomethane	ND	ug/l	5.0	03/04/07 16:23	MCK	74-95-3		
1,2-Dichlorobenzene	ND	ug/l	5.0	03/04/07 16:23	MCK	95-50-1		
1,4-Dichlorobenzene	ND	ug/l	5.0	03/04/07 16:23	MCK	106-46-7		
trans-1,4-Dichloro-2-butene	ND	ug/l	5.0	03/04/07 16:23	MCK	110-57-6		
1,1-Dichloroethane	ND	ug/l	5.0	03/04/07 16:23	MCK	75-34-3		
1,2-Dichloroethane	ND	ug/l	5.0	03/04/07 16:23	MCK	107-06-2		
1,2-Dichloroethene (Total)	ND	ug/l	5.0	03/04/07 16:23	MCK	540-59-0		
1,1-Dichloroethene	ND	ug/l	5.0	03/04/07 16:23	MCK	75-35-4		
cis-1,2-Dichloroethene	ND	ug/l	5.0	03/04/07 16:23	MCK	156-59-2		
trans-1,2-Dichloroethene	ND	ug/l	5.0	03/04/07 16:23	MCK	156-60-5		
1,2-Dichloropropane	ND	ug/l	5.0	03/04/07 16:23	MCK	78-87-5		
cis-1,3-Dichloropropene	ND	ug/l	5.0	03/04/07 16:23	MCK	10061-01-5		
trans-1,3-Dichloropropene	ND	ug/l	5.0	03/04/07 16:23	MCK	10061-02-6		
Ethylbenzene	ND	ug/l	5.0	03/04/07 16:23	MCK	100-41-4		
2-Hexanone	ND	ug/l	10.	03/04/07 16:23	MCK	591-78-6		
Iodomethane	ND	ug/l	10.	03/04/07 16:23	MCK	74-88-4		
Methylene chloride	ND	ug/l	5.0	03/04/07 16:23	MCK	75-09-2		
4-Methyl-2-pentanone (MIBK)	ND	ug/l	10.	03/04/07 16:23	MCK	108-10-1		
Styrene	ND	ug/l	5.0	03/04/07 16:23	MCK	100-42-5		
1,1,1,2-Tetrachloroethane	ND	ug/l	5.0	03/04/07 16:23	MCK	630-20-6		
1,1,2,2-Tetrachloroethane	ND	ug/l	5.0	03/04/07 16:23	MCK	79-34-5		
Tetrachloroethene	ND	ug/l	5.0	03/04/07 16:23	MCK	127-18-4		
Toluene	ND	ug/l	5.0	03/04/07 16:23	MCK	108-88-3		
1,1,1-Trichloroethane	ND	ug/l	5.0	03/04/07 16:23	MCK	71-55-6		
1,1,2-Trichloroethane	ND	ug/l	5.0	03/04/07 16:23	MCK	79-00-5		
Trichloroethene	ND	ug/l	5.0	03/04/07 16:23	MCK	79-01-6		
Trichlorofluoromethane	ND	ug/l	10.	03/04/07 16:23	MCK	75-69-4		
1,2,3-Trichloropropane	ND	ug/l	5.0	03/04/07 16:23	MCK	96-18-4		
Vinyl acetate	ND	ug/l	10.	03/04/07 16:23	MCK	108-05-4		
Vinyl chloride	ND	ug/l	5.0	03/04/07 16:23	MCK	75-01-4		
Xylene (Total)	ND	ug/l	10.	03/04/07 16:23	MCK	1330-20-7		
m&p-Xylene	ND	ug/l	10.	03/04/07 16:23	MCK			
o-Xylene	ND	ug/l	5.0	03/04/07 16:23	MCK	95-47-6		
Toluene-d8 (S)	97	%		03/04/07 16:23	MCK	2037-26-5		
4-Bromofluorobenzene (S)	107	%		03/04/07 16:23	MCK	460-00-4		

Asheville Certification IDs
NC Wastewater 40
NC Drinking Water 37712
SC Environmental 99030
FL NELAP E87648

REPORT OF LABORATORY ANALYSIS
This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, Inc.

Charlotte Certification IDs
NC Wastewater 12
NC Drinking Water 37706
SC 99006
FL NELAP E87627

Pace Analytical Services, Inc.
9800 Kincey Avenue, Suite 100
Huntersville, NC 28078
Phone: 704.875.9092
Fax: 704.875.9091

Lab Project Number: 92138920
Client Project ID: Francis Farm Landfill

Lab Sample No: 928057397 Project Sample Number: 92138920-007 Date Collected: 02/26/07 15:30
Client Sample ID: SW-2 Matrix: Water Date Received: 02/26/07 17:00

Parameters	Results	Units	Report Limit	Analyzed	By	CAS No.	Qual	RegLmt
Dibromofluoromethane (S)	98	%		03/04/07 16:23	MCK	1868-53-7		
1,2-Dichloroethane-d4 (S)	112	%		03/04/07 16:23	MCK	17060-07-0		

Asheville Certification IDs
NC Wastewater 40
NC Drinking Water 37712
SC Environmental 99030
FL NELAP E87648

REPORT OF LABORATORY ANALYSIS
This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, Inc.

Charlotte Certification IDs
NC Wastewater 12
NC Drinking Water 37706
SC 99006
FL NELAP E87627

Pace Analytical
www.pacelabs.com

Pace Analytical Services, Inc.
9800 Kincey Avenue, Suite 100
Huntersville, NC 28078
Phone: 704.875.9092
Fax: 704.875.9091

Lab Project Number: 92138920
Client Project ID: Francis Farm Landfill

Lab Sample No: 928057405 | Project Sample Number: 92138920-008 | Date Collected: 02/26/07 15:15
Client Sample ID: BLANTON BRANCH | Matrix: Water | Date Received: 02/26/07 17:00

Parameters	Results	Units	Report Limit	Analyzed	By	CAS No.	Qual	RegLmt
Field Services								
Monitoring Well Data	Method:							
Collected By	MPS			03/07/07	MPS			
Collected Date	2-26-07			03/07/07	MPS			
Collected Time	15:15			03/07/07	MPS			
Field pH	7.36			03/07/07	MPS			
Field Specific Conductance	91			03/07/07	MPS			
Field Temperature	12.6			03/07/07	MPS			
Metals								
Metals by Trace ICP	Prep/Method: EPA 3010 / EPA 6010							
Arsenic	ND	ug/l	5.0	03/07/07 00:01	SHB	7440-38-2		
Barium	36.	ug/l	5.0	03/07/07 00:01	SHB	7440-39-3		
Cadmium	ND	ug/l	1.0	03/07/07 00:01	SHB	7440-43-9		
Chromium	ND	ug/l	5.0	03/07/07 00:01	SHB	7440-47-3		
Lead	ND	ug/l	5.0	03/07/07 00:01	SHB	7439-92-1		
Selenium	ND	ug/l	10.	03/07/07 00:01	SHB	7782-49-2		
Silver	ND	ug/l	5.0	03/07/07 00:01	SHB	7440-22-4		
Date Digested	03/02/07 11:45			03/02/07 11:45				
Mercury, CVAAS, in Water	Method: EPA 7470							
Mercury	ND	ug/l	0.20	03/01/07 12:10	ALV	7439-97-6		
GC/MS Volatiles								
GC/MS VOCs by 8260	Method: EPA 8260							
Acetone	ND	ug/l	25.	03/04/07 16:39	MCK	67-64-1		
Acrylonitrile	ND	ug/l	25.	03/04/07 16:39	MCK	107-13-1		
Benzene	ND	ug/l	5.0	03/04/07 16:39	MCK	71-43-2		
Bromobenzene	ND	ug/l	5.0	03/04/07 16:39	MCK	108-86-1		
Bromochloromethane	ND	ug/l	5.0	03/04/07 16:39	MCK	74-97-5		
Bromodichloromethane	ND	ug/l	5.0	03/04/07 16:39	MCK	75-27-4		
Bromoform	ND	ug/l	5.0	03/04/07 16:39	MCK	75-25-2		
Bromomethane	ND	ug/l	5.0	03/04/07 16:39	MCK	74-83-9		
2-Butanone (MEK)	ND	ug/l	10.	03/04/07 16:39	MCK	78-93-3		
Carbon disulfide	ND	ug/l	10.	03/04/07 16:39	MCK	75-15-0		
Carbon tetrachloride	ND	ug/l	5.0	03/04/07 16:39	MCK	56-23-5		
Chlorobenzene	ND	ug/l	5.0	03/04/07 16:39	MCK	108-90-7		
Chloroethane	ND	ug/l	10.	03/04/07 16:39	MCK	75-00-3		
Chloroform	ND	ug/l	5.0	03/04/07 16:39	MCK	67-66-3		

Asheville Certification IDs
NC Wastewater 40
NC Drinking Water 37712
SC Environmental 99030
FL NELAP E87648

REPORT OF LABORATORY ANALYSIS
This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, Inc.

Charlotte Certification IDs
NC Wastewater 12
NC Drinking Water 37706
SC 99006
FL NELAP E87627

Pace Analytical™
www.pacelabs.com

Pace Analytical Services, Inc.
9800 Kincey Avenue, Suite 100
Huntersville, NC 28078
Phone: 704.875.9092
Fax: 704.875.9091

Lab Project Number: 92138920
Client Project ID: Francis Farm Landfill

Lab Sample No: 928057405 | Project Sample Number: 92138920-008 | Date Collected: 02/26/07 15:15
Client Sample ID: BLANTON BRANCH | Matrix: Water | Date Received: 02/26/07 17:00

Parameters	Results	Units	Report Limit	Analyzed	By	CAS No.	Qual	RegLmt
Chloromethane	ND	ug/l	5.0	03/04/07 16:39	MCK	74-87-3		
1,2-Dibromo-3-chloropropane	ND	ug/l	5.0	03/04/07 16:39	MCK	96-12-8		
Dibromochloromethane	ND	ug/l	5.0	03/04/07 16:39	MCK	124-48-1		
1,2-Dibromoethane (EDB)	ND	ug/l	5.0	03/04/07 16:39	MCK	106-93-4		
Dibromomethane	ND	ug/l	5.0	03/04/07 16:39	MCK	74-95-3		
1,2-Dichlorobenzene	ND	ug/l	5.0	03/04/07 16:39	MCK	95-50-1		
1,4-Dichlorobenzene	ND	ug/l	5.0	03/04/07 16:39	MCK	106-46-7		
trans-1,4-Dichloro-2-butene	ND	ug/l	5.0	03/04/07 16:39	MCK	110-57-6		
1,1-Dichloroethane	ND	ug/l	5.0	03/04/07 16:39	MCK	75-34-3		
1,2-Dichloroethane	ND	ug/l	5.0	03/04/07 16:39	MCK	107-06-2		
1,2-Dichloroethene (Total)	ND	ug/l	5.0	03/04/07 16:39	MCK	540-59-0		
1,1-Dichloroethene	ND	ug/l	5.0	03/04/07 16:39	MCK	75-35-4		
cis-1,2-Dichloroethene	ND	ug/l	5.0	03/04/07 16:39	MCK	156-59-2		
trans-1,2-Dichloroethene	ND	ug/l	5.0	03/04/07 16:39	MCK	156-60-5		
1,2-Dichloropropane	ND	ug/l	5.0	03/04/07 16:39	MCK	78-87-5		
cis-1,3-Dichloropropene	ND	ug/l	5.0	03/04/07 16:39	MCK	10061-01-5		
trans-1,3-Dichloropropene	ND	ug/l	5.0	03/04/07 16:39	MCK	10061-02-6		
Ethylbenzene	ND	ug/l	5.0	03/04/07 16:39	MCK	100-41-4		
2-Hexanone	ND	ug/l	10.	03/04/07 16:39	MCK	591-78-6		
Iodomethane	ND	ug/l	10.	03/04/07 16:39	MCK	74-88-4		
Methylene chloride	ND	ug/l	5.0	03/04/07 16:39	MCK	75-09-2		
4-Methyl-2-pentanone (MIBK)	ND	ug/l	10.	03/04/07 16:39	MCK	108-10-1		
Styrene	ND	ug/l	5.0	03/04/07 16:39	MCK	100-42-5		
1,1,1,2-Tetrachloroethane	ND	ug/l	5.0	03/04/07 16:39	MCK	630-20-6		
1,1,2,2-Tetrachloroethane	ND	ug/l	5.0	03/04/07 16:39	MCK	79-34-5		
Tetrachloroethene	ND	ug/l	5.0	03/04/07 16:39	MCK	127-18-4		
Toluene	ND	ug/l	5.0	03/04/07 16:39	MCK	108-88-3		
1,1,1-Trichloroethane	ND	ug/l	5.0	03/04/07 16:39	MCK	71-55-6		
1,1,2-Trichloroethane	ND	ug/l	5.0	03/04/07 16:39	MCK	79-00-5		
Trichloroethene	ND	ug/l	5.0	03/04/07 16:39	MCK	79-01-6		
Trichlorofluoromethane	ND	ug/l	10.	03/04/07 16:39	MCK	75-69-4		
1,2,3-Trichloropropane	ND	ug/l	5.0	03/04/07 16:39	MCK	96-18-4		
Vinyl acetate	ND	ug/l	10.	03/04/07 16:39	MCK	108-05-4		
Vinyl chloride	ND	ug/l	5.0	03/04/07 16:39	MCK	75-01-4		
Xylene (Total)	ND	ug/l	10.	03/04/07 16:39	MCK	1330-20-7		
m&p-Xylene	ND	ug/l	10.	03/04/07 16:39	MCK			
o-Xylene	ND	ug/l	5.0	03/04/07 16:39	MCK	95-47-6		
Toluene-d8 (S)	100	%		03/04/07 16:39	MCK	2037-26-5		
4-Bromofluorobenzene (S)	109	%		03/04/07 16:39	MCK	460-00-4		

Asheville Certification IDs
NC Wastewater 40
NC Drinking Water 37712
SC Environmental 99030
FL NELAP E87648

REPORT OF LABORATORY ANALYSIS
This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, Inc.

Charlotte Certification IDs
NC Wastewater 12
NC Drinking Water 37706
SC 99006
FL NELAP E87627

Pace Analytical™
www.pacelabs.com

Pace Analytical Services, Inc.
9800 Kincey Avenue, Suite 100
Huntersville, NC 28078
Phone: 704.875.9092
Fax: 704.875.9091

F

Lab Project Number: 92138920
Client Project ID: Francis Farm Landfill

Lab Sample No: 928057405 Project Sample Number: 92138920-008 Date Collected: 02/26/07 15:15
Client Sample ID: BLANTON BRANCH Matrix: Water Date Received: 02/26/07 17:00

Parameters	Results	Units	Report Limit	Analyzed	By	CAS No.	Qual	RegLmt
Dibromofluoromethane (S)	98	%		03/04/07 16:39	MCK	1868-53-7		
1,2-Dichloroethane-d4 (S)	115	%		03/04/07 16:39	MCK	17060-07-0		

Asheville Certification IDs
NC Wastewater 40
NC Drinking Water 37712
SC Environmental 99030
FL NELAP E87648

REPORT OF LABORATORY ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Charlotte Certification IDs
NC Wastewater 12
NC Drinking Water 37706
SC 99006
FL NELAP E87627

Pace Analytical
www.pacelabs.com

Pace Analytical Services, Inc.
9800 Kincey Avenue, Suite 100
Huntersville, NC 28078
Phone: 704.875.9092
Fax: 704.875.9091

Lab Project Number: 92138920
Client Project ID: Francis Farm Landfill

Lab Sample No: 928057413 | Project Sample Number: 92138920-009 | Date Collected: 02/26/07 00:00
Client Sample ID: TVL BLANK | Matrix: Water | Date Received: 02/26/07 17:00

Parameters	Results	Units	Report Limit	Analyzed	By	CAS No.	Qual	RegLmt
GC/MS Volatiles								
GC/MS VOCs by 8260	Method: EPA 8260							
Acetone	ND	ug/l	25.	03/04/07 13:42	MCK	67-64-1		
Acrylonitrile	ND	ug/l	25.	03/04/07 13:42	MCK	107-13-1		
Benzene	ND	ug/l	5.0	03/04/07 13:42	MCK	71-43-2		
Bromobenzene	ND	ug/l	5.0	03/04/07 13:42	MCK	108-86-1		
Bromochloromethane	ND	ug/l	5.0	03/04/07 13:42	MCK	74-97-5		
Bromodichloromethane	ND	ug/l	5.0	03/04/07 13:42	MCK	75-27-4		
Bromoform	ND	ug/l	5.0	03/04/07 13:42	MCK	75-25-2		
Bromomethane	ND	ug/l	5.0	03/04/07 13:42	MCK	74-83-9		
2-Butanone (MEK)	ND	ug/l	10.	03/04/07 13:42	MCK	78-93-3		
Carbon disulfide	ND	ug/l	10.	03/04/07 13:42	MCK	75-15-0		
Carbon tetrachloride	ND	ug/l	5.0	03/04/07 13:42	MCK	56-23-5		
Chlorobenzene	ND	ug/l	5.0	03/04/07 13:42	MCK	108-90-7		
Chloroethane	ND	ug/l	10.	03/04/07 13:42	MCK	75-00-3		
Chloroform	ND	ug/l	5.0	03/04/07 13:42	MCK	67-66-3		
Chloromethane	ND	ug/l	5.0	03/04/07 13:42	MCK	74-87-3		
1,2-Dibromo-3-chloropropane	ND	ug/l	5.0	03/04/07 13:42	MCK	96-12-8		
Dibromochloromethane	ND	ug/l	5.0	03/04/07 13:42	MCK	124-48-1		
1,2-Dibromoethane (EDB)	ND	ug/l	5.0	03/04/07 13:42	MCK	106-93-4		
Dibromomethane	ND	ug/l	5.0	03/04/07 13:42	MCK	74-95-3		
1,2-Dichlorobenzene	ND	ug/l	5.0	03/04/07 13:42	MCK	95-50-1		
1,4-Dichlorobenzene	ND	ug/l	5.0	03/04/07 13:42	MCK	106-46-7		
trans-1,4-Dichloro-2-butene	ND	ug/l	5.0	03/04/07 13:42	MCK	110-57-6		
1,1-Dichloroethane	ND	ug/l	5.0	03/04/07 13:42	MCK	75-34-3		
1,2-Dichloroethane	ND	ug/l	5.0	03/04/07 13:42	MCK	107-06-2		
1,2-Dichloroethene (Total)	ND	ug/l	5.0	03/04/07 13:42	MCK	540-59-0		
1,1-Dichloroethene	ND	ug/l	5.0	03/04/07 13:42	MCK	75-35-4		
cis-1,2-Dichloroethene	ND	ug/l	5.0	03/04/07 13:42	MCK	156-59-2		
trans-1,2-Dichloroethene	ND	ug/l	5.0	03/04/07 13:42	MCK	156-60-5		
1,2-Dichloropropane	ND	ug/l	5.0	03/04/07 13:42	MCK	78-87-5		
cis-1,3-Dichloropropene	ND	ug/l	5.0	03/04/07 13:42	MCK	10061-01-5		
trans-1,3-Dichloropropene	ND	ug/l	5.0	03/04/07 13:42	MCK	10061-02-6		
Ethylbenzene	ND	ug/l	5.0	03/04/07 13:42	MCK	100-41-4		
2-Hexanone	ND	ug/l	10.	03/04/07 13:42	MCK	591-78-6		
Iodomethane	ND	ug/l	10.	03/04/07 13:42	MCK	74-88-4		
Methylene chloride	ND	ug/l	5.0	03/04/07 13:42	MCK	75-09-2		
4-Methyl-2-pentanone (MIBK)	ND	ug/l	10.	03/04/07 13:42	MCK	108-10-1		
Styrene	ND	ug/l	5.0	03/04/07 13:42	MCK	100-42-5		

Asheville Certification IDs
NC Wastewater 40
NC Drinking Water 37712
SC Environmental 99030
FL NELAP E87648

REPORT OF LABORATORY ANALYSIS
This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, Inc.

Charlotte Certification IDs
NC Wastewater 12
NC Drinking Water 37706
SC 99006
FL NELAP E87627

Pace Analytical™
www.pacelabs.com

Pace Analytical Services, Inc.
9800 Kincey Avenue, Suite 100
Huntersville, NC 28078
Phone: 704.875.9092
Fax: 704.875.9091

F

Lab Project Number: 92138920
Client Project ID: Francis Farm Landfill

Lab Sample No: 928057413 | Project Sample Number: 92138920-009 | Date Collected: 02/26/07 00:00
Client Sample ID: TVL BLANK | Matrix: Water | Date Received: 02/26/07 17:00

Parameters	Results	Units	Report Limit	Analyzed	By	CAS No.	Qual	ReqLmt
1,1,1,2-Tetrachloroethane	ND	ug/l	5.0	03/04/07 13:42	MCK	630-20-6		
1,1,2,2-Tetrachloroethane	ND	ug/l	5.0	03/04/07 13:42	MCK	79-34-5		
Tetrachloroethene	ND	ug/l	5.0	03/04/07 13:42	MCK	127-18-4		
Toluene	ND	ug/l	5.0	03/04/07 13:42	MCK	108-88-3		
1,1,1-Trichloroethane	ND	ug/l	5.0	03/04/07 13:42	MCK	71-55-6		
1,1,2-Trichloroethane	ND	ug/l	5.0	03/04/07 13:42	MCK	79-00-5		
Trichloroethene	ND	ug/l	5.0	03/04/07 13:42	MCK	79-01-6		
Trichlorofluoromethane	ND	ug/l	10.	03/04/07 13:42	MCK	75-69-4		
1,2,3-Trichloropropane	ND	ug/l	5.0	03/04/07 13:42	MCK	96-18-4		
Vinyl acetate	ND	ug/l	10.	03/04/07 13:42	MCK	108-05-4		
Vinyl chloride	ND	ug/l	5.0	03/04/07 13:42	MCK	75-01-4		
Xylene (Total)	ND	ug/l	10.	03/04/07 13:42	MCK	1330-20-7		
m&p-Xylene	ND	ug/l	10.	03/04/07 13:42	MCK			
o-Xylene	ND	ug/l	5.0	03/04/07 13:42	MCK	95-47-6		
Toluene-d8 (S)	98	%		03/04/07 13:42	MCK	2037-26-5		
4-Bromofluorobenzene (S)	111	%		03/04/07 13:42	MCK	460-00-4		
Dibromofluoromethane (S)	96	%		03/04/07 13:42	MCK	1868-53-7		
1,2-Dichloroethane-d4 (S)	110	%		03/04/07 13:42	MCK	17060-07-0		

Asheville Certification IDs
NC Wastewater 40
NC Drinking Water 37712
SC Environmental 99030
FL NELAP E87648

REPORT OF LABORATORY ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Charlotte Certification IDs
NC Wastewater 12
NC Drinking Water 37706
SC 99006
FL NELAP E87627

Pace Analytical™
www.pacelabs.com

Pace Analytical Services, Inc.
9800 Kincey Avenue, Suite 100
Huntersville, NC 28078
Phone: 704.875.9092
Fax: 704.875.9091

Lab Project Number: 92138920
Client Project ID: Francis Farm Landfill

Lab Sample No: 928057421 | Project Sample Number: 92138920-010 | Date Collected: 02/26/07 00:00
Client Sample ID: EQUIP BLANK | Matrix: Water | Date Received: 02/26/07 17:00

Parameters	Results	Units	Report Limit	Analyzed	By	CAS No.	Qual	RegLmt
GC/MS Volatiles								
GC/MS VOCs by 8260	Method: EPA 8260							
Acetone	ND	ug/l	25.	03/04/07 13:58	MCK	67-64-1		
Acrylonitrile	ND	ug/l	25.	03/04/07 13:58	MCK	107-13-1		
Benzene	ND	ug/l	5.0	03/04/07 13:58	MCK	71-43-2		
Bromobenzene	ND	ug/l	5.0	03/04/07 13:58	MCK	108-86-1		
Bromochloromethane	ND	ug/l	5.0	03/04/07 13:58	MCK	74-97-5		
Bromodichloromethane	ND	ug/l	5.0	03/04/07 13:58	MCK	75-27-4		
Bromoform	ND	ug/l	5.0	03/04/07 13:58	MCK	75-25-2		
Bromomethane	ND	ug/l	5.0	03/04/07 13:58	MCK	74-83-9		
2-Butanone (MEK)	ND	ug/l	10.	03/04/07 13:58	MCK	78-93-3		
Carbon disulfide	ND	ug/l	10.	03/04/07 13:58	MCK	75-15-0		
Carbon tetrachloride	ND	ug/l	5.0	03/04/07 13:58	MCK	56-23-5		
Chlorobenzene	ND	ug/l	5.0	03/04/07 13:58	MCK	108-90-7		
Chloroethane	ND	ug/l	10.	03/04/07 13:58	MCK	75-00-3		
Chloroform	ND	ug/l	5.0	03/04/07 13:58	MCK	67-66-3		
Chloromethane	ND	ug/l	5.0	03/04/07 13:58	MCK	74-87-3		
1,2-Dibromo-3-chloropropane	ND	ug/l	5.0	03/04/07 13:58	MCK	96-12-8		
Dibromochloromethane	ND	ug/l	5.0	03/04/07 13:58	MCK	124-48-1		
1,2-Dibromoethane (EDB)	ND	ug/l	5.0	03/04/07 13:58	MCK	106-93-4		
Dibromomethane	ND	ug/l	5.0	03/04/07 13:58	MCK	74-95-3		
1,2-Dichlorobenzene	ND	ug/l	5.0	03/04/07 13:58	MCK	95-50-1		
1,4-Dichlorobenzene	ND	ug/l	5.0	03/04/07 13:58	MCK	106-46-7		
trans-1,4-Dichloro-2-butene	ND	ug/l	5.0	03/04/07 13:58	MCK	110-57-6		
1,1-Dichloroethane	ND	ug/l	5.0	03/04/07 13:58	MCK	75-34-3		
1,2-Dichloroethane	ND	ug/l	5.0	03/04/07 13:58	MCK	107-06-2		
1,2-Dichloroethene (Total)	ND	ug/l	5.0	03/04/07 13:58	MCK	540-59-0		
1,1-Dichloroethene	ND	ug/l	5.0	03/04/07 13:58	MCK	75-35-4		
cis-1,2-Dichloroethene	ND	ug/l	5.0	03/04/07 13:58	MCK	156-59-2		
trans-1,2-Dichloroethene	ND	ug/l	5.0	03/04/07 13:58	MCK	156-60-5		
1,2-Dichloropropane	ND	ug/l	5.0	03/04/07 13:58	MCK	78-87-5		
cis-1,3-Dichloropropene	ND	ug/l	5.0	03/04/07 13:58	MCK	10061-01-5		
trans-1,3-Dichloropropene	ND	ug/l	5.0	03/04/07 13:58	MCK	10061-02-6		
Ethylbenzene	ND	ug/l	5.0	03/04/07 13:58	MCK	100-41-4		
2-Hexanone	ND	ug/l	10.	03/04/07 13:58	MCK	591-78-6		
Iodomethane	ND	ug/l	10.	03/04/07 13:58	MCK	74-88-4		
Methylene chloride	ND	ug/l	5.0	03/04/07 13:58	MCK	75-09-2		
4-Methyl-2-pentanone (MIBK)	ND	ug/l	10.	03/04/07 13:58	MCK	108-10-1		
Styrene	ND	ug/l	5.0	03/04/07 13:58	MCK	100-42-5		

Asheville Certification IDs
NC Wastewater 40
NC Drinking Water 37712
SC Environmental 99030
FL NELAP E87648

REPORT OF LABORATORY ANALYSIS
This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, Inc.

Charlotte Certification IDs
NC Wastewater 12
NC Drinking Water 37706
SC 99006
FL NELAP E87627

Pace Analytical™
www.pacelabs.com

Pace Analytical Services, Inc.
9800 Kincey Avenue, Suite 100
Huntersville, NC 28078
Phone: 704.875.9092
Fax: 704.875.9091

Lab Project Number: 92138920
Client Project ID: Francis Farm Landfill

Lab Sample No: 928057421 | Project Sample Number: 92138920-010 | Date Collected: 02/26/07 00:00
Client Sample ID: EQUIP BLANK | Matrix: Water | Date Received: 02/26/07 17:00

Parameters	Results	Units	Report Limit	Analyzed	By	CAS No.	Qual	RegLmt
1,1,1,2-Tetrachloroethane	ND	ug/l	5.0	03/04/07 13:58	MCK	630-20-6		
1,1,2,2-Tetrachloroethane	ND	ug/l	5.0	03/04/07 13:58	MCK	79-34-5		
Tetrachloroethene	ND	ug/l	5.0	03/04/07 13:58	MCK	127-18-4		
Toluene	ND	ug/l	5.0	03/04/07 13:58	MCK	108-88-3		
1,1,1-Trichloroethane	ND	ug/l	5.0	03/04/07 13:58	MCK	71-55-6		
1,1,2-Trichloroethane	ND	ug/l	5.0	03/04/07 13:58	MCK	79-00-5		
Trichloroethene	ND	ug/l	5.0	03/04/07 13:58	MCK	79-01-6		
Trichlorofluoromethane	ND	ug/l	10.	03/04/07 13:58	MCK	75-69-4		
1,2,3-Trichloropropane	ND	ug/l	5.0	03/04/07 13:58	MCK	96-18-4		
Vinyl acetate	ND	ug/l	10.	03/04/07 13:58	MCK	108-05-4		
Vinyl chloride	ND	ug/l	5.0	03/04/07 13:58	MCK	75-01-4		
Xylene (Total)	ND	ug/l	10.	03/04/07 13:58	MCK	1330-20-7		
m&p-Xylene	ND	ug/l	10.	03/04/07 13:58	MCK			
o-Xylene	ND	ug/l	5.0	03/04/07 13:58	MCK	95-47-6		
Toluene-d8 (S)	100	%		03/04/07 13:58	MCK	2037-26-5		
4-Bromofluorobenzene (S)	107	%		03/04/07 13:58	MCK	460-00-4		
Dibromofluoromethane (S)	97	%		03/04/07 13:58	MCK	1868-53-7		
1,2-Dichloroethane-d4 (S)	111	%		03/04/07 13:58	MCK	17060-07-0		

Asheville Certification IDs
NC Wastewater 40
NC Drinking Water 37712
SC Environmental 99030
FL NELAP E87648

REPORT OF LABORATORY ANALYSIS
This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, Inc.

Charlotte Certification IDs
NC Wastewater 12
NC Drinking Water 37706
SC 99006
FL NELAP E87627

Pace Analytical™
www.pacelabs.com

Pace Analytical Services, Inc.
9800 Kincey Avenue, Suite 100
Huntersville, NC 28078
Phone: 704.875.9092
Fax: 704.875.9091

F

Lab Project Number: 92138920
Client Project ID: Francis Farm Landfill

PARAMETER FOOTNOTES

Method 9071B modified to use ASE.

All pH, Free Chlorine, Total Chlorine and Ferrous Iron analyses conducted outside of EPA recommended immediate hold time.

Depending on the moisture content the PRLs can be elevated for all soil samples reported on a dry weight basis.

2-Chloroethyl vinyl ether has been shown to degrade in the presence of acid.

ND	Not detected at or above adjusted reporting limit
NC	Not Calculable
J	Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit
MDL	Adjusted Method Detection Limit
(S)	Surrogate

Asheville Certification IDs
NC Wastewater 40
NC Drinking Water 37712
SC Environmental 99030
FL NELAP E87648

REPORT OF LABORATORY ANALYSIS
This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, Inc.

Charlotte Certification IDs
NC Wastewater 12
NC Drinking Water 37706
SC 99006
FL NELAP E87627

Pace Analytical™
www.pacelabs.com

Pace Analytical Services, Inc.
9800 Kincey Avenue, Suite 100
Huntersville, NC 28078
Phone: 704.875.9092
Fax: 704.875.9091

F

QUALITY CONTROL DATA

Lab Project Number: 92138920
Client Project ID: Francis Farm Landfill

QC Batch: 182153 — Analysis Method: EPA 8260
QC Batch Method: EPA 8260 — Analysis Description: GC/MS VOCs by 8260
Associated Lab Samples: 928057330 928057348 928057355 928057363 928057371 928057389 928057397 928057405 928057413 928057421

METHOD BLANK: 928082668
Associated Lab Samples: 928057330 928057348 928057355 928057363 928057371 928057389 928057397 928057405 928057413 928057421

Parameter	Units	Blank Result	Reporting Limit	Footnotes
Acetone	ug/l	ND	25.	
Acrylonitrile	ug/l	ND	25.	
Benzene	ug/l	ND	5.0	
Bromobenzene	ug/l	ND	5.0	
Bromochloromethane	ug/l	ND	5.0	
Bromodichloromethane	ug/l	ND	5.0	
Bromoform	ug/l	ND	5.0	
Bromomethane	ug/l	ND	5.0	
2-Butanone (MEK)	ug/l	ND	10.	
Carbon disulfide	ug/l	ND	10.	
Carbon tetrachloride	ug/l	ND	5.0	
Chlorobenzene	ug/l	ND	5.0	
Chloroethane	ug/l	ND	10.	
Chloroform	ug/l	ND	5.0	
Chloromethane	ug/l	ND	5.0	
1,2-Dibromo-3-chloropropane	ug/l	ND	5.0	
Dibromochloromethane	ug/l	ND	5.0	
1,2-Dibromoethane (EDB)	ug/l	ND	5.0	
Dibromomethane	ug/l	ND	5.0	
1,2-Dichlorobenzene	ug/l	ND	5.0	
1,4-Dichlorobenzene	ug/l	ND	5.0	
trans-1,4-Dichloro-2-butene	ug/l	ND	5.0	
1,1-Dichloroethane	ug/l	ND	5.0	
1,2-Dichloroethane	ug/l	ND	5.0	
1,2-Dichloroethene (Total)	ug/l	ND	5.0	
1,1-Dichloroethene	ug/l	ND	5.0	
cis-1,2-Dichloroethene	ug/l	ND	5.0	
trans-1,2-Dichloroethene	ug/l	ND	5.0	
1,2-Dichloropropane	ug/l	ND	5.0	

Asheville Certification IDs
NC Wastewater 40
NC Drinking Water 37712
SC Environmental 99030
FL NELAP E87648

REPORT OF LABORATORY ANALYSIS
This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, Inc.

Charlotte Certification IDs
NC Wastewater 12
NC Drinking Water 37706
SC 99006
FL NELAP E87627

Pace Analytical
www.pacelabs.com

Pace Analytical Services, Inc.
9800 Kincey Avenue, Suite 100
Huntersville, NC 28078
Phone: 704.875.9092
Fax: 704.875.9091

QUALITY CONTROL DATA

Lab Project Number: 92138920
Client Project ID: Francis Farm Landfill

METHOD BLANK: 928082668
Associated Lab Samples: 928057330 928057348 928057355 928057363 928057371 928057389 928057397 928057405 928057413 928057421

Parameter	Units	Blank Result	Reporting Limit	Footnotes
cis-1,3-Dichloropropene	ug/l	ND	5.0	
trans-1,3-Dichloropropene	ug/l	ND	5.0	
Ethylbenzene	ug/l	ND	5.0	
2-Hexanone	ug/l	ND	10.	
Iodomethane	ug/l	ND	10.	
Methylene chloride	ug/l	ND	5.0	
4-Methyl-2-pentanone (MIBK)	ug/l	ND	10.	
Styrene	ug/l	ND	5.0	
1,1,1,2-Tetrachloroethane	ug/l	ND	5.0	
1,1,2,2-Tetrachloroethane	ug/l	ND	5.0	
Tetrachloroethene	ug/l	ND	5.0	
Toluene	ug/l	ND	5.0	
1,1,1-Trichloroethane	ug/l	ND	5.0	
1,1,2-Trichloroethane	ug/l	ND	5.0	
Trichloroethene	ug/l	ND	5.0	
Trichlorofluoromethane	ug/l	ND	10.	
1,2,3-Trichloropropane	ug/l	ND	5.0	
Vinyl acetate	ug/l	ND	10.	
Vinyl chloride	ug/l	ND	5.0	
Xylene (Total)	ug/l	ND	10.	
m&p-Xylene	ug/l	ND	10.	
o-Xylene	ug/l	ND	5.0	
Toluene-d8 (S)	%	100		
4-Bromofluorobenzene (S)	%	113		
Dibromofluoromethane (S)	%	97		
1,2-Dichloroethane-d4 (S)	%	108		

LABORATORY CONTROL SAMPLE: 928082676

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	Footnotes
Acetone	ug/l	100.00	95.90	96	
Acrylonitrile	ug/l	250.00	445.9	178	1
Benzene	ug/l	50.00	50.56	101	

Asheville Certification IDs
NC Wastewater 40
NC Drinking Water 37712
SC Environmental 99030
FL NELAP E87648

REPORT OF LABORATORY ANALYSIS
This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, Inc.

Charlotte Certification IDs
NC Wastewater 12
NC Drinking Water 37706
SC 99006
FL NELAP E87627

Pace Analytical
www.pacelabs.com

Pace Analytical Services, Inc.
9800 Kincey Avenue, Suite 100
Huntersville, NC 28078
Phone: 704.875.9092
Fax: 704.875.9091

QUALITY CONTROL DATA

Lab Project Number: 92138920
Client Project ID: Francis Farm Landfill

LABORATORY CONTROL SAMPLE: 928082676

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	Footnotes
Bromobenzene	ug/l	50.00	49.69	99	
Bromochloromethane	ug/l	50.00	39.27	78	
Bromodichloromethane	ug/l	50.00	55.44	111	
Bromoform	ug/l	50.00	55.23	110	
Bromomethane	ug/l	50.00	39.40	79	
2-Butanone (MEK)	ug/l	100.00	87.13	87	
Carbon disulfide	ug/l	50.00	51.82	104	
Carbon tetrachloride	ug/l	50.00	60.62	121	
Chlorobenzene	ug/l	50.00	52.68	105	
Chloroethane	ug/l	50.00	42.78	86	
Chloroform	ug/l	50.00	51.43	103	
Chloromethane	ug/l	50.00	40.56	81	
1,2-Dibromo-3-chloropropane	ug/l	50.00	53.90	108	
Dibromochloromethane	ug/l	50.00	54.83	110	
1,2-Dibromoethane (EDB)	ug/l	50.00	53.49	107	
Dibromomethane	ug/l	50.00	55.37	111	
1,2-Dichlorobenzene	ug/l	50.00	52.03	104	
1,4-Dichlorobenzene	ug/l	50.00	49.95	100	
trans-1,4-Dichloro-2-butene	ug/l	50.00	40.32	81	
1,1-Dichloroethane	ug/l	50.00	47.75	96	
1,2-Dichloroethane	ug/l	50.00	51.44	103	
1,1-Dichloroethene	ug/l	50.00	59.96	120	
cis-1,2-Dichloroethene	ug/l	50.00	50.61	101	
trans-1,2-Dichloroethene	ug/l	50.00	54.21	108	
1,2-Dichloropropane	ug/l	50.00	49.94	100	
cis-1,3-Dichloropropene	ug/l	50.00	51.72	103	
trans-1,3-Dichloropropene	ug/l	50.00	52.18	104	
Ethylbenzene	ug/l	50.00	52.48	105	
2-Hexanone	ug/l	100.00	100.3	100	
Iodomethane	ug/l	100.00	89.74	90	
Methylene chloride	ug/l	50.00	42.65	85	
4-Methyl-2-pentanone (MIBK)	ug/l	100.00	98.22	98	
Styrene	ug/l	50.00	53.37	107	
1,1,1,2-Tetrachloroethane	ug/l	50.00	54.25	108	
1,1,2,2-Tetrachloroethane	ug/l	50.00	49.08	98	
Tetrachloroethene	ug/l	50.00	57.02	114	
Toluene	ug/l	50.00	51.38	103	

Asheville Certification IDs
NC Wastewater 40
NC Drinking Water 37712
SC Environmental 99030
FL NELAP E87648

REPORT OF LABORATORY ANALYSIS
This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, Inc.

Charlotte Certification IDs
NC Wastewater 12
NC Drinking Water 37706
SC 99006
FL NELAP E87627

Pace Analytical
www.pacelabs.com

Pace Analytical Services, Inc.
9800 Kincey Avenue, Suite 100
Huntersville, NC 28078
Phone: 704.875.9092
Fax: 704.875.9091

QUALITY CONTROL DATA

Lab Project Number: 92138920
Client Project ID: Francis Farm Landfill

LABORATORY CONTROL SAMPLE: 928082676

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	Footnotes
1,1,1-Trichloroethane	ug/l	50.00	56.37	113	
1,1,2-Trichloroethane	ug/l	50.00	49.95	100	
Trichloroethene	ug/l	50.00	54.12	108	
Trichlorofluoromethane	ug/l	50.00	61.01	122	
1,2,3-Trichloropropane	ug/l	50.00	51.63	103	
Vinyl acetate	ug/l	100.00	102.7	103	
Vinyl chloride	ug/l	50.00	41.93	84	
m&p-Xylene	ug/l	100.00	107.4	107	
o-Xylene	ug/l	50.00	53.27	107	
Toluene-d8 (S)				104	
4-Bromofluorobenzene (S)				112	
Dibromofluoromethane (S)				101	
1,2-Dichloroethane-d4 (S)				111	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 928082684 928082692

Parameter	Units	928057330 Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	RPD	Footnotes
Benzene	ug/l	0	50.00	47.74	53.04	96	106	11	
Chlorobenzene	ug/l	2.579	50.00	51.39	56.62	98	108	10	
1,1-Dichloroethene	ug/l	0	50.00	55.12	60.01	110	120	8	
Toluene	ug/l	0	50.00	47.24	52.61	94	105	11	
Trichloroethene	ug/l	0	50.00	51.03	55.43	102	111	8	
Toluene-d8 (S)						100	100		
4-Bromofluorobenzene (S)						110	112		
Dibromofluoromethane (S)						98	95		
1,2-Dichloroethane-d4 (S)						116	112		

Asheville Certification IDs
NC Wastewater 40
NC Drinking Water 37712
SC Environmental 99030
FL NELAP E87648

REPORT OF LABORATORY ANALYSIS
This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, Inc.

Charlotte Certification IDs
NC Wastewater 12
NC Drinking Water 37706
SC 99006
FL NELAP E87627

Pace Analytical™
www.pacelabs.com

Pace Analytical Services, Inc.
9800 Kincey Avenue, Suite 100
Huntersville, NC 28078
Phone: 704.875.9092
Fax: 704.875.9091

QUALITY CONTROL DATA

Lab Project Number: 92138920
Client Project ID: Francis Farm Landfill

QC Batch: 181783 — Analysis Method: EPA 7470
QC Batch Method: EPA 7470 — Analysis Description: Mercury, CVAAS, in Water
Associated Lab Samples: 928057330 928057348 928057355 928057363 928057371 928057389

METHOD BLANK: 928062736
Associated Lab Samples: 928057330 928057348 928057355 928057363 928057371 928057389

Parameter	Units	Blank Result	Reporting Limit	Footnotes
Mercury	ug/l	ND	0.20	

LABORATORY CONTROL SAMPLE: 928062744

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	Footnotes
Mercury	ug/l	2.500	2.660	106	

MATRIX SPIKE: 928062751

Parameter	Units	928061308 Result	Spike Conc.	MS Result	MS % Rec	Footnotes
Mercury	ug/l	0	2.500	2.340	94	

SAMPLE DUPLICATE: 928062769

Parameter	Units	928061332 Result	DUP Result	RPD	Footnotes
Mercury	ug/l	ND	ND	NC	

Asheville Certification IDs
NC Wastewater 40
NC Drinking Water 37712
SC Environmental 99030
FL NELAP E87648

REPORT OF LABORATORY ANALYSIS
This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, Inc.

Charlotte Certification IDs
NC Wastewater 12
NC Drinking Water 37706
SC 99006
FL NELAP E87627

Pace Analytical Services, Inc.
9800 Kincey Avenue, Suite 100
Huntersville, NC 28078
Phone: 704.875.9092
Fax: 704.875.9091

QUALITY CONTROL DATA

Lab Project Number: 92138920
Client Project ID: Francis Farm Landfill

QC Batch: 181939 — Analysis Method: EPA 7470
QC Batch Method: EPA 7470 — Analysis Description: Mercury, CVAAS, in Water
Associated Lab Samples: 928057397 928057405

METHOD BLANK: 928069319
Associated Lab Samples: 928057397 928057405

Parameter	Units	Blank Result	Reporting Limit	Footnotes
Mercury	ug/l	ND	0.20	

LABORATORY CONTROL SAMPLE: 928069327

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	Footnotes
Mercury	ug/l	2.500	2.480	99	

MATRIX SPIKE: 928069350

Parameter	Units	928065572 Result	Spike Conc.	MS Result	MS % Rec	Footnotes
Mercury	ug/l	0.08800	2.500	2.550	98	

SAMPLE DUPLICATE: 928069368

Parameter	Units	928065283 Result	DUP Result	RPD	Footnotes
Mercury	ug/l	ND	ND	NC	

Asheville Certification IDs
NC Wastewater 40
NC Drinking Water 37712
SC Environmental 99030
FL NELAP E87648

REPORT OF LABORATORY ANALYSIS
This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, Inc.

Charlotte Certification IDs
NC Wastewater 12
NC Drinking Water 37706
SC 99006
FL NELAP E87627

Pace Analytical
www.pacelabs.com

Pace Analytical Services, Inc.
9800 Kincey Avenue, Suite 100
Huntersville, NC 28078
Phone: 704.875.9092
Fax: 704.875.9091

QUALITY CONTROL DATA

Lab Project Number: 92138920
Client Project ID: Francis Farm Landfill

QC Batch: 182076 — Analysis Method: EPA 6010
QC Batch Method: EPA 3010 — Analysis Description: Metals by Trace ICP
Associated Lab Samples: 928057330 928057348 928057355 928057363 928057371

METHOD BLANK: 928075639
Associated Lab Samples: 928057330 928057348 928057355 928057363 928057371

Parameter	Units	Blank Result	Reporting Limit	Footnotes
Arsenic	ug/l	ND	5.0	
Barium	ug/l	ND	5.0	
Cadmium	ug/l	ND	1.0	
Chromium	ug/l	ND	5.0	
Lead	ug/l	ND	5.0	
Selenium	ug/l	ND	10.	
Silver	ug/l	ND	5.0	

LABORATORY CONTROL SAMPLE: 928075647

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	Footnotes
Arsenic	ug/l	500.00	538.0	108	
Barium	ug/l	500.00	524.0	105	
Cadmium	ug/l	500.00	533.0	107	
Chromium	ug/l	500.00	542.0	108	
Lead	ug/l	500.00	524.0	105	
Selenium	ug/l	500.00	533.0	107	
Silver	ug/l	250.00	246.0	98	

MATRIX SPIKE: 928075654

Parameter	Units	928060342 Result	Spike Conc.	MS Result	MS % Rec	Footnotes
Arsenic	ug/l	0.2540	500.00	532.0	106	
Barium	ug/l	10.40	500.00	519.0	102	
Cadmium	ug/l	0	500.00	519.0	104	
Chromium	ug/l	1.710	500.00	529.0	106	
Lead	ug/l	0.7730	500.00	505.0	101	

Asheville Certification IDs
NC Wastewater 40
NC Drinking Water 37712
SC Environmental 99030
FL NELAP E87648

REPORT OF LABORATORY ANALYSIS
This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, Inc.

Charlotte Certification IDs
NC Wastewater 12
NC Drinking Water 37706
SC 99006
FL NELAP E87627

Pace Analytical™
www.pacelabs.com

Pace Analytical Services, Inc.
9800 Kincey Avenue, Suite 100
Huntersville, NC 28078
Phone: 704.875.9092
Fax: 704.875.9091

QUALITY CONTROL DATA

Lab Project Number: 92138920
Client Project ID: Francis Farm Landfill

MATRIX SPIKE: 928075654

Parameter	Units	928060342 Result	Spike Conc.	MS Result	MS % Rec	Footnotes
Selenium	ug/l	0.8390	500.00	526.0	105	
Silver	ug/l	0	250.00	239.0	96	

SAMPLE DUPLICATE: 928075662

Parameter	Units	928060359 Result	DUP Result	RPD	Footnotes
Arsenic	ug/l	ND	ND	NC	
Barium	ug/l	5.200	5.300	2	
Cadmium	ug/l	ND	ND	NC	
Chromium	ug/l	ND	5.900	0	
Lead	ug/l	ND	ND	NC	
Selenium	ug/l	ND	ND	NC	
Silver	ug/l	ND	ND	NC	

Asheville Certification IDs
NC Wastewater 40
NC Drinking Water 37712
SC Environmental 99030
FL NELAP E87648

REPORT OF LABORATORY ANALYSIS
This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, Inc.

Charlotte Certification IDs
NC Wastewater 12
NC Drinking Water 37706
SC 99006
FL NELAP E87627

Pace Analytical
www.pacelabs.com

Pace Analytical Services, Inc.
9800 Kincey Avenue, Suite 100
Huntersville, NC 28078
Phone: 704.875.9092
Fax: 704.875.9091

QUALITY CONTROL DATA

Lab Project Number: 92138920
Client Project ID: Francis Farm Landfill

QC Batch: 182077 — Analysis Method: EPA 6010
QC Batch Method: EPA 3010 — Analysis Description: Metals by Trace ICP
Associated Lab Samples: 928057389 928057397 928057405

METHOD BLANK: 928075738
Associated Lab Samples: 928057389 928057397 928057405

Parameter	Units	Blank Result	Reporting Limit	Footnotes
Arsenic	ug/l	ND	5.0	
Barium	ug/l	ND	5.0	
Cadmium	ug/l	ND	1.0	
Chromium	ug/l	ND	5.0	
Lead	ug/l	ND	5.0	
Selenium	ug/l	ND	10.	
Silver	ug/l	ND	5.0	

LABORATORY CONTROL SAMPLE: 928075746

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	Footnotes
Arsenic	ug/l	500.00	514.0	103	
Barium	ug/l	500.00	516.0	103	
Cadmium	ug/l	500.00	515.0	103	
Chromium	ug/l	500.00	516.0	103	
Lead	ug/l	500.00	525.0	105	
Selenium	ug/l	500.00	509.0	102	
Silver	ug/l	250.00	242.0	97	

MATRIX SPIKE: 928075753

Parameter	Units	928057389 Result	Spike Conc.	MS Result	MS % Rec	Footnotes
Arsenic	ug/l	0	500.00	525.0	105	
Barium	ug/l	34.20	500.00	556.0	104	
Cadmium	ug/l	0	500.00	522.0	104	
Chromium	ug/l	0	500.00	527.0	105	
Lead	ug/l	0	500.00	529.0	106	

Asheville Certification IDs
NC Wastewater 40
NC Drinking Water 37712
SC Environmental 99030
FL NELAP E87648

REPORT OF LABORATORY ANALYSIS
This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, Inc.

Charlotte Certification IDs
NC Wastewater 12
NC Drinking Water 37706
SC 99006
FL NELAP E87627

Pace Analytical™
www.pacelabs.com

Pace Analytical Services, Inc.
9800 Kincey Avenue, Suite 100
Huntersville, NC 28078
Phone: 704.875.9092
Fax: 704.875.9091

QUALITY CONTROL DATA

Lab Project Number: 92138920
Client Project ID: Francis Farm Landfill

MATRIX SPIKE: 928075753

Parameter	Units	928057389 Result	Spike Conc.	MS Result	MS % Rec	Footnotes
Selenium	ug/l	0	500.00	520.0	104	
Silver	ug/l	0	250.00	246.0	98	

SAMPLE DUPLICATE: 928075761

Parameter	Units	928057397 Result	DUP Result	RPD	Footnotes
Arsenic	ug/l	ND	ND	NC	
Barium	ug/l	36.00	37.00	3	
Cadmium	ug/l	ND	ND	NC	
Chromium	ug/l	ND	ND	NC	
Lead	ug/l	ND	ND	NC	
Selenium	ug/l	ND	ND	NC	
Silver	ug/l	ND	ND	NC	

Asheville Certification IDs
NC Wastewater 40
NC Drinking Water 37712
SC Environmental 99030
FL NELAP E87648

REPORT OF LABORATORY ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Charlotte Certification IDs
NC Wastewater 12
NC Drinking Water 37706
SC 99006
FL NELAP E87627

Pace Analytical™
www.pacelabs.com

Pace Analytical Services, Inc.
9800 Kincey Avenue, Suite 100
Huntersville, NC 28078
Phone: 704.875.9092
Fax: 704.875.9091

F

Lab Project Number: 92138920
Client Project ID: Francis Farm Landfill

QUALITY CONTROL DATA PARAMETER FOOTNOTES

Consistent with EPA guidelines, unrounded concentrations are displayed and have been used to calculate % Rec and RPD values.

LCS(D)	Laboratory Control Sample (Duplicate)
MS(D)	Matrix Spike (Duplicate)
DUP	Sample Duplicate
ND	Not detected at or above adjusted reporting limit
NC	Not Calculable
J	Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit
MDL	Adjusted Method Detection Limit
RPD	Relative Percent Difference
(S)	Surrogate
[1]	Recovery falls outside of QC limits, however, this compound is not found in the associated samples.

Asheville Certification IDs
NC Wastewater 40
NC Drinking Water 37712
SC Environmental 99030
FL NELAP E87648

REPORT OF LABORATORY ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Charlotte Certification IDs
NC Wastewater 12
NC Drinking Water 37706
SC 99006
FL NELAP E87627

Pace Analytical®

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: 1 of 1

0956866

Section A Required Client Information:

Company	Harwood
Address	Clyde NC
Email To:	
Phone	Fax
Requested Due Date/TAT:	

Section B Required Project Information:

Report To:	Steven King
Copy To:	Municipal
Purchase Order No.:	
Project Name:	Francis Farm LF
Project Number:	

Section C Invoice Information:

Attention:	
Company Name:	
Address:	
Pace Quote Reference:	
Pace Project Manager:	
Pace Profile #:	

REGULATORY AGENCY

☒ NPDES ☐ GROUND WATER ☐ DRINKING WATER ☐ UST ☐ RCRA ☐ Other

SITE LOCATION ☐GA ☐IL ☐IN ☐MI ☐MN ☐NC ☐OH ☐SC ☐WI ☐OTHER

Section D Required Client Information

SAMPLE ID

One Character per box. (A-Z, 0-9 / .-) Samples IDs MUST BE UNIQUE

Valid Matrix Codes: MATRIX / CODE — DRINKING WATER DW; WATER WT; WASTE WATER WW; PRODUCT P; SOIL/SOLID SL; OIL OL; WIPE WP; AIR AR; OTHER OT; TISSUE TS

ITEM #	SAMPLE ID	MATRIX CODE	SAMPLE TYPE G=GRAB C=COMP	COLLECTED COMPOSITE START DATE	COMPOSITE START TIME	COMPOSITE END/GRAB DATE	COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Filtered (Y/N)	Requested Analysis:	Residual Chlorine (Y/N)	Pace Project Number / Lab I.D
1	MW-1A	GW				2-26-07	1330		4			1	3					X	X	X	92138920
2	MW-2A						1440		4			1	3					X	X	X	926057355
3	MW-3A						1410		4			1	3					X	X	X	363
4	MW-4						1315		4			1	3					X	X	X	371
5	MW-5						1255		4			1	3					X	X	X	389
6	SW-1	SW					1540		4			1	3					X	X	X	397
7	SW-2	SW					1520		4			1	3					X	X	X	405
8	BLANTON BRANCH	SW					1515		4			1	3					X	X	X	413
9																					421
10	TUL BIK								2				2						X		
11	EQUIP BIK								2				2						X		
12																					

Additional Comments:

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
Donna Allen	2-26-07	1620	[signature]	2-26-07	1620
			[signature]	2/26	1700

SAMPLE CONDITION

Temp in °C	Received on Ice	Custody Sealed Cooler	Samples Intact
	Y/N	Y/N	Y/N
2.0	Y/N	Y/N	Y/N
	Y/N	Y/N	Y/N
	Y/N	Y/N	Y/N

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Mark C. Swann

SIGNATURE of SAMPLER: [signature]

DATE Signed (MM / DD / YY) 2-26-07

SEE REVERSE SIDE FOR INSTRUCTIONS

ALL0020rev3.31May05

Pace Analytical®

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: 1 of 1

0956866

Section A Required Client Information:

Company	Harwood
Address	[illegible] NC
Email To:	
Phone	Fax
Requested Due Date/TAT:	

Section B Required Project Information:

Report To:	[illegible]
Copy To:	[illegible]
Purchase Order No.:	
Project Name:	[illegible]
Project Number:	

Section C Invoice Information:

Attention:	
Company Name:	
Address:	
Pace Quote Reference:	
Pace Project Manager:	
Pace Profile #:	

REGULATORY AGENCY

☒ NPDES ☐ GROUND WATER ☐ DRINKING WATER ☐ UST ☐ RCRA ☐ Other_____

SITE LOCATION ☐GA ☐IL ☐IN ☐MI ☐MN ☐NC ☐OH ☐SC ☐WI ☐OTHER _____

Section D Required Client Information

SAMPLE ID

One Character per box. (A-Z, 0-9 / .-) Samples IDs MUST BE UNIQUE

Valid Matrix Codes: MATRIX / CODE — DRINKING WATER DW; WATER WT; WASTE WATER WW; PRODUCT P; SOIL/SOLID SL; OIL OL; WIPE WP; AIR AR; OTHER OT; TISSUE TS

ITEM #	SAMPLE ID	MATRIX CODE	SAMPLE TYPE G=GRAB C=COMP	COLLECTED COMPOSITE START DATE	COMPOSITE START TIME	COMPOSITE END/GRAB DATE	COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Filtered (Y/N)	Requested Analysis	Residual Chlorine (Y/N)	Pace Project Number / Lab I.D
1	MW-1A	GW				2-26-07	1330		4			1	3					Y	Y	Y	92138920
2	MW-2A						1400		4			1	3					Y	Y	X	92805735
3	MW-3A						1410		4			1	3					Y	Y	Y	363
4	MW-4						1315		4			1	3					Y	Y	X	371
5	MW-5						1255		4			1	3					Y	Y	X	389
6	SW-1	SW					1540		4			1	3					Y		X	397
7	SW-2	SW					1530		4			1	3					Y		X	405
8	BLANK ON BRANCH	SW					1515		4			1	3					Y		X	413
9																					421
10	TVL BLK								2				2							Y	
11	TRV. P. BLK								2				2							Y	
12																					

Additional Comments:

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
[illegible]	2-26-07	1620	[illegible]	2-26-07	1620
			[illegible]	2/26	1700

SAMPLE CONDITION

Temp in °C	Received on Ice	Custody Sealed Cooler	Samples Intact
	Y/N	Y/N	Y/N
2.0	Y/N	Y/N	Y/N
	Y/N	Y/N	Y/N
	Y/N	Y/N	Y/N

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Mark C. Swann

SIGNATURE of SAMPLER: [illegible]

DATE Signed (MM / DD / YY): 2-26-07

SEE REVERSE SIDE FOR INSTRUCTIONS

ALL Q020rev.3.31Mar05

APPENDIX D

Statistical Calculations

Haywood County Closed Landfill, Francis Farm
Haywood County, North Carolina
BLE Project Number J07-1957-03

COMPOUND	TOTAL	ND	DETECTED	%ND	STATISTICAL TEST
Total Arsenic	66	53	13	80.3%	Poisson Prediction Limits
Total Barium *	66	5	61	7.6%	Kruskal-Wallis
Total Cadmium	66	43	23	65.2%	Kruskal-Wallis
Total Chromium	66	27	39	40.9%	Kruskal-Wallis
Total Lead	66	42	24	63.6%	Kruskal-Wallis
Total Mercury	61	54	7	88.5%	Kruskal-Wallis
Total Selenium	57	44	13	77.2%	Kruskal-Wallis
Total Silver	66	53	13	80.3%	Kruskal-Wallis
Acetone	40	38	2	95.0%	Poisson Prediction Limits
Benzene	40	30	10	75.0%	Kruskal-Wallis
Carbon Disulfide	40	39	1	97.5%	Poisson Prediction Limits
Chloroethane	40	35	5	87.5%	Poisson Prediction Limits
1,2-Dichlorobenzene	40	39	1	97.5%	Poisson Prediction Limits
1,4-Dichlorobenzene	40	35	5	87.5%	Poisson Prediction Limits
1,1-Dichloroethane	40	13	27	32.5%	Kruskal-Wallis
1,2-Dichloroethane	40	38	2	95.0%	Poisson Prediction Limits
1,1-Dichloroethene	40	39	1	97.5%	Poisson Prediction Limits
cis-1,2-Dichloroethene	40	10	30	25.0%	Kruskal-Wallis
cis-1,3-Dichloropropene	40	39	1	97.5%	Poisson Prediction Limits
Dichloromethane	40	31	9	77.5%	Kruskal-Wallis
Tetrachloroethene	40	29	11	72.5%	Kruskal-Wallis
Toluene	40	35	5	87.5%	Poisson Prediction Limits
Trichloroethene	40	29	11	72.5%	Kruskal-Wallis

Sampling Event	# Detected
N 1	3
N 2	8
N 3	11
N 4	13
N 5	20
N 6	14
N 7	21
N 8	43
N 9	33
N 10	34
N 11	42
N 12	29
N 13	7
N 14	22
N 15	14

LEGEND FOR THE FOLLOWING PAGES:

ND = *Not Detected* at the method detection limit
MCL = *Maximum Contaminant Level*; NCAC 2L Standard
NE = *Not Established*; NC has not established a MCL
NP = *Not Present* during sampling event
NS = *Not Sampled*
NT = *Not Tested*
NA = information *Not Available*
MDL = *Method Detection Limit*

Total Detected Concentrations (per compound) =	314
Total Detected Concentrations (per event) =	314
Are all accounted for ?	Yes
Statistical Package Prepared By:	MSP
Statistical Package Checked By:	TJB

Haywood County Closed Landfill, Francis Farm
Haywood County, North Carolina
BLE Project Number J07-1957-03

Compound:	**Total Arsenic (As)**
MCL (µg/l):	50
Method:	Poisson Prediction Limits
Background:	MW-4 & MW-5

	MW-4	MW-5	MW-1A	MW-2A	MW-3A	MDL
02/18/99	ND	NS	ND	NS	ND	5
08/16/99	ND	NS	ND	NS	ND	5
02/14/00	ND	NS	ND	NS	ND	5
08/14/00	ND	NT	ND	NS	**10**	5
03/19/01	ND	**11**	ND	ND	ND	5
08/27/02	**5.8**	**25**	ND	**23**	NT	5
02/24/03	ND	**23**	ND	**16**	ND	5
08/11/03	ND	**9.9**	ND	**6.5**	ND	5
02/09/04	ND	**8.3**	ND	ND	ND	5
08/16/04	ND	**6.1**	ND	ND	ND	5
02/14/05	ND	**6.2**	ND	ND	ND	5
09/01/05	ND	ND	ND	ND	ND	5
02/16/06	ND	ND	ND	ND	ND	5
08/30/06	ND	ND	ND	ND	ND	5
02/26/07	ND	ND	ND	**5.9**	ND	5

1) If not detected (ND), use half of the detection limit.

02/18/99	2.5	-	2.5	-	2.5
08/16/99	2.5	-	2.5	-	2.5
02/14/00	2.5	-	2.5	-	2.5
08/14/00	2.5	-	2.5	-	10
03/19/01	2.5	11	2.5	2.5	2.5
08/27/02	5.8	25	2.5	23	-
02/24/03	2.5	23	2.5	16	2.5
08/11/03	2.5	9.9	2.5	6.5	2.5
02/09/04	2.5	8.3	2.5	2.5	2.5
08/16/04	2.5	6.1	2.5	2.5	2.5
02/14/05	2.5	6.2	2.5	2.5	2.5
09/01/05	2.5	2.5	2.5	2.5	2.5
02/16/06	2.5	2.5	2.5	2.5	2.5
08/30/06	2.5	2.5	2.5	2.5	2.5
02/26/07			2.5	5.9	2.5

2) Set the total number of data values for background wells (through the previous sampling event) equal to 'n' = 14.
Use 1/2 of the method detection limit to calculate the Total Poisson Count of the Sum (T_n).

$n = 24$
$T_{n1} = 135.3$

3) Using Gibbons' formula, calculate the upper Poisson Prediction limit T^*_k:

$$T^*_k = cT_{n1} + ct^2/2 + ct[T_{n1}(1+1/c) + t^2/4]^{-0.5}$$

where $c = k/n$
and where k = the number of future predicted measurements (one per well during the current sampling event)
and where t = the upper 99th percentile of the t-distribution with (n-1) degrees of freedom (Table 6 of the IFG).

$k = 3$
$n = 24$
$T_{n1} = 135.3$
$t[23,.01] = 2.5$
$c = 0.1250$
$T_{n2} = 10.9$
$T^*_k = 28.2$

4) Compare the *Poisson Prediction Limit* (T^*_k) to the *Sum of the Concentrations Detected* (T_{n2}) in the wells during the most recent sampling event.
Since the Poisson Prediction Limit was not exceeded, there is no evidence of contamination.

Haywood County Closed Landfill, Francis Farm
Haywood County, North Carolina
BLE Project Number J07-1957-03

Compound:	**Total Barium (Ba)**
NC MCL (µg/l):	2000
Method:	Kruskal-Wallis
Background:	MW-4 & MW-5

	MW-4	MW-5	MW-1A	MW-2A	MW-3A	MDL
02/18/99	100	NS	300	NS	400	100
08/16/99	120	NS	230	NS	260	100
02/14/00	150	NS	270	NS	240	100
08/14/00	180	NT	410	NS	310	100
03/19/01	120	2000	340	830	310	100
08/27/02	150	2800	250	2700	NT	100
02/24/03	150	2500	310	1800	330	100
08/11/03	150	1200	530	950	350	5
02/09/04	120	890	260	370	310	5
08/16/04	140	1100	280	300	310	5
02/14/05	160	520	310	300	300	5
09/01/05	140	330	280	280	210	5
02/16/06	ND	ND	ND	ND	ND	5
08/30/06	160	250	290	220	240	5
02/26/07	140	280	210	240	300	5
N_i	15	11	15	11	14	
sum of rank values (R_i)	178.0	539.5	525.5	456.5	511.5	
avg rank value (Rbar)	11.9	49.0	35.0	41.5	36.5	

	Number of each rank value					Rank Value
rank value of NDs =	1	1	1	1	1	3
rank value of 100s =	1	0	0	0	0	6
rank value of 120s =	3	0	0	0	0	8
rank value of 140s =	3	0	0	0	0	11
rank value of 150s =	4	0	0	0	0	14.5
rank value of 160s =	2	0	0	0	0	17.5
rank value of 180s =	1	0	0	0	0	19
rank value of 210s =	0	0	1	0	1	20.5
rank value of 220s =	0	0	0	1	0	22
rank value of 230s =	0	0	1	0	0	23
rank value of 240s =	0	0	0	1	2	25
rank value of 250s =	0	1	1	0	0	27.5
rank value of 260s =	0	0	1	0	1	29.5
rank value of 270s =	0	0	1	0	0	31
rank value of 280s =	0	1	2	1	0	33.5
rank value of 290s =	0	0	1	0	0	36
rank value of 300s =	0	0	1	2	2	39
rank value of 310s =	0	0	2	0	4	44.5
rank value of 330s =	0	1	0	0	1	48.5
rank value of 340s =	0	0	1	0	0	50
rank value of 350s =	0	0	0	0	1	51
rank value of 370s =	0	0	0	1	0	52
rank value of 400s =	0	0	0	0	1	53
rank value of 410s =	0	0	1	0	0	54
rank value of 520s =	0	1	0	0	0	55
rank value of 530s =	0	0	1	0	0	56
rank value of 830s =	0	0	0	1	0	57
rank value of 890s =	0	1	0	0	0	58
rank value of 950s =	0	0	0	1	0	59
rank value of 1100s =	0	1	0	0	0	60
rank value of 1200s =	0	1	0	0	0	61
rank value of 1800s =	0	0	0	1	0	62
rank value of 2000s =	0	1	0	0	0	63
rank value of 2500s =	0	1	0	0	0	64
rank value of 2700s =	0	0	0	1	0	65

rank value of 2800s =	0	1	0	0	0	66
n =	**15**	**11**	**15**	**11**	**14**	

Sum of rank value calculations

3	3	3	3	3
6	0	0	0	0
24	0	0	0	0
33	0	0	0	0
58	0	0	0	0
35	0	0	0	0
19	0	0	0	0
0	0	20.5	0	20.5
0	0	0	22	0
0	0	23	0	0
0	0	0	25	50
0	27.5	27.5	0	0
0	0	29.5	0	29.5
0	0	31	0	0
0	33.5	67	33.5	0
0	0	36	0	0
0	0	39	78	78
0	0	89	0	178
0	48.5	0	0	48.5
0	0	50	0	0
0	0	0	0	51
0	0	0	52	0
0	0	0	0	53
0	0	54	0	0
0	55	0	0	0
0	0	56	0	0
0	0	0	57	0
0	58	0	0	0
0	0	0	59	0
0	60	0	0	0
0	61	0	0	0
0	0	0	62	0
0	63	0	0	0
0	64	0	0	0
0	0	0	65	0
0	66	0	0	0
sum of rank values (R_i) **178**	**539.5**	**525.5**	**456.5**	**511.5**

Compute the Kruskal-Wallis statistic:

$$H = \{[12/N(N+1)] * [\Sigma^{K}_{i=1} (R_i^2)/N_i]\} -3(N+1)$$

Well =	**Background**	**MW-1A**	**MW-2A**	**MW-3A**
Ri^2/N_i =	19800.2	18410.02	18944.75	18688.02

$N_{i\,bg}$ = 26
N = 66
H = 4.82

Adjust H for ties:

T_i = 672 sum of T1..T10

$H' = H/(1-(T_i/(N^3-N)))$
H' = 4.83
Chi-square = 7.82

Compare the calculated value H' to the tabulated Chi-square value with K-1 = # groups -1 = 17df at the 5 significance level from Table 1 of the IFG. The value is 7.82 which is greater than H' =4.83. Therefore, the null hypothesis of no contamination at the 5% level holds true and significant evidence of contamination does not exist.

Haywood County Closed Landfill, Francis Farm
Haywood County, North Carolina
BLE Project Number J07-1957-03

Compound: **Total Barium (Ba)**
AL MCL (µg/l): 2000
Method: Levene's Test for Homogeneity
Background: MW-4 & MW-5

	MW-11S	MW-11D	MW-1A	MW-2	MW-2D	MDL
2/18/1999	100	NS	300	NS	400	100
8/16/1999	120	NS	230	NS	260	100
2/14/2000	150	NS	270	NS	240	100
8/14/2000	180	NT	410	NS	310	100
3/19/2001	120	2000	340	830	310	100
8/27/2002	150	2800	250	2700	NT	100
2/24/2003	150	2500	310	1800	330	100
8/11/2003	150	1200	530	950	350	5
2/9/2004	120	890	260	370	310	5
8/16/2004	140	1100	280	300	310	5
2/14/2005	160	520	310	300	300	5
9/1/2005	140	330	280	280	210	5
2/16/2006	ND	ND	ND	ND	ND	5
8/30/2006	160	250	290	220	240	5
2/26/2007	140	280	210	240	300	5

If not detected (ND), use half of the detection limit.

	100		300		400
	120		230		260
	150		270		240
	180		410		310
	120	2000	340	830	310
	150	2800	250	2700	
	150	2500	310	1800	330
	150	1200	530	950	350
	120	890	260	370	310
	140	1100	280	300	310
	160	520	310	300	300
	140	330	280	280	210
	2.5	2.5	2.5	2.5	2.5
	160	250	290	220	240
	140	280	210	240	300
n =	15	11	15	11	14
bar x_i =	132.1666667	1079.318182	284.8333333	726.5909091	276.6071429
z_{ij} =	32.16666667		15.16666667		123.3928571
	12.16666667		54.83333333		16.60714286
	17.83333333		14.83333333		36.60714286
	47.83333333		125.1666667		33.39285714
	12.16666667	920.6818182	55.16666667	103.4090909	33.39285714
	17.83333333	1720.681818	34.83333333	1973.409091	
	17.83333333	1420.681818	25.16666667	1073.409091	53.39285714
	17.83333333	120.6818182	245.1666667	223.4090909	73.39285714
	12.16666667	189.3181818	24.83333333	356.5909091	33.39285714
	7.833333333	20.68181818	4.833333333	426.5909091	33.39285714
	27.83333333	559.3181818	25.16666667	426.5909091	23.39285714
	7.833333333	749.3181818	4.833333333	446.5909091	66.60714286
	129.6666667	1076.818182	282.3333333	724.0909091	274.1071429
	27.83333333	829.3181818	5.166666667	506.5909091	36.60714286
	7.833333333	799.3181818	74.83333333	486.5909091	23.39285714
bar z_i =	26.44444444	764.2561983	66.15555556	613.3884298	61.50510204
n_i * bar z_i^2 =	10489.62963	6424962.904	65648.36296	4138699.023	52960.28608

bar z = 306.349946
N = 66

	SS	df	MS	F_{Ratio}	$F_{critical}$
Between Wells	4498641.103	4	1124660.28	7.71	2.53
Error	8900992.715	61	145917.91		
Total	13399633.82	65			

Since the F-ratio = 7.71 exceeds the tabulated value of F-critical = 2.53 (see Table 2 of IFG) with 4 and 61 df, the assumption of equal variances should be rejected.
Re-test the data set using the natural log of the above values.

	MW-11S	MW-11D	MW-1A	MW-2	MW-2D
ln=	4.605170186		5.703782475		5.991464547
	4.787491743		5.438079309		5.560681631
	5.010635294		5.598421959		5.480638923
	5.192956851		6.01615716		5.736572297
	4.787491743	7.60090246	5.828945618	6.721425701	5.736572297
	5.010635294	7.937374696	5.521460918	7.901007052	
	5.010635294	7.824046011	5.736572297	7.495541944	5.799092654
	5.010635294	7.090076836	6.272877007	6.856461985	5.857933154
	4.787491743	6.791221463	5.560681631	5.913503006	5.736572297
	4.941642423	7.003065459	5.634789603	5.703782475	5.736572297
	5.075173815	6.253828812	5.736572297	5.703782475	5.703782475
	4.941642423	5.799092654	5.634789603	5.634789603	5.347107531
	0.916290732	0.916290732	0.916290732	0.916290732	0.916290732
	5.075173815	5.521460918	5.669880923	5.393627546	5.480638923
	4.941642423	5.634789603	5.347107531	5.480638923	5.703782475
n =	15	11	15	11	14
bar x_i =	4.672980605	6.215649968	5.374427271	5.792804676	5.341978731
z_{ij} =	0.067810419		0.329355204		0.649485816
	0.114511138		0.063652038		0.2187029
	0.337654689		0.223994688		0.138660192
	0.519976246		0.641729889		0.394593566
	0.114511138	1.385252492	0.454518347	0.928621024	0.394593566
	0.337654689	1.721724729	0.147033647	2.108202376	
	0.337654689	1.608396043	0.362145027	1.702737267	0.457113923
	0.337654689	0.874426868	0.898449736	1.063657308	0.515954423
	0.114511138	0.575571495	0.18625436	0.120698329	0.394593566
	0.268661818	0.787415491	0.260362332	0.089022202	0.394593566
	0.40219321	0.038178844	0.362145027	0.089022202	0.361803744
	0.268661818	0.416557313	0.260362332	0.158015073	0.0051288
	3.756689873	5.299359236	4.458136539	4.876513945	4.425687999
	0.40219321	0.69418905	0.295453652	0.39917713	0.138660192
	0.268661818	0.580860364	0.02731974	0.312165753	0.361803744
bar z_i =	0.509933372	1.27108472	0.598060837	1.077075692	0.632241143
n_i * bar z_i^2 =	3.900480662	17.77222003	5.365151475	12.7610125	5.596204076

bar z = 0.817679153
N = 66

	SS	df	MS	F_{Ratio}	$F_{critical}$
Between Wells	1.27	4	0.32	0.19	2.53
Error	101.99	61	1.67		
Total	103.26	65			

Since the F-ratio = 0.19 does not exceed the tabulated value of F-critical = 2.53 (see Table 2 of IFG) with 4 and 61 df, the assumption of equal means should be accepted.
Proceed with further statistical tests using the log-transformed values shown above.

Haywood County Closed Landfill, Francis Farm
Haywood County, North Carolina
BLE Project Number J07-1957-03

Compound: **Total Barium**
NC MCL (µg/l): 2000
Method: Skewness Test for Normality
Background: MW-4 & MW-5

	MW-11S	MW-11D	MW-1A	MW-2	MW-2D	MDL
2/18/99	**100**	NS	**300**	NS	**400**	**100**
8/16/99	**120**	NS	**230**	NS	**260**	**100**
2/14/00	**150**	NS	**270**	NS	**240**	**100**
8/14/00	**180**	NT	**410**	NS	**310**	**100**
3/19/01	**120**	**2000**	**340**	**830**	**310**	**100**
8/27/02	**150**	**2800**	**250**	**2700**	NT	**100**
2/24/03	**150**	**2500**	**310**	**1800**	**330**	**100**
8/11/03	**150**	**1200**	**530**	**950**	**350**	**5**
2/9/04	**120**	**890**	**260**	**370**	**310**	**5**
8/16/04	**140**	**1100**	**280**	**300**	**310**	**5**
2/14/05	**160**	**520**	**310**	**300**	**300**	**5**
9/1/05	**140**	**330**	**280**	**280**	**210**	**5**
2/16/06	ND	ND	ND	ND	ND	**5**
8/30/06	**160**	**250**	**290**	**220**	**240**	**5**
2/26/07	**140**	**280**	**210**	**240**	**300**	**5**

If not detected (ND), use half of the detection limit.

100		300		400
120		230		260
150		270		240
180		410		310
120	2000	340	830	310
150	2800	250	2700	
150	2500	310	1800	330
150	1200	530	950	350
120	890	260	370	310
140	1100	280	300	310
160	520	310	300	300
140	330	280	280	210
2.5	2.5	2.5	2.5	2.5
160	250	290	220	240
140	280	210	240	300

X_i values =	-44524403.3		-3683073.23		-161271.834
	-37404406.6		-11304550.1		-7350248.33
	-28214354.9		-6273465.92		-9859790.43
	-20668234.9		-87716.6942		-3012927.18
	-37404406.6	3692023914	-1498443.58	52974440.07	-3012927.18
	-28214354.9	12904589234	-8543689.83	11323449251	
	-28214354.9	8559371557	-3012927.18	2436223493	-1926612.36
	-28214354.9	414440412.1	431535.8885	121705510.8	-1138933.89
	-37404406.6	82635839.09	-7350248.33	-601891.797	-3012927.18
	-31087046.4	269045883.4	-5307342.6	-3683073.23	-3012927.18
	-25524322.5	281889.8399	-3012927.18	-3683073.23	-3683073.23
	-31087046.4	-1926612.36	-5307342.6	-5307342.6	-14604046.8
	-92303624.8	-92303624.8	-92303624.8	-92303624.8	-92303624.8
	-25524322.5	-8543689.83	-4445878.37	-12883968.9	-9859790.43
	-31087046.4	-5307342.6	-14604046.8	-9859790.43	-3683073.23

X_{bar} = 454.4318182
SD = 606.3952119
N = 66
$1/N\Sigma_i(X_i-X_{bar})^3$ = 587432345.3
γ_1 = 2.695481988

Since the Coefficient of Skewness of 2.70 is greater than 1.0, the data appear to be significantly skewed.
Do not assume that the data follow a Normal distribution.
Perform the Skewness Test on the natural log of the values.

	MW-11S	MW-11D	MW-1A	MW-2	MW-2D
ln =	4.605170186		5.703782475		5.991464547
	4.787491743		5.438079309		5.560681631
	5.010635294		5.598421959		5.480638923
	5.192956851		6.01615716		5.736572297
	4.787491743	7.60090246	5.828945618	6.721425701	5.736572297
	5.010635294	7.937374696	5.521460918	7.901007052	
	5.010635294	7.824046011	5.736572297	7.495541944	5.799092654
	5.010635294	7.090076836	6.272877007	6.856461985	5.857933154
	4.787491743	6.791221463	5.560681631	5.913503006	5.736572297
	4.941642423	7.003065459	5.634789603	5.703782475	5.736572297
	5.075173815	6.253828812	5.736572297	5.703782475	5.703782475
	4.941642423	5.799092654	5.634789603	5.634789603	5.347107531
	0.916290732	0.916290732	0.916290732	0.916290732	0.916290732
	5.075173815	5.521460918	5.669880923	5.393627546	5.480638923
	4.941642423	5.634789603	5.347107531	5.480638923	5.703782475

X_i values =	-0.53714518		0.023326135		0.188533343
	-0.25072173		8.02572E-06		0.002901185
	-0.06762937		0.005867458		0.000245091
	-0.01140598		0.213953696		0.032313738
	-0.25072173	10.40084038	0.069369646	2.214119018	0.032313738
	-0.06762937	15.98999566	0.001105604	15.30747211	
	-0.06762937	13.92773293	0.032313738	8.966296375	0.055321477
	-0.06762937	4.674375253	0.624629744	2.976067123	0.085111568
	-0.25072173	2.589207233	0.002901185	0.121614855	0.032313738
	-0.10813283	3.981933587	0.010180458	0.023326135	0.032313738
	-0.04031271	0.583796859	0.032313738	0.023326135	0.023326135
	-0.10813283	0.055321477	0.010180458	0.010180458	-0.00035716
	-91.2323977	-91.2323977	-91.2323977	-91.2323977	-91.2323977
	-0.04031271	0.001105604	0.015969315	-1.4581E-05	0.000245091
	-0.10813283	0.010180458	-0.00035716	0.000245091	0.023326135

X_{bar} = 5.418057901
SD = 1.506683369
N = 66
$1/N\Sigma_i(X_i-X_{bar})^3$ = -5.6777493
γ_1 = 1.698463027

Since the Coefficient of Skewness of 1.70 is greater than 1.0, the data appear to be significantly skewed.
Do not assume that the data follow a Normal distribution.
A non-parametric testing procedure should be used on the data set.

Haywood County Closed Landfill, Francis Farm
Haywood County, North Carolina
BLE Project Number J07-1957-03

Compound:	**Total Cadmium (Cd)**
NC MCL (µg/l):	1.75
Method:	Kruskal-Wallis
Background:	MW-4 & MW-5

	MW-4	MW-5	MW-1A	MW-2A	MW-3A	MDL
02/18/99	ND	NS	ND	NS	ND	**10**
08/16/99	ND	NS	**2.5**	NS	**7.4**	**10**
02/14/00	**1.4**	NS	**2**	NS	**9.1**	**10**
08/14/00	**1.3**	NT	**4.9**	NS	**13**	**10**
03/19/01	ND	**18**	**2.6**	**12**	**6.9**	**10**
08/27/02	ND	**21**	ND	**25**	NT	**10**
02/24/03	ND	**19**	**2.1**	**22**	**6.2**	**10**
08/11/03	ND	ND	**2**	**3.1**	ND	**1**
02/09/04	ND	ND	ND	ND	ND	**1**
08/16/04	ND	ND	ND	ND	ND	**1**
02/14/05	ND	ND	**2.4**	**7**	**4**	**1**
09/01/05	ND	ND	ND	ND	ND	**1**
02/16/06	ND	ND	ND	ND	ND	**1**
08/30/06	ND	ND	ND	ND	ND	**1**
02/26/07	ND	ND	ND	ND	ND	**1**

N_i	15	11	15	11	14
sum of rank values (R_i)	375.0	365.0	521.0	432.0	518.0
avg rank value (Rbar)	25.0	33.2	34.7	39.3	37.0

	Number of each rank value					Rank Value
rank value of NDs =	13	8	8	6	8	22
rank value of 1.3s =	1	0	0	0	0	44
rank value of 1.4s =	1	0	0	0	0	45
rank value of 2s =	0	0	2	0	0	46.5
rank value of 2.1s =	0	0	1	0	0	48
rank value of 2.4s =	0	0	1	0	0	49
rank value of 2.5s =	0	0	1	0	0	50
rank value of 2.6s =	0	0	1	0	0	51
rank value of 3.1s =	0	0	0	1	0	52
rank value of 4s =	0	0	0	0	1	53
rank value of 4.9s =	0	0	1	0	0	54
rank value of 6.2s =	0	0	0	0	1	55
rank value of 6.9s =	0	0	0	0	1	56
rank value of 7s =	0	0	0	1	0	57
rank value of 7.4s =	0	0	0	0	1	58
rank value of 9.1s =	0	0	0	0	1	59
rank value of 12s =	0	0	0	1	0	60
rank value of 13s =	0	0	0	0	1	61
rank value of 18s =	0	1	0	0	0	62
rank value of 19s =	0	1	0	0	0	63
rank value of 21s =	0	1	0	0	0	64
rank value of 22s =	0	0	0	1	0	65
rank value of 25s =	0	0	0	1	0	66

n =	**15**	**11**	**15**	**11**	**14**

Sum of rank value calculations

286	176	176	132	176
44	0	0	0	0
45	0	0	0	0
0	0	93	0	0
0	0	48	0	0
0	0	49	0	0
0	0	50	0	0
0	0	51	0	0
0	0	0	52	0
0	0	0	0	53
0	0	54	0	0
0	0	0	0	55
0	0	0	0	56
0	0	0	57	0
0	0	0	0	58
0	0	0	0	59
0	0	0	60	0
0	0	0	0	61
0	62	0	0	0
0	63	0	0	0
0	64	0	0	0
0	0	0	65	0
0	0	0	66	0

sum of rank values (R_i)	**375**	**365**	**521**	**432**	**518**

Compute the Kruskal-Wallis statistic:

$$H = \{[12/N(N+1)] * [\Sigma^{K}_{i=1} (R_i^2)/N_i]\} -3(N+1)$$

Well =	**Background**	**MW-1A**	**MW-2A**	**MW-3A**
Ri^2/N_i =	21061.5	18096.1	16965.8	19166

$N_{i\,bg}$ = 26
N = 66
H = 3.31

Adjust H for ties:

T_i = 79470 sum of T1..T2

$H' = H/(1-(T_i/(N^3-N)))$
H' = 4.58
Chi-square = 7.82

Compare the calculated value H' to the tabulated Chi-square value with K-1 = # groups -1 = 17df at the : significance level from Table 1 of the IFG. The value is 7.82 which is greater than H' =4.58. Therefore, the null hypothesis of no contamination at the 5% level holds true and significant evidence of contamination does not exist.

Haywood County Closed Landfill, Francis Farm
Haywood County, North Carolina
BLE Project Number J07-1957-03

Compound:	**Total Chromium (Cr)**
NC MCL (µg/l):	50
Method:	Kruskal-Wallis
Background:	MW-4 & MW-5

	MW-4	MW-5	MW-1A	MW-2A	MW-3A	MDL
02/18/99	ND	NS	ND	NS	ND	20
08/16/99	35	NS	61	NS	14	20
02/14/00	11	NS	7.2	NS	5.6	20
08/14/00	5.4	NT	7.4	NS	ND	20
03/19/01	5.2	140	12	32	7.7	20
08/27/02	5.4	210	ND	130	NT	20
02/24/03	ND	200	5.1	79	14	20
08/11/03	81	81	19	38	6.7	2
02/09/04	ND	57	ND	2.1	4.9	2
08/16/04	3.3	52	4	2.8	2	2
02/14/05	4.1	11	7.6	18	12	2
09/01/05	ND	ND	ND	ND	ND	2
02/16/06	ND	16	ND	ND	ND	2
08/30/06	ND	ND	ND	ND	ND	2
02/26/07	ND	ND	ND	ND	ND	5
N_i	15	11	15	11	14	
sum of rank values (R_i)	435.0	510.0	450.5	400.0	415.5	
avg rank value (Rbar)	29.0	46.4	30.0	36.4	29.7	

	Number of each rank value					Rank Value
rank value of NDs =	7	3	7	4	6	14
rank value of 2s =	0	0	0	0	1	28
rank value of 2.1s =	0	0	0	1	0	29
rank value of 2.8s =	0	0	0	1	0	30
rank value of 3.3s =	1	0	0	0	0	31
rank value of 4s =	0	0	1	0	0	32
rank value of 4.1s =	1	0	0	0	0	33
rank value of 4.9s =	0	0	0	0	1	34
rank value of 5.1s =	0	0	1	0	0	35
rank value of 5.2s =	1	0	0	0	0	36
rank value of 5.4s =	2	0	0	0	0	37.5
rank value of 5.6s =	0	0	0	0	1	39
rank value of 6.7s =	0	0	0	0	1	40
rank value of 7.2s =	0	0	1	0	0	41
rank value of 7.4s =	0	0	1	0	0	42
rank value of 7.6s =	0	0	1	0	0	43
rank value of 7.7s =	0	0	0	0	1	44
rank value of 11s =	1	1	0	0	0	45.5
rank value of 12s =	0	0	1	0	1	47.5
rank value of 14s =	0	0	0	0	2	49.5
rank value of 16s =	0	1	0	0	0	51
rank value of 18s =	0	0	0	1	0	52
rank value of 19s =	0	0	1	0	0	53
rank value of 32s =	0	0	0	1	0	54
rank value of 35s =	1	0	0	0	0	55
rank value of 38s =	0	0	0	1	0	56
rank value of 52s =	0	1	0	0	0	57
rank value of 57s =	0	1	0	0	0	58
rank value of 61s =	0	0	1	0	0	59
rank value of 79s =	0	0	0	1	0	60
rank value of 81s =	1	1	0	0	0	61.5
rank value of 130s =	0	0	0	1	0	63
rank value of 140s =	0	1	0	0	0	64
rank value of 200s =	0	1	0	0	0	65
rank value of 210s =	0	1	0	0	0	66

n =	15	11	15	11	14

Sum of rank value calculations

98	42	98	56	84
0	0	0	0	28
0	0	0	29	0
0	0	0	30	0
31	0	0	0	0
0	0	32	0	0
33	0	0	0	0
0	0	0	0	34
0	0	35	0	0
36	0	0	0	0
75	0	0	0	0
0	0	0	0	39
0	0	0	0	40
0	0	41	0	0
0	0	42	0	0
0	0	43	0	0
0	0	0	0	44
45.5	45.5	0	0	0
0	0	47.5	0	47.5
0	0	0	0	99
0	51	0	0	0
0	0	0	52	0
0	0	53	0	0
0	0	0	54	0
55	0	0	0	0
0	0	0	56	0
0	57	0	0	0
0	58	0	0	0
0	0	59	0	0
0	0	0	60	0
61.5	61.5	0	0	0
0	0	0	63	0
0	64	0	0	0
0	65	0	0	0
0	66	0	0	0
sum of rank values (R_i)	**435**	**510**	**450.5**	**400**	**415.5**

Compute the Kruskal-Wallis statistic:

$$H = \{[12/N(N+1)] * [\Sigma^{K}_{i=1} (R_i^2)/N_i]\} -3(N+1)$$

Well =	**Background**	**MW-1A**	**MW-2A**	**MW-3A**
Ri^2/N_i =	34347.1	13530.02	14545.45	12331.45

$N_{i\,bg}$ = 26
N = 66
H = 1.86

Adjust H for ties:

T_i = 19686 sum of T1..T2

$H' = H/(1-(T_i/(N^3-N)))$
H' = 2.00
Chi-square = 7.82

Compare the calculated value H' to the tabulated Chi-square value with K-1 = # groups -1 = 17df at the 5 significance level from Table 1 of the IFG. The value is 7.82 which is greater than H' =2.00. Therefore, the null hypothesis of no contamination at the 5% level holds true and significant evidence of contamination does not exist.

Haywood County Closed Landfill, Francis Farm
Haywood County, North Carolina
BLE Project Number J07-1957-03

Compound:	**Total Lead (Pb)**
NC MCL (µg/l):	15
Method:	Kruskal-Wallis
Background:	MW-4 & MW-5

	MW-4	MW-5	MW-1A	MW-2A	MW-3A	MDL
02/18/99	ND	NS	ND	NS	ND	**100**
08/16/99	ND	NS	ND	NS	ND	**100**
02/14/00	ND	NS	ND	NS	ND	**100**
08/14/00	ND	NT	ND	NS	ND	**100**
03/19/01	ND	**38**	ND	**16**	ND	**100**
08/27/02	ND	**47**	ND	**31**	NT	**100**
02/24/03	ND	**41**	ND	**27**	ND	**100**
08/11/03	**30**	**30**	**10**	**28**	**17**	**5**
02/09/04	ND	**18**	ND	**9.4**	**7.4**	**5**
08/16/04	ND	**23**	ND	**11**	**9.4**	**5**
02/14/05	ND	**7.9**	ND	ND	ND	**5**
09/01/05	ND	ND	ND	**14**	**7.4**	**5**
02/16/06	ND	ND	ND	ND	ND	**5**
08/30/06	**7.6**	**6.5**	**5.2**	**5.7**	ND	**5**
02/26/07	ND	ND	ND	ND	ND	**5**
N_i	15	11	15	11	14	
sum of rank values (R_i)	389.0	530.0	374.5	503.0	414.5	
avg rank value (Rbar)	25.9	48.2	25.0	45.7	29.6	

	Number of each rank value					Rank Value
rank value of NDs =	13	3	13	3	10	21.5
rank value of 5.2s =	0	0	1	0	0	43
rank value of 5.7s =	0	0	0	1	0	44
rank value of 6.5s =	0	1	0	0	0	45
rank value of 7.4s =	0	0	0	0	2	46.5
rank value of 7.6s =	1	0	0	0	0	48
rank value of 7.9s =	0	1	0	0	0	49
rank value of 9.4s =	0	0	0	1	1	50.5
rank value of 10s =	0	0	1	0	0	52
rank value of 11s =	0	0	0	1	0	53
rank value of 14s =	0	0	0	1	0	54
rank value of 16s =	0	0	0	1	0	55
rank value of 17s =	0	0	0	0	1	56
rank value of 18s =	0	1	0	0	0	57
rank value of 23s =	0	1	0	0	0	58
rank value of 27s =	0	0	0	1	0	59
rank value of 28s =	0	0	0	1	0	60
rank value of 30s =	1	1	0	0	0	61.5
rank value of 31s =	0	0	0	1	0	63
rank value of 38s =	0	1	0	0	0	64
rank value of 41s =	0	1	0	0	0	65
rank value of 47s =	0	1	0	0	0	66
n =	**15**	**11**	**15**	**11**	**14**	

Sum of rank value calculations

279.5	64.5	279.5	64.5	215
0	0	43	0	0
0	0	0	44	0
0	45	0	0	0
0	0	0	0	93
48	0	0	0	0
0	49	0	0	0

	0	0	0	50.5	50.5
	0	0	52	0	0
	0	0	0	53	0
	0	0	0	54	0
	0	0	0	55	0
	0	0	0	0	56
	0	57	0	0	0
	0	58	0	0	0
	0	0	0	59	0
	0	0	0	60	0
	61.5	61.5	0	0	0
	0	0	0	63	0
	0	64	0	0	0
	0	65	0	0	0
	0	66	0	0	0
sum of rank values (R_i)	**389**	**530**	**374.5**	**503**	**414.5**

Compute the Kruskal-Wallis statistic:

$$H = \{[12/N(N+1)] * [\Sigma^{K}_{i=1} (R_i^2)/N_i]\} -3(N+1)$$

Well =	**Background**	**MW-1A**	**MW-2A**	**MW-3A**
Ri^2/N_i =	32483.1	9350.017	23000.82	12272.16

$N_{i\,bg}$ = 26
N = 66
H = 8.24

Adjust H for ties:

T_i = 74064 sum of T1..T3

$H' = H/(1-(T_i/(N^3-N)))$
H' = 11.10
Chi-square = 7.82

Compare the calculated value H' to the tabulated Chi-square value with K-1 = # groups -1 = 17df at the significance level from Table 1 of the IFG. The value is 7.82 which is less than H' =11.10.
Therefore, there is evidence of significant differences between the well groups.
Post-hoc pairwise comparisons are necessary (see below).

Calculate the critical values to compare each compliance well to the background wells:

Critical Value (C_x) = $P(N(N+1)/12)^{0.5} * (1/N_{i\,bg}+1/N_x)^{0.5}$
P = 2.12 Percentile of Standard Normal Distribution
from Table 4 of IFG
N = total sample size
$N_{i\,bg}$ = total samples (N_i) of background data
N_x = total samples (N_i) of well x

Difference between average ranks (Dx) = Rbar (well x) - avg Rbar (background)

Well =	MW-1A	MW-2A	MW-3A
Rbar (well x) =	25.0	45.7	29.6
avg Rbar (background) =	35.3	35.3	35.3
Dx =	-10.4	10.4	-5.7
Cx =	13.2	14.6	13.5
Statistical Significance ?	-	-	-

Compare each difference (Dx) with the corresponding critical value (Cx).
No compliance well's difference between average ranks exceeded its corresponding critical value at a 5% significance level. Therefore, we conclude that significant evidence of contamination does not exist at the 5% significance level.

Haywood County Closed Landfill, Francis Farm
Haywood County, North Carolina
BLE Project Number J07-1957-03

Compound:	**Total Mercury (Hg)**
NC MCL (µg/l):	1.05
Method:	Kruskal-Wallis
Background:	MW-4 & MW-5

	MW-4	MW-5	MW-1A	MW-2A	MW-3A	MDL
02/18/99	ND	NS	ND	NS	ND	**0.2**
08/16/99	ND	NS	ND	NS	ND	**0.2**
02/14/00	ND	NS	ND	NS	ND	**0.2**
08/14/00	ND	NT	**0.4**	NS	ND	**0.2**
03/19/01	ND	ND	ND	**0.2**	ND	**0.2**
08/27/02	ND	ND	ND	ND	NT	**0.2**
02/24/03	NT	NT	NT	NT	NT	**0.2**
08/11/03	ND	ND	ND	ND	ND	**0.2**
02/09/04	ND	ND	ND	ND	ND	**0.2**
08/16/04	**0.3**	ND	**1.4**	**3.5**	**0.6**	**0.2**
02/14/05	ND	ND	ND	ND	ND	**0.2**
09/01/05	**0.2**	ND	ND	ND	ND	**0.2**
02/16/06	ND	ND	ND	ND	ND	**0.2**
08/30/06	ND	ND	ND	ND	ND	**0.2**
02/26/07	ND	ND	ND	ND	ND	**0.2**

N_i	14	10	14	10	13
sum of rank values (R_i)	442.5	275.0	448.0	336.5	389.0
avg rank value (Rbar)	31.6	27.5	32.0	33.7	29.9

	Number of each rank value					Rank Value
rank value of NDs =	12	10	12	8	12	27.5
rank value of 0.2s =	1	0	0	1	0	55.5
rank value of 0.3s =	1	0	0	0	0	57
rank value of 0.4s =	0	0	1	0	0	58
rank value of 0.6s =	0	0	0	0	1	59
rank value of 1.4s =	0	0	1	0	0	60
rank value of 3.5s =	0	0	0	1	0	61
n =	**14**	**10**	**14**	**10**	**13**	

Sum of rank value calculations

330	275	330	220	330
55.5	0	0	55.5	0
57	0	0	0	0
0	0	58	0	0
0	0	0	0	59
0	0	60	0	0
0	0	0	61	0
sum of rank values (R_i)	**442.5**	**275**	**448**	**336.5**	**389**

Compute the Kruskal-Wallis statistic:

$$H = \{[12/N(N+1)] * [\Sigma^{K}_{i=1} (R_i^2)/N_i]\} -3(N+1)$$

Well =	**Background**	**MW-1A**	**MW-2A**	**MW-3A**
Ri^2/N_i =	21450.3	14336	11323.2	11640.1

$N_{i\,bg}$ = 24
N = 61
H = 0.41

Adjust H for ties:

T_i = 157416 sum of T1..T2

$H' = H/(1-(T_i/(N^3-N)))$
H' = 1.33
Chi-square = 7.82

Compare the calculated value H' to the tabulated Chi-square value with K-1 = # groups -1 = 17df at the significance level from Table 1 of the IFG. The value is 7.82 which is greater than H' =1.33. Therefore, the null hypothesis of no contamination at the 5% level holds true and significant evidence of contamination does not exist.

Haywood County Closed Landfill, Francis Farm
Haywood County, North Carolina
BLE Project Number J07-1957-03

Compound:	**Total Selenium (Se)**
NC MCL (µg/l):	50
Method:	Kruskal-Wallis
Background:	MW-4 & MW-5

	MW-4	MW-5	MW-1A	MW-2A	MW-3A	MDL
02/18/99	ND	NS	ND	NS	ND	**5**
08/16/99	ND	NS	ND	NS	ND	**5**
02/14/00	ND	NS	ND	NS	ND	**5**
08/14/00	ND	NT	ND	NS	ND	**5**
03/19/01	ND	ND	ND	ND	ND	**5**
08/27/02	NT	NT	NT	NT	NT	**5**
02/24/03	NT	NT	NT	NT	NT	**5**
08/11/03	ND	ND	ND	**7.3**	ND	**5**
02/09/04	ND	ND	**6.9**	**13**	**16**	**5**
08/16/04	ND	ND	**5.5**	ND	ND	**5**
02/14/05	**5.3**	ND	**16**	**39**	**24**	**5**
09/01/05	**6.9**	ND	**10**	**8.9**	**9.5**	**5**
02/16/06	ND	ND	ND	ND	ND	**5**
08/30/06	ND	ND	ND	ND	ND	**5**
02/26/07	ND	ND	ND	ND	ND	**10**

N_i	13	9	13	9	13
sum of rank values (R_i)	340.0	202.5	402.5	321.5	386.5
avg rank value (Rbar)	26.2	22.5	31.0	35.7	29.7

	Number of each rank value					Rank Value
rank value of NDs =	11	9	9	5	10	22.5
rank value of 5.3s =	1	0	0	0	0	45
rank value of 5.5s =	0	0	1	0	0	46
rank value of 6.9s =	1	0	1	0	0	47.5
rank value of 7.3s =	0	0	0	1	0	49
rank value of 8.9s =	0	0	0	1	0	50
rank value of 9.5s =	0	0	0	0	1	51
rank value of 10s =	0	0	1	0	0	52
rank value of 13s =	0	0	0	1	0	53
rank value of 16s =	0	0	1	0	1	54.5
rank value of 24s =	0	0	0	0	1	56
rank value of 39s =	0	0	0	1	0	57
n =	**13**	**9**	**13**	**9**	**13**	

Sum of rank value calculations

247.5	202.5	202.5	112.5	225
45	0	0	0	0
0	0	46	0	0
47.5	0	47.5	0	0
0	0	0	49	0
0	0	0	50	0
0	0	0	0	51
0	0	52	0	0
0	0	0	53	0
0	0	54.5	0	54.5
0	0	0	0	56
0	0	0	57	0
sum of rank values (R_i) **340**	**202.5**	**402.5**	**321.5**	**386.5**

Compute the Kruskal-Wallis statistic:

$$H = \{[12/N(N+1)] * [\Sigma^{K}_{i=1} (R_i^2)/N_i]\} -3(N+1)$$

Well =	**Background**	**MW-1A**	**MW-2A**	**MW-3A**
Ri^2/N_i =	13377.6	12462	11484.7	11490.9

$N_{i\,bg}$ = 22
N = 57
H = 3.19

Adjust H for ties:

T_i = 85152 sum of T1..T3

$H' = H/(1-(T_i/(N^3-N)))$
H' = 5.90
Chi-square = 7.82

Compare the calculated value H' to the tabulated Chi-square value with K-1 = # groups -1 = 17df at the significance level from Table 1 of the IFG. The value is 7.82 which is greater than H' =5.90. Therefore, the null hypothesis of no contamination at the 5% level holds true and significant evidence of contamination does not exist.

Haywood County Closed Landfill, Francis Farm
Haywood County, North Carolina
BLE Project Number J07-1957-03

Compound:	**Total Silver (Ag)**
NC MCL (µg/l):	17.5
Method:	Kruskal-Wallis
Background:	MW-4 & MW-5

	MW-4	MW-5	MW-1A	MW-2A	MW-3A	MDL
02/18/99	ND	NS	ND	NS	ND	**0**
08/16/99	ND	NS	ND	NS	ND	**0**
02/14/00	ND	NS	**4.3**	NS	**4.9**	**0**
08/14/00	**4**	NT	**8.9**	NS	**7.8**	**0**
03/19/01	ND	ND	ND	**6.6**	**4.7**	**0**
08/27/02	ND	ND	ND	ND	NT	**0**
02/24/03	**4.1**	ND	**7.3**	**3.5**	**8.5**	**0**
08/11/03	ND	ND	ND	ND	ND	**0**
02/09/04	ND	ND	ND	ND	ND	**0**
08/16/04	ND	ND	ND	ND	ND	**0**
02/14/05	ND	ND	ND	**5.8**	**3.6**	**0**
09/01/05	ND	ND	ND	ND	ND	**0**
02/16/06	ND	ND	ND	ND	ND	**0**
08/30/06	ND	ND	ND	ND	ND	**0**
02/26/07	ND	ND	ND	ND	ND	**0**
N_i	15	11	15	11	14	
sum of rank values (R_i)	464.0	297.0	511.0	393.0	546.0	
avg rank value (Rbar)	30.9	27.0	34.1	35.7	39.0	

	Number of each rank value					Rank Value
rank value of NDs =	13	11	12	8	9	27
rank value of 3.5s =	0	0	0	1	0	54
rank value of 3.6s =	0	0	0	0	1	55
rank value of 4s =	1	0	0	0	0	56
rank value of 4.1s =	1	0	0	0	0	57
rank value of 4.3s =	0	0	1	0	0	58
rank value of 4.7s =	0	0	0	0	1	59
rank value of 4.9s =	0	0	0	0	1	60
rank value of 5.8s =	0	0	0	1	0	61
rank value of 6.6s =	0	0	0	1	0	62
rank value of 7.3s =	0	0	1	0	0	63
rank value of 7.8s =	0	0	0	0	1	64
rank value of 8.5s =	0	0	0	0	1	65
rank value of 8.9s =	0	0	1	0	0	66

n =	**15**	**11**	**15**	**11**	**14**

Sum of rank value calculations

351	297	324	216	243
0	0	0	54	0
0	0	0	0	55
56	0	0	0	0
57	0	0	0	0
0	0	58	0	0
0	0	0	0	59
0	0	0	0	60
0	0	0	61	0
0	0	0	62	0
0	0	63	0	0
0	0	0	0	64
0	0	0	0	65
0	0	66	0	0

sum of rank values (R_i)	**464**	**297**	**511**	**393**	**546**

Compute the Kruskal-Wallis statistic:

$$H = \{[12/N(N+1)] * [\Sigma^{K}_{i=1} (R_i^2)/N_i]\} -3(N+1)$$

Well =	**Background**	**MW-1A**	**MW-2A**	**MW-3A**
Ri^2/N_i =	22273.9	17408.1	14040.8	21294

$N_{i\,bg}$ = 26
N = 66
H = 2.57

Adjust H for ties:

T_i = 148824 sum of T1..T1

$H' = H/(1-(T_i/(N^3-N)))$
H' = 5.34
Chi-square = 7.82

Compare the calculated value H' to the tabulated Chi-square value with K-1 = # groups -1 = 17df at the 5% significance level from Table 1 of the IFG. The value is 7.82 which is greater than H' =5.34. Therefore, the null hypothesis of no contamination at the 5% level holds true and significant evidence of contamination does not exist.

Haywood County Closed Landfill, Francis Farm
Haywood County, North Carolina
BLE Project Number J07-1957-03

Compound: **Acetone**
MCL (µg/l): 700
Method: Poisson Prediction Limits
Background: MW-4 & MW-5

	MW-4	MW-5	MW-1A	MW-2A	MW-3A	MDL
02/18/99	NT	NS	NT	NS	NT	**100**
08/16/99	NT	NS	NT	NS	NT	**100**
02/14/00	NT	NS	NT	NS	NT	**100**
08/14/00	NT	NT	NT	NS	NT	**100**
03/19/01	NT	NT	NT	NT	NT	**100**
08/27/02	NT	NT	NT	NT	NT	**100**
02/24/03	NT	NT	NT	NT	NT	**100**
08/11/03	ND	ND	ND	ND	ND	**10**
02/09/04	ND	ND	ND	**25**	ND	**10**
08/16/04	ND	ND	ND	ND	ND	**100**
02/14/05	**53**	ND	ND	ND	ND	**100**
09/01/05	ND	ND	ND	ND	ND	**10**
02/16/06	ND	ND	ND	ND	ND	**10**
08/30/06	ND	ND	ND	ND	ND	**25**
02/26/07	ND	ND	ND	ND	ND	**25**

1) If not detected (ND), use half of the detection limit.

02/18/99	-	-	-	-	-
08/16/99	-	-	-	-	-
02/14/00	-	-	-	-	-
08/14/00	-	-	-	-	-
03/19/01	-	-	-	-	-
08/27/02	-	-	-	-	-
02/24/03	-	-	-	-	-
08/11/03	5	5	5	5	5
02/09/04	5	5	5	25	5
08/16/04	50	50	50	50	50
02/14/05	53	50	50	50	50
09/01/05	5	5	5	5	5
02/16/06	5	5	5	5	5
08/30/06	12.5	12.5	12.5	12.5	12.5
02/26/07			12.5	12.5	12.5

2) Set the total number of data values for background wells (through the previous sampling event) equal to 'n' = 7.
Use 1/2 of the method detection limit to calculate the Total Poisson Count of the Sum (T_n).

$n = 14$
$T_{n1} = 268$

3) Using Gibbons' formula, calculate the upper Poisson Prediction limit T^*_k:

$$T^*_k = cT_{n1} + ct^2/2 + ct[T_{n1}(1+1/c) + t^2/4]^{-0.5}$$

where $c = k/n$
and where k = the number of future predicted measurements (one per well during the current sampling event)
and where t = the upper 99th percentile of the t-distribution with (n-1) degrees of freedom (Table 6 of the IFG).

$k = 3$
$n = 14$
$T_{n1} = 268$
$t[13,.01] = 2.65$
$c = 0.2143$
$T_{n2} = 37.5$
$T^*_k = 80.3$

4) Compare the *Poisson Prediction Limit* (T^*_k) to the *Sum of the Concentrations Detected* (T_{n2}) in the wells during the most recent sampling event.
Since the Poisson Prediction Limit was not exceeded, there is no evidence of contamination.

Haywood County Closed Landfill, Francis Farm
Haywood County, North Carolina
BLE Project Number J07-1957-03

Compound:	**Benzene**
NC MCL (µg/l):	1
Method:	Kruskal-Wallis
Background:	MW-4 & MW-5

	MW-4	MW-5	MW-1A	MW-2A	MW-3A	MDL
02/18/99	NT	NS	NT	NS	NT	5
08/16/99	NT	NS	NT	NS	NT	5
02/14/00	NT	NS	NT	NS	NT	5
08/14/00	NT	NT	NT	NS	NT	5
03/19/01	NT	NT	NT	NT	NT	5
08/27/02	NT	NT	NT	NT	NT	5
02/24/03	NT	NT	NT	NT	NT	5
08/11/03	**7.2**	**9**	ND	ND	ND	5
02/09/04	**14**	ND	ND	ND	ND	5
08/16/04	**13**	**6.1**	ND	ND	ND	5
02/14/05	**20**	**7.1**	ND	ND	ND	5
09/01/05	**13**	ND	ND	ND	ND	5
02/16/06	ND	ND	ND	ND	ND	5
08/30/06	**16**	ND	ND	ND	ND	5
02/26/07	**15**	ND	ND	ND	ND	5

N_i	8	8	8	8	8
sum of rank values (R_i)	273.5	174.5	124.0	124.0	124.0
avg rank value (Rbar)	34.2	21.8	15.5	15.5	15.5

	Number of each rank value					Rank Value
rank value of NDs =	1	5	8	8	8	15.5
rank value of 6.1s =	0	1	0	0	0	31
rank value of 7.1s =	0	1	0	0	0	32
rank value of 7.2s =	1	0	0	0	0	33
rank value of 9s =	0	1	0	0	0	34
rank value of 13s =	2	0	0	0	0	35.5
rank value of 14s =	1	0	0	0	0	37
rank value of 15s =	1	0	0	0	0	38
rank value of 16s =	1	0	0	0	0	39
rank value of 20s =	1	0	0	0	0	40
n =	**8**	**8**	**8**	**8**	**8**	

Sum of rank value calculations

15.5	77.5	124	124	124
0	31	0	0	0
0	32	0	0	0
33	0	0	0	0
0	34	0	0	0
71	0	0	0	0
37	0	0	0	0

	38	0	0	0	0
	39	0	0	0	0
	40	0	0	0	0
sum of rank values (R_i)	**273.5**	**174.5**	**124**	**124**	**124**

Compute the Kruskal-Wallis statistic:

$$H = \{[12/N(N+1)] * [\Sigma^{K}_{i=1} (R_i^2)/N_i]\} -3(N+1)$$

		MW-1A	MW-2A	MW-3A
Well =	**Background**			
Ri^2/N_i =	12544.0	1922	1922	1922

$N_{i\,bg}$ = 16
N = 40
H = 10.98

Adjust H for ties:

T_i = 26976 sum of T1..T2

$H' = H/(1-(T_i/(N^3-N)))$
H' = 18.98
Chi-square = 7.82

Compare the calculated value H' to the tabulated Chi-square value with K-1 = # groups -1 = 17df at the significance level from Table 1 of the IFG. The value is 7.82 which is less than H' =18.98.
Therefore, there is evidence of significant differences between the well groups.
Post-hoc pairwise comparisons are necessary (see below).

Calculate the critical values to compare each compliance well to the background wells:

Critical Value (C_x) = $P(N(N+1)/12)^{0.5} * (1/N_{i\,bg}+1/N_x)^{0.5}$
P = 2.12 Percentile of Standard Normal Distribution
from Table 4 of IFG
N = total sample size
$N_{i\,bg}$ = total samples (N_i) of background data
N_x = total samples (N_i) of well x

Difference between average ranks (Dx) = Rbar (well x) - avg Rbar (background)

Well =	MW-1A	MW-2A	MW-3A
Rbar (well x) =	15.5	15.5	15.5
avg Rbar (background) =	28.0	28.0	28.0
Dx =	-12.5	-12.5	-12.5
Cx =	10.7	10.7	10.7
Statistical Significance ?	-	-	-

Compare each difference (Dx) with the corresponding critical value (Cx).
No compliance well's difference between average ranks exceeded its corresponding critical value at a 5% significance level. Therefore, we conclude that significant evidence of contamination does not exist at the 5% significance level.

Haywood County Closed Landfill, Francis Farm
Haywood County, North Carolina
BLE Project Number J07-1957-03

Compound: **Carbon Disulfide**
MCL (µg/l): 700
Method: Poisson Prediction Limits
Background: MW-4 & MW-5

	MW-4	MW-5	MW-1A	MW-2A	MW-3A	MDL
02/18/99	NT	NS	NT	NS	NT	**100**
08/16/99	NT	NS	NT	NS	NT	**100**
02/14/00	NT	NS	NT	NS	NT	**100**
08/14/00	NT	NT	NT	NS	NT	**100**
03/19/01	NT	NT	NT	NT	NT	**100**
08/27/02	NT	NT	NT	NT	NT	**100**
02/24/03	NT	NT	NT	NT	NT	**100**
08/11/03	ND	ND	ND	ND	ND	**10**
02/09/04	ND	ND	**12**	ND	ND	**10**
08/16/04	ND	ND	ND	ND	ND	**100**
02/14/05	ND	ND	ND	ND	ND	**100**
09/01/05	ND	ND	ND	ND	ND	**10**
02/16/06	ND	ND	ND	ND	ND	**10**
08/30/06	ND	ND	ND	ND	ND	**10**
02/26/07	ND	ND	ND	ND	ND	**10**

1) If not detected (ND), use half of the detection limit.

02/18/99	-	-	-	-	-
08/16/99	-	-	-	-	-
02/14/00	-	-	-	-	-
08/14/00	-	-	-	-	-
03/19/01	-	-	-	-	-
08/27/02	-	-	-	-	-
02/24/03	-	-	-	-	-
08/11/03	5	5	5	5	5
02/09/04	5	5	12	5	5
08/16/04	50	50	50	50	50
02/14/05	50	50	50	50	50
09/01/05	5	5	5	5	5
02/16/06	5	5	5	5	5
08/30/06	5	5	5	5	5
02/26/07			5	5	5

2) Set the total number of data values for background wells (through the previous sampling event) equal to 'n' = 7.
Use 1/2 of the method detection limit to calculate the Total Poisson Count of the Sum (T_n).

$n = 14$
$T_{n1} = 250$

3) Using Gibbons' formula, calculate the upper Poisson Prediction limit T^*_k:

$$T^*_k = cT_{n1} + ct^2/2 + ct[T_{n1}(1+1/c) + t^2/4]^{-0.5}$$

where $c = k/n$
and where k = the number of future predicted measurements (one per well during the current sampling event)
and where t = the upper 99th percentile of the t-distribution with (n-1) degrees of freedom (Table 6 of the IFG).

$k = 3$
$n = 14$
$T_{n1} = 250$
$t[13,.01] = 2.65$
$c = 0.2143$
$T_{n2} = 15$
$T^*_k = 75.7$

4) Compare the *Poisson Prediction Limit* (T^*_k) to the *Sum of the Concentrations Detected* (T_{n2}) in the wells during the most recent sampling event.
Since the Poisson Prediction Limit was not exceeded, there is no evidence of contamination.

Haywood County Closed Landfill, Francis Farm
Haywood County, North Carolina
BLE Project Number J07-1957-03

Compound: **Chloroethane**
MCL (µg/l): 2800
Method: Poisson Prediction Limits
Background: MW-4 & MW-5

	MW-4	MW-5	MW-1A	MW-2A	MW-3A	MDL
02/18/99	NT	NS	NT	NS	NT	**10**
08/16/99	NT	NS	NT	NS	NT	**10**
02/14/00	NT	NS	NT	NS	NT	**10**
08/14/00	NT	NT	NT	NS	NT	**10**
03/19/01	NT	NT	NT	NT	NT	**10**
08/27/02	NT	NT	NT	NT	NT	**10**
02/24/03	NT	NT	NT	NT	NT	**10**
08/11/03	**52**	**33**	**20**	**11**	ND	**10**
02/09/04	ND	ND	ND	ND	ND	**10**
08/16/04	ND	ND	ND	ND	ND	**10**
02/14/05	**16**	ND	ND	ND	ND	**10**
09/01/05	ND	ND	ND	ND	ND	**10**
02/16/06	ND	ND	ND	ND	ND	**10**
08/30/06	ND	ND	ND	ND	ND	**10**
02/26/07	ND	ND	ND	ND	ND	**10**

1) If not detected (ND), use half of the detection limit.

02/18/99	-	-	-	-	-
08/16/99	-	-	-	-	-
02/14/00	-	-	-	-	-
08/14/00	-	-	-	-	-
03/19/01	-	-	-	-	-
08/27/02	-	-	-	-	-
02/24/03	-	-	-	-	-
08/11/03	52	33	20	11	5
02/09/04	5	5	5	5	5
08/16/04	5	5	5	5	5
02/14/05	16	5	5	5	5
09/01/05	5	5	5	5	5
02/16/06	5	5	5	5	5
08/30/06	5	5	5	5	5
02/26/07			5	5	5

2) Set the total number of data values for background wells (through the previous sampling event) equal to 'n' = 7.
Use 1/2 of the method detection limit to calculate the Total Poisson Count of the Sum (T_n).

$n = 14$
$T_{n1} = 156$

3) Using Gibbons' formula, calculate the upper Poisson Prediction limit T^*_k:

$$T^*_k = cT_{n1} + ct^2/2 + ct[T_{n1}(1+1/c) + t^2/4]^{-0.5}$$

where c = k/n
and where k = the number of future predicted measurements (one per well during the current sampling event)
and where t = the upper 99th percentile of the t-distribution with (n-1) degrees of freedom (Table 6 of the IFG).

$k = 3$
$n = 14$
$T_{n1} = 156$
$t[13,.01] = 2.65$
$c = 0.2143$
$T_{n2} = 15$
$T^*_k = 51.1$

4) Compare the *Poisson Prediction Limit* (T^*_k) to the *Sum of the Concentrations Detected* (T_{n2}) in the wells during the most recent sampling event.
Since the Poisson Prediction Limit was not exceeded, there is no evidence of contamination.

Haywood County Closed Landfill, Francis Farm
Haywood County, North Carolina
BLE Project Number J07-1957-03

Compound: **1,2-Dichlorobenzene**
MCL (µg/l): 24
Method: Poisson Prediction Limits
Background: MW-4 & MW-5

	MW-4	MW-5	MW-1A	MW-2A	MW-3A	MDL
02/18/99	NT	NS	NT	NS	NT	5
08/16/99	NT	NS	NT	NS	NT	5
02/14/00	NT	NS	NT	NS	NT	5
08/14/00	NT	NT	NT	NS	NT	5
03/19/01	NT	NT	NT	NT	NT	5
08/27/02	NT	NT	NT	NT	NT	5
02/24/03	NT	NT	NT	NT	NT	5
08/11/03	ND	ND	ND	22	ND	5
02/09/04	ND	ND	ND	ND	ND	5
08/16/04	ND	ND	ND	ND	ND	5
02/14/05	ND	ND	ND	ND	ND	5
09/01/05	ND	ND	ND	ND	ND	5
02/16/06	ND	ND	ND	ND	ND	5
08/30/06	ND	ND	ND	ND	ND	5
02/26/07	ND	ND	ND	ND	ND	5

1) If not detected (ND), use half of the detection limit.

02/18/99	-	-	-	-	-
08/16/99	-	-	-	-	-
02/14/00	-	-	-	-	-
08/14/00	-	-	-	-	-
03/19/01	-	-	-	-	-
08/27/02	-	-	-	-	-
02/24/03	-	-	-	-	-
08/11/03	2.5	2.5	2.5	22	2.5
02/09/04	2.5	2.5	2.5	2.5	2.5
08/16/04	2.5	2.5	2.5	2.5	2.5
02/14/05	2.5	2.5	2.5	2.5	2.5
09/01/05	2.5	2.5	2.5	2.5	2.5
02/16/06	2.5	2.5	2.5	2.5	2.5
08/30/06	2.5	2.5	2.5	2.5	2.5
02/26/07			2.5	2.5	2.5

2) Set the total number of data values for background wells (through the previous sampling event) equal to 'n' = 7.
Use 1/2 of the method detection limit to calculate the Total Poisson Count of the Sum (T_n).

$n = 14$
$T_{n1} = 35$

3) Using Gibbons' formula, calculate the upper Poisson Prediction limit T^*_k:

$$T^*_k = cT_{n1} + ct^2/2 + ct[T_{n1}(1+1/c) + t^2/4]^{-0.5}$$

where $c = k/n$
and where k = the number of future predicted measurements (one per well during the current sampling event)
and where t = the upper 99th percentile of the t-distribution with (n-1) degrees of freedom (Table 6 of the IFG).

$k = 3$
$n = 14$
$T_{n1} = 35$
$t[13,.01] = 2.65$
$c = 0.2143$
$T_{n2} = 7.5$
$T^*_k = 16.3$

4) Compare the *Poisson Prediction Limit* (T^*_k) to the *Sum of the Concentrations Detected* (T_{n2}) in the wells during the most recent sampling event.
Since the Poisson Prediction Limit was not exceeded, there is no evidence of contamination.

Haywood County Closed Landfill, Francis Farm
Haywood County, North Carolina
BLE Project Number J07-1957-03

Compound: **1,4-Dichlorobenzene**
MCL (µg/l): 1.4
Method: Poisson Prediction Limits
Background: MW-4 & MW-5

	MW-4	MW-5	MW-1A	MW-2A	MW-3A	MDL
02/18/99	NT	NS	NT	NS	NT	5
08/16/99	NT	NS	NT	NS	NT	5
02/14/00	NT	NS	NT	NS	NT	5
08/14/00	NT	NT	NT	NS	NT	5
03/19/01	NT	NT	NT	NT	NT	5
08/27/02	NT	NT	NT	NT	NT	5
02/24/03	NT	NT	NT	NT	NT	5
08/11/03	ND	ND	ND	ND	ND	5
02/09/04	ND	ND	ND	**5.9**	ND	5
08/16/04	ND	ND	ND	**11**	ND	5
02/14/05	ND	ND	ND	**14**	ND	5
09/01/05	ND	ND	ND	**13**	ND	5
02/16/06	ND	ND	ND	**10**	ND	5
08/30/06	ND	ND	ND	ND	ND	5
02/26/07	ND	ND	ND	ND	ND	5

1) If not detected (ND), use half of the detection limit.

02/18/99	-	-	-	-	-
08/16/99	-	-	-	-	-
02/14/00	-	-	-	-	-
08/14/00	-	-	-	-	-
03/19/01	-	-	-	-	-
08/27/02	-	-	-	-	-
02/24/03	-	-	-	-	-
08/11/03	2.5	2.5	2.5	2.5	2.5
02/09/04	2.5	2.5	2.5	5.9	2.5
08/16/04	2.5	2.5	2.5	11	2.5
02/14/05	2.5	2.5	2.5	14	2.5
09/01/05	2.5	2.5	2.5	13	2.5
02/16/06	2.5	2.5	2.5	10	2.5
08/30/06	2.5	2.5	2.5	2.5	2.5
02/26/07			2.5	2.5	2.5

2) Set the total number of data values for background wells (through the previous sampling event) equal to 'n' = 7.
Use 1/2 of the method detection limit to calculate the Total Poisson Count of the Sum (T_n).

$n = 14$
$T_{n1} = 35$

3) Using Gibbons' formula, calculate the upper Poisson Prediction limit T^*_k:

$$T^*_k = cT_{n1} + ct^2/2 + ct[T_{n1}(1+1/c) + t^2/4]^{-0.5}$$

where $c = k/n$
and where k = the number of future predicted measurements (one per well during the current sampling event)
and where t = the upper 99th percentile of the t-distribution with (n-1) degrees of freedom (Table 6 of the IFG).

$k = 3$
$n = 14$
$T_{n1} = 35$
$t[13,.01] = 2.65$
$c = 0.2143$
$T_{n2} = 7.5$
$T^*_k = 16.3$

4) Compare the *Poisson Prediction Limit* (T^*_k) to the *Sum of the Concentrations Detected* (T_{n2}) in the wells during the most recent sampling event.
Since the Poisson Prediction Limit was not exceeded, there is no evidence of contamination.

Haywood County Closed Landfill, Francis Farm
Haywood County, North Carolina
BLE Project Number J07-1957-03

Compound:	**1,1-Dichloroethane**
NC MCL (µg/l):	70
Method:	Kruskal-Wallis
Background:	MW-4 & MW-5

	MW-4	MW-5	MW-1A	MW-2A	MW-3A	MDL
02/18/99	NT	NS	NT	NS	NT	5
08/16/99	NT	NS	NT	NS	NT	5
02/14/00	NT	NS	NT	NS	NT	5
08/14/00	NT	NT	NT	NS	NT	5
03/19/01	NT	NT	NT	NT	NT	5
08/27/02	NT	NT	NT	NT	NT	5
02/24/03	NT	NT	NT	NT	NT	5
08/11/03	**22**	**23**	**8.8**	**5.2**	**10**	5
02/09/04	**40**	ND	**6.2**	ND	**8.2**	5
08/16/04	**38**	**12**	ND	ND	**12**	5
02/14/05	**70**	**15**	**5.5**	ND	**11**	5
09/01/05	**42**	**10**	**6.3**	ND	**8.6**	5
02/16/06	ND	**7.1**	ND	ND	**13**	5
08/30/06	**42**	**5.7**	ND	**7.6**	**23**	5
02/26/07	**36**	ND	ND	ND	**17**	5
N_i	8	8	8	8	8	
sum of rank values (R_i)	264.0	164.5	101.0	76.0	214.5	
avg rank value (Rbar)	33.0	20.6	12.6	9.5	26.8	

	Number of each rank value					Rank Value
rank value of NDs =	1	2	4	6	0	7
rank value of 5.2s =	0	0	0	1	0	14
rank value of 5.5s =	0	0	1	0	0	15
rank value of 5.7s =	0	1	0	0	0	16
rank value of 6.2s =	0	0	1	0	0	17
rank value of 6.3s =	0	0	1	0	0	18
rank value of 7.1s =	0	1	0	0	0	19
rank value of 7.6s =	0	0	0	1	0	20
rank value of 8.2s =	0	0	0	0	1	21
rank value of 8.6s =	0	0	0	0	1	22
rank value of 8.8s =	0	0	1	0	0	23
rank value of 10s =	0	1	0	0	1	24.5
rank value of 11s =	0	0	0	0	1	26
rank value of 12s =	0	1	0	0	1	27.5
rank value of 13s =	0	0	0	0	1	29
rank value of 15s =	0	1	0	0	0	30
rank value of 17s =	0	0	0	0	1	31
rank value of 22s =	1	0	0	0	0	32
rank value of 23s =	0	1	0	0	1	33.5
rank value of 36s =	1	0	0	0	0	35
rank value of 38s =	1	0	0	0	0	36
rank value of 40s =	1	0	0	0	0	37
rank value of 42s =	2	0	0	0	0	38.5
rank value of 70s =	1	0	0	0	0	40
n =	**8**	**8**	**8**	**8**	**8**	

Sum of rank value calculations

7	14	28	42	0
0	0	0	14	0
0	0	15	0	0
0	16	0	0	0
0	0	17	0	0
0	0	18	0	0
0	19	0	0	0

	0	0	0	20	0
	0	0	0	0	21
	0	0	0	0	22
	0	0	23	0	0
	0	24.5	0	0	24.5
	0	0	0	0	26
	0	27.5	0	0	27.5
	0	0	0	0	29
	0	30	0	0	0
	0	0	0	0	31
	32	0	0	0	0
	0	33.5	0	0	33.5
	35	0	0	0	0
	36	0	0	0	0
	37	0	0	0	0
	77	0	0	0	0
	40	0	0	0	0
sum of rank values (R_i)	**264**	**164.5**	**101**	**76**	**214.5**

Compute the Kruskal-Wallis statistic:

$$H = \{[12/N(N+1)] * [\Sigma^{K}_{i=1} (R_i^2)/N_i]\} -3(N+1)$$

Well =	**Background**	**MW-1A**	**MW-2A**	**MW-3A**
Ri^2/N_i =	11475.8	1275.13	722	5751.28

$N_{i\,bg}$ = 16
N = 40
H = 17.66

Adjust H for ties:

T_i = 2208 sum of T1..T3

$H' = H/(1-(T_i/(N^3-N)))$
H' = 18.30
Chi-square = 7.82

Compare the calculated value H' to the tabulated Chi-square value with K-1 = # groups -1 = 17df at th significance level from Table 1 of the IFG. The value is 7.82 which is less than H' =18.30.
Therefore, there is evidence of significant differences between the well groups.
Post-hoc pairwise comparisons are necessary (see below).

Calculate the critical values to compare each compliance well to the background wells:

Critical Value (C_x) = $P(N(N+1)/12)^{0.5} * (1/N_{i\,bg}+1/N_x)^{0.5}$
P = 2.12 Percentile of Standard Normal Distribution
from Table 4 of IFG
N = total sample size
$N_{i\,bg}$ = total samples (N_i) of background data
N_x = total samples (N_i) of well x

Difference between average ranks (Dx) = Rbar (well x) - avg Rbar (background)

Well =	MW-1A	MW-2A	MW-3A
Rbar (well x) =	12.6	9.5	26.8
avg Rbar (background) =	26.8	26.8	26.8
Dx =	-14.2	-17.3	0.0
Cx =	10.7	10.7	10.7
Statistical Significance ?	-	-	-

Compare each difference (Dx) with the corresponding critical value (Cx).
No compliance well's difference between average ranks exceeded its corresponding critical value at a 5% significance level. Therefore, we conclude that significant evidence of contamination does not exist at the 5% significance level.

Haywood County Closed Landfill, Francis Farm
Haywood County, North Carolina
BLE Project Number J07-1957-03

Compound: **1,2-Dichloroethane**
MCL (µg/l): 0.38
Method: Poisson Prediction Limits
Background: MW-4 & MW-5

	MW-4	MW-5	MW-1A	MW-2A	MW-3A	MDL
02/18/99	NT	NS	NT	NS	NT	5
08/16/99	NT	NS	NT	NS	NT	5
02/14/00	NT	NS	NT	NS	NT	5
08/14/00	NT	NT	NT	NS	NT	5
03/19/01	NT	NT	NT	NT	NT	5
08/27/02	NT	NT	NT	NT	NT	5
02/24/03	NT	NT	NT	NT	NT	5
08/11/03	ND	ND	ND	ND	5	5
02/09/04	ND	ND	ND	ND	ND	5
08/16/04	ND	ND	ND	ND	ND	5
02/14/05	ND	ND	ND	ND	ND	5
09/01/05	ND	ND	ND	ND	ND	5
02/16/06	ND	ND	ND	ND	ND	5
08/30/06	ND	ND	ND	ND	5	5
02/26/07	ND	ND	ND	ND	ND	5

1) If not detected (ND), use half of the detection limit.

02/18/99	-	-	-	-	-
08/16/99	-	-	-	-	-
02/14/00	-	-	-	-	-
08/14/00	-	-	-	-	-
03/19/01	-	-	-	-	-
08/27/02	-	-	-	-	-
02/24/03	-	-	-	-	-
08/11/03	2.5	2.5	2.5	2.5	5
02/09/04	2.5	2.5	2.5	2.5	2.5
08/16/04	2.5	2.5	2.5	2.5	2.5
02/14/05	2.5	2.5	2.5	2.5	2.5
09/01/05	2.5	2.5	2.5	2.5	2.5
02/16/06	2.5	2.5	2.5	2.5	2.5
08/30/06	2.5	2.5	2.5	2.5	5
02/26/07			2.5	2.5	2.5

2) Set the total number of data values for background wells (through the previous sampling event) equal to 'n' = 7.
Use 1/2 of the method detection limit to calculate the Total Poisson Count of the Sum (T_n).

$n = 14$
$T_{n1} = 35$

3) Using Gibbons' formula, calculate the upper Poisson Prediction limit T^*_k:

$$T^*_k = cT_{n1} + ct^2/2 + ct[T_{n1}(1+1/c) + t^2/4]^{-0.5}$$

where $c = k/n$
and where k = the number of future predicted measurements (one per well during the current sampling event)
and where t = the upper 99th percentile of the t-distribution with (n-1) degrees of freedom (Table 6 of the IFG).

$k = 3$
$n = 14$
$T_{n1} = 35$
$t[13,.01] = 2.65$
$c = 0.2143$
$T_{n2} = 7.5$
$T^*_k = 16.3$

4) Compare the *Poisson Prediction Limit* (T^*_k) to the *Sum of the Concentrations Detected* (T_{n2}) in the wells during the most recent sampling event.
Since the Poisson Prediction Limit was not exceeded, there is no evidence of contamination.

Haywood County Closed Landfill, Francis Farm
Haywood County, North Carolina
BLE Project Number J07-1957-03

Compound: **1,1-Dichloroethene**
MCL (µg/l): 7
Method: Poisson Prediction Limits
Background: MW-4 & MW-5

	MW-4	MW-5	MW-1A	MW-2A	MW-3A	MDL
02/18/99	NT	NS	NT	NS	NT	5
08/16/99	NT	NS	NT	NS	NT	5
02/14/00	NT	NS	NT	NS	NT	5
08/14/00	NT	NT	NT	NS	NT	5
03/19/01	NT	NT	NT	NT	NT	5
08/27/02	NT	NT	NT	NT	NT	5
02/24/03	NT	NT	NT	NT	NT	5
08/11/03	ND	ND	ND	ND	ND	5
02/09/04	ND	**11**	ND	ND	ND	5
08/16/04	ND	ND	ND	ND	ND	5
02/14/05	ND	ND	ND	ND	ND	5
09/01/05	ND	ND	ND	ND	ND	5
02/16/06	ND	ND	ND	ND	ND	5
08/30/06	ND	ND	ND	ND	ND	5
02/26/07	ND	ND	ND	ND	ND	5

1) If not detected (ND), use half of the detection limit.

02/18/99	-	-	-	-	-
08/16/99	-	-	-	-	-
02/14/00	-	-	-	-	-
08/14/00	-	-	-	-	-
03/19/01	-	-	-	-	-
08/27/02	-	-	-	-	-
02/24/03	-	-	-	-	-
08/11/03	2.5	2.5	2.5	2.5	2.5
02/09/04	2.5	11	2.5	2.5	2.5
08/16/04	2.5	2.5	2.5	2.5	2.5
02/14/05	2.5	2.5	2.5	2.5	2.5
09/01/05	2.5	2.5	2.5	2.5	2.5
02/16/06	2.5	2.5	2.5	2.5	2.5
08/30/06	2.5	2.5	2.5	2.5	2.5
02/26/07			2.5	2.5	2.5

2) Set the total number of data values for background wells (through the previous sampling event) equal to 'n' = 7.
Use 1/2 of the method detection limit to calculate the Total Poisson Count of the Sum (T_n).

$n = 14$
$T_{n1} = 43.5$

3) Using Gibbons' formula, calculate the upper Poisson Prediction limit T^*_k:

$$T^*_k = cT_{n1} + ct^2/2 + ct[T_{n1}(1+1/c) + t^2/4]^{-0.5}$$

where $c = k/n$
and where k = the number of future predicted measurements (one per well during the current sampling event)
and where t = the upper 99th percentile of the t-distribution with (n-1) degrees of freedom (Table 6 of the IFG).

$k = 3$
$n = 14$
$T_{n1} = 43.5$
$t[13,.01] = 2.65$
$c = 0.2143$
$T_{n2} = 7.5$
$T^*_k = 19.0$

4) Compare the *Poisson Prediction Limit* (T^*_k) to the *Sum of the Concentrations Detected* (T_{n2}) in the wells during the most recent sampling event.
Since the Poisson Prediction Limit was not exceeded, there is no evidence of contamination.

Haywood County Closed Landfill, Francis Farm
Haywood County, North Carolina
BLE Project Number J07-1957-03

Compound: **cis-1,2-Dichloroethene**
NC MCL (µg/l): 70
Method: Kruskal-Wallis
Background: MW-4 & MW-5

	MW-4	MW-5	MW-1A	MW-2A	MW-3A	MDL
02/18/99	NT	NS	NT	NS	NT	5
08/16/99	NT	NS	NT	NS	NT	5
02/14/00	NT	NS	NT	NS	NT	5
08/14/00	NT	NT	NT	NS	NT	5
03/19/01	NT	NT	NT	NT	NT	5
08/27/02	NT	NT	NT	NT	NT	5
02/24/03	NT	NT	NT	NT	NT	5
08/11/03	**16**	**21**	**13**	**50**	**5.6**	5
02/09/04	**24**	ND	**11**	**7.6**	ND	5
08/16/04	**29**	**15**	**9.7**	**12**	ND	5
02/14/05	**48**	**20**	**10**	**26**	**6**	5
09/01/05	**31**	**13**	**11**	**27**	**9.4**	5
02/16/06	ND	**7.4**	ND	**17**	ND	5
08/30/06	**34**	ND	**6.8**	**16**	**5.8**	5
02/26/07	**30**	ND	ND	**12**	ND	5
N_i	8	8	8	8	8	
sum of rank values (R_i)	250.0	143.0	127.5	224.5	75.0	
avg rank value (Rbar)	31.3	17.9	15.9	28.1	9.4	

	Number of each rank value					Rank Value
rank value of NDs =	1	3	2	0	4	5.5
rank value of 5.6s =	0	0	0	0	1	11
rank value of 5.8s =	0	0	0	0	1	12
rank value of 6s =	0	0	0	0	1	13
rank value of 6.8s =	0	0	1	0	0	14
rank value of 7.4s =	0	1	0	0	0	15
rank value of 7.6s =	0	0	0	1	0	16
rank value of 9.4s =	0	0	0	0	1	17
rank value of 9.7s =	0	0	1	0	0	18
rank value of 10s =	0	0	1	0	0	19
rank value of 11s =	0	0	2	0	0	20.5
rank value of 12s =	0	0	0	2	0	22.5
rank value of 13s =	0	1	1	0	0	24.5
rank value of 15s =	0	1	0	0	0	26
rank value of 16s =	1	0	0	1	0	27.5
rank value of 17s =	0	0	0	1	0	29
rank value of 20s =	0	1	0	0	0	30
rank value of 21s =	0	1	0	0	0	31
rank value of 24s =	1	0	0	0	0	32
rank value of 26s =	0	0	0	1	0	33
rank value of 27s =	0	0	0	1	0	34
rank value of 29s =	1	0	0	0	0	35
rank value of 30s =	1	0	0	0	0	36
rank value of 31s =	1	0	0	0	0	37
rank value of 34s =	1	0	0	0	0	38
rank value of 48s =	1	0	0	0	0	39
rank value of 50s =	0	0	0	1	0	40
n =	**8**	**8**	**8**	**8**	**8**	

Sum of rank value calculations

5.5	16.5	11	0	22
0	0	0	0	11
0	0	0	0	12
0	0	0	0	13
0	0	14	0	0
0	15	0	0	0
0	0	0	16	0

	0	0	0	0	17
	0	0	18	0	0
	0	0	19	0	0
	0	0	41	0	0
	0	0	0	45	0
	0	24.5	24.5	0	0
	0	26	0	0	0
	27.5	0	0	27.5	0
	0	0	0	29	0
	0	30	0	0	0
	0	31	0	0	0
	32	0	0	0	0
	0	0	0	33	0
	0	0	0	34	0
	35	0	0	0	0
	36	0	0	0	0
	37	0	0	0	0
	38	0	0	0	0
	39	0	0	0	0
	0	0	0	40	0
sum of rank values (R_i)	**250**	**143**	**127.5**	**224.5**	**75**

Compute the Kruskal-Wallis statistic:

$$H = \{[12/N(N+1)] * [\Sigma^{K}_{i=1} (R_i^2)/N_i]\} -3(N+1)$$

Well =	**Background**	**MW-1A**	**MW-2A**	**MW-3A**
Ri^2/N_i =	9653.1	2032.03	6300.03	703.125

$N_{i\,bg}$ = 16
N = 40
H = 13.74

Adjust H for ties:

T_i = 1014 sum of T1..T5

$H' = H/(1-(T_i/(N^3-N)))$
H' = 13.96
Chi-square = 7.82

Compare the calculated value H' to the tabulated Chi-square value with K-1 = # groups -1 = 17df at the significance level from Table 1 of the IFG. The value is 7.82 which is less than H' =13.96.
Therefore, there is evidence of significant differences between the well groups.
Post-hoc pairwise comparisons are necessary (see below).

Calculate the critical values to compare each compliance well to the background wells:

Critical Value (C_x) = $P(N(N+1)/12)^{0.5} * (1/N_{i\,bg}+1/N_x)^{0.5}$
P = 2.12 Percentile of Standard Normal Distribution
from Table 4 of IFG
N = total sample size
$N_{i\,bg}$ = total samples (N_i) of background data
N_x = total samples (N_i) of well x

Difference between average ranks (Dx) = Rbar (well x) - avg Rbar (background)

Well =	MW-1A	MW-2A	MW-3A
Rbar (well x) =	15.9	28.1	9.4
avg Rbar (background) =	24.6	24.6	24.6
Dx =	-8.6	3.5	-15.2
Cx =	10.7	10.7	10.7
Statistical Significance ?	-	-	-

Compare each difference (Dx) with the corresponding critical value (Cx).
No compliance well's difference between average ranks exceeded its corresponding critical value at a 5% significance level. Therefore, we conclude that significant evidence of contamination does not exist at the 5% significance level.

Haywood County Closed Landfill, Francis Farm
Haywood County, North Carolina
BLE Project Number J07-1957-03

Compound: **cis-1,3-Dichloropropene**
MCL (µg/l): 0.19
Method: Poisson Prediction Limits
Background: MW-4 & MW-5

	MW-4	MW-5	MW-1A	MW-2A	MW-3A	MDL
02/18/99	NT	NS	NT	NS	NT	**10**
08/16/99	NT	NS	NT	NS	NT	**10**
02/14/00	NT	NS	NT	NS	NT	**10**
08/14/00	NT	NT	NT	NS	NT	**10**
03/19/01	NT	NT	NT	NT	NT	**10**
08/27/02	NT	NT	NT	NT	NT	**10**
02/24/03	NT	NT	NT	NT	NT	**10**
08/11/03	ND	ND	ND	ND	ND	**5**
02/09/04	ND	**8.1**	ND	ND	ND	**5**
08/16/04	ND	ND	ND	ND	ND	**10**
02/14/05	ND	ND	ND	ND	ND	**10**
09/01/05	ND	ND	ND	ND	ND	**5**
02/16/06	ND	ND	ND	ND	ND	**5**
08/30/06	ND	ND	ND	ND	ND	**5**
02/26/07	ND	ND	ND	ND	ND	**5**

1) If not detected (ND), use half of the detection limit.

02/18/99	-	-	-	-	-
08/16/99	-	-	-	-	-
02/14/00	-	-	-	-	-
08/14/00	-	-	-	-	-
03/19/01	-	-	-	-	-
08/27/02	-	-	-	-	-
02/24/03	-	-	-	-	-
08/11/03	2.5	2.5	2.5	2.5	2.5
02/09/04	2.5	8.1	2.5	2.5	2.5
08/16/04	5	5	5	5	5
02/14/05	5	5	5	5	5
09/01/05	2.5	2.5	2.5	2.5	2.5
02/16/06	2.5	2.5	2.5	2.5	2.5
08/30/06	2.5	2.5	2.5	2.5	2.5
02/26/07			2.5	2.5	2.5

2) Set the total number of data values for background wells (through the previous sampling event) equal to 'n' = 7.
Use 1/2 of the method detection limit to calculate the Total Poisson Count of the Sum (T_n).

$n = 14$
$T_{n1} = 50.6$

3) Using Gibbons' formula, calculate the upper Poisson Prediction limit T^*_k:

$$T^*_k = cT_{n1} + ct^2/2 + ct[T_{n1}(1+1/c) + t^2/4]^{-0.5}$$

where $c = k/n$
and where k = the number of future predicted measurements (one per well during the current sampling event)
and where t = the upper 99th percentile of the t-distribution with (n-1) degrees of freedom (Table 6 of the IFG).

$k = 3$
$n = 14$
$T_{n1} = 50.6$
$t[13,.01] = 2.65$
$c = 0.2143$
$T_{n2} = 7.5$
$T^*_k = 21.2$

4) Compare the *Poisson Prediction Limit* (T^*_k) to the *Sum of the Concentrations Detected* (T_{n2}) in the wells during the most recent sampling event.
Since the Poisson Prediction Limit was not exceeded, there is no evidence of contamination.

Haywood County Closed Landfill, Francis Farm
Haywood County, North Carolina
BLE Project Number J07-1957-03

Compound:	**Dichloromethane**
NC MCL (µg/l):	4.6
Method:	Kruskal-Wallis
Background:	MW-4 & MW-5

	MW-4	MW-5	MW-1A	MW-2A	MW-3A	MDL
02/18/99	NT	NS	NT	NS	NT	**10**
08/16/99	NT	NS	NT	NS	NT	**10**
02/14/00	NT	NS	NT	NS	NT	**10**
08/14/00	NT	NT	NT	NS	NT	**10**
03/19/01	NT	NT	NT	NT	NT	**10**
08/27/02	NT	NT	NT	NT	NT	**10**
02/24/03	NT	NT	NT	NT	NT	**10**
08/11/03	ND	**21**	ND	ND	ND	**5**
02/09/04	ND	**8.7**	ND	ND	ND	**5**
08/16/04	**6.1**	ND	ND	ND	ND	**10**
02/14/05	**12**	**12**	ND	ND	ND	**10**
09/01/05	**7.3**	**7.4**	ND	ND	ND	**5**
02/16/06	ND	ND	ND	ND	ND	**5**
08/30/06	**17**	ND	ND	ND	ND	**5**
02/26/07	**15**	ND	ND	ND	ND	**5**
N_i	8	8	8	8	8	
sum of rank values (R_i)	226.5	209.5	128.0	128.0	128.0	
avg rank value (Rbar)	28.3	26.2	16.0	16.0	16.0	

	Number of each rank value					Rank Value
rank value of NDs =	3	4	8	8	8	16
rank value of 6.1s =	1	0	0	0	0	32
rank value of 7.3s =	1	0	0	0	0	33
rank value of 7.4s =	0	1	0	0	0	34
rank value of 8.7s =	0	1	0	0	0	35
rank value of 12s =	1	1	0	0	0	36.5
rank value of 15s =	1	0	0	0	0	38
rank value of 17s =	1	0	0	0	0	39
rank value of 21s =	0	1	0	0	0	40
n =	**8**	**8**	**8**	**8**	**8**	

Sum of rank value calculations

48	64	128	128	128
32	0	0	0	0
33	0	0	0	0
0	34	0	0	0
0	35	0	0	0
36.5	36.5	0	0	0
38	0	0	0	0

	39	0	0	0	0
	0	40	0	0	0
sum of rank values (R_i)	**226.5**	**209.5**	**128**	**128**	**128**

Compute the Kruskal-Wallis statistic:

$$H = \{[12/N(N+1)] * [\Sigma^{K}_{i=1} (R_i^2)/N_i]\} -3(N+1)$$

Well =	**Background**	**MW-1A**	**MW-2A**	**MW-3A**
Ri^2/N_i =	11881.0	2048	2048	2048

$N_{i\,bg}$ = 16
N = 40
H = 8.89

Adjust H for ties:

T_i = 29766 sum of T1..T2

$H' = H/(1-(T_i/(N^3-N)))$
H' = 16.63
Chi-square = 7.82

Compare the calculated value H' to the tabulated Chi-square value with K-1 = # groups -1 = 17df at the significance level from Table 1 of the IFG. The value is 7.82 which is less than H' =16.63.
Therefore, there is evidence of significant differences between the well groups.
Post-hoc pairwise comparisons are necessary (see below).

Calculate the critical values to compare each compliance well to the background wells:

Critical Value (C_x) = $P(N(N+1)/12)^{0.5} * (1/N_{i\,bg}+1/N_x)^{0.5}$
P = 2.12 Percentile of Standard Normal Distribution from Table 4 of IFG
N = total sample size
$N_{i\,bg}$ = total samples (N_i) of background data
N_x = total samples (N_i) of well x

Difference between average ranks (Dx) = Rbar (well x) - avg Rbar (background)

Well =	MW-1A	MW-2A	MW-3A
Rbar (well x) =	16.0	16.0	16.0
avg Rbar (background) =	27.3	27.3	27.3
Dx =	-11.3	-11.3	-11.3
Cx =	10.7	10.7	10.7
Statistical Significance ?	-	-	-

Compare each difference (Dx) with the corresponding critical value (Cx).
No compliance well's difference between average ranks exceeded its corresponding critical value at a 5% significance level. Therefore, we conclude that significant evidence of contamination does not exist at the 5% significance level.

Haywood County Closed Landfill, Francis Farm
Haywood County, North Carolina
BLE Project Number J07-1957-03

Compound:	**Tetrachloroethene**
NC MCL (µg/l):	0.7
Method:	Kruskal-Wallis
Background:	MW-4 & MW-5

	MW-4	MW-5	MW-1A	MW-2A	MW-3A	MDL
02/18/99	NT	NS	NT	NS	NT	5
08/16/99	NT	NS	NT	NS	NT	5
02/14/00	NT	NS	NT	NS	NT	5
08/14/00	NT	NT	NT	NS	NT	5
03/19/01	NT	NT	NT	NT	NT	5
08/27/02	NT	NT	NT	NT	NT	5
02/24/03	NT	NT	NT	NT	NT	5
08/11/03	ND	**8.9**	ND	ND	ND	5
02/09/04	**9.6**	**6.2**	ND	ND	ND	5
08/16/04	**7.9**	**5.8**	ND	ND	ND	5
02/14/05	**15**	**6.4**	ND	ND	ND	5
09/01/05	**9**	**5.4**	ND	ND	ND	5
02/16/06	ND	ND	ND	ND	ND	5
08/30/06	**8.3**	ND	ND	ND	ND	5
02/26/07	**8.5**	ND	ND	ND	ND	5

N_i	8	8	8	8	8
sum of rank values (R_i)	252.0	208.0	120.0	120.0	120.0
avg rank value (Rbar)	31.5	26.0	15.0	15.0	15.0

	Number of each rank value					Rank Value
rank value of NDs =	2	3	8	8	8	15
rank value of 5.4s =	0	1	0	0	0	30
rank value of 5.8s =	0	1	0	0	0	31
rank value of 6.2s =	0	1	0	0	0	32
rank value of 6.4s =	0	1	0	0	0	33
rank value of 7.9s =	1	0	0	0	0	34
rank value of 8.3s =	1	0	0	0	0	35
rank value of 8.5s =	1	0	0	0	0	36
rank value of 8.9s =	0	1	0	0	0	37
rank value of 9s =	1	0	0	0	0	38
rank value of 9.6s =	1	0	0	0	0	39
rank value of 15s =	1	0	0	0	0	40
n =	**8**	**8**	**8**	**8**	**8**	

Sum of rank value calculations

30	45	120	120	120
0	30	0	0	0
0	31	0	0	0
0	32	0	0	0
0	33	0	0	0
34	0	0	0	0
35	0	0	0	0

	36	0	0	0	0
	0	37	0	0	0
	38	0	0	0	0
	39	0	0	0	0
	40	0	0	0	0
sum of rank values (R_i)	**252**	**208**	**120**	**120**	**120**

Compute the Kruskal-Wallis statistic:

$$H = \{[12/N(N+1)] * [\Sigma^{K}_{i=1} (R_i^2)/N_i]\} -3(N+1)$$

		MW-1A	MW-2A	MW-3A
Well =	**Background**			
Ri^2/N_i =	13225.0	1800	1800	1800

$N_{i\,bg}$ = 16
N = 40
H = 13.28

Adjust H for ties:

T_i = 24360 sum of T1..T1

$H' = H/(1-(T_i/(N^3-N)))$
H' = 21.45
Chi-square = 7.82

Compare the calculated value H' to the tabulated Chi-square value with K-1 = # groups -1 = 17df at the significance level from Table 1 of the IFG. The value is 7.82 which is less than H' =21.45.
Therefore, there is evidence of significant differences between the well groups.
Post-hoc pairwise comparisons are necessary (see below).

Calculate the critical values to compare each compliance well to the background wells:

Critical Value (C_x) = $P(N(N+1)/12)^{0.5} * (1/N_{i\,bg}+1/N_x)^{0.5}$
P = 2.12 Percentile of Standard Normal Distribution
from Table 4 of IFG
N = total sample size
$N_{i\,bg}$ = total samples (N_i) of background data
N_x = total samples (N_i) of well x

Difference between average ranks (Dx) = Rbar (well x) - avg Rbar (background)

	MW-1A	MW-2A	MW-3A
Well =			
Rbar (well x) =	15.0	15.0	15.0
avg Rbar (background) =	28.8	28.8	28.8
Dx =	-13.8	-13.8	-13.8
Cx =	10.7	10.7	10.7
Statistical Significance ?	-	-	-

Compare each difference (Dx) with the corresponding critical value (Cx).
No compliance well's difference between average ranks exceeded its corresponding critical value at a 5% significance level. Therefore, we conclude that significant evidence of contamination does not exist at the 5% significance level.

Haywood County Closed Landfill, Francis Farm
Haywood County, North Carolina
BLE Project Number J07-1957-03

Compound: **Toluene**
MCL (µg/l): 1000
Method: Poisson Prediction Limits
Background: MW-4 & MW-5

	MW-4	MW-5	MW-1A	MW-2A	MW-3A	MDL
02/18/99	NT	NS	NT	NS	NT	5
08/16/99	NT	NS	NT	NS	NT	5
02/14/00	NT	NS	NT	NS	NT	5
08/14/00	NT	NT	NT	NS	NT	5
03/19/01	NT	NT	NT	NT	NT	5
08/27/02	NT	NT	NT	NT	NT	5
02/24/03	NT	NT	NT	NT	NT	5
08/11/03	ND	ND	ND	ND	**4500**	5
02/09/04	ND	ND	ND	ND	**34**	5
08/16/04	ND	ND	ND	ND	ND	5
02/14/05	ND	ND	ND	ND	**6.5**	5
09/01/05	ND	ND	ND	ND	**120**	5
02/16/06	ND	ND	ND	ND	**6.5**	5
08/30/06	ND	ND	ND	ND	ND	5
02/26/07	ND	ND	ND	ND	ND	5

1) If not detected (ND), use half of the detection limit.

02/18/99	-	-	-	-	-
08/16/99	-	-	-	-	-
02/14/00	-	-	-	-	-
08/14/00	-	-	-	-	-
03/19/01	-	-	-	-	-
08/27/02	-	-	-	-	-
02/24/03	-	-	-	-	-
08/11/03	2.5	2.5	2.5	2.5	4500
02/09/04	2.5	2.5	2.5	2.5	34
08/16/04	2.5	2.5	2.5	2.5	2.5
02/14/05	2.5	2.5	2.5	2.5	6.5
09/01/05	2.5	2.5	2.5	2.5	120
02/16/06	2.5	2.5	2.5	2.5	6.5
08/30/06	2.5	2.5	2.5	2.5	2.5
02/26/07			2.5	2.5	2.5

2) Set the total number of data values for background wells (through the previous sampling event) equal to 'n' = 7.
Use 1/2 of the method detection limit to calculate the Total Poisson Count of the Sum (T_n).

$n = 14$
$T_{n1} = 35$

3) Using Gibbons' formula, calculate the upper Poisson Prediction limit T^*_k:

$$T^*_k = cT_{n1} + ct^2/2 + ct[T_{n1}(1+1/c) + t^2/4]^{-0.5}$$

where $c = k/n$
and where k = the number of future predicted measurements (one per well during the current sampling event)
and where t = the upper 99th percentile of the t-distribution with (n-1) degrees of freedom (Table 6 of the IFG).

$k = 3$
$n = 14$
$T_{n1} = 35$
$t[13,.01] = 2.65$
$c = 0.2143$
$T_{n2} = 7.5$
$T^*_k = 16.3$

4) Compare the *Poisson Prediction Limit* (T^*_k) to the *Sum of the Concentrations Detected* (T_{n2}) in the wells during the most recent sampling event.
Since the Poisson Prediction Limit was not exceeded, there is no evidence of contamination.

Haywood County Closed Landfill, Francis Farm
Haywood County, North Carolina
BLE Project Number J07-1957-03

Compound:	**Trichloroethene**
NC MCL (µg/l):	2.8
Method:	Kruskal-Wallis
Background:	MW-4 & MW-5

	MW-4	MW-5	MW-1A	MW-2A	MW-3A	MDL
02/18/99	NT	NS	NT	NS	NT	5
08/16/99	NT	NS	NT	NS	NT	5
02/14/00	NT	NS	NT	NS	NT	5
08/14/00	NT	NT	NT	NS	NT	5
03/19/01	NT	NT	NT	NT	NT	5
08/27/02	NT	NT	NT	NT	NT	5
02/24/03	NT	NT	NT	NT	NT	5
08/11/03	**5.6**	**11**	ND	ND	ND	5
02/09/04	**13**	**6.2**	ND	ND	ND	5
08/16/04	**10**	**5.5**	ND	ND	ND	5
02/14/05	**17**	**7**	ND	ND	ND	5
09/01/05	**11**	ND	ND	ND	ND	5
02/16/06	ND	ND	ND	ND	ND	5
08/30/06	**11**	ND	ND	ND	ND	5
02/26/07	**11**	ND	ND	ND	ND	5

N_i	8	8	8	8	8
sum of rank values (R_i)	268.5	191.5	120.0	120.0	120.0
avg rank value (Rbar)	33.6	23.9	15.0	15.0	15.0

	Number of each rank value					Rank Value
rank value of NDs =	1	4	8	8	8	15
rank value of 5.5s =	0	1	0	0	0	30
rank value of 5.6s =	1	0	0	0	0	31
rank value of 6.2s =	0	1	0	0	0	32
rank value of 7s =	0	1	0	0	0	33
rank value of 10s =	1	0	0	0	0	34
rank value of 11s =	3	1	0	0	0	36.5
rank value of 13s =	1	0	0	0	0	39
rank value of 17s =	1	0	0	0	0	40

n =	**8**	**8**	**8**	**8**	**8**

Sum of rank value calculations

15	60	120	120	120
0	30	0	0	0
31	0	0	0	0
0	32	0	0	0
0	33	0	0	0
34	0	0	0	0
109.5	36.5	0	0	0

	39	0	0	0	0
	40	0	0	0	0
sum of rank values (R_i)	**268.5**	**191.5**	**120**	**120**	**120**

Compute the Kruskal-Wallis statistic:

$$H = \{[12/N(N+1)] * [\Sigma^{K}_{i=1} (R_i^2)/N_i]\} -3(N+1)$$

Well =	**Background**	**MW-1A**	**MW-2A**	**MW-3A**
Ri^2/N_i =	13225.0	1800	1800	1800

$N_{i\,bg}$ = 16
N = 40
H = 13.28

Adjust H for ties:

T_i = 24420 sum of T1..T2

$H' = H/(1-(T_i/(N^3-N)))$
H' = 21.48
Chi-square = 7.82

Compare the calculated value H' to the tabulated Chi-square value with K-1 = # groups -1 = 17df at the significance level from Table 1 of the IFG. The value is 7.82 which is less than H' =21.48. Therefore, there is evidence of significant differences between the well groups. Post-hoc pairwise comparisons are necessary (see below).

Calculate the critical values to compare each compliance well to the background wells:

Critical Value (C_x) = $P(N(N+1)/12)^{0.5} * (1/N_{i\,bg}+1/N_x)^{0.5}$
P = 2.12 Percentile of Standard Normal Distribution from Table 4 of IFG
N = total sample size
$N_{i\,bg}$ = total samples (N_i) of background data
N_x = total samples (N_i) of well x

Difference between average ranks (Dx) = Rbar (well x) - avg Rbar (background)

Well =	MW-1A	MW-2A	MW-3A
Rbar (well x) =	15.0	15.0	15.0
avg Rbar (background) =	28.8	28.8	28.8
Dx =	-13.8	-13.8	-13.8
Cx =	10.7	10.7	10.7
Statistical Significance ?	-	-	-

Compare each difference (Dx) with the corresponding critical value (Cx).
No compliance well's difference between average ranks exceeded its corresponding critical value at a 5% significance level. Therefore, we conclude that significant evidence of contamination does not exist at the 5% significance level.