

NC DENR
Division of Waste Management - Solid Waste

Environmental Monitoring Reporting Form

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

Instructions:

- Prepare one form for each individually monitored unit.
- Please type or print legibly.
- Attach a notification table with values that attain or exceed NC 2L groundwater standards or NC 2B surface water standards. The notification must include a preliminary analysis of the cause and significance of each value. (e.g. naturally occurring, off-site source, pre-existing condition, etc.).
- Attach a notification table of any groundwater or surface water values that equal or exceed the reporting limits.
- Attach a notification table of any methane gas values that attain or exceed explosive gas levels. This includes any structures on or nearby the facility (NCAC 13B .1629 (4)(a)(i)).
- In accordance with NC General Statutes Chapter 89C and 89E and NC Solid Waste Management Rules 15A NCAC 13B, be sure to affix a seal to the bottom of this page, when applicable.
- Send the original signed and sealed form, any tables, and Electronic Data Deliverable to: Compliance Unit, NCDENR-DWM, Solid Waste Section, 1646 Mail Service Center, Raleigh, NC 27699-1646.

Solid Waste Monitoring Data Submittal Information

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

SCS Engineers, PC

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

Name: Brandon King Phone: 804.378.7440
E-mail: bking@scsengineers.com



Facility name:	Facility Address:	Facility Permit #	NC Landfill Rule: (.0500 or .1600)	Actual sampling dates (e.g., October 20-24, 2006)
North Wake County Landfill	9004 Deponie Drive Raleigh, NC 27615	92-09	.1600	December 20-21, 2011

Environmental Status: (Check all that apply)

- Initial/Background Monitoring Detection Monitoring Assessment Monitoring Corrective Action

Type of data submitted: (Check all that apply)

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

Notification attached?

- No. No groundwater or surface water standards were exceeded.
 Yes, a notification of values exceeding a groundwater or surface water standard is attached. It includes a list of groundwater and surface water monitoring points, dates, analytical values, NC 2L groundwater standard, NC 2B surface water standard or NC Solid Waste GWPS and preliminary analysis of the cause and significance of any concentration.
 Yes, a notification of values exceeding an explosive methane gas limit is attached. It includes the methane monitoring points, dates, sample values and explosive methane gas limits.

Certification

To the best of my knowledge, the information reported and statements made on this data submittal and attachments are true and correct. Furthermore, I have attached complete notification of any sampling values meeting or exceeding groundwater standards or explosive gas levels, and a preliminary analysis of the cause and significance of concentrations exceeding groundwater standards. I am aware that there are significant penalties for making any false statement, representation, or certification including the possibility of a fine and imprisonment.

Robert E Dick / SCS Engineers, PC Project Director 804.378.7440
 Facility Representative Name (Print) Title (Area Code) Telephone Number

Robert E. Dick 1.4.12
 Signature Date

Affix NC Licensed/ Professional Geologist/Engineer Seal here:



SCS ENGINEERS

January 4, 2012
File No. 02199312.07-1

Mr. Lee Squires
Facility Manager
Wake County Solid Waste Management Division
PO Box 550
Raleigh, NC 27602

Subject: Fourth Quarter Landfill Gas Monitoring Event – December 20 and 21, 2011
North Wake Landfill – Wake County, North Carolina

Dear Lee:

SCS Engineers, PC (SCS) is pleased to submit the results of the Fourth Quarter Landfill Gas (LFG) Monitoring Event for 2011, performed at the North Wake Landfill (Permit No. 92-09) on December 20 and 21, 2011.

The monitoring was performed in accordance with 15A NCAC 13B.1626(4) at the compliance boundary monitoring probes and on-site structures at the facility. At the facility property boundary, the concentration of methane gas is not to exceed the Lower Explosive Limit (LEL) which is 5 percent by volume (50,000 ppmv). Inside facility structures the concentration of methane gas is not to exceed 25 percent of the LEL (equivalent to 12,500 ppmv).

At each boundary compliance monitoring probe, SCS recorded the subsurface landfill gas (LFG) composition (i.e., concentrations of methane, carbon dioxide, and oxygen) using a GEM-2000 Infrared Gas Analyzer. Measurements inside facility structures were obtained at critical locations such as conduit penetrations, junction boxes, floor drains, etc. using a Gas-Trac Model No. NGX-6. The results of the boundary compliance probe and on-site structure monitoring are attached as Exhibit 1. An executed copy of the NC Division of Waste Management – Solid Waste Section, Landfill Gas Monitoring Data Form, documenting this event is also attached for your facility records.

Monitoring was conducted at a total of 26 LFG monitoring probes and 4 on-site structures on December 20 and 21, 2011. None of the LFG monitoring probes recorded measurable methane during the 4th Quarter monitoring event. SCS notes that the subsurface methane concentrations recorded at former non-compliant probe M-26 was below the regulatory limit for the third consecutive month; therefore monitoring of this probe will return to a quarterly frequency. None of the on-site structures monitored during this event detected significant concentrations of methane.



Mr. Lee Squires
January 4, 2012
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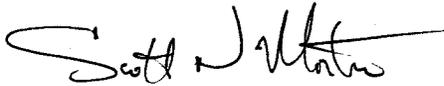
SCS observed the probe conditions and addressed basic probe repair and maintenance needs during these monitoring activities. SCS will notify Wake County of the proposed schedule for the first round of Quarterly LFG Compliance Boundary Probe Monitoring for 2012 (to be performed prior to March 31, 2012).

Please contact either of the undersigned if you have questions or require additional information.

Sincerely,



D. Brandon King
Project Scientist



Scott N. Mortimer
Sr. Project Professional
SCS ENGINEERS, PC

DBK/SNM:asd

Enclosures

cc: Jaclynne Drummond, NCDENR

**EXHIBIT 1. LANDFILL GAS MONITORING PROBES
NORTH WAKE LANDFILL - WAKE COUNTY, NORTH CAROLINA**

Personnel: DBK
Equipment: GEM-2000, Gas-Trac

Date: December 20 and 21, 2011
Project No: 02199312.07-1
Weather: Cloudy, 60°F

Monitoring Probe No.	Date	Time (24-hr)	Methane (% vol)	% LEL (5% CH4)	Carbon Dioxide (% vol)	Oxygen (% vol)	Balance Gas (% vol)	Pressure (in-wc)	Interior Monitoring Location	Methane (% vol)
M 1	12/21/11	9:06	0.0	0.0	0.4	20.8	78.8	0.1	Scale House	ND
M 2	12/21/11	9:11	0.0	0.0	0.3	20.9	78.8	0.0	Front Office	ND
M 3R	12/21/11	9:17	0.0	0.0	2.9	17.0	80.1	0.1	Bathrooms (2)	ND
M 4	12/21/11	9:22	0.0	0.0	2.2	20.0	77.8	0.0	Hallway	ND
M 5	12/20/11	NR	0.0	NR	NR	NR	NR	NR	Kitchen	ND
M 6R	12/20/11	16:45	0.0	0.0	0.6	20.7	78.7	0.0	Admin. Offices	ND
M 7	12/21/11	8:41	0.0	0.0	0.5	20.5	79.0	0.0	Offices (4)	ND
M 8	12/21/11	8:44	0.0	0.0	0.4	20.7	78.9	0.0	Reception Area	ND
M 9	12/21/11	8:55	0.0	0.0	2.1	18.8	79.1	0.0	Bathrooms (2)	ND
M 10	12/21/11	9:35	0.0	0.0	6.7	6.5	86.8	0.0	Conference Area	ND
M 11	12/21/11	10:19	0.0	0.0	8.0	12.7	79.3	0.0	Kitchen	ND
M 12	12/21/11	9:42	0.0	0.0	3.4	18.2	78.4	0.0	Storage Area	ND
M 13	12/21/11	9:47	0.0	0.0	5.4	16.1	78.5	0.1	Drop Off/Transfer	ND
M 14	12/21/11	9:52	0.0	0.0	5.4	16.1	78.5	0.1	Office	ND
M 15	12/21/11	9:56	0.0	0.0	5.9	15.4	78.7	0.0	Service Bay	ND
M 16	12/21/11	10:01	0.0	0.0	1.9	19.6	78.5	0.0	Maintenance Shop	ND
M 17	12/21/11	10:08	0.0	0.0	2.0	19.1	78.9	0.0	Service Bay	ND
M 18	12/21/11	10:13	0.0	0.0	3.7	16.6	79.7	0.1	Maintenance Shop	ND
M 19R	12/21/11	8:22	0.0	0.0	1.8	19.1	79.1	0.0	Service Bay	ND
M 20	12/21/11	8:26	0.0	0.0	0.5	20.7	78.8	0.1	Maintenance Shop	ND
M 21	12/21/11	8:29	0.0	0.0	0.8	19.3	79.9	0.0	Service Bay	ND
M 22	12/21/11	8:35	0.0	0.0	0.4	20.6	79.0	0.0	Maintenance Shop	ND
M 23	12/21/11	8:50	0.0	0.0	0.3	20.8	78.9	0.0	Service Bay	ND
M 24	12/21/11	9:02	0.0	0.0	0.6	20.9	78.5	0.0	Maintenance Shop	ND
M 25	12/20/11	17:01	0.0	0.0	0.4	20.8	78.8	0.0	Service Bay	ND
M 26	12/20/11	16:26	0.0	0.0	1.4	20.2	78.4	0.0	Maintenance Shop	ND

Notes:
ND = No Detection; Samples below 0.1% (1000 ppm) methane
NR = Not recorded

Project No: 02199312.07-1 Facility: North Wake County Landfill
 Date: 12-20-2011 Personnel: Brandon King

CALIBRATION LOG

GAS ANALYZER

Model: GEM-2000 Serial No: 08176 Calibration Date: 9/13/11

GAS CYLINDER

ID	Exp. Date	Time	Gas	Concentration % Vol	Results
41133-01	5/1/14	8:45	CH4	15 / 50	50.0 %
41133-01	5/1/14	8:45	CO2	15 / 35	35.8 %
41118-05	5/1/14	8:47	O2	4	4.0 %

FLAME IONIZATION DETECTOR

Model: _____ Serial No: _____ Calibration Date: _____

GAS CYLINDER

Pre-Sampling:

ID	Exp. Date	Time	Gas	Concentration PPM	Results
_____	_____	_____	CH4	500	_____ ppm
_____	_____	_____	ZERO AIR	0	_____ ppm
Background:					
_____	_____	_____	UPWIND	_____	_____ ppm
_____	_____	_____	DOWNWIND	_____	_____ ppm

WEATHER CONDITIONS

Temperature: 60.0 °F Barometric Pressure: 30.17 "Hg
 Current Conditions: Overcast

Project No: 02199312.07-1
 Date: 12-21-2011

CALIBRATION LOG

Facility: North Wake County Landfill
 Personnel: Brandon King

GAS ANALYZER

Model: GEM-2000 Serial No: 08176 Calibration Date: 9/13/11

GAS CYLINDER

ID	Exp. Date	Time	Gas	Concentration % Vol	Results
41133-01	5/1/14	8:05	CH4	15 / 50	49.9 %
41133-01	5/1/14	8:05	CO2	15 / 35	35.1 %
41118-05	5/1/14	8:07	O2	4	4.0 %

FLAME IONIZATION DETECTOR

Model: _____ Serial No: _____ Calibration Date: _____

GAS CYLINDER

Pre-Sampling: _____

ID	Exp. Date	Time	Gas	Concentration PPM	Results
_____	_____	_____	CH4	500	_____ ppm
_____	_____	_____	ZERO AIR	0	_____ ppm
Background:					
			UPWIND		_____ ppm
			DOWNWIND		_____ ppm

WEATHER CONDITIONS

Temperature: 65.0 °F Barometric Pressure: 30.1 "Hg
 Current Conditions: Cloudy, Light Rain

NC Division of Waste Management - Solid Waste Section

Landfill Gas Monitoring Data Form

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

Facility Name: North Wake Landfill Permit Number: 92-09

Date of Sampling: 12/21/11 NC Landfill Rule (.0500 or .1600): .1600

Name and Position of Sample Collector: Brandon King Project Scientist

Type and Serial Number of Gas Meter: GEM-2000 / GM08176 Calibration Date of Gas Meter: 9/13/11

Date and Time of Field Calibration: 12/21/11 8:05

Type of Field Calibration Gas (15/15 or 35/50): 35/50 Expiration Date of Field Calibration Gas Canister: 5/2014

Pump Rate of Gas Meter: 4500 mL

Ambient Air Temperature: 65 F Barometric Pressure: 30.10 General Weather Conditions: light rain

Instructions: Under "Location or LFG Well" identify the monitoring wells or describe the location for other tests (e.g., inside buildings). A drawing showing the location of test must be attached. Report methane readings in both % LEL and % methane by volume. A reading in percent methane by volume can be converted to % LEL as follows: % methane by volume = % LEL/20

Location or LFG Well ID	Sample Tube Purge	Time	Time Pumped (s)	Initial %LEL	Stabilized %LEL	%CH4 by Volume	%O2	%CO2	Notes
All Wells	375 mL		45						see Exhibit 1

If your facility has more gas monitoring locations than there is room on this form, please attach additional sheets listing the same information as contained on this form.

Certification

To the best of my knowledge, the information reported and statements made on this data submittal and attachments are true and correct. I am aware that there are significant penalties for making any false statement, representation, or certification including the possibility of a fine and imprisonment.


SIGNATURE

Project Scientist
TITLE

