

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

**Instructions:**

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

**Solid Waste Monitoring Data Submittal Information**

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

S&ME, Inc. (Consultant)

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

Name: Larry Armstrong, P.E.

Phone: 864-574-2360

E-mail: larmstrong@smeinc.com

Facility name:	Facility Address:	Facility Permit #	NC Landfill Rule: (.0500 or .1600)	Actual sampling dates (e.g., October 20-24, 2006)
Duke Energy Marshall Steam Station FGD Landfill	8320 East Hwy 150 Terrell, Catawba County, NC	18-09	.0500	March 16, 2010

**Environmental Status: (Check all that apply)**

- Initial/Background Monitoring  Detection Monitoring  Assessment Monitoring  Corrective Action

**Type of data submitted: (Check all that apply)**

- Groundwater monitoring data from monitoring wells  Methane gas monitoring data
- Groundwater monitoring data from private water supply wells  Corrective action data (specify) \_\_\_\_\_
- Leachate monitoring data  Other(specify) Hydrogen Sulfide Monitoring
- 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.

Larry Armstrong, P.E. Senior Engineer 864-574-2360  
 Facility Representative Name (Print) Title (Area Code) Telephone Number  
 Signature Date June 4, 2010 Affix NC Licensed Professional Geologist Seal

301 Zima Park Drive, Spartanburg, South Carolina 29301  
 Facility Representative Address

F-0176  
 NC PE Firm License Number (if applicable effective May 1, 2009)





June 4, 2010

Ms. Jackie Drummond  
North Carolina Department of Environment and Natural Resources  
Division of Waste Management  
Solid Waste Section  
1646 Mail Service Center  
Raleigh, North Carolina 27699-1646

**Reference:** **Semi-Annual Hydrogen Sulfide Monitoring Report**  
Duke Energy Carolinas – Marshall Steam Station  
Flue Gas Desulfurization (FGD) Landfill  
Permit # 18-09  
S&ME Project 1411-09-047

Dear Ms. Drummond:

On behalf of Duke Energy, S&ME, Inc. (S&ME) is providing this semi-annual hydrogen sulfide (H<sub>2</sub>S) monitoring data for the Marshall Steam Station (MSS) Flue Gas Desulfurization (FGD) Landfill located in Terrell, North Carolina. This data is being provided in accordance with the facility's Permit to Operate.

On March 16, 2010, H<sub>2</sub>S measurements were obtained from the two leachate collection clean-out pipes. The sampling locations, FGD-LCCP-1 and FGD-LCCP-2, are shown on **Figure 1**. The measurements were taken by Duke Energy personnel using an Industrial Scientific Corp. ITX Multi-Gas Monitor that was calibrated for the detection of H<sub>2</sub>S in the concentration range of 0 to 999 parts per million (ppm).

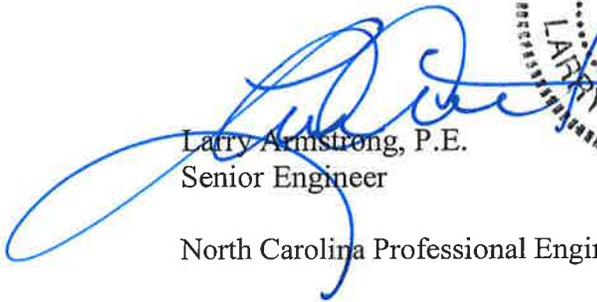
H<sub>2</sub>S was not detected in either pipe; both measurements exhibited H<sub>2</sub>S concentrations of 0 ppm. The field data sheet for the sampling event is attached. The data suggests that H<sub>2</sub>S is not being generated by the material stored in the landfill. The next hydrogen sulfide monitoring event will be conducted in September 2010.

## CLOSURE

If you have questions or require additional information, please contact me at 864-574-2360.

Sincerely,

**S&ME, Inc.**



Larry Armstrong, P.E.  
Senior Engineer

North Carolina Professional Engineering Firm License No. F-0176

Attachments: Figure 1, Sample Location Map  
Field Data Sheet

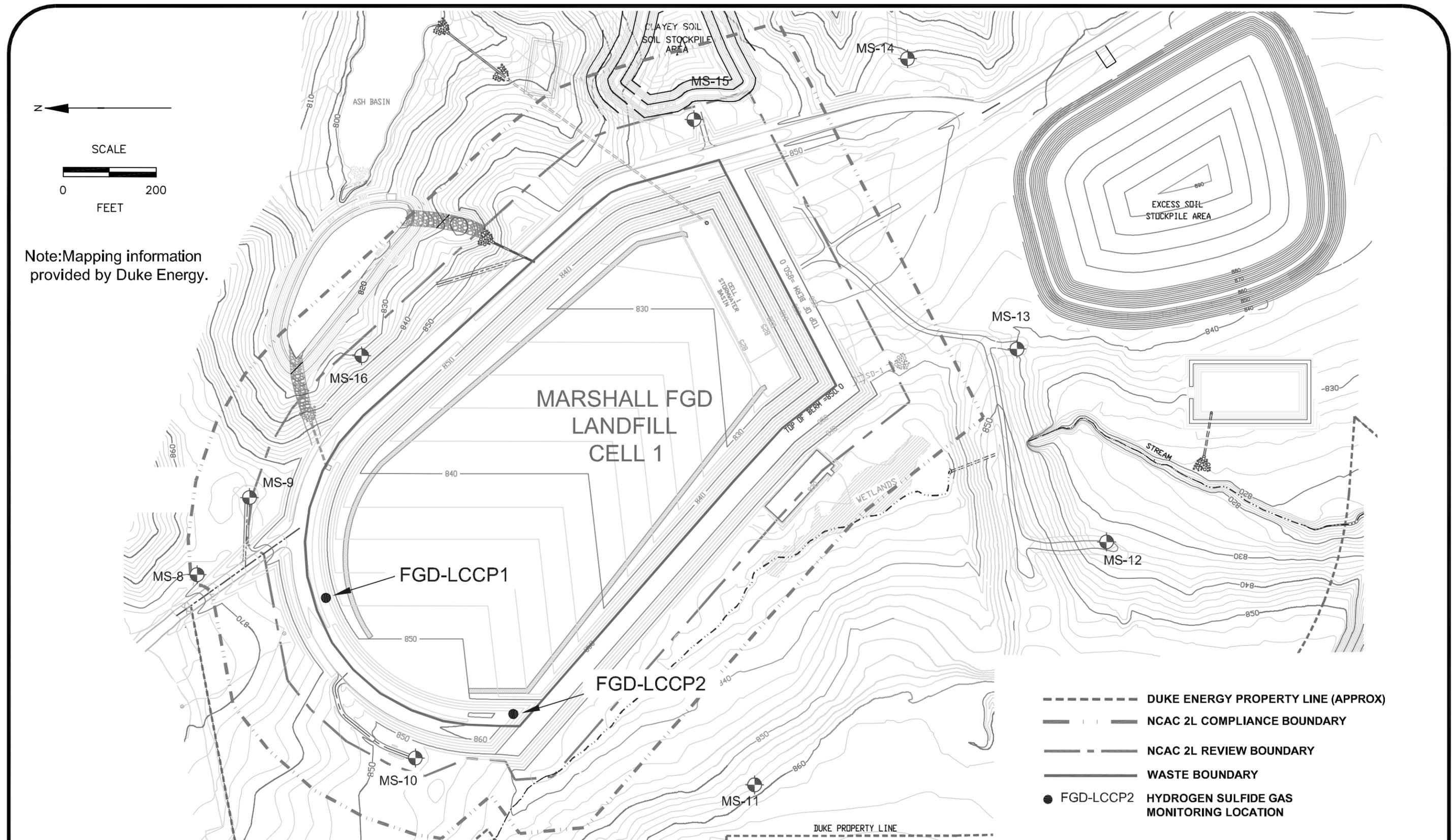
*Ashnc\share\2009 PROJECTS\1411\ENVIRONMENTAL PROJECTS\11 09 047 Duke Energy Landfills - GW Reports\Marshall FGD Landfill\Gas Monitoring\March 2010\NCDENR-MSS FGD LF H2S Report-June 2010.doc*

cc:

Duke Energy  
Marshall Steam Station  
8320 East Highway 150  
Terrell, North Carolina 28682  
Attn: Donna Burrell, Environmental Coordinator

Duke Energy  
526 South Church Street  
Charlotte, North Carolina 28201  
Attn: Ed Sullivan, P.E. Mail Code EC13K

Duke Energy  
526 South Church Street  
Charlotte, North Carolina 28201  
Attention: Tim Hunsucker, Mail Code EC13K



- DUKE ENERGY PROPERTY LINE (APPROX)
- . - . - . NCAC 2L COMPLIANCE BOUNDARY
- - - - - NCAC 2L REVIEW BOUNDARY
- WASTE BOUNDARY
- FGD-LCCP2 HYDROGEN SULFIDE GAS MONITORING LOCATION

SCALE:	DATE:
AS SHOWN	June 2, 2010
PROJECT NO.	DRAWN BY:
1411-09-047	W.Miller
	CHECKED BY:
	L.Armstrong



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**DUKE ENERGY MARSHALL STEAM STATION  
 FLUE GAS DESULPHURIZATION (FGD) LANDFILL - PERMIT #18-09  
 HYDROGEN SULFIDE GAS MONITORING LOCATIONS**

FIGURE NO.  
 1



**DUKE ENERGY**  
LEACHATE COLLECTION CLEANOUT PIPES (LCCP)  
HYDROGEN SULFIDE (H<sub>2</sub>S) MONITORING

LOCATION:	MARSHALL STEAM STATION	PROCEDURE NO:	NA
PROJECT NAME:	FGD Landfill / Hydrogen Sulfide Monitoring	ITX Serial Number	09020ZW012
SAMPLING DATE(s):	16-Mar-2010 <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	LDC 3/16/10	

FIELD CREW: **LDC, RLW**

SAMPLING EQUIPMENT: Industrial Scientific Corp / ITX Multi-Gas Monitor

Location	Time	H2S (ppm)	LEL (%)	Collector
FGD-LCCP-1	1040	0	0	LDC
FGD-LCCP-2	1050	0	0	LDC

**NOTES** ITX Multi-Gas Monitor is checked out from the Marshall Station pre-calibrated for Hydrogen Sulfide (Range 0 to 999 ppm) and LEL Calibration documentation available from Marshall upon request