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December 18, 2012

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

**RE: Landfill Gas Monitoring Report  
Fourth Quarter Sampling Event of 2012  
Granville County – Butner Closed MSW Landfill, Permit No. 39-02  
JOYCE Project No. 660.1201.12, Task No. 06**

Dear Ms. Drummond:

Attached please find a copy of the Landfill Gas Monitoring Log for the monitoring event that occurred on December 12, 2012, at the Granville County Butner Landfill (Permit number 39-02) for inclusion in your records. Please note that there was an initial detection in GP-4 of methane at but not in exceedance of the lower explosive limit (LEL), and that the stabilized reading after the purge was below the LEL; therefore, we do not consider the probe to have been in exceedance.

Landfill gas monitoring will continue on a quarterly basis for the Butner Landfill. If you have any questions, please contact me or Dan Girdner at (336) 323-0092. Thank you.

Sincerely,  
**JOYCE ENGINEERING**

Van Burbach, Ph.D., P.G.  
Technical Consultant

Attachments  
Copy: Jason Falls, Granville County

NC DENR  
Division of Waste Management - Solid Waste

**Environmental Monitoring Reporting Form**

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

**Instructions:**

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

**Solid Waste Monitoring Data Submittal Information**

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

Joyce Engineering, Inc.

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

Name: G. Van Ness Burbach, Ph.D., P.G. Phone: (336) 323-0092

E-mail: vburbach@joyceengineering.com

Facility name:	Facility Address:	Facility Permit #	NC Landfill Rule: (.0500 or .1600)	Actual sampling dates (e.g., October 20-24, 2006)
Butner Landfill	State Road 1004 Butner, NC	39-02	.1600	December 12, 2012

**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.

G. VanNess Burbach, Ph.D., PG Technical Consultant (336) 323-0092

Facility Representative Name (Print) Title (Area Code) Telephone Number

Signature: *G. Van Ness Burbach* Date: 12/17/12

Affix NC Licensed Professional Geologist Seal

2211 W. Meadowview Rd., Ste. 101 Greensboro, NC 27407

Facility Representative Address

C-0782

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

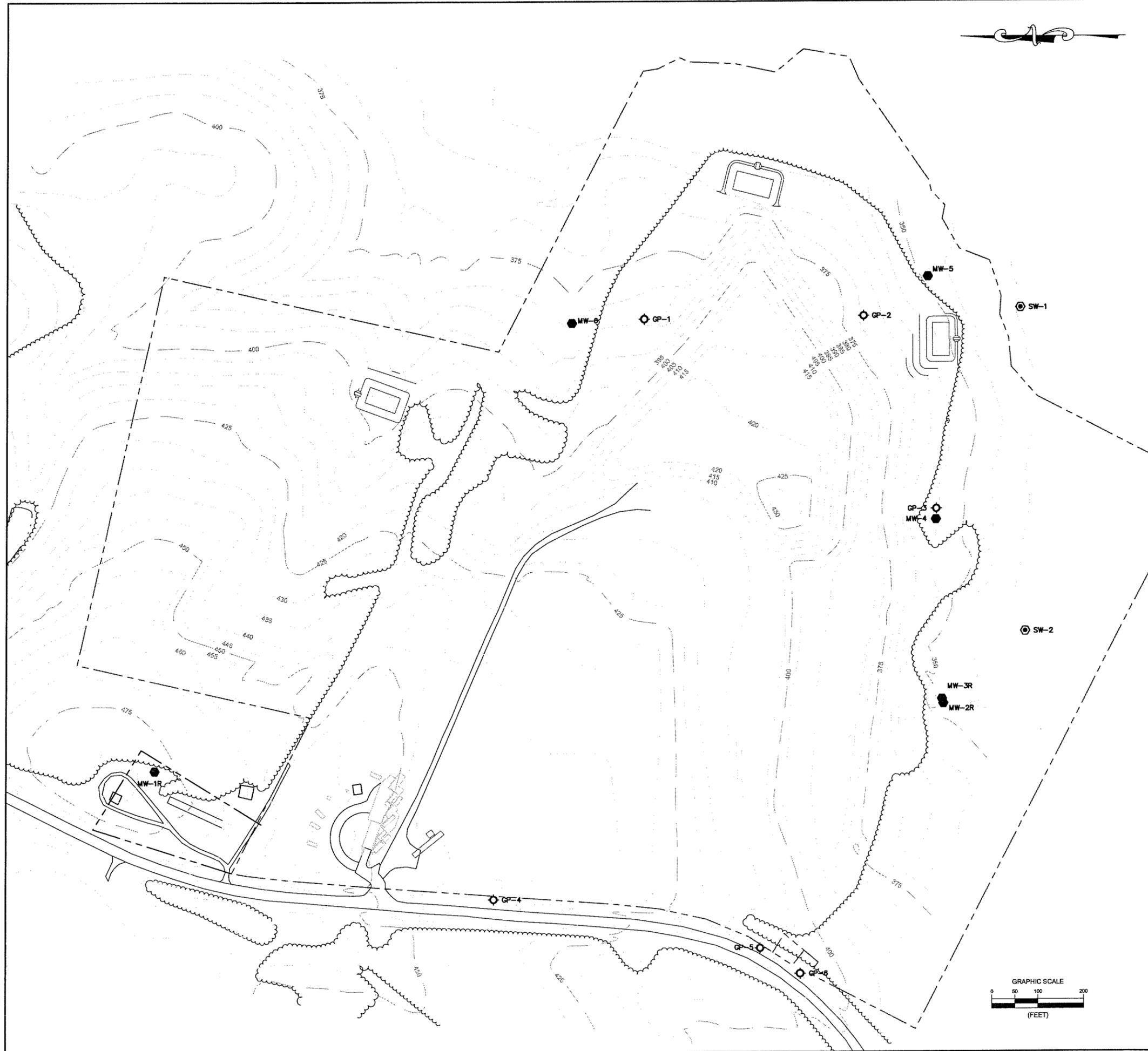


**Landfill Gas Monitoring Data Form**

Facility Name: Butner Landfill, Granville County Permit Number: 39-02  
 Date of Sampling: December 12, 2012 Personnel: A. Cox, D. Girdner /JOYCE  
 Gas Monitor Type & Serial Number: RKI GX-2003, SN 55030103RN Calibration Date: March 24, 2012  
 Field Calibration Date & Time: 12/12/2012 9:28 Calibration Gas Type: 2.5% CH4, exp. 8-2013  
 General Weather Conditions: Cloudy, 40° F, 0" Precipitation, Barometer : 30.30 In-Hg

Location or ID	Time	Probe Pressure (In-Wg)	Instr. sample tube purged	Time Pumped (sec.)	Initial %LEL	Stable %LEL	CH <sub>4</sub> (%Vol)	Comments
GP-1	9:35	0.007	Y	60	4	4	0.2	
GP-2	9:44	0.084	Y	60	9	9	0.45	
GP-3	10:18	0.002	Y	60	3	3	0.15	
GP-4	11:19	-0.008	Y	93	100	27	1.35	initial peak @ 5% Volume
GP-5	11:15	0.004	Y	60	18	18	0.9	
GP-6	11:12	-0.010	Y	60	0	0	0	
GP-8	11:26	-	Y	180	0	0	0	scalehouse/office building

Notes: GP-7 could not be located and may be damaged & missing.  
 GP-4 initially went to a peak of 100% of the LEL (5% Volume Methane), which declined during the purge until stable at 27% LEL for 60 seconds.



**LEGEND**

	EXISTING 25' TOPOGRAPHIC CONTOUR
	EXISTING 5' TOPOGRAPHIC CONTOUR
	PROPERTY LINE
	APPROXIMATE LIMITS OF WASTE
	GROUNDWATER SURFACE CONTOUR (FEET ABOVE MEAN SEA LEVEL)
	EXISTING ROAD
	CENTERLINE OF STREAM
	GROUNDWATER MONITORING WELL LOCATION AND IDENTIFICATION
	GAS PROBE LOCATION AND IDENTIFICATION
	SURFACE WATER MONITORING POINT
	NOT MEASURED

- NOTES**
1. TOPOGRAPHIC CONTOUR INTERVAL = 5 FEET
  2. ELEVATION RELATIVE TO MEAN SEA LEVEL.
  3. TOPOGRAPHIC CONTOURS SHOWN IN THIS MAP ARE BASED ON EARLIER SURVEY DATA AND DIFFER FROM THE APRIL 2008 DATA BY SEVERAL FEET IN SOME LOCATIONS.

DESIGNED _____ DSG		<b>JOYCE ENGINEERING</b> 2211 W. MEADOWVIEW ROAD GREENSBORO, NC 27407 PHONE: (336) 323-0992	BUTNER LANDFILL GRANVILLE COUNTY, NORTH CAROLINA QUARTERLY LFG MONITORING LOCATIONS	NO	BY	CHK	APP	
DRAWN _____ HRW				DATE				
CHECKED _____ DSG								
APPROVED _____ DSG								
DATE 12/13/12				REVISIONS AND RECORD OF ISSUE				
				PROJECT NO.		660.1201.12		
				SCALE		AS NOTED		
				DRAWING NO.		1		

L:\Granville\dwg\Butner\GW Event Maps\2012 Quarterly monitoring locations.dwg Layout=660.1201.12