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

NC DENR
Division of Waste Management - Solid Waste

Environmental Monitoring Reporting Form

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

Instructions:

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

Solid Waste Monitoring Data Submittal Information

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

Joyce Engineering, Inc.

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

Name: Daniel Girdner Phone: (336)-323-0092

E-mail: dgirdner@joyceengineering.com

Facility name:	Facility Address:	Facility Permit #	NC Landfill Rule: (.0500 or .1600)	Actual sampling dates (e.g., October 20-24, 2006)
Town of Kernersville Landfill	Freeman Road Kernersville, NC 27284	34-04	.0500	February 9, 2015

Environmental Status: (Check all that apply)

☐ Initial/Background Monitoring ☒ Detection Monitoring ☐ Assessment Monitoring ☐ Corrective Action

Type of data submitted: (Check all that apply)

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

Notification attached?

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

Certification

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

Van Burbach, Ph.D., P.G. — Facility Representative Name (Print)
Sr. Technical Consultant — Title
(336)-323-0092 — (Area Code) Telephone Number

Signature — Date: 2/9/15

Affix NC Licensed Professional Geologist Seal

NORTH CAROLINA LICENSED SEAL 1349 GEOLOGIST G. VAN NESS BURBACH

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)

Revised 6/2009

Environmental Engineers, Scientists & Consultants

JOYCE ENGINEERING

2211 W. Meadowview Road, Suite 101
Greensboro, NC 27407
tel: 336/ 323-0092
fax: 336/ 323-0093
www.JoyceEngineering.com

February 9, 2015

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
LFG Monitoring – February 2015
Town of Kernersville Closed Landfill, Permit No. 34-04
JOYCE Project No. 838.1501.12, Task No. 03

Dear Ms. Drummond:

Please find the attached Environmantal Monitoring Reporting Form (EMRF) and Landfill Gas Monitoring Log for the monthly monitoring event that occurred on February 9, 2015, at the Closed Town of Kernersville Landfill (Permit number 34-04). Methane monitoring for this event was conducted by Joyce Engineering (JOYCE) on behalf of the Town of Kernersville in accordance with the approved *Landfill Gas Monitoring Plan* dated July 17, 2012. Methane was detected in gas monitoring wells GW-1 and GW-8 above the Lower Explosive Limit (LEL) during this monitoring event.

During this event three probes belonging to the adjacent Waste Management Piedmont landfill GP-9, GP-10, and GP-11 were also monitored for methane gas.

Additional monthly monitoring will provide additional data to demonstrate whether the methane migration is being reduced by the three passive vents installed on the Kernersville Landfill in November 2013. A map has been included with this report to illustrate the proximity of the two landfills and the locations of the gas probes. If you have any further questions, please contact me or Van Burbach at (336) 323-0092. Thank you.

Sincerely,
JOYCE ENGINEERING

Haley Seaton

Haley Seaton
Field Consultant

Attachments: EMRF
Table of Detections and Table of Eceedances
Landfill Gas Monitoring Log
Site Map

Copy: Thad Buck, Town of Kernersville

TABLE 1: Methane Detections

Date	Location	CH_4 (% LEL)	CH_4 (% Volume)
2/9/2015	GW-1	**326**	**16.3**
2/9/2015	GW-2R	**1198**	**59.9**
2/9/2015	GW-8	**936**	**46.8**
2/9/2015	GP-10	**130**	**6.5**

TABLE 2: Exceedances of the LEL

Date	Location	CH_4 (% LEL)	CH_4 (% Volume)
2/9/2015	GP-1	**326**	**16.3**
2/9/2015	GW-2R	**1198**	**59.9**
2/9/2015	GW-8	**936**	**46.8**
2/9/2015	GP-10	**130**	**6.5**

CH_4 = Methane
LEL = Lower Explosive Limit for Methane
LEL = 5% by volume at standard temperature and pressure

Landfill Gas Monitoring Data Form

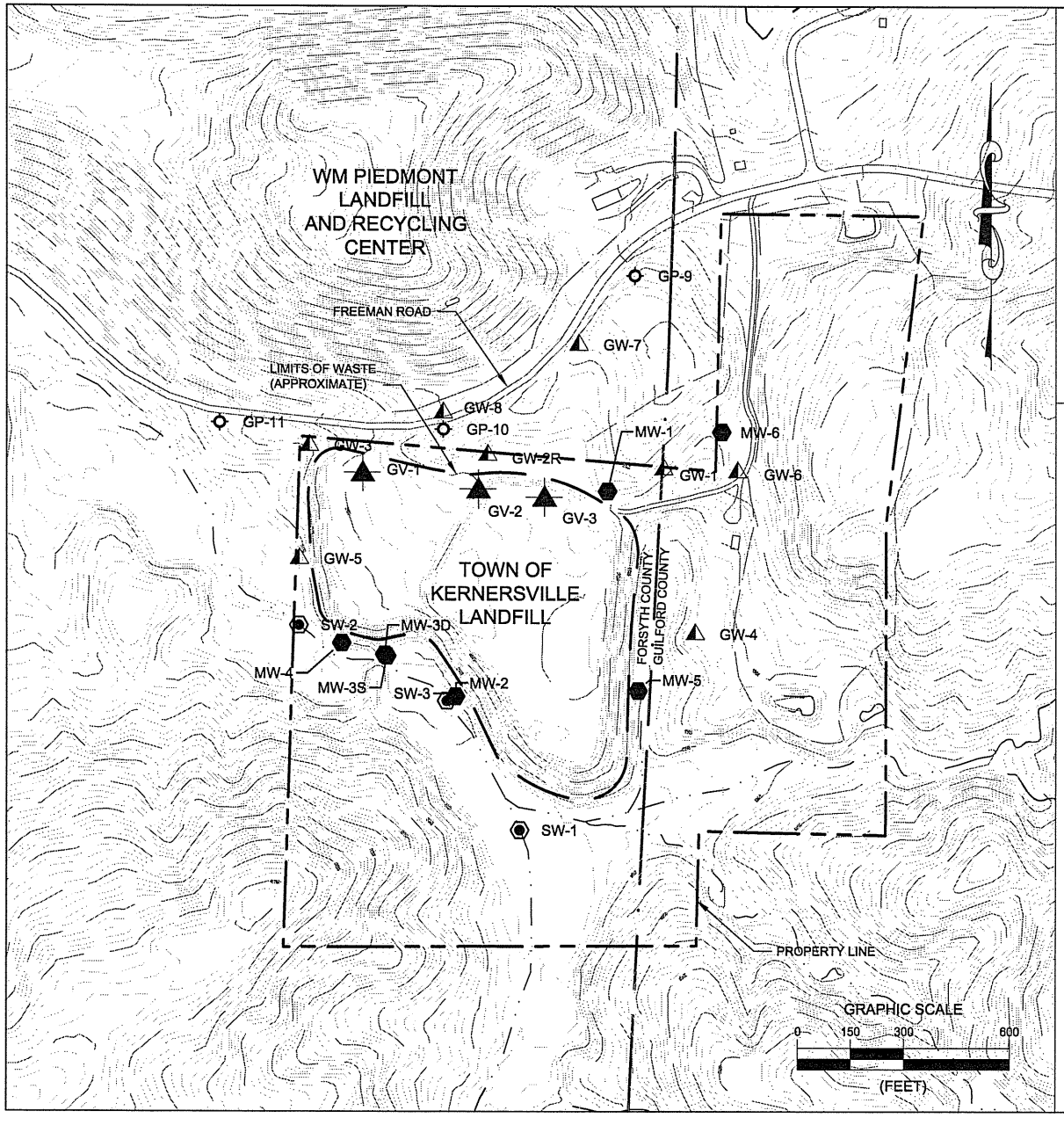
Facility Name Town of Kernersville Landfill - Closed
Date of Sampling: February 9, 2015
Gas Monitor Type & Serial Number: GEM 2000 SN.5194
Field Calibration Date & Time: 2/9/15 8:50 AM
Field Calibration Gas Type: 50% CH4, 35% CO2
General Weather Conditions: Cloudy, 50's° F

Permit Number: 34-04
Personnel: H. Seaton, A. Freeman
Calibration Date November 13, 2014

Cal. Gas Lot: Landtec 43553-09, exp. 9-16
Barometer : 28.99 In-Hg

Location or ID	Time	Probe Pressure (In-Wg)	Instr. sample tube	Time Pumped (sec.)	CH_4 (%LEL)	CH_4 (%Vol)	Notes
GW-1	9:28	-0.10	Y	60	326	16.3	Over LEL
GW-2R	9:05	0.00	Y	60	1198	59.9	Over LEL
GW-3	10:01	0.60	Y	60	0	0.0	
GW-4	9:15	-0.10	Y	60	0	0.0	
GW-5	10:04	0.00	Y	60	0	0.0	
GW-6	8:58	0.00	Y	60	0	0.0	
GW-7	9:52	0.00	Y	60	0	0.0	
GW-8	10:00	0.20	Y	60	936	46.8	Over LEL
GP-9	9:49	0.00	Y	60	0	0.0	
GP-10	9:55	0.00	Y	60	130	6.5	Over LEL
GP-11	9:43	0.00	Y	60	0	0.0	

Notes: GW = Gas Well- Town of Kernersville LFG monitoring location.
GP = Gas Probe- LFG monitoring location shared with WM Piedmont site.



LEGEND

1130	EXISTING 10' TOPOGRAPHIC CONTOUR
	EXISTING 2' TOPOGRAPHIC CONTOUR
	PROPERTY LINE
	EXISTING ROAD
	APPROXIMATE LIMITS OF WASTE
	CENTERLINE OF STREAM
SW-1	APPROXIMATE SURFACE WATER SAMPLING POINT LOCATION AND IDENTIFICATION
MW-1	MONITORING WELL IDENTIFICATION
GW- 1	LANDFILL GAS WELL - TOWN OF KERNERSVILLE
GP- 1	LANDFILL GAS PROBE - WM PIEDMONT
GV-1	LANDFILL PASSIVE GAS VENT

NOTES:

1. SURVEY DATA FOR GUILFORD COUNTY DATED SEPTEMBER 2009, AND MARCH 2010.
2. SURVEY DATA FOR FORSYTH COUNTY DATED OCTOBER, 2010.
3. ALL SURVEY DATA OBTAINED FROM COUNTY GIS FILES.
4. LIMITS OF WASTE ARE APPROXIMATE.

DATE	REVISIONS AND RECORD OF ISSUE	NO	BY	CK	APP

DESIGNED
DRAWN CADD
CHECKED
APPROVED
DATE

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JOYCE ENGINEERING
2211 W. MEADOWVIEW ROAD
GREENSBORO, NC 27407
PHONE: (336) 323-0252
NC CORP LIC: C-0782

TOWN OF KERNERSVILLE LANDFILL
FORSYTH COUNTY, NORTH CAROLINA

LANDFILL GAS MONITORING PLAN

PROJECT NO.
838.1301.12

SCALE
AS SHOWN

DRAWING NO.
1

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