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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

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

Name: Dan 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)
John's River Waste Management Facility C&D-over-MSWLF	2500 Marsh Trail Morganton, NC	12-03	.1600	May 17, 2016

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. Van Ness Burbach, Ph.D., P.G.

Technical Consultant

(336) 323-0092

Facility Representative Name (Print)

Title

(Area Code) Telephone Number

G. Van Ness Burbach 5/24/16

Affix NC Licensed/ Professional Geologist Seal

Signature

Date

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





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Greensboro, NC 27407

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www.JoyceEngineering.com

May 24, 2016

Mr. Chris Hollifield
Burke County
General Services Director/County Engineer
P.O. Box 219
Morganton, NC 28680

**RE: Burke County, John's River Landfill
Permit Number 12-03
Second Quarterly Landfill Gas Monitoring Report of 2016
JOYCE Project No. 277.1601.12, Task 04**

Dear Mr. Hollifield;

The purpose of this letter is to provide you with the results for the May 17, 2016, (second quarter) monitoring event at the John's River Waste Management Facility. Methane was detected above the lower explosive limit (LEL) in gas probes GP-2S, GP-2I, and GP-2D. Gas probes GP-2S, GP-2I, and GP-2D are a nested set and are not boundary probes. They are located in close proximity to waste and the detection of landfill gas is expected. The concentrations are similar to those detected during previous events.

Gas probes GP-4, GP-5, and GP-6 were installed on September 2, 2014 to monitor the Phase 1A cell. Methane was detected in GP-4 above the LEL. GP-4 is located between the old C&D-over-MSW landfill and the Phase 1A area, and is not a boundary probe. The methane is more likely from the old landfill than Phase 1A.

The passive gas vents GV-1 through GV-7, temporary gas probes TGP-1 through TGP-10 (excluding TGP-3 and TGP-6 which were destroyed), and selected wells and piezometers were also monitored and the results are attached. Exceedances of the LEL for methane were noted in the passive gas vents, as expected, and in TGP-1, TGP-2, TGP-4, and TGP-9. Methane was detected in MW-36 and MW-38, but below the LEL. None of these are considered to be boundary probes.

No exceedances were recorded for any of the other probes, monitoring points, or structures. The methane detections and exceedances are summarized in Tables 1 and 2, respectively. The landfill gas monitoring logs are also attached. A site map showing probe and monitoring point locations is also attached.

Mr. Chris Hollifield

May 24, 2016

Page 2 of 2

We have included an EMRF and will forward a copy of this report to Jaclynne Drummond with the NCDEQ Solid Waste Section. This report should be added to the facility's records. If we can provide any additional information please do not hesitate to call Van Burbach or me at (336) 323-0092.

Sincerely,

JOYCE ENGINEERING

A handwritten signature in blue ink that reads "Van Burbach".

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

Sr. Technical Consultant

Attachments: NCDEQ EMRF
Landfill Gas Monitoring Logs
Site Map with Gas Monitoring Locations

cc: Jaclynne Drummond, NCDEQ

Table 1: Methane Detections - May 17, 2016

LFG Probe	CH₄ (% Vol.)	CH₄ (%LEL)
GP-2 S	58.7	1174
GP-2 I	58.6	1172
GP-2 D	58.7	1174
GP-4	58.5	1170
TGP-1	30.8	616
TGP-2	11.4	228
TGP-4	56.1	1122
TGP-5	0.1	2
TGP-9	11.0	220
MW-36	2.5	50
MW-38	0.5	10

Table 2: Methane Exceedances of the LEL - May 17, 2015

LFG Probe	CH₄ (% Vol.)	CH₄ (%LEL)
GP-2 S	58.7	1174
GP-2 I	58.6	1172
GP-2 D	58.7	1174
GP-4	58.5	1170
TGP-1	30.8	616
TGP-2	11.4	228
TGP-4	56.1	1122
TGP-9	11.0	220

CH₄ = Methane

% Vol. = Concentration in percent-by-volume.

%LEL = Concentration as a percent of the LEL.

LEL = Lower Explosive Limit = 5% Vol.

GP = Gas Probe, permanent installation.

S = Shallow Screen. I = Intermediate Screen. D = Deep Screen.

TGP = Temporary Gas Probe for delineation study.

Landfill Gas Monitoring Data Form

Facility Name: John's River Waste Management Facility
 Date of Sampling: May 17, 2016
 Gas Monitor Type & Serial Number: GEM 2000 (SN 855106)
 Field Calibration Date & Time: 5/17/2016 6:55
 General Weather Conditions: Cloudy, Rain, 70's

Permit Number: 12-03
 Personnel: D. Girdner / JOYCE
 Calibration Date: 12/8/2015
 Calibration Gas: 15% Vol. CH₄
 Barometer : 28.94 In-Hg

Location or LFG Well ID	Instr. Purged?	Time	Probe Pressure (In-Wg)	Time Pumped (sec.)	CH ₄ (% Vol.)	CH ₄ (%LEL)	CH ₄ Limit (%LEL)	Notes
GP-1 S	Y	1429	-0.06	60	0.0	0	100	
GP-1 D	Y	1431	-0.06	60	0.0	0	100	
GP-2 S	Y	1527	0.00	60	58.7	1174	100	
GP-2 I	Y	1528	0.00	60	58.6	1172	100	
GP-2 D	Y	1530	0.00	60	58.7	1174	100	
GP-3 S	Y	1413	0.00	60	0.0	0	100	
GP-3 D	Y	1411	0.01	60	0.0	0	100	
GP-4	Y	1545	-0.05	60	58.5	1170	100	
GP-5	Y	1607	-0.02	60	0.0	0	100	
GP-6	Y	1420	0.00	60	0.0	0	100	
GMP-1	Y	1342	--	continuous	0.0	0	25	Scale House
GMP-2	Y	1404	--	continuous	0.0	0	25	Recycling Center
GMP-3	Y	1400	--	continuous	0.0	0	25	Office & Shop Building
GMP-4	Y	1401	--	continuous	0.0	0	100	
GMP-5	Y	1435	--	continuous	0.0	0	100	
GMP-6	Y	1436	--	continuous	0.0	0	100	
GMP-7	Y	1438	--	continuous	0.0	0	100	
GMP-7A	Y	1439	--	continuous	0.0	0	25	Storage Barn
GMP-8	Y	1441	--	continuous	0.0	0	100	
GMP-9	Y	1442	--	continuous	0.0	0	100	
GMP-10	Y	1444	--	continuous	0.0	0	100	
GMP-11	Y	1445	--	continuous	0.0	0	100	
GMP-12	Y	1446	--	continuous	0.0	0	100	
GMP-13	Y	1350	--	continuous	0.0	0	25	Firing Range Structure
GMP-14	Y	1345	--	continuous	0.0	0	25	Transfer Station Bldg.

Abbreviations: GP = Gas Probe.
 S = Shallow depth (silver cap).
 I = Intermediate depth (blue cap).
 D = Deep depth (red cap).
 GMP = Gas Monitoring Point.

In-Wg = Inches of water column.
 In-Hg = Inches of mercury.
 CH₄ = Methane.
 LEL = Lower Explosive Limit.
 (LEL for methane = 5% at standard temperature & pressure.)

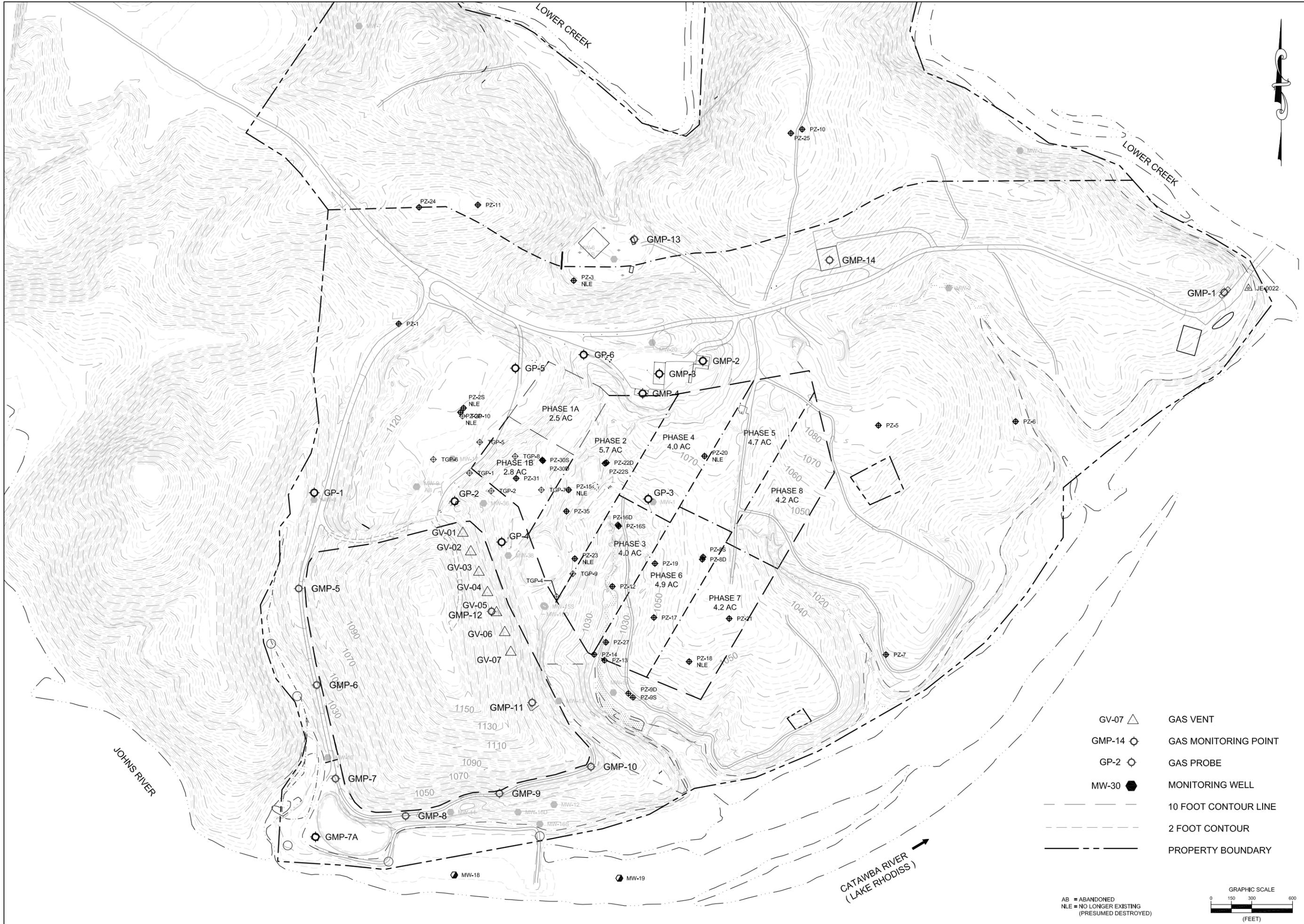
Landfill Gas Monitoring Data Form

Facility Name: John's River Waste Management Facility Permit Number: 12-03
 Date of Sampling: May 17, 2016 Personnel: D. Girdner/ JOYCE
 Gas Monitor Type & Serial Number: GEM 2000 (SN 5194) Calibration Date:
 Field Calibration Date & Time: 2/19/2016 7:10 Calibration Gas: 15% Vol. CH₄, exp. 6-18
 General Weather Conditions: Cloudy, Rain, 70's Barometer : 28.94 In-Hg

Location or LFG Well ID	Instr. purged	Time	Probe Pressure (In-Wg)	Time Pumped (sec.)	CH ₄ (% Vol.)	CH ₄ (%LEL)	CH ₄ Limit (%LEL)	Notes
GV-1	Y	1532	-0.05	45	59.1	1182	NA	
GV-2	Y	1533	-0.01	45	61.5	1230	NA	
GV-3	Y	1535	-0.05	45	61.6	1232	NA	
GV-4	Y	1536	-0.05	45	64.9	1298	NA	
GV-5	Y	1537	-0.05	45	61.2	1224	NA	
GV-6	Y	1538	-0.05	45	61.0	1220	NA	
GV-7	Y	1540	-0.05	45	40.1	802	NA	
TGP-1	Y	1558	-0.02	45	30.8	616	NA	
TGP-2	Y	1521	0.00	45	11.4	228	NA	
TGP-4	Y	1503	0.39	45	56.1	1122	NA	
TGP-5	Y	1556	-0.02	45	0.1	2	NA	
TGP-7	Y	1553	-0.02	45	0.0	0	NA	
TGP-8	Y	1518	-0.05	45	0.0	0	NA	
TGP-9	Y	1506	-0.05	45	11.0	220	NA	
TGP-10	Y	1603	0.00	45	0.0	0	NA	
PZ-30S	Y	1514	0.00	45	0.0	0	NA	Depth to Water: 38.56'
PZ-31	Y	1520	0.00	45	0.0	0	NA	Depth to Water: 26.14'
PZ-35	Y	1508	0.00	45	0.0	0	NA	
MW-36	Y	1523	0.00	45	2.5	50	NA	Depth to Water: 28.80'
MW-38	Y	1546	0.00	45	0.5	10	NA	Depth to Water: 41.54'

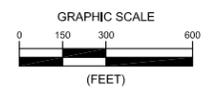
Abbreviations: GV = Gas Vent.
 TGP = Temporary Gas Probe.
 PZ = Piezometer.
 MW = Monitoring well.

In-Wg = Inches of water column.
 In-Hg = Inches of mercury.
 CH₄ = Methane.
 LEL = Lower Explosive Limit.
 (LEL for methane = 5% at standard temperature & pressure.)



- GV-07 △ GAS VENT
- GMP-14 ○ GAS MONITORING POINT
- GP-2 ○ GAS PROBE
- MW-30 ● MONITORING WELL
- - - 10 FOOT CONTOUR LINE
- - - 2 FOOT CONTOUR
- - - PROPERTY BOUNDARY

AB = ABANDONED
 NLE = NO LONGER EXISTING
 (PRESUMED DESTROYED)



DATE	REVISIONS AND RECORD OF ISSUE
04/08/13	NO
	BY
	CK
	APP

DESIGNED: SJC
 DRAWN: RWH
 CHECKED: GVB
 APPROVED: SJC
 DATE: 09/04/12

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JOHN'S RIVER WASTE MANAGEMENT FACILITY
 BURKE COUNTY, NORTH CAROLINA

LFG MONITORING NETWORK

PROJECT NO.
 277.1002.11

SCALE
 AS SHOWN

DRAWING NO.
 LFG-01

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