

Smith, George

From: Cooper, Dan <DCooper@SCSEngineers.com>
Sent: Friday, August 12, 2016 5:03 PM
To: SWD_Waste (Shared Mailbox)
Cc: Morris, John R.; Bryan White; Anthony Detweiler; Lynette Falkowski; Mike Gore
Subject: Manatee County 2016 Third Quarter Monitoring Report
Attachments: 2016-Third qtr monitoring Report-Final.pdf

Attached please find the 2016 Manatee County Third Quarter Landfill Gas Probe Monitoring Report for the Lena Road Landfill.

Please let us know if you have questions or require any additional information.

Thanks,
Dan

Daniel Cooper, P.E.
Project Director
SCS ENGINEERS
4041 Park Oaks Blvd., Suite 100
Tampa, FL 33610
Phone (813) 621-0080
Direct (813) 804-6710

SCS ENGINEERS

August 12, 2016
File No. 09214113.04

Mr. John Morris, P.G.
Florida Department of Environmental Protection
Southwest District Office – Solid Waste Section
13051 N. Telecom Parkway
Temple Terrace, FL, 33737-0926

Subject: **Landfill Gas Monitoring Report, Third Quarter 2016
Methane Perimeter Probes and Buildings Sampling
Lena Road Landfill, Manatee County, Florida
Permit # 39884-018-SO/01**

Dear Mr. Morris:

SCS Engineers (SCS) is pleased to submit the results of the third quarter of 2016 landfill gas (LFG) monitoring at Lena Road Landfill. Provided below is a description of our activities, summary of the monitoring results, and recommendations.

BACKGROUND

At Lena Road Landfill, Stage I and Stage III are currently not accepting waste and are closed, while Stage II contains the active area of the site. Currently, there is an active landfill gas (LFG) collection system encompassing both Stage I and Stage III, with vertical LFG extraction wells removing gas from the landfill. There is no gas collection system in Stage II.

Landfill gas probes are designed to monitor whether methane and other gases are migrating underground outside of the landfill area. There are 11 LFG monitoring probes located on site around the boundaries of the Lena Road Landfill. Attachment 1 is a site map showing the LFG monitoring probe locations. This quarterly monitoring was conducted in accordance with Rule 62-701.530(2)(c), F.A.C. per specific condition Part F-2 of the landfill's operations permit #39884-018-SO-01.

Additionally, rule 62-701.530(1)(a) of the Florida Administrative Code (F.A.C.) requires the following:

- The methane concentration may not exceed 25 percent of the lower explosive limit (LEL) in structures on- or off-site. The LEL for methane is five percent by volume in air. Therefore, the maximum allowable concentration in on-site or off-site structures is 1.25 percent methane by volume.

- The methane concentration at or beyond the landfill property boundary may not exceed the LEL (i.e., five percent (5.0%) methane by volume).

MONITORING RESULTS

On July 13, 2016, SCS personnel monitored the LFG monitoring probes and on-site structures. SCS used a Landtec GEM-5000 gas monitor to measure gas composition in the monitoring probes and on-site structures. The GEM-5000 measures gas by percent volume of methane, carbon dioxide, oxygen, and balance gas, which is considered to be composed primarily of nitrogen. The instrument was calibrated prior to use during the sampling event and the calibration sheets are included in Attachment 3.

LFG Monitoring Probes

Table 1 of Attachment 2 shows the readings obtained from the 11 probes along the property boundary, no methane was detected in the gas monitoring probes. A site plan showing the probe locations is included in Attachment 1.

Monitoring of On-Site Structures

No methane was detected in the scale house, administration building, operations building, recycling building, or maintenance building as shown in Table 1 of Attachment 2. In the buildings, SCS monitored both restrooms, the offices, and main area. Readings were taken while walking around the buildings and interior rooms in a continuous manner.

CONCLUSIONS

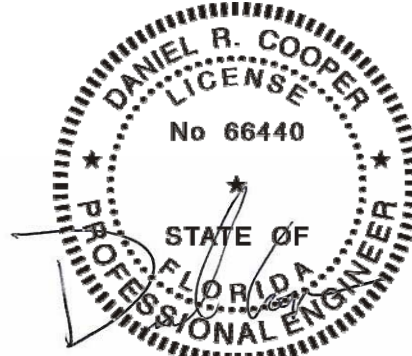
No methane was detected during this monitoring event in the 11 probes, which are the compliance points for migration, or within any of the buildings monitored on-site. The facility is thus in compliance with its operations permit for gas migration and monitoring.

Please call us at (813) 621-0080 if you have any questions or would like additional information.

Sincerely,



Wendell Stainsby, E.I.
Staff Professional
SCS ENGINEERS



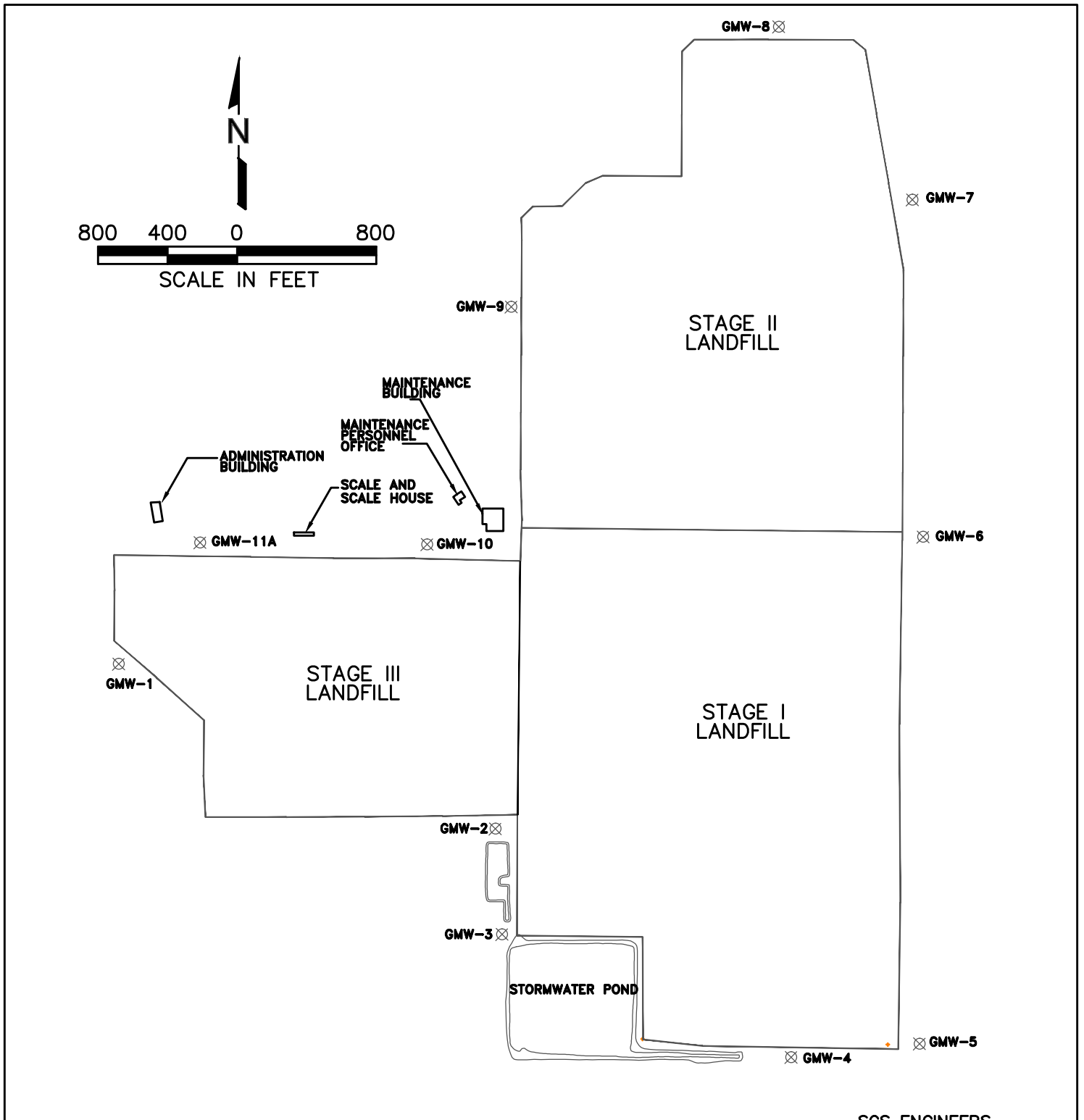
Daniel R. Cooper, P.E.
Project Director
SCS ENGINEERS

WJS/DRC: wjs

Attachment

cc: C. Mike Gore – Utilities Department Director, Manatee County (electronic)
Bryan White – Landfill Superintendent, Manatee County (electronic)
Anthony Detweiler – Operations Supervisor, Manatee County (electronic)
Lynette Falkowski – Administration, Manatee County (electronic)

ATTACHMENT 1
GAS PROBE LOCATIONS



Lena Road Landfill, Manatee County, Florida
Figure 1: Gas Monitoring Probes & Building Locations

ATTACHMENT 2

2ND QUARTER PROBE/BUILDING MONITORING RESULTS

ATTACHMENT 2
TABLE 1
LANDFILL GAS MIGRATION MONITORING
3RD QUARTER 2016
LENA ROAD LANDFILL, MANATEE COUNTY, FLORIDA

Probe No.	CH ₄ (%)	CO ₂ (%)	O ₂ (%)	Balance (%)	Comments
GMW-1	0.0	1.7	19.6	78.7	
GMW-2	0.0	0.2	20.8	79.0	
GMW-3	0.0	0.4	20.3	79.3	
GMW-4	0.0	0.2	20.8	79.0	
GMW-5	0.0	0.3	20.7	79.0	
GMW-6	0.0	0.3	20.6	79.1	
GMW-7	0.0	0.3	20.7	79.0	
GMW-8	0.0	0.2	20.7	79.1	
GMW-9A	0.0	0.8	20.5	78.7	
GMW-10	0.0	0.1	21.0	78.8	
GMW-11A	0.0	4.2	17.9	77.9	

On Site	CH ₄ (%)	% LEL
Recycle Building	0.0	0.0
Recycle Building - Office	0.0	0.0
Scale House	0.0	0.0
Administration	0.0	0.0
Operations Bldg	0.0	0.0
Maintenance Bldg	0.0	0.0

Notes:

1. Monitoring performed by SCS Engineers on: 7/13/2016
2. Temperature: 92 °F
3. Barometric Pressure: 30.13 inches-Hg

ATTACHMENT 3
GEM CALIBRATION SHEETS

GEM-5000 Field Calibration Data Sheet

GEM-5000 Instrument Data

Instrument Serial No.: G500213
 Technician Name: Jacob Smith
 Date and Time: 7/13/2016 10:07am
 Last Factory Calibration Date: February 10, 2016

Calibration Gas Manufacturer's Data

Manufactured by: Landtec
 Manufactured date: _____
 Lot Number: LAN-399-2
 Expiration Date: February 10, 2017

Prior to taking any measurements the instrument must undergo a full calibration according to manufacturer's instructions. This should then be followed by a calibration verification using ambient air and calibration gas to verify instrument performance prior to measurement.

Tabulated below are the acceptable gas concentrations that should be demonstrated when zeroing the instrument and calibrating the span gas concentrations.

Zero Gas Composition			
CH ₄ (%)	CO ₂ (%)	N ₂ (%)	O ₂ (%)
0.0	0.0	0.0	0.0 (Calibration Gas)

Span Gas Composition			
CH ₄ (%)	CO ₂ (%)	N ₂ (%)	O ₂ (%)
50.0	35.0	15.0	0.0

Calibration must be verified by conducting the following procedures:

- 1) Turn on the instrument and allow it to run and purge with ambient air for 3 minutes and then record the gas concentration readings.
- 2) Apply calibration gas to the instrument, wait 1 minute for the readings to stabilize and then record the gas concentration readings.
- 3) Determine if the reading is within 10% of calibration gas concentration. If so indicate that the instrument "Passes" the field calibration for that gas.
- 4) If any of the sensors display a reading outside of the acceptable range, then a full manufacturer's calibration must be performed.

Target Gas (%)	Ambient Air Purge Gas Readings (%)	Acceptable Ambient Air Range (%)	Calibration Gas Instrument Readings (%)	Acceptable Calibration Gas Range (%)	Pass/Fail
CH ₄	0.0	0.0 - 0.3	50.1	47.0 - 53.0	Pass
CO ₂	0.0	0.0 - 0.3	35.1	32.0 - 38.0	Pass
O ₂	20.8	19.9 - 21.9	0.1	0.0 - 1.0	Pass

CERTIFICATION OF CALIBRATION

ISSUED BY: Landtec North America Instrument Services Facility

Date Of Calibration: February 10, 2016

Certificate Number: G500213_4/17505



PJLA
Calibration
Accreditation
No. 66916

Page 1 of 2

Approved By Signatory

Dorian Venditto
Laboratory Inspection



Landtec North America Instrument Services Facility, 850
South Via Lata, Suite 112, Colton CA, 92324
www.landtecnica.com

Customer: SCS Field Services
3900 Kilroy Airport Way
Suite 100
Long Beach, CA 90806
USA

Description: GEM5000

Model: GEM5000

Serial Number: G500213

Accredited Results:

Methane (CH4)		
Certified Gas (%)	Instrument Reading (%)	Uncertainty (%)
5.0	4.9	0.42
15.0	14.9	0.66
50.0	49.7	1.03

Carbon Dioxide (CO2)		
Certified Gas (%)	Instrument Reading (%)	Uncertainty (%)
5.0	4.8	0.43
15.0	14.6	0.71
50.0	49.8	1.19

Oxygen (O2)		
Certified Gas (%)	Instrument Reading (%)	Uncertainty (%)
21.0	21.0	0.25

Gas cylinders are traceable and details can be provided if requested.

CH4, CO2 readings recorded at: 35.3 °C/95.5 °F

Barometric Pressure: 29.13 "Hg

O2 readings recorded at: 25.2 °C/77.4 °F

Method of Test: The analyzer is calibrated in a temperature controlled chamber using reference gases. All analyzers are calibrated in accordance with our procedure ISP-17 using high purity grade gas.

All calibrations are performed in accordance with ISO 17025 at LANDTEC, an ISO 17025:2005 – accredited service facility through PJLA.

The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor of k=2, providing a level of confidence of approximately 95%. The uncertainty evaluation has been carried out in accordance with NIST requirements.

The calibration results published in this certificate were obtained using equipment capable of producing results that are traceable through NIST to the International System of Units (SI). Certification only applies to results shown. This certificate may not be reproduced other than in full, except with the prior written approval of the issuing laboratory.

CERTIFICATION OF CALIBRATION

PJLA ACCREDITED CALIBRATION LABORATORY NO. 66916

Certificate Number
G500213_4/17505

Page 2 of 2

Non Accredited results:

Pressure Transducers (inches of water column)					
Transducer	Certified (Low)	Reading (Low)	Certified (High)	Reading (High)	Accuracy
Static	0"	0.00"	40"	40.02"	2.0"
Differential	0"	0.00"	4"	4.02"	0.7"

Barometer (mbar)	
Reference	Instrument Reading
0986 mbar / 29.13 "Hg	0985 mbar / 29.10 "Hg

Additional Gas Cells		
Gas	Certified Gas (ppm)	Instrument Reading (ppm)
H2	1000	LOW
CO	500	500
H2S	200	200

As received gas check readings:

Methane (CH4)	
Certified Gas (%)	Instrument Reading (%)
5.0	5.2
15.0	15.6
50.0	49.8

Carbon Dioxide (CO2)	
Certified Gas (%)	Instrument Reading (%)
5.0	5.0
15.0	14.9
50.0	50.2

Oxygen (O2)	
Certified Gas (%)	Instrument Reading (%)
21.0	20.4

As received Gas readings recorded at: 35.3 °C/95.5 °F

As received Barometric Pressure recorded at: 25.2 °C/77.4 °F

End of Certificate

LP015LNANIST-1.1

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