



**Board of County Commissioners  
DEPARTMENT OF PUBLIC WORKS  
SOLID WASTE MANAGEMENT DIVISION**

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March 24, 2011

Susan J. Pelz, P.E.  
Solid Waste Section  
Department of Environmental Protection  
13051 N Telecom Pkwy  
Temple Terrace, FL 33637-0926

Dept. Of Environmental Protection  
**MAR 30 2011**  
Southwest District

**Re: Citrus County Central Landfill – Permit No. 21375-018-SO/01  
Landfill Gas Monitoring**

Dear Ms. Pelz,

The attached report was prepared by SCS Engineers for the County and reports the results of gas monitoring for the first quarter of 2011. This monitoring is in accordance with Specific Conditions F2 and F3 of the referenced permit.

No methane was detected in any of the probes or monitoring points.

Please contact me if you have questions or require additional information.

Sincerely,

T. Casey Stephens  
Director, Division of  
Solid Waste Management

CC: Ken Frink, Director, Public Works Department (w/o attachments)  
Ed Hilton, SCS Engineers, Tampa (w/o attachments)  
Ed Gough – Withlacoochee Technical Institute  
Mike Penn – Division of Forestry

## SCS ENGINEERS

March 8, 2011  
File No. 09210021.02

Mr. Casey Stephens, Director  
Citrus County Department of Public Works  
Division of Solid Waste Management  
P.O. Box 340  
Lecanto, Florida 34460

Subject: Landfill Gas Monitoring Report, First Quarter 2011  
Central Landfill, Citrus County, Florida

Dear Casey:

SCS Engineers (SCS) is pleased to submit the results of the first quarter landfill gas (LFG) monitoring at Citrus County Central Landfill. SCS conducted this monitoring in accordance with our scope of services accepted on August 23, 2010. Provided below is a description of our activities, summary of the monitoring results, and recommendations.

### BACKGROUND

In April 2007, the Florida Department of Environmental Protection (FDEP) approved extending the compliance boundary for LFG migration monitoring at the site to coincide with the boundaries of the 2006 lease agreement between Citrus County and the Florida Division of Forestry. As a result, 18 LFG monitoring probes installed along the new property boundary served as the compliance points for migration monitoring. The remaining 62 permanent LFG probes and 12 interim probes have been abandoned in place and are no longer monitored on a quarterly basis. In November 2010, as part of the phase III cell expansion, GP-19 was installed. Figure 1 in Attachment 1 includes a site map that shows all LFG monitoring probe locations.

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

- The methane concentration in on, or off-site structures, may not exceed 25 percent of the lower explosive limit (LEL). 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).

This quarterly monitoring was conducted in accordance with Rule 62-701.530(2)(c), F.A.C.



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## MONITORING RESULTS

On March 2, 2011, SCS personnel monitored the LFG monitoring probes and on-site structures. SCS used a Landtec GEM-2000 gas monitor to measure gas composition in the monitoring probes and on-site structures. The GEM-2000 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 and once more during the sampling event.

### **LFG Monitoring Probes**

Table 1 of Attachment 2 shows the readings obtained from the 19 probes along the property boundary. Methane was not detected in any of the 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 scalehouse, administration building, shop, leachate treatment facility, or firing range as shown in Table 1 of Attachment 2. Floor plans of the scale house and the administration building are included in Attachment 1.

SCS monitored in the restrooms of the administration building, as well as in select closets, the break room, conference room, and hallways. In the scalehouse, SCS monitored the main work area, cabinets, the restroom, and at electrical outlets. Monitoring of the leachate treatment facility included around the base of structures, at the control panel, and inside the electrical room.

At the firing range, SCS monitored the floor joints, electrical outlets, and the base of slabs or posts that penetrated the ground.

### **Testing Methane Monitor**

SCS checked the methane monitor in the leachate treatment plant electrical building and determined that the monitor is operating in accordance with the manufacturer's standards.

## CONCLUSIONS

No methane was detected during this monitoring event in the 19 probes, which are the compliance points for migration or within any of the buildings monitored on-site.

SCS is providing you two signed and sealed originals of this submittal. Please keep one for your files and forward the other to the FDEP Southwest District office at the following address:

Mr. Casey Stephens  
March 8, 2011  
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Florida Department of Environmental Protection  
13051 N. Telecom Parkway  
Temple Terrace, Florida 33637-0926

SCS appreciates the opportunity to assist you with this work. Please call us at (800) 569-9702 if you have any questions or would like additional information.

Sincerely,

Handwritten signature of Daniel R. Cooper in blue ink, with the date "3-8-11" written below it.

Daniel R. Cooper, P.E.  
Project Manager

Handwritten signature of C. Ed Hilton in blue ink.

C. Ed Hilton, P.E.  
Vice President

**SCS ENGINEERS**

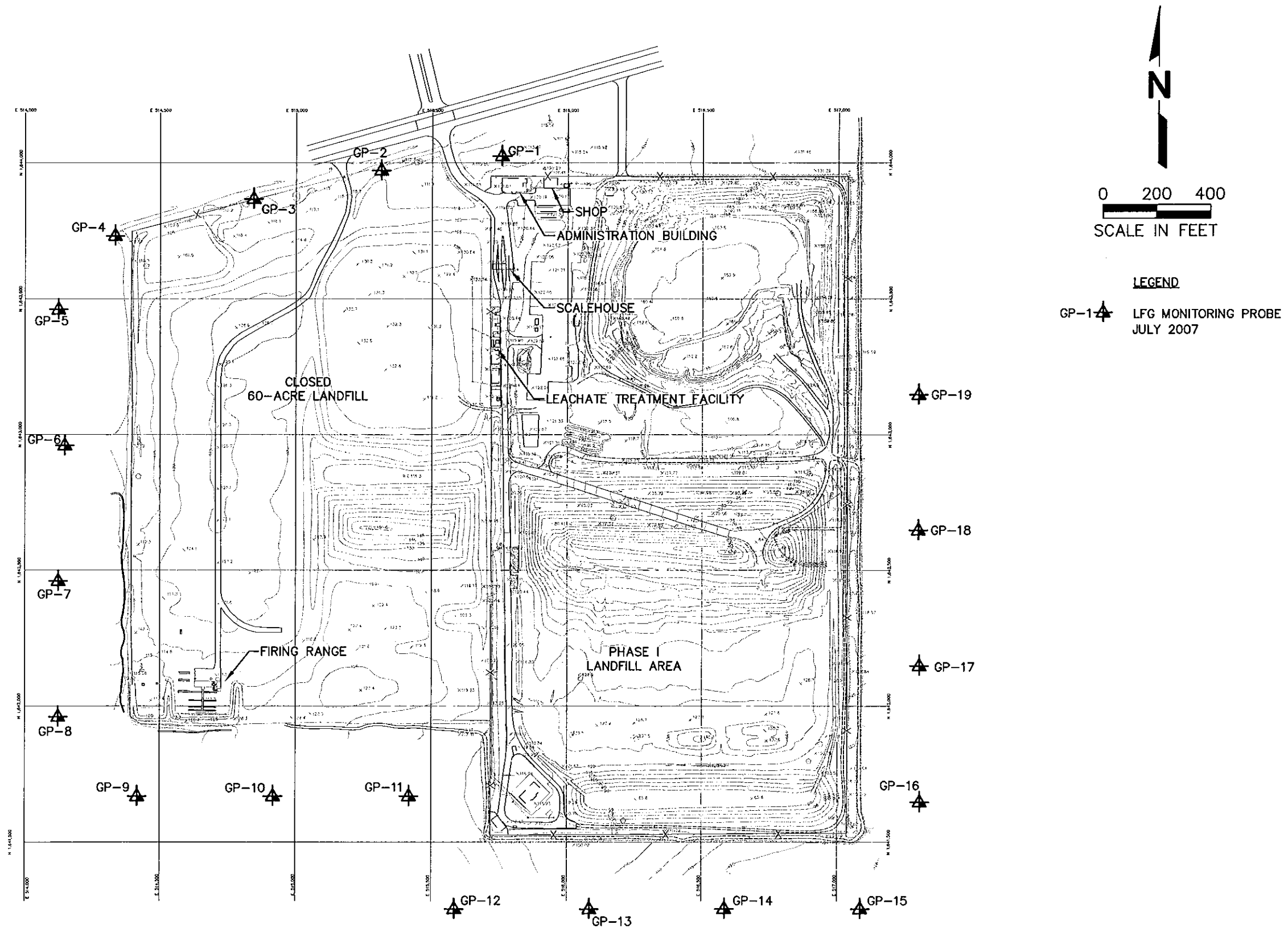
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Attachments

**ATTACHMENT 1**  
**MONITORING LOCATIONS**

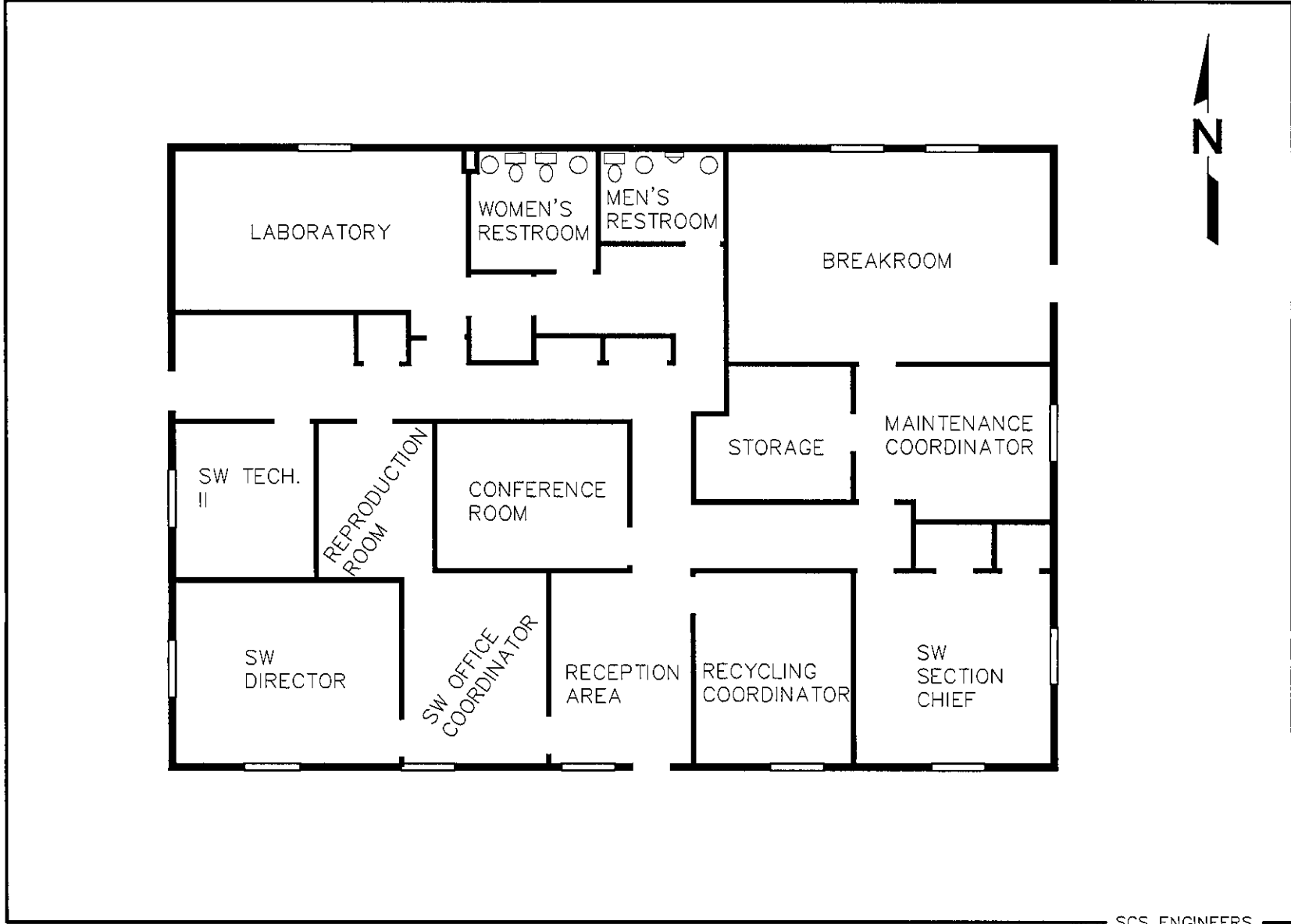


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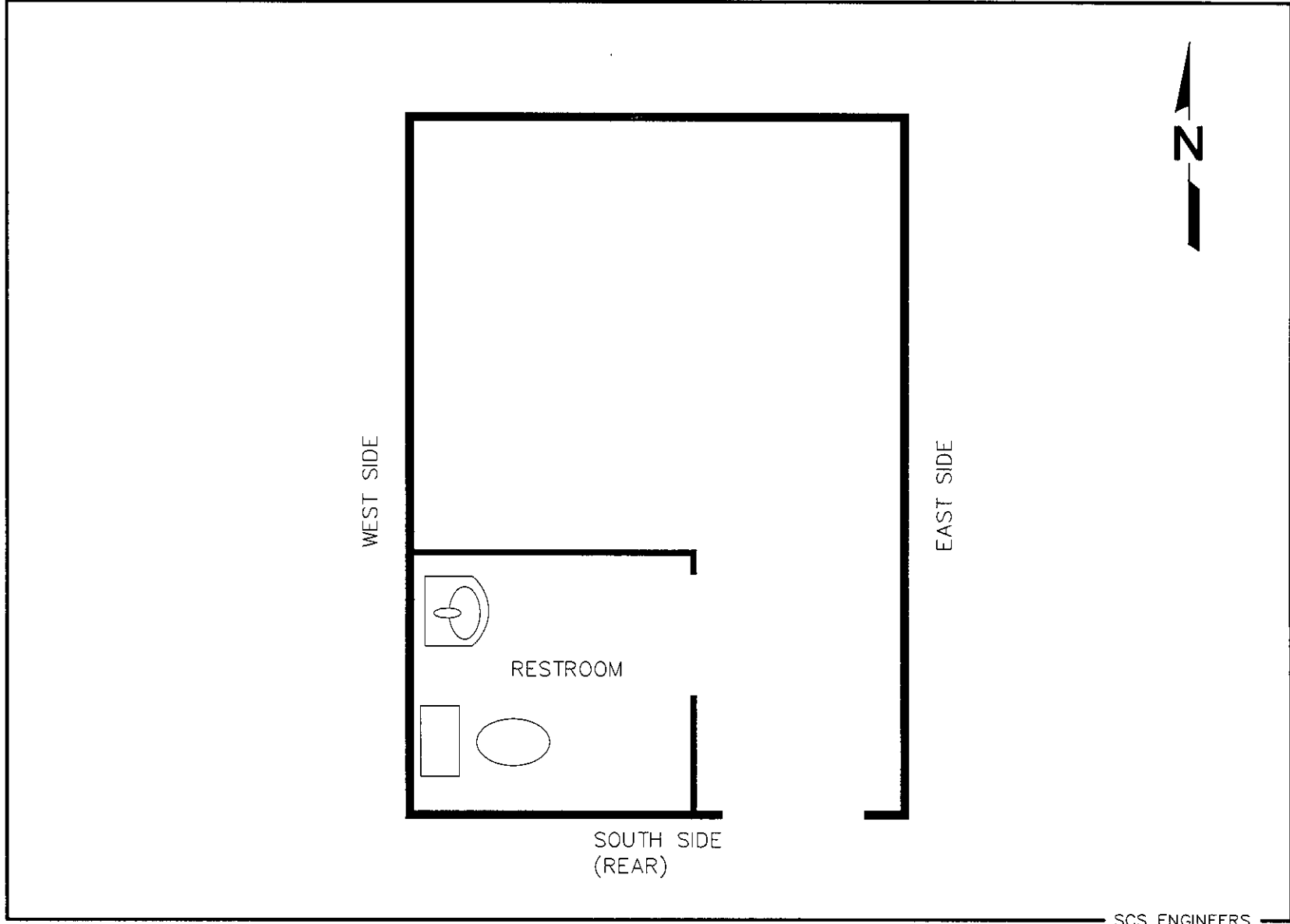
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Figure 1. Landfill Gas Monitoring Probe Locations, Central Landfill, Citrus County, Florida



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Figure 2. Administration Building Floor Plan



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Figure 3. Scalehouse Floor Plan



**TABLE 1**  
**LANDFILL GAS MIGRATION MONITORING, FIRST QUARTER 2011**  
**CENTRAL LANDFILL, CITRUS COUNTY**

Probe No.	CH <sub>4</sub> (%)	CO <sub>2</sub> (%)	O <sub>2</sub> (%)	Balance (%)	Pressure (in-w.c.)	Comments
GP-1	0.0	1.4	19.8	78.8	0.0	
GP-2	0.0	0.1	21.5	78.4	0.0	
GP-3	0.0	0.4	20.5	79.1	0.0	
GP-4	0.0	2.1	20.5	77.5	0.0	
GP-5	0.0	0.8	21.2	78.0	0.0	
GP-6	0.0	1.1	20.8	78.2	0.0	
GP-7	0.0	1.3	20.5	78.2	0.0	
GP-8	0.0	0.5	21.2	78.3	0.0	
GP-9	0.0	0.5	21.3	78.2	0.0	
GP-10	0.0	0.4	21.1	78.5	0.0	
GP-11	0.0	0.8	20.5	78.7	0.0	
GP-12	0.0	1.3	20.3	78.4	0.0	
GP-13	0.0	0.1	21.4	78.5	0.0	
GP-14	0.0	0.3	20.8	78.9	0.0	
GP-15	0.0	0.5	20.9	78.6	0.0	
GP-16	0.0	0.2	21.2	78.6	0.0	
GP-17	0.0	1.1	19.6	79.3	0.0	
GP-18	0.0	0.4	21.1	78.5	0.0	
GP-19	0.0	0.2	21.4	78.4	0.0	

On Site	CH <sub>4</sub> (%)	% LEL
Scalehouse	0.0	0.0
Shop	0.0	0.0
Administration Building	0.0	0.0
Treatment Facility	0.0	0.0
Firing Range	0.0	0.0

**Notes:**

1. Monitoring performed by SCS Engineers (813) 621-0080 on 3/2/11.
2. Temperature: P Cloudy rain 66 degrees F
3. Barometric Pressure:30.04 in. Hg