



# Florida Department of Environmental Protection

Bob Martinez Center  
2600 Blair Stone Road  
Tallahassee, Florida 32399-2400

Charlie Crist  
Governor

Jeff Kottkamp  
Lt. Governor

Michael W. Sole  
Secretary

## EAOR Submission Receipt

Facility ID: **0730099**

Facility Name: **SOLID WASTE MANAGEMENT FACILITY**

Reporting Year: **2008**

File Name: **0730099\_2008\_1.sub**

Received: **3/20/2009 7:26:50 PM**

Signature pages must be mailed to the following address:

*Department of Environmental Protection  
Division of Air Resource Management, MS 5500  
2600 Blair Stone Road  
Tallahassee, Florida 32399-2400*

*"More Protection, Less Process"*



March 20, 2009

Jon Holtom, P.E., CPM  
Title V Program Administrator  
Bureau of Air Regulation  
Bob Martinez Center  
2600 Blair Stone Road  
Tallahassee, Florida 32399-2400

RE: Leon County Solid Waste Management Facility – Annual Operations Report (AOR)  
FDEP Facility ID# 0730099

Dear Mr. Holtom

On behalf of Leon County, HDR is submitting the Annual Operations Report (AOR) and supporting information electronically. During the development of the 2008 AOR we noted some issues associated with the 2007 AOR. We discussed these issues with Yi Zhu of FDEP Tallahassee and modified the AOR for 2008 as follows:

- Landfill gas generation for 2008 is estimated by the EPA's Landfill Gas Emissions Model (LandGEM) version 3.02 using site specific Non-Methane Organic Compound (NMOC) concentration of 159 ppmv. The waste acceptance for the facility was obtained from the LandGEM output submitted with the 2005 AOR. It should be noted that insignificant amount of MSW was accepted at this facility since 2004 to maintain the Class I waste disposal permit. MSW is currently collected at the Transfer Station and hauled to a regional landfill located in Jackson County. Methane concentration of the LFG is assumed to be 50% based on 2005 LandGEM.
- It is assumed that LFG is collected and flared at a flow rate of 650 scfm which is the maximum flow rate as stated in the Title V permit. Accordingly, emissions from the flare are calculated and reported in SCC code 5-03-006-01. All gas not captured by the flare is assumed to be emitted through the cover as fugitive emissions and reported under SCC code 5-02-006-02.
- The SCC code 5-01-004-01 is for the dust emission due to unpaved road traffic. Based on the Title V permit, there is no requirement to report these emissions and accordingly dust emissions were not quantified.
- The SCC code 5-01-004-02 is for the fugitive dust emission from landfill dump. Based on the Title V permit there is no requirement to report these emissions and accordingly fugitive dust emissions were not quantified.

The supporting information for our calculations is enclosed. Please contact me if you have any questions.

Sincerely,  
HDR Engineering, Inc.



Kanishka Perera, Ph.D., P.E.  
Senior Solid Waste Engineer

cc: Ms. Norm Thomas (Leon County)  
Mr. Carlo Lebron P.E. (HDR)

Enclosed:  
2008 AOR  
LandGem Output  
Emission Calculation Tables



# Department of Environmental Protection

## Division of Air Resources Management

### ANNUAL OPERATING REPORT FOR AIR POLLUTANT EMITTING FACILITY

See Instructions for Form No. 62-210.900(5)

### I. FACILITY REPORT

#### A. REPORT INFORMATION

1. Year of Report <p style="text-align: center;"><b>2008</b></p>	2. Number of Emissions Units in Report <p style="text-align: center;"><b>2</b></p>
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#### B. FACILITY INFORMATION

1. Facility ID <p style="text-align: center;"><b>0730099</b></p>	2. Facility Status <p style="text-align: center;"><b>ACTIVE</b></p>	3. Date of Permanent Facility Shutdown
4. Facility Owner/Company Name <p style="text-align: center;"><b>LEON COUNTY</b></p>		
5. Site Name <p style="text-align: center;"><b>SOLID WASTE MANAGEMENT FACILITY</b></p>		
6. Facility Location Street Address or Other Locator: <b>7550 Apalachee Parkway</b> City: <b>TALLAHASSEE</b> County: <b>LEON</b> Zip Code: <b>32311</b>		
7. Governmental Facility Code <p style="text-align: center;"><b>3</b></p>	8. Facility SIC(s) <p style="text-align: center;"><b>4953</b></p>	
9. Facility Comment <p style="text-align: center;"><b>Existing Municipal Solid Waste Landfill</b></p>		

#### C. FACILITY HISTORY INFORMATION

1. Change in Facility Owner/ Company Name During Year?	Previous Name	2. Date of Change
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## II. EMISSIONS UNIT REPORT

### A. EMISSIONS UNIT INFORMATION

1. Emissions Unit Description <b>Landfill (Class I Disposal Area)</b>		
2. Emissions Unit ID <b>001</b>	3. Emissions Unit Classification <b>Regulated Emissions Unit</b>	4. Operated During Year? <b>Y</b>
5. DEP Permit or PPS Number <b>0730099005AV</b> <b>0730099007AV</b>		6. Emissions Unit Status <b>ACTIVE</b>
7. Emissions Unit Startup Date	8. Long-term Reserve Shutdown Date	9. Permanent Shutdown Date

### B. EMISSION POINT/CONTROL INFORMATION

1. Emissions Point Type <b>NO TRUE EMISSION POINT (FUGITIVE EMISSION)</b>
2. Description of Control Equipment

### C. EMISSIONS UNIT OPERATING SCHEDULE INFORMATION

1. Average Annual Operation hours/day <b>24</b> days/week <b>7</b>	2. Total Operation During Year (hours/year) <b>8760</b>
3. Percent Hours of Operation by Season D J F : <b>25</b> M A M : <b>25</b> J J A : <b>25</b> S O N : <b>25</b>	
4. Average Summer Season Operation (June 1 to August 31) hours/day <b>24</b> days/week <b>7</b>	5. Total Operation During Summer Season (days/season) <b>90</b>

D. EMISSIONS UNIT COMMENT

**While this landfill has an active FDEP Class I Landfill Operation Permit, only negligible amounts of solid waste were put in this landfill since 2004 to keep the existing Class I permit active. Leon County operates a transfer station and the Class I solid waste is hauled and disposed of in a regional landfill located in Jackson County.**

**Total LFG generated was estimated based on the site specific NMOC concentration and AP-42 parameters. Fugitive emissions were estimated based on the assumption that 650 scfm of LFG is controlled from the flare.**

**It should also be noted that units of SCC code 5-02-006-02 are in terms of million cubic feet of gas and not acre-year.**

E. EMISSIONS INFORMATION BY PROCESS/FUEL

( 1 ) PROCESS/FUEL INFORMATION

1. SCC <b>5-02-006-02</b>	2. Description of Process or Type of Fuel <b>Waste Disposal Solid Waste Disposal - Commercial/ Landfill Dump Municipal: Fugitive Emissions **</b>	
3. Annual Process or Fuel Usage Rate <b>211.5</b>	4. Summer Season Daily Process or Fuel Usage Rate <b>0.579</b>	5. SCC Unit <b>Acre-Years Landfill Existing</b>
6. Fuel Average % Sulfur	7. Fuel Average % Ash	8. Fuel Heat Content (mmBtu/SCC Unit)

( 2 ) EMISSIONS INFORMATION

1. Pollutant <b>NMOC Nonmethane Organic Compounds from MSW Landfill</b>	CAS No.	<input checked="" type="checkbox"/> Below Threshold <input type="checkbox"/> Not Emitted
2. Annual Emissions (ton/year)	3. Summer Season Daily Emissions (lb/day)	4. Emissions Method Code <b>3A</b>
5. Emissions Calculation (Show separately both annual and daily emissions calculations)		

1. Pollutant <b>PM Particulate Matter - Total</b>	CAS No.	<input checked="" type="checkbox"/> Below Threshold <input type="checkbox"/> Not Emitted
2. Annual Emissions (ton/year)	3. Summer Season Daily Emissions (lb/day)	4. Emissions Method Code <b>3B</b>
5. Emissions Calculation (Show separately both annual and daily emissions calculations)		

1. Pollutant <b>PM10 Particulate Matter - PM10</b>	CAS No.	<input checked="" type="checkbox"/> Below Threshold <input type="checkbox"/> Not Emitted
2. Annual Emissions (ton/year)	3. Summer Season Daily Emissions (lb/day)	4. Emissions Method Code <b>3B</b>
5. Emissions Calculation (Show separately both annual and daily emissions calculations)		

\*: Pollutant subject to emissions limiting standard or emissions cap

1. Pollutant <b>VOC</b> <b>Volatile Organic Compounds</b>	CAS No.	<input checked="" type="checkbox"/> Below Threshold <input type="checkbox"/> Not Emitted
2. Annual Emissions (ton/year)	3. Summer Season Daily Emissions (lb/day)	4. Emissions Method Code  <b>3A</b>
5. Emissions Calculation (Show separately both annual and daily emissions calculations)		

\*: Pollutant subject to emissions limiting standard or emissions cap

## II. EMISSIONS UNIT REPORT

### A. EMISSIONS UNIT INFORMATION

1. Emissions Unit Description <b>Landfill Gas Utility Flare</b>		
2. Emissions Unit ID <b>003</b>	3. Emissions Unit Classification <b>Regulated Emissions Unit</b>	4. Operated During Year? <b>Y</b>
5. DEP Permit or PPS Number <b>0730099006AC</b> <b>0730099007AV</b>		6. Emissions Unit Status <b>ACTIVE</b>
7. Emissions Unit Startup Date <b>April 25, 2007</b>	8. Long-term Reserve Shutdown Date	9. Permanent Shutdown Date

### B. EMISSION POINT/CONTROL INFORMATION

1. Emissions Point Type <b>SINGLE POINT SERVING A SINGLE EMISSIONS UNIT</b>
2. Description of Control Equipment <b>FLARING</b>

### C. EMISSIONS UNIT OPERATING SCHEDULE INFORMATION

1. Average Annual Operation hours/day <b>24</b> days/week <b>7</b>	2. Total Operation During Year (hours/year) <b>8760</b>
3. Percent Hours of Operation by Season DJF : <b>25</b> MAM : <b>25</b> JJA : <b>25</b> SON : <b>25</b>	
4. Average Summer Season Operation (June 1 to August 31) hours/day <b>24</b> days/week <b>7</b>	5. Total Operation During Summer Season (days/season) <b>90</b>

\*: Pollutant subject to emissions limiting standard or emissions cap

D. EMISSIONS UNIT COMMENT

**While this landfill has an active FDEP Class I Landfill Operation Permit, only negligible amounts of solid waste were put in this landfill since 2004 to keep the existing Class I permit active. Leon County operates a transfer station and the Class I solid waste is hauled and disposed of in a regional landfill located in Jackson County.**

**Total LFG generated was estimated based on the site specific NMOC concentration and AP-42 parameters. Flare emissions were calculated based on the reported maximum LFG flow rate of 650 scfm per Title V permit.**

\*: Pollutant subject to emissions limiting standard or emissions cap



1. Pollutant <b>NOX</b> <b>Nitrogen Oxides</b>		CAS No. <b>10102-44-0</b>	[ ] Below Threshold [x] Not Emitted
2. Annual Emissions (ton/year)	3. Summer Season Daily Emissions (lb/day)		4. Emissions Method Code
5. Emissions Calculation (Show separately both annual and daily emissions calculations)			

1. Pollutant <b>PM10</b> <b>Particulate Matter - PM10</b>		CAS No.	[x] Below Threshold [ ] Not Emitted
2. Annual Emissions (ton/year)	3. Summer Season Daily Emissions (lb/day)		4. Emissions Method Code
5. Emissions Calculation (Show separately both annual and daily emissions calculations)			

1. Pollutant <b>SO2</b> <b>Sulfur Dioxide</b>		CAS No. <b>7446-09-5</b>	[ ] Below Threshold [x] Not Emitted
2. Annual Emissions (ton/year)	3. Summer Season Daily Emissions (lb/day)		4. Emissions Method Code
5. Emissions Calculation (Show separately both annual and daily emissions calculations)			

1. Pollutant <b>VOC</b> <b>Volatile Organic Compounds</b>		CAS No.	[ ] Below Threshold [x] Not Emitted
2. Annual Emissions (ton/year)	3. Summer Season Daily Emissions (lb/day)		4. Emissions Method Code
5. Emissions Calculation (Show separately both annual and daily emissions calculations)			

\*: Pollutant subject to emissions limiting standard or emissions cap

E. EMISSIONS INFORMATION BY PROCESS/FUEL

( 1 ) PROCESS/FUEL INFORMATION

1. SCC <b>5-01-004-02</b>	2. Description of Process or Type of Fuel <b>Waste Disposal Landfill Dump</b> <b>Solid Waste Disposal - Government Fugitive Emissions</b> <b>650 scfm max at max 1000 btu/cf(methane) = 341,640,000 MMBtu/yr.</b> <b>Divide by 1105.4 (above MMBtu/SCC Unit) = 309064.59 acre-years</b>	
3. Annual Process or Fuel Usage Rate <b>0</b>	4. Summer Season Daily Process or Fuel Usage Rate	5. SCC Unit <b>Acre-Years Landfill Existing</b>
6. Fuel Average % Sulfur	7. Fuel Average % Ash	8. Fuel Heat Content (mmBtu/SCC Unit)

( 2 ) EMISSIONS INFORMATION

1. Pollutant <b>CO</b> <b>Carbon Monoxide</b>	CAS No. <b>630-08-0</b>	<input type="checkbox"/> Below Threshold <input checked="" type="checkbox"/> Not Emitted
2. Annual Emissions (ton/year)	3. Summer Season Daily Emissions (lb/day)	4. Emissions Method Code
5. Emissions Calculation (Show separately both annual and daily emissions calculations)		

1. Pollutant <b>H106</b> <b>Hydrogen chloride (Hydrochloric acid)</b>	CAS No. <b>7647-01-0</b>	<input type="checkbox"/> Below Threshold <input checked="" type="checkbox"/> Not Emitted
2. Annual Emissions (ton/year)	3. Summer Season Daily Emissions (lb/day)	4. Emissions Method Code
5. Emissions Calculation (Show separately both annual and daily emissions calculations)		

1. Pollutant <b>* NMOC</b> <b>Nonmethane Organic Compounds from MSW Landfill</b>	CAS No.	<input type="checkbox"/> Below Threshold <input checked="" type="checkbox"/> Not Emitted
2. Annual Emissions (ton/year)	3. Summer Season Daily Emissions (lb/day)	4. Emissions Method Code
5. Emissions Calculation (Show separately both annual and daily emissions calculations)		

\*: Pollutant subject to emissions limiting standard or emissions cap

1. Pollutant <b>NOX</b> <b>Nitrogen Oxides</b>		CAS No. <b>10102-44-0</b>	[ ] Below Threshold [x] Not Emitted
2. Annual Emissions (ton/year)	3. Summer Season Daily Emissions (lb/day)		4. Emissions Method Code
5. Emissions Calculation (Show separately both annual and daily emissions calculations)			

1. Pollutant <b>PM10</b> <b>Particulate Matter - PM10</b>		CAS No.	[x] Below Threshold [ ] Not Emitted
2. Annual Emissions (ton/year)	3. Summer Season Daily Emissions (lb/day)		4. Emissions Method Code
5. Emissions Calculation (Show separately both annual and daily emissions calculations)			

1. Pollutant <b>SO2</b> <b>Sulfur Dioxide</b>		CAS No. <b>7446-09-5</b>	[ ] Below Threshold [x] Not Emitted
2. Annual Emissions (ton/year)	3. Summer Season Daily Emissions (lb/day)		4. Emissions Method Code
5. Emissions Calculation (Show separately both annual and daily emissions calculations)			

1. Pollutant <b>VOC</b> <b>Volatile Organic Compounds</b>		CAS No.	[ ] Below Threshold [x] Not Emitted
2. Annual Emissions (ton/year)	3. Summer Season Daily Emissions (lb/day)		4. Emissions Method Code
5. Emissions Calculation (Show separately both annual and daily emissions calculations)			

\*: Pollutant subject to emissions limiting standard or emissions cap

E. EMISSIONS INFORMATION BY PROCESS/FUEL

( 1 ) PROCESS/FUEL INFORMATION

1. SCC <b>5-03-006-01</b>	2. Description of Process or Type of Fuel <b>Waste Disposal Solid Waste Disposal - Industrial Max 650 scfm at max btu (methane 1000 btu/cf) = 341,640,000 MMBtu/yr. Divide by 138.6 MMcf = 2,464,935 MM cu ft burned</b>	
3. Annual Process or Fuel Usage Rate <b>341.64</b>	4. Summer Season Daily Process or Fuel Usage Rate <b>0.936</b>	5. SCC Unit <b>Million Cubic Feet Waste Gas Burned</b>
6. Fuel Average % Sulfur	7. Fuel Average % Ash	8. Fuel Heat Content (mmBtu/SCC Unit) <b>500</b>

( 2 ) EMISSIONS INFORMATION

1. Pollutant <b>CO Carbon Monoxide</b>	CAS No. <b>630-08-0</b>	<input type="checkbox"/> Below Threshold <input type="checkbox"/> Not Emitted
2. Annual Emissions (ton/year) <b>64.05</b>	3. Summer Season Daily Emissions (lb/day)	4. Emissions Method Code <b>3B</b>
5. Emissions Calculation (Show separately both annual and daily emissions calculations)		

1. Pollutant <b>H106 Hydrogen chloride (Hydrochloric acid)</b>	CAS No. <b>7647-01-0</b>	<input type="checkbox"/> Below Threshold <input type="checkbox"/> Not Emitted
2. Annual Emissions (ton/year) <b>0.6895</b>	3. Summer Season Daily Emissions (lb/day)	4. Emissions Method Code <b>3B</b>
5. Emissions Calculation (Show separately both annual and daily emissions calculations)		

1. Pollutant <b>* NMOC Nonmethane Organic Compounds from MSW Landfill</b>	CAS No.	<input checked="" type="checkbox"/> Below Threshold <input type="checkbox"/> Not Emitted
2. Annual Emissions (ton/year) <b>0</b>	3. Summer Season Daily Emissions (lb/day)	4. Emissions Method Code <b>3A</b>
5. Emissions Calculation (Show separately both annual and daily emissions calculations)		

\*: Pollutant subject to emissions limiting standard or emissions cap

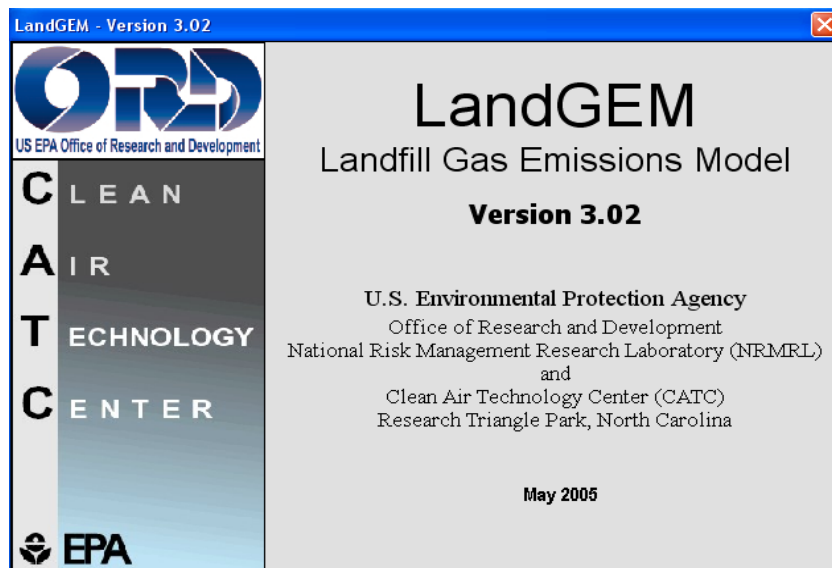
1. Pollutant <b>NOX</b> <b>Nitrogen Oxides</b>		CAS No. <b>10102-44-0</b>	<input checked="" type="checkbox"/> Below Threshold <input type="checkbox"/> Not Emitted
2. Annual Emissions (ton/year)	3. Summer Season Daily Emissions (lb/day)	4. Emissions Method Code  <b>3B</b>	
5. Emissions Calculation (Show separately both annual and daily emissions calculations)			

1. Pollutant <b>PM10</b> <b>Particulate Matter - PM10</b>		CAS No.	<input checked="" type="checkbox"/> Below Threshold <input type="checkbox"/> Not Emitted
2. Annual Emissions (ton/year)	3. Summer Season Daily Emissions (lb/day)	4. Emissions Method Code  <b>3B</b>	
5. Emissions Calculation (Show separately both annual and daily emissions calculations)			

1. Pollutant <b>SO2</b> <b>Sulfur Dioxide</b>		CAS No. <b>7446-09-5</b>	<input checked="" type="checkbox"/> Below Threshold <input type="checkbox"/> Not Emitted
2. Annual Emissions (ton/year)	3. Summer Season Daily Emissions (lb/day)	4. Emissions Method Code  <b>3B</b>	
5. Emissions Calculation (Show separately both annual and daily emissions calculations)			

1. Pollutant <b>VOC</b> <b>Volatile Organic Compounds</b>		CAS No.	<input checked="" type="checkbox"/> Below Threshold <input type="checkbox"/> Not Emitted
2. Annual Emissions (ton/year)	3. Summer Season Daily Emissions (lb/day)	4. Emissions Method Code  <b>3B</b>	
5. Emissions Calculation (Show separately both annual and daily emissions calculations)			

\*: Pollutant subject to emissions limiting standard or emissions cap



## Summary Report

**Landfill Name or Identifier:** Leon County Solid Waste Management Facility

**Date:** Thursday, February 26, 2009

### Description/Comments:

#### About LandGEM:

First-Order Decomposition Rate Equation:

$$Q_{CH_4} = \sum_{i=1}^n \sum_{j=0.1}^1 kL_o \left( \frac{M_i}{10} \right) e^{-kt_{ij}}$$

Where,

$Q_{CH_4}$  = annual methane generation in the year of the calculation ( $m^3/year$ )

$i$  = 1-year time increment

$n$  = (year of the calculation) - (initial year of waste acceptance)

$j$  = 0.1-year time increment

$k$  = methane generation rate ( $year^{-1}$ )

$L_o$  = potential methane generation capacity ( $m^3/Mg$ )

$M_i$  = mass of waste accepted in the  $i^{th}$  year ( $Mg$ )

$t_{ij}$  = age of the  $j^{th}$  section of waste mass  $M_i$  accepted in the  $i^{th}$  year (*decimal years*, e.g., 3.2 years)

LandGEM is based on a first-order decomposition rate equation for quantifying emissions from the decomposition of landfilled waste in municipal solid waste (MSW) landfills. The software provides a relatively simple approach to estimating landfill gas emissions. Model defaults are based on empirical data from U.S. landfills. Field test data can also be used in place of model defaults when available. Further guidance on EPA test methods, Clean Air Act (CAA) regulations, and other guidance regarding landfill gas emissions and control technology requirements can be found at <http://www.epa.gov/ttnatw01/landfill/landflpg.html>.

LandGEM is considered a screening tool — the better the input data, the better the estimates. Often, there are limitations with the available data regarding waste quantity and composition, variation in design and operating practices over time, and changes occurring over time that impact the emissions potential. Changes to landfill operation, such as operating under wet conditions through leachate recirculation or other liquid additions, will result in generating more gas at a faster rate. Defaults for estimating emissions for this type of operation are being developed to include in LandGEM along with defaults for conventional landfills (no leachate or liquid additions) for developing emission inventories and determining CAA applicability. Refer to the Web site identified above for future updates.

## Input Review

### LANDFILL CHARACTERISTICS

Landfill Open Year	<b>1977</b>	
Landfill Closure Year (with 80-year limit)	<b>2004</b>	
Actual Closure Year (without limit)	<b>2004</b>	
Have Model Calculate Closure Year?	<b>No</b>	
Waste Design Capacity	<b>4,684,206</b>	<i>megagrams</i>

### MODEL PARAMETERS

Methane Generation Rate, k	<b>0.040</b>	<i>year<sup>-1</sup></i>
Potential Methane Generation Capacity, L <sub>0</sub>	<b>100</b>	<i>m<sup>3</sup>/Mg</i>
NMOC Concentration	<b>159</b>	<i>ppmv as hexane</i>
Methane Content	<b>50</b>	<i>% by volume</i>

### GASES / POLLUTANTS SELECTED

Gas / Pollutant #1:	<b>Total landfill gas</b>
Gas / Pollutant #2:	<b>Methane</b>
Gas / Pollutant #3:	<b>Carbon dioxide</b>
Gas / Pollutant #4:	<b>NMOC</b>

### WASTE ACCEPTANCE RATES

Year	Waste Accepted		Waste-In-Place	
	(Mg/year)	(short tons/year)	(Mg)	(short tons)
1977	140,100	154,110	0	0
1978	140,200	154,220	140,100	154,110
1979	140,100	154,110	280,300	308,330
1980	140,100	154,110	420,400	462,440
1981	140,100	154,110	560,500	616,550
1982	140,100	154,110	700,600	770,660
1983	140,200	154,220	840,700	924,770
1984	140,000	154,000	980,900	1,078,990
1985	140,000	154,000	1,120,900	1,232,990
1986	140,000	154,000	1,260,900	1,386,990
1987	140,000	154,000	1,400,900	1,540,990
1988	141,000	155,100	1,540,900	1,694,990
1989	140,000	154,000	1,681,900	1,850,090
1990	140,000	154,000	1,821,900	2,004,090
1991	140,000	154,000	1,961,900	2,158,090
1992	140,000	154,000	2,101,900	2,312,090
1993	140,000	154,000	2,241,900	2,466,090
1994	140,000	154,000	2,381,900	2,620,090
1995	140,000	154,000	2,521,900	2,774,090
1996	140,000	154,000	2,661,900	2,928,090
1997	141,000	155,100	2,801,900	3,082,090
1998	140,000	154,000	2,942,900	3,237,190
1999	136,000	149,600	3,082,900	3,391,190
2000	155,000	170,500	3,218,900	3,540,790
2001	162,000	178,200	3,373,900	3,711,290
2002	58,000	63,800	3,535,900	3,889,490
2003	140,000	154,000	3,593,900	3,953,290
2004	27,000	29,700	3,733,900	4,107,290
2005	0	0	3,760,900	4,136,990
2006	0	0	3,760,900	4,136,990
2007	0	0	3,760,900	4,136,990
2008	0	0	3,760,900	4,136,990
2009	0	0	3,760,900	4,136,990
2010	0	0	3,760,900	4,136,990
2011	0	0	3,760,900	4,136,990
2012	0	0	3,760,900	4,136,990
2013	0	0	3,760,900	4,136,990
2014	0	0	3,760,900	4,136,990
2015	0	0	3,760,900	4,136,990
2016	0	0	3,760,900	4,136,990

## WASTE ACCEPTANCE RATES (Continued)

Year	Waste Accepted		Waste-In-Place	
	(Mg/year)	(short tons/year)	(Mg)	(short tons)
2017	0	0	3,760,900	4,136,990
2018	0	0	3,760,900	4,136,990
2019	0	0	3,760,900	4,136,990
2020	0	0	3,760,900	4,136,990
2021	0	0	3,760,900	4,136,990
2022	0	0	3,760,900	4,136,990
2023	0	0	3,760,900	4,136,990
2024	0	0	3,760,900	4,136,990
2025	0	0	3,760,900	4,136,990
2026	0	0	3,760,900	4,136,990
2027	0	0	3,760,900	4,136,990
2028	0	0	3,760,900	4,136,990
2029	0	0	3,760,900	4,136,990
2030	0	0	3,760,900	4,136,990
2031	0	0	3,760,900	4,136,990
2032	0	0	3,760,900	4,136,990
2033	0	0	3,760,900	4,136,990
2034	0	0	3,760,900	4,136,990
2035	0	0	3,760,900	4,136,990
2036	0	0	3,760,900	4,136,990
2037	0	0	3,760,900	4,136,990
2038	0	0	3,760,900	4,136,990
2039	0	0	3,760,900	4,136,990
2040	0	0	3,760,900	4,136,990
2041	0	0	3,760,900	4,136,990
2042	0	0	3,760,900	4,136,990
2043	0	0	3,760,900	4,136,990
2044	0	0	3,760,900	4,136,990
2045	0	0	3,760,900	4,136,990
2046	0	0	3,760,900	4,136,990
2047	0	0	3,760,900	4,136,990
2048	0	0	3,760,900	4,136,990
2049	0	0	3,760,900	4,136,990
2050	0	0	3,760,900	4,136,990
2051	0	0	3,760,900	4,136,990
2052	0	0	3,760,900	4,136,990
2053	0	0	3,760,900	4,136,990
2054	0	0	3,760,900	4,136,990
2055	0	0	3,760,900	4,136,990
2056	0	0	3,760,900	4,136,990

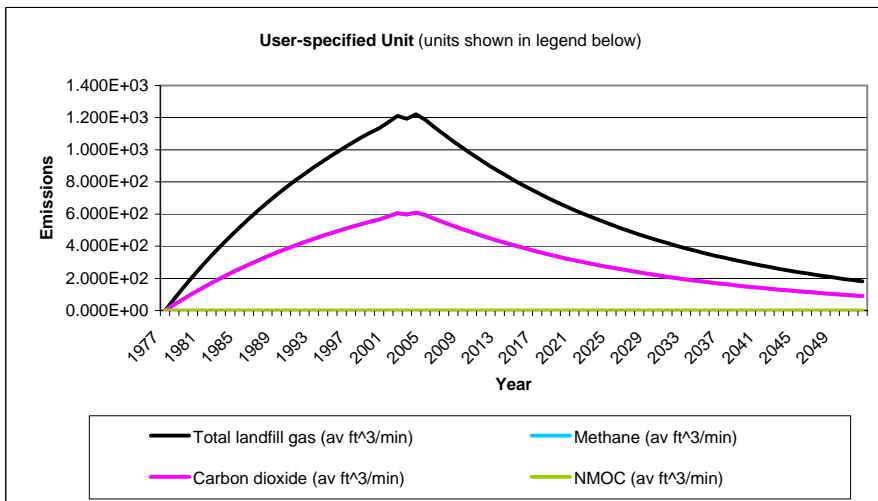
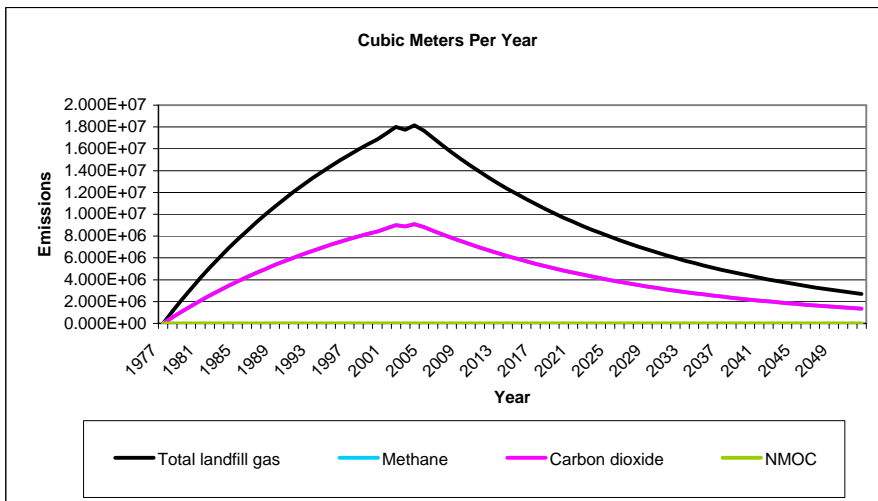
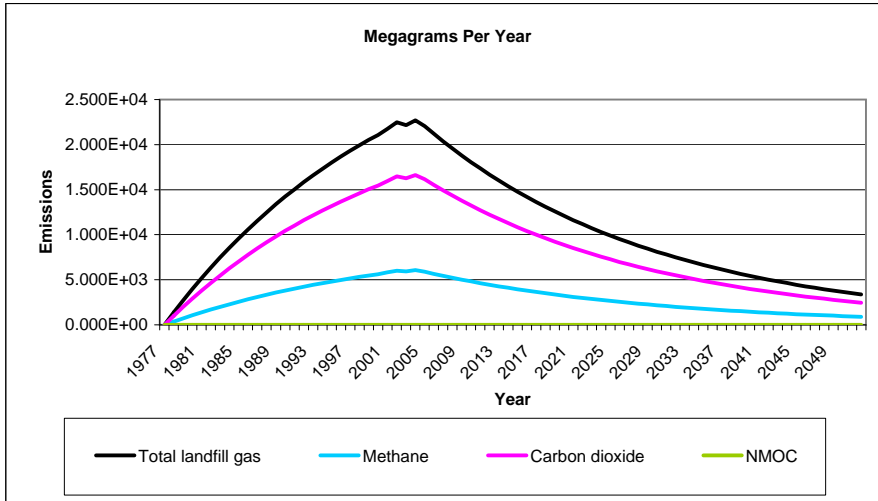
**Pollutant Parameters**

<b>Gas / Pollutant Default Parameters:</b>				<b>User-specified Pollutant Parameters:</b>	
	Compound	Concentration (ppmv)	Molecular Weight	Concentration (ppmv)	Molecular Weight
<b>Gases</b>	Total landfill gas		0.00		
	Methane		16.04		
	Carbon dioxide		44.01		
	NMOC	4,000	86.18		
<b>Pollutants</b>	1,1,1-Trichloroethane (methyl chloroform) - HAP	0.48	133.41		
	1,1,1,2-Tetrachloroethane - HAP/VOC	1.1	167.85		
	1,1-Dichloroethane (ethylidene dichloride) - HAP/VOC	2.4	98.97		
	1,1-Dichloroethene (vinylidene chloride) - HAP/VOC	0.20	96.94		
	1,2-Dichloroethane (ethylene dichloride) - HAP/VOC	0.41	98.96		
	1,2-Dichloropropane (propylene dichloride) - HAP/VOC	0.18	112.99		
	2-Propanol (isopropyl alcohol) - VOC	50	60.11		
	Acetone	7.0	58.08		
	Acrylonitrile - HAP/VOC	6.3	53.06		
	Benzene - No or Unknown Co-disposal - HAP/VOC	1.9	78.11		
	Benzene - Co-disposal - HAP/VOC	11	78.11		
	Bromodichloromethane - VOC	3.1	163.83		
	Butane - VOC	5.0	58.12		
	Carbon disulfide - HAP/VOC	0.58	76.13		
	Carbon monoxide	140	28.01		
	Carbon tetrachloride - HAP/VOC	4.0E-03	153.84		
	Carbonyl sulfide - HAP/VOC	0.49	60.07		
	Chlorobenzene - HAP/VOC	0.25	112.56		
	Chlorodifluoromethane	1.3	86.47		
	Chloroethane (ethyl chloride) - HAP/VOC	1.3	64.52		
	Chloroform - HAP/VOC	0.03	119.39		
	Chloromethane - VOC	1.2	50.49		
	Dichlorobenzene - (HAP for para isomer/VOC)	0.21	147		
	Dichlorodifluoromethane	16	120.91		
	Dichlorofluoromethane - VOC	2.6	102.92		
	Dichloromethane (methylene chloride) - HAP	14	84.94		
	Dimethyl sulfide (methyl sulfide) - VOC	7.8	62.13		
	Ethane	890	30.07		
	Ethanol - VOC	27	46.08		





**Graphs**



**Results**

Year	Total landfill gas			Methane		
	(Mg/year)	(m <sup>3</sup> /year)	(av ft <sup>3</sup> /min)	(Mg/year)	(m <sup>3</sup> /year)	(av ft <sup>3</sup> /min)
1977	0	0	0	0	0	0
1978	1.375E+03	1.101E+06	7.397E+01	3.672E+02	5.504E+05	3.698E+01
1979	2.697E+03	2.159E+06	1.451E+02	7.203E+02	1.080E+06	7.254E+01
1980	3.966E+03	3.176E+06	2.134E+02	1.059E+03	1.588E+06	1.067E+02
1981	5.185E+03	4.152E+06	2.790E+02	1.385E+03	2.076E+06	1.395E+02
1982	6.357E+03	5.090E+06	3.420E+02	1.698E+03	2.545E+06	1.710E+02
1983	7.482E+03	5.991E+06	4.026E+02	1.999E+03	2.996E+06	2.013E+02
1984	8.565E+03	6.858E+06	4.608E+02	2.288E+03	3.429E+06	2.304E+02
1985	9.603E+03	7.689E+06	5.166E+02	2.565E+03	3.845E+06	2.583E+02
1986	1.060E+04	8.488E+06	5.703E+02	2.831E+03	4.244E+06	2.851E+02
1987	1.156E+04	9.255E+06	6.219E+02	3.087E+03	4.628E+06	3.109E+02
1988	1.248E+04	9.992E+06	6.714E+02	3.333E+03	4.996E+06	3.357E+02
1989	1.337E+04	1.071E+07	7.195E+02	3.572E+03	5.354E+06	3.598E+02
1990	1.422E+04	1.139E+07	7.652E+02	3.799E+03	5.694E+06	3.826E+02
1991	1.504E+04	1.204E+07	8.091E+02	4.017E+03	6.021E+06	4.046E+02
1992	1.582E+04	1.267E+07	8.513E+02	4.226E+03	6.335E+06	4.257E+02
1993	1.658E+04	1.327E+07	8.918E+02	4.428E+03	6.637E+06	4.459E+02
1994	1.730E+04	1.385E+07	9.308E+02	4.621E+03	6.927E+06	4.654E+02
1995	1.800E+04	1.441E+07	9.682E+02	4.807E+03	7.205E+06	4.841E+02
1996	1.866E+04	1.495E+07	1.004E+03	4.985E+03	7.473E+06	5.021E+02
1997	1.931E+04	1.546E+07	1.039E+03	5.157E+03	7.730E+06	5.193E+02
1998	1.993E+04	1.596E+07	1.072E+03	5.324E+03	7.980E+06	5.362E+02
1999	2.052E+04	1.644E+07	1.104E+03	5.482E+03	8.218E+06	5.521E+02
2000	2.105E+04	1.686E+07	1.133E+03	5.624E+03	8.430E+06	5.664E+02
2001	2.175E+04	1.742E+07	1.170E+03	5.810E+03	8.708E+06	5.851E+02
2002	2.249E+04	1.801E+07	1.210E+03	6.006E+03	9.003E+06	6.049E+02
2003	2.217E+04	1.776E+07	1.193E+03	5.923E+03	8.878E+06	5.965E+02
2004	2.268E+04	1.816E+07	1.220E+03	6.058E+03	9.080E+06	6.101E+02
2005	2.205E+04	1.766E+07	1.187E+03	5.891E+03	8.830E+06	5.933E+02
2006	2.119E+04	1.697E+07	1.140E+03	5.660E+03	8.484E+06	5.700E+02
2007	2.036E+04	1.630E+07	1.095E+03	5.438E+03	8.151E+06	5.477E+02
2008	1.956E+04	1.566E+07	1.052E+03	5.225E+03	7.832E+06	5.262E+02
2009	1.879E+04	1.505E+07	1.011E+03	5.020E+03	7.524E+06	5.056E+02
2010	1.806E+04	1.446E+07	9.715E+02	4.823E+03	7.229E+06	4.857E+02
2011	1.735E+04	1.389E+07	9.334E+02	4.634E+03	6.946E+06	4.667E+02
2012	1.667E+04	1.335E+07	8.968E+02	4.452E+03	6.674E+06	4.484E+02
2013	1.601E+04	1.282E+07	8.616E+02	4.278E+03	6.412E+06	4.308E+02
2014	1.539E+04	1.232E+07	8.278E+02	4.110E+03	6.160E+06	4.139E+02
2015	1.478E+04	1.184E+07	7.954E+02	3.949E+03	5.919E+06	3.977E+02
2016	1.420E+04	1.137E+07	7.642E+02	3.794E+03	5.687E+06	3.821E+02
2017	1.365E+04	1.093E+07	7.342E+02	3.645E+03	5.464E+06	3.671E+02
2018	1.311E+04	1.050E+07	7.054E+02	3.502E+03	5.250E+06	3.527E+02
2019	1.260E+04	1.009E+07	6.778E+02	3.365E+03	5.044E+06	3.389E+02
2020	1.210E+04	9.692E+06	6.512E+02	3.233E+03	4.846E+06	3.256E+02
2021	1.163E+04	9.312E+06	6.257E+02	3.106E+03	4.656E+06	3.128E+02
2022	1.117E+04	8.947E+06	6.011E+02	2.984E+03	4.473E+06	3.006E+02
2023	1.073E+04	8.596E+06	5.776E+02	2.867E+03	4.298E+06	2.888E+02
2024	1.031E+04	8.259E+06	5.549E+02	2.755E+03	4.130E+06	2.775E+02
2025	9.910E+03	7.935E+06	5.332E+02	2.647E+03	3.968E+06	2.666E+02
2026	9.521E+03	7.624E+06	5.123E+02	2.543E+03	3.812E+06	2.561E+02

**Results (Continued)**

Year	Total landfill gas			Methane		
	(Mg/year)	(m <sup>3</sup> /year)	(av ft <sup>3</sup> /min)	(Mg/year)	(m <sup>3</sup> /year)	(av ft <sup>3</sup> /min)
2027	9.148E+03	7.325E+06	4.922E+02	2.443E+03	3.663E+06	2.461E+02
2028	8.789E+03	7.038E+06	4.729E+02	2.348E+03	3.519E+06	2.364E+02
2029	8.444E+03	6.762E+06	4.543E+02	2.256E+03	3.381E+06	2.272E+02
2030	8.113E+03	6.497E+06	4.365E+02	2.167E+03	3.248E+06	2.183E+02
2031	7.795E+03	6.242E+06	4.194E+02	2.082E+03	3.121E+06	2.097E+02
2032	7.490E+03	5.997E+06	4.030E+02	2.001E+03	2.999E+06	2.015E+02
2033	7.196E+03	5.762E+06	3.872E+02	1.922E+03	2.881E+06	1.936E+02
2034	6.914E+03	5.536E+06	3.720E+02	1.847E+03	2.768E+06	1.860E+02
2035	6.643E+03	5.319E+06	3.574E+02	1.774E+03	2.660E+06	1.787E+02
2036	6.382E+03	5.111E+06	3.434E+02	1.705E+03	2.555E+06	1.717E+02
2037	6.132E+03	4.910E+06	3.299E+02	1.638E+03	2.455E+06	1.650E+02
2038	5.891E+03	4.718E+06	3.170E+02	1.574E+03	2.359E+06	1.585E+02
2039	5.660E+03	4.533E+06	3.045E+02	1.512E+03	2.266E+06	1.523E+02
2040	5.439E+03	4.355E+06	2.926E+02	1.453E+03	2.177E+06	1.463E+02
2041	5.225E+03	4.184E+06	2.811E+02	1.396E+03	2.092E+06	1.406E+02
2042	5.020E+03	4.020E+06	2.701E+02	1.341E+03	2.010E+06	1.351E+02
2043	4.824E+03	3.862E+06	2.595E+02	1.288E+03	1.931E+06	1.298E+02
2044	4.634E+03	3.711E+06	2.493E+02	1.238E+03	1.856E+06	1.247E+02
2045	4.453E+03	3.565E+06	2.396E+02	1.189E+03	1.783E+06	1.198E+02
2046	4.278E+03	3.426E+06	2.302E+02	1.143E+03	1.713E+06	1.151E+02
2047	4.110E+03	3.291E+06	2.211E+02	1.098E+03	1.646E+06	1.106E+02
2048	3.949E+03	3.162E+06	2.125E+02	1.055E+03	1.581E+06	1.062E+02
2049	3.794E+03	3.038E+06	2.041E+02	1.014E+03	1.519E+06	1.021E+02
2050	3.646E+03	2.919E+06	1.961E+02	9.738E+02	1.460E+06	9.807E+01
2051	3.503E+03	2.805E+06	1.884E+02	9.356E+02	1.402E+06	9.422E+01
2052	3.365E+03	2.695E+06	1.811E+02	8.989E+02	1.347E+06	9.053E+01
2053	3.233E+03	2.589E+06	1.740E+02	8.637E+02	1.295E+06	8.698E+01
2054	3.107E+03	2.488E+06	1.671E+02	8.298E+02	1.244E+06	8.357E+01
2055	2.985E+03	2.390E+06	1.606E+02	7.973E+02	1.195E+06	8.029E+01
2056	2.868E+03	2.296E+06	1.543E+02	7.660E+02	1.148E+06	7.714E+01
2057	2.755E+03	2.206E+06	1.482E+02	7.360E+02	1.103E+06	7.412E+01
2058	2.647E+03	2.120E+06	1.424E+02	7.071E+02	1.060E+06	7.121E+01
2059	2.543E+03	2.037E+06	1.368E+02	6.794E+02	1.018E+06	6.842E+01
2060	2.444E+03	1.957E+06	1.315E+02	6.527E+02	9.784E+05	6.574E+01
2061	2.348E+03	1.880E+06	1.263E+02	6.271E+02	9.400E+05	6.316E+01
2062	2.256E+03	1.806E+06	1.214E+02	6.025E+02	9.032E+05	6.068E+01
2063	2.167E+03	1.736E+06	1.166E+02	5.789E+02	8.678E+05	5.830E+01
2064	2.082E+03	1.667E+06	1.120E+02	5.562E+02	8.337E+05	5.602E+01
2065	2.001E+03	1.602E+06	1.076E+02	5.344E+02	8.010E+05	5.382E+01
2066	1.922E+03	1.539E+06	1.034E+02	5.135E+02	7.696E+05	5.171E+01
2067	1.847E+03	1.479E+06	9.937E+01	4.933E+02	7.395E+05	4.968E+01
2068	1.774E+03	1.421E+06	9.547E+01	4.740E+02	7.105E+05	4.774E+01
2069	1.705E+03	1.365E+06	9.173E+01	4.554E+02	6.826E+05	4.586E+01
2070	1.638E+03	1.312E+06	8.813E+01	4.375E+02	6.558E+05	4.407E+01
2071	1.574E+03	1.260E+06	8.468E+01	4.204E+02	6.301E+05	4.234E+01
2072	1.512E+03	1.211E+06	8.136E+01	4.039E+02	6.054E+05	4.068E+01
2073	1.453E+03	1.163E+06	7.817E+01	3.881E+02	5.817E+05	3.908E+01
2074	1.396E+03	1.118E+06	7.510E+01	3.728E+02	5.589E+05	3.755E+01
2075	1.341E+03	1.074E+06	7.216E+01	3.582E+02	5.370E+05	3.608E+01
2076	1.289E+03	1.032E+06	6.933E+01	3.442E+02	5.159E+05	3.466E+01
2077	1.238E+03	9.913E+05	6.661E+01	3.307E+02	4.957E+05	3.330E+01

**Results (Continued)**

Year	Total landfill gas			Methane		
	(Mg/year)	(m <sup>3</sup> /year)	(av ft <sup>3</sup> /min)	(Mg/year)	(m <sup>3</sup> /year)	(av ft <sup>3</sup> /min)
2078	1.189E+03	9.525E+05	6.400E+01	3.177E+02	4.762E+05	3.200E+01
2079	1.143E+03	9.151E+05	6.149E+01	3.053E+02	4.576E+05	3.074E+01
2080	1.098E+03	8.792E+05	5.908E+01	2.933E+02	4.396E+05	2.954E+01
2081	1.055E+03	8.448E+05	5.676E+01	2.818E+02	4.224E+05	2.838E+01
2082	1.014E+03	8.116E+05	5.453E+01	2.707E+02	4.058E+05	2.727E+01
2083	9.739E+02	7.798E+05	5.240E+01	2.601E+02	3.899E+05	2.620E+01
2084	9.357E+02	7.492E+05	5.034E+01	2.499E+02	3.746E+05	2.517E+01
2085	8.990E+02	7.199E+05	4.837E+01	2.401E+02	3.599E+05	2.418E+01
2086	8.637E+02	6.916E+05	4.647E+01	2.307E+02	3.458E+05	2.324E+01
2087	8.299E+02	6.645E+05	4.465E+01	2.217E+02	3.323E+05	2.232E+01
2088	7.973E+02	6.385E+05	4.290E+01	2.130E+02	3.192E+05	2.145E+01
2089	7.661E+02	6.134E+05	4.122E+01	2.046E+02	3.067E+05	2.061E+01
2090	7.360E+02	5.894E+05	3.960E+01	1.966E+02	2.947E+05	1.980E+01
2091	7.072E+02	5.663E+05	3.805E+01	1.889E+02	2.831E+05	1.902E+01
2092	6.794E+02	5.441E+05	3.656E+01	1.815E+02	2.720E+05	1.828E+01
2093	6.528E+02	5.227E+05	3.512E+01	1.744E+02	2.614E+05	1.756E+01
2094	6.272E+02	5.022E+05	3.374E+01	1.675E+02	2.511E+05	1.687E+01
2095	6.026E+02	4.825E+05	3.242E+01	1.610E+02	2.413E+05	1.621E+01
2096	5.790E+02	4.636E+05	3.115E+01	1.547E+02	2.318E+05	1.558E+01
2097	5.563E+02	4.454E+05	2.993E+01	1.486E+02	2.227E+05	1.496E+01
2098	5.345E+02	4.280E+05	2.876E+01	1.428E+02	2.140E+05	1.438E+01
2099	5.135E+02	4.112E+05	2.763E+01	1.372E+02	2.056E+05	1.381E+01
2100	4.934E+02	3.951E+05	2.654E+01	1.318E+02	1.975E+05	1.327E+01
2101	4.740E+02	3.796E+05	2.550E+01	1.266E+02	1.898E+05	1.275E+01
2102	4.554E+02	3.647E+05	2.450E+01	1.217E+02	1.823E+05	1.225E+01
2103	4.376E+02	3.504E+05	2.354E+01	1.169E+02	1.752E+05	1.177E+01
2104	4.204E+02	3.367E+05	2.262E+01	1.123E+02	1.683E+05	1.131E+01
2105	4.039E+02	3.235E+05	2.173E+01	1.079E+02	1.617E+05	1.087E+01
2106	3.881E+02	3.108E+05	2.088E+01	1.037E+02	1.554E+05	1.044E+01
2107	3.729E+02	2.986E+05	2.006E+01	9.960E+01	1.493E+05	1.003E+01
2108	3.583E+02	2.869E+05	1.928E+01	9.570E+01	1.434E+05	9.638E+00
2109	3.442E+02	2.756E+05	1.852E+01	9.194E+01	1.378E+05	9.260E+00
2110	3.307E+02	2.648E+05	1.779E+01	8.834E+01	1.324E+05	8.897E+00
2111	3.177E+02	2.544E+05	1.710E+01	8.487E+01	1.272E+05	8.548E+00
2112	3.053E+02	2.445E+05	1.643E+01	8.155E+01	1.222E+05	8.213E+00
2113	2.933E+02	2.349E+05	1.578E+01	7.835E+01	1.174E+05	7.891E+00
2114	2.818E+02	2.257E+05	1.516E+01	7.528E+01	1.128E+05	7.581E+00
2115	2.708E+02	2.168E+05	1.457E+01	7.232E+01	1.084E+05	7.284E+00
2116	2.602E+02	2.083E+05	1.400E+01	6.949E+01	1.042E+05	6.998E+00
2117	2.500E+02	2.001E+05	1.345E+01	6.676E+01	1.001E+05	6.724E+00

**Results (Continued)**

Year	Carbon dioxide			NMOC		
	(Mg/year)	(m <sup>3</sup> /year)	(av ft <sup>3</sup> /min)	(Mg/year)	(m <sup>3</sup> /year)	(av ft <sup>3</sup> /min)
1977	0	0	0	0	0	0
1978	1.008E+03	5.504E+05	3.698E+01	6.274E-01	1.750E+02	1.176E-02
1979	1.976E+03	1.080E+06	7.254E+01	1.231E+00	3.433E+02	2.307E-02
1980	2.906E+03	1.588E+06	1.067E+02	1.810E+00	5.049E+02	3.393E-02
1981	3.800E+03	2.076E+06	1.395E+02	2.366E+00	6.602E+02	4.436E-02
1982	4.659E+03	2.545E+06	1.710E+02	2.901E+00	8.093E+02	5.438E-02
1983	5.484E+03	2.996E+06	2.013E+02	3.415E+00	9.526E+02	6.401E-02
1984	6.277E+03	3.429E+06	2.304E+02	3.909E+00	1.090E+03	7.327E-02
1985	7.038E+03	3.845E+06	2.583E+02	4.382E+00	1.223E+03	8.215E-02
1986	7.768E+03	4.244E+06	2.851E+02	4.837E+00	1.350E+03	9.068E-02
1987	8.471E+03	4.628E+06	3.109E+02	5.275E+00	1.472E+03	9.887E-02
1988	9.145E+03	4.996E+06	3.357E+02	5.695E+00	1.589E+03	1.067E-01
1989	9.801E+03	5.354E+06	3.598E+02	6.103E+00	1.703E+03	1.144E-01
1990	1.042E+04	5.694E+06	3.826E+02	6.491E+00	1.811E+03	1.217E-01
1991	1.102E+04	6.021E+06	4.046E+02	6.863E+00	1.915E+03	1.286E-01
1992	1.160E+04	6.335E+06	4.257E+02	7.221E+00	2.015E+03	1.354E-01
1993	1.215E+04	6.637E+06	4.459E+02	7.565E+00	2.110E+03	1.418E-01
1994	1.268E+04	6.927E+06	4.654E+02	7.895E+00	2.203E+03	1.480E-01
1995	1.319E+04	7.205E+06	4.841E+02	8.213E+00	2.291E+03	1.539E-01
1996	1.368E+04	7.473E+06	5.021E+02	8.518E+00	2.376E+03	1.597E-01
1997	1.415E+04	7.730E+06	5.193E+02	8.811E+00	2.458E+03	1.652E-01
1998	1.461E+04	7.980E+06	5.362E+02	9.097E+00	2.538E+03	1.705E-01
1999	1.504E+04	8.218E+06	5.521E+02	9.367E+00	2.613E+03	1.756E-01
2000	1.543E+04	8.430E+06	5.664E+02	9.609E+00	2.681E+03	1.801E-01
2001	1.594E+04	8.708E+06	5.851E+02	9.926E+00	2.769E+03	1.861E-01
2002	1.648E+04	9.003E+06	6.049E+02	1.026E+01	2.863E+03	1.924E-01
2003	1.625E+04	8.878E+06	5.965E+02	1.012E+01	2.823E+03	1.897E-01
2004	1.662E+04	9.080E+06	6.101E+02	1.035E+01	2.887E+03	1.940E-01
2005	1.616E+04	8.830E+06	5.933E+02	1.006E+01	2.808E+03	1.887E-01
2006	1.553E+04	8.484E+06	5.700E+02	9.670E+00	2.698E+03	1.813E-01
2007	1.492E+04	8.151E+06	5.477E+02	9.291E+00	2.592E+03	1.742E-01
2008	1.434E+04	7.832E+06	5.262E+02	8.927E+00	2.490E+03	1.673E-01
2009	1.377E+04	7.524E+06	5.056E+02	8.577E+00	2.393E+03	1.608E-01
2010	1.323E+04	7.229E+06	4.857E+02	8.241E+00	2.299E+03	1.545E-01
2011	1.271E+04	6.946E+06	4.667E+02	7.917E+00	2.209E+03	1.484E-01
2012	1.222E+04	6.674E+06	4.484E+02	7.607E+00	2.122E+03	1.426E-01
2013	1.174E+04	6.412E+06	4.308E+02	7.309E+00	2.039E+03	1.370E-01
2014	1.128E+04	6.160E+06	4.139E+02	7.022E+00	1.959E+03	1.316E-01
2015	1.083E+04	5.919E+06	3.977E+02	6.747E+00	1.882E+03	1.265E-01
2016	1.041E+04	5.687E+06	3.821E+02	6.482E+00	1.808E+03	1.215E-01
2017	1.000E+04	5.464E+06	3.671E+02	6.228E+00	1.738E+03	1.167E-01
2018	9.609E+03	5.250E+06	3.527E+02	5.984E+00	1.669E+03	1.122E-01
2019	9.233E+03	5.044E+06	3.389E+02	5.749E+00	1.604E+03	1.078E-01
2020	8.871E+03	4.846E+06	3.256E+02	5.524E+00	1.541E+03	1.035E-01
2021	8.523E+03	4.656E+06	3.128E+02	5.307E+00	1.481E+03	9.948E-02
2022	8.189E+03	4.473E+06	3.006E+02	5.099E+00	1.423E+03	9.558E-02
2023	7.868E+03	4.298E+06	2.888E+02	4.899E+00	1.367E+03	9.183E-02
2024	7.559E+03	4.130E+06	2.775E+02	4.707E+00	1.313E+03	8.823E-02
2025	7.263E+03	3.968E+06	2.666E+02	4.522E+00	1.262E+03	8.477E-02
2026	6.978E+03	3.812E+06	2.561E+02	4.345E+00	1.212E+03	8.145E-02

**Results (Continued)**

Year	Carbon dioxide			NMOC		
	(Mg/year)	(m <sup>3</sup> /year)	(av ft <sup>3</sup> /min)	(Mg/year)	(m <sup>3</sup> /year)	(av ft <sup>3</sup> /min)
2027	6.704E+03	3.663E+06	2.461E+02	4.175E+00	1.165E+03	7.826E-02
2028	6.441E+03	3.519E+06	2.364E+02	4.011E+00	1.119E+03	7.519E-02
2029	6.189E+03	3.381E+06	2.272E+02	3.854E+00	1.075E+03	7.224E-02
2030	5.946E+03	3.248E+06	2.183E+02	3.703E+00	1.033E+03	6.941E-02
2031	5.713E+03	3.121E+06	2.097E+02	3.558E+00	9.925E+02	6.668E-02
2032	5.489E+03	2.999E+06	2.015E+02	3.418E+00	9.536E+02	6.407E-02
2033	5.274E+03	2.881E+06	1.936E+02	3.284E+00	9.162E+02	6.156E-02
2034	5.067E+03	2.768E+06	1.860E+02	3.155E+00	8.803E+02	5.914E-02
2035	4.868E+03	2.660E+06	1.787E+02	3.032E+00	8.457E+02	5.682E-02
2036	4.677E+03	2.555E+06	1.717E+02	2.913E+00	8.126E+02	5.460E-02
2037	4.494E+03	2.455E+06	1.650E+02	2.798E+00	7.807E+02	5.246E-02
2038	4.318E+03	2.359E+06	1.585E+02	2.689E+00	7.501E+02	5.040E-02
2039	4.148E+03	2.266E+06	1.523E+02	2.583E+00	7.207E+02	4.842E-02
2040	3.986E+03	2.177E+06	1.463E+02	2.482E+00	6.924E+02	4.652E-02
2041	3.830E+03	2.092E+06	1.406E+02	2.385E+00	6.653E+02	4.470E-02
2042	3.679E+03	2.010E+06	1.351E+02	2.291E+00	6.392E+02	4.295E-02
2043	3.535E+03	1.931E+06	1.298E+02	2.201E+00	6.141E+02	4.126E-02
2044	3.396E+03	1.856E+06	1.247E+02	2.115E+00	5.901E+02	3.965E-02
2045	3.263E+03	1.783E+06	1.198E+02	2.032E+00	5.669E+02	3.809E-02
2046	3.135E+03	1.713E+06	1.151E+02	1.952E+00	5.447E+02	3.660E-02
2047	3.012E+03	1.646E+06	1.106E+02	1.876E+00	5.233E+02	3.516E-02
2048	2.894E+03	1.581E+06	1.062E+02	1.802E+00	5.028E+02	3.378E-02
2049	2.781E+03	1.519E+06	1.021E+02	1.732E+00	4.831E+02	3.246E-02
2050	2.672E+03	1.460E+06	9.807E+01	1.664E+00	4.642E+02	3.119E-02
2051	2.567E+03	1.402E+06	9.422E+01	1.598E+00	4.460E+02	2.996E-02
2052	2.466E+03	1.347E+06	9.053E+01	1.536E+00	4.285E+02	2.879E-02
2053	2.370E+03	1.295E+06	8.698E+01	1.476E+00	4.117E+02	2.766E-02
2054	2.277E+03	1.244E+06	8.357E+01	1.418E+00	3.955E+02	2.658E-02
2055	2.187E+03	1.195E+06	8.029E+01	1.362E+00	3.800E+02	2.553E-02
2056	2.102E+03	1.148E+06	7.714E+01	1.309E+00	3.651E+02	2.453E-02
2057	2.019E+03	1.103E+06	7.412E+01	1.257E+00	3.508E+02	2.357E-02
2058	1.940E+03	1.060E+06	7.121E+01	1.208E+00	3.370E+02	2.265E-02
2059	1.864E+03	1.018E+06	6.842E+01	1.161E+00	3.238E+02	2.176E-02
2060	1.791E+03	9.784E+05	6.574E+01	1.115E+00	3.111E+02	2.090E-02
2061	1.721E+03	9.400E+05	6.316E+01	1.072E+00	2.989E+02	2.009E-02
2062	1.653E+03	9.032E+05	6.068E+01	1.029E+00	2.872E+02	1.930E-02
2063	1.588E+03	8.678E+05	5.830E+01	9.891E+00	2.759E+02	1.854E-02
2064	1.526E+03	8.337E+05	5.602E+01	9.503E-01	2.651E+02	1.781E-02
2065	1.466E+03	8.010E+05	5.382E+01	9.131E-01	2.547E+02	1.712E-02
2066	1.409E+03	7.696E+05	5.171E+01	8.773E-01	2.447E+02	1.644E-02
2067	1.354E+03	7.395E+05	4.968E+01	8.429E-01	2.351E+02	1.580E-02
2068	1.300E+03	7.105E+05	4.774E+01	8.098E-01	2.259E+02	1.518E-02
2069	1.250E+03	6.826E+05	4.586E+01	7.781E-01	2.171E+02	1.458E-02
2070	1.201E+03	6.558E+05	4.407E+01	7.476E-01	2.086E+02	1.401E-02
2071	1.153E+03	6.301E+05	4.234E+01	7.183E-01	2.004E+02	1.346E-02
2072	1.108E+03	6.054E+05	4.068E+01	6.901E-01	1.925E+02	1.294E-02
2073	1.065E+03	5.817E+05	3.908E+01	6.630E-01	1.850E+02	1.243E-02
2074	1.023E+03	5.589E+05	3.755E+01	6.370E-01	1.777E+02	1.194E-02
2075	9.829E+02	5.370E+05	3.608E+01	6.121E-01	1.708E+02	1.147E-02
2076	9.444E+02	5.159E+05	3.466E+01	5.881E-01	1.641E+02	1.102E-02
2077	9.073E+02	4.957E+05	3.330E+01	5.650E-01	1.576E+02	1.059E-02

**Results (Continued)**

Year	Carbon dioxide			NMOC		
	(Mg/year)	(m <sup>3</sup> /year)	(av ft <sup>3</sup> /min)	(Mg/year)	(m <sup>3</sup> /year)	(av ft <sup>3</sup> /min)
2078	8.717E+02	4.762E+05	3.200E+01	5.428E-01	1.514E+02	1.018E-02
2079	8.376E+02	4.576E+05	3.074E+01	5.216E-01	1.455E+02	9.776E-03
2080	8.047E+02	4.396E+05	2.954E+01	5.011E-01	1.398E+02	9.393E-03
2081	7.732E+02	4.224E+05	2.838E+01	4.815E-01	1.343E+02	9.025E-03
2082	7.429E+02	4.058E+05	2.727E+01	4.626E-01	1.291E+02	8.671E-03
2083	7.137E+02	3.899E+05	2.620E+01	4.444E-01	1.240E+02	8.331E-03
2084	6.857E+02	3.746E+05	2.517E+01	4.270E-01	1.191E+02	8.004E-03
2085	6.589E+02	3.599E+05	2.418E+01	4.103E-01	1.145E+02	7.690E-03
2086	6.330E+02	3.458E+05	2.324E+01	3.942E-01	1.100E+02	7.389E-03
2087	6.082E+02	3.323E+05	2.232E+01	3.787E-01	1.057E+02	7.099E-03
2088	5.844E+02	3.192E+05	2.145E+01	3.639E-01	1.015E+02	6.821E-03
2089	5.614E+02	3.067E+05	2.061E+01	3.496E-01	9.753E+01	6.553E-03
2090	5.394E+02	2.947E+05	1.980E+01	3.359E-01	9.371E+01	6.296E-03
2091	5.183E+02	2.831E+05	1.902E+01	3.227E-01	9.004E+01	6.049E-03
2092	4.980E+02	2.720E+05	1.828E+01	3.101E-01	8.651E+01	5.812E-03
2093	4.784E+02	2.614E+05	1.756E+01	2.979E-01	8.311E+01	5.584E-03
2094	4.597E+02	2.511E+05	1.687E+01	2.862E-01	7.985E+01	5.365E-03
2095	4.416E+02	2.413E+05	1.621E+01	2.750E-01	7.672E+01	5.155E-03
2096	4.243E+02	2.318E+05	1.558E+01	2.642E-01	7.372E+01	4.953E-03
2097	4.077E+02	2.227E+05	1.496E+01	2.539E-01	7.082E+01	4.759E-03
2098	3.917E+02	2.140E+05	1.438E+01	2.439E-01	6.805E+01	4.572E-03
2099	3.763E+02	2.056E+05	1.381E+01	2.344E-01	6.538E+01	4.393E-03
2100	3.616E+02	1.975E+05	1.327E+01	2.252E-01	6.282E+01	4.221E-03
2101	3.474E+02	1.898E+05	1.275E+01	2.163E-01	6.035E+01	4.055E-03
2102	3.338E+02	1.823E+05	1.225E+01	2.079E-01	5.799E+01	3.896E-03
2103	3.207E+02	1.752E+05	1.177E+01	1.997E-01	5.571E+01	3.743E-03
2104	3.081E+02	1.683E+05	1.131E+01	1.919E-01	5.353E+01	3.597E-03
2105	2.960E+02	1.617E+05	1.087E+01	1.843E-01	5.143E+01	3.456E-03
2106	2.844E+02	1.554E+05	1.044E+01	1.771E-01	4.941E+01	3.320E-03
2107	2.733E+02	1.493E+05	1.003E+01	1.702E-01	4.748E+01	3.190E-03
2108	2.626E+02	1.434E+05	9.638E+00	1.635E-01	4.561E+01	3.065E-03
2109	2.523E+02	1.378E+05	9.260E+00	1.571E-01	4.383E+01	2.945E-03
2110	2.424E+02	1.324E+05	8.897E+00	1.509E-01	4.211E+01	2.829E-03
2111	2.329E+02	1.272E+05	8.548E+00	1.450E-01	4.046E+01	2.718E-03
2112	2.237E+02	1.222E+05	8.213E+00	1.393E-01	3.887E+01	2.612E-03
2113	2.150E+02	1.174E+05	7.891E+00	1.339E-01	3.735E+01	2.509E-03
2114	2.065E+02	1.128E+05	7.581E+00	1.286E-01	3.588E+01	2.411E-03
2115	1.984E+02	1.084E+05	7.284E+00	1.236E-01	3.447E+01	2.316E-03
2116	1.907E+02	1.042E+05	6.998E+00	1.187E-01	3.312E+01	2.225E-03
2117	1.832E+02	1.001E+05	6.724E+00	1.141E-01	3.182E+01	2.138E-03

## Annual Operating Report 2008

Leon County Solid Waste Management Facility, Leon County, Florida  
Permit No. 0730099-AV-005

In accordance with permit Condition No. 24 in Appendix TV-6 of the above stated permit and Rule 62-210.650 F.A.C., the Annual Operating Report should be submitted by March 1st. The following table summarizes and details the AP-42 Method (Fifth Edition, Supplement E, Section 2.4.4.2 -11/98) that was used in assessing the emissions from the regulated emission unit that is also reported in FDEP form no. 62-210.900(5).

**TABLE A -1 GENERAL PROCESS INFORMATION**

<i>Required Information</i>	<i>Provided Information</i>	<i>Source</i>
A. Total LFG generated, 2008 (ft <sup>3</sup> )	553,140,236	<i>Estimated LFG Generation for 2008, From LandGEM</i>
Total LFG generated, 2008 (m <sup>3</sup> )	15,663,187	
B. Methane percentage of LFG	50	<i>Assumed based on previous AOR</i>
C. Methane to flare (m <sup>3</sup> )	4,837,084	<i>Based on Title V Permit, Estimated Maximum Flow Rate is 650 scfm</i>
Methane to flare (ft <sup>3</sup> )	170,820,000	
D. Flare efficiency (percent)	98	<i>Flare Efficiency as Required</i>
E. Collection system efficiency (percent)	61.76	<i>Calculated based on maximum flare capacity</i>
F. Estimated total methane generated (ft <sup>3</sup> )	276,570,118	<i>LFG Generation * Percent Methane</i>
Estimated total methane generated (m <sup>3</sup> )	7,831,594	
G. Estimated uncollected landfill gas (million ft <sup>3</sup> )	211.50	<i>Estimated LFG generation for 2008, and LFG controled by the flare</i>
H. Summer Season Daily Fuel Usage Rate (million ft <sup>3</sup> )	0.936	<i>From Flare</i>
Summer Season Daily Fuel Usage Rate (million ft <sup>3</sup> )	0.579	<i>From Fugitive Emissions</i>

Note: Emission unit for fugitive emissions states "acre-years" and the value listed found in Emissions Information Section E. This value reflects million cubic feet for uncollected landfill gas. The total LFG generation and maximum flare capacity was used to calculate the uncollected landfill gas.

**Annual Operating Report 2008**  
 Leon County Solid Waste Management Facility, Leon County, Florida  
 Permit No. 0730099-AV-005

TABLE A-2 SUMMARY OF POTENTIAL EMISSIONS

Pollutant	FDEP ID	AP-42	molecular weight	Total Pollutant Generated				Flare Emissions (EU I.D. 3)		Uncollected Emissions (EU I.D. 1)	
	column 1	column 2	column 3	column 4	column 5	column 6	column 7	column 8	column 9	column 10	column 11
		ppmv	g/mol	m3/yr	kg/yr	lb/day	ton/yr	lb/day	ton/yr	lb/day	ton/yr
Ethyl mercaptan (ethanethiol) - VOC	F027	2.28	62.13	35.71207	90.74475	0.54695	0.09982	0.00676	0.00123	0.2091	0.0382
Acrylonitrile - HAP/VOC	H009	6.33	53.06	99.14797	215.15738	1.29684	0.23667	0.01602	0.00292	0.49586	0.09049
Benzene - No or Unknown Co-disposal - HAP/VOC	H017	1.91	78.11	29.91669	95.57082	0.57604	0.10513	0.00712	0.00130	0.22026	0.04020
Carbon disulfide - HAP/VOC	H032	0.58	76.13	9.08465	28.28584	0.17049	0.03111	0.00211	0.00038	0.06519	0.01190
Carbon tetrachloride - HAP/VOC	H033	0.004	153.84	0.06265	0.39420	0.00238	0.00043	0.00003	0.00001	0.00091	0.00017
Carbonyl sulfide - HAP/VOC	H034	0.49	60.07	7.67496	18.85554	0.11365	0.02074	0.00140	0.00026	0.04346	0.00793
Chlorobenzene - HAP/VOC	H041	0.25	112.56	3.91580	18.02642	0.10865	0.01983	0.00134	0.00024	0.04154	0.00758
Chloroform - HAP/VOC	H043	0.03	119.39	0.46990	2.29443	0.01383	0.00252	0.00017	0.00003	0.00529	0.00097
Dichlorobenzene - (HAP for para isomer/VOC)	H061	0.21	147	3.28927	19.77525	0.11919	0.02175	0.00147	0.00027	0.04558	0.00832
Ethylbenzene - HAP/VOC	H085	4.61	106.16	72.20729	313.50691	1.88963	0.34486	0.02334	0.00426	0.72252	0.13186
Chloroethane (ethyl chloride) - HAP/VOC	H087	1.25	64.52	19.57898	51.66419	0.31140	0.05683	0.00385	0.00070	0.11907	0.02173
Ethylene dibromide - HAP/VOC	H088	0.001	187.88	0.01566	0.12036	0.00073	0.00013	0.00001	0.00000	0.00028	0.00005
1,2-Dichloroethane (ethylene dichloride) - HAP/VOC	H089	0.41	98.96	6.42191	26.82862	0.16171	0.02951	0.00200	0.00036	0.06183	0.01128
1,1-Dichloroethane (ethylidene dichloride) - HAP/VOC	H094	2.35	98.97	36.80849	153.78933	0.92695	0.16917	0.01145	0.00209	0.35443	0.06468
Hexane - HAP/VOC	H104	6.57	86.18	102.90714	374.39206	2.25661	0.41183	0.02788	0.00509	0.86284	0.15747
Mercury (total) - HAP	H114	0.000292	200.61	0.00457	0.03873	0.0002	0.0000	0.00000	0.00000	0.00009	0.00002
Chloromethane - VOC	H118	1.21	50.49	18.9525	40.39666	0.2435	0.0444	0.00301	0.00055	0.09310	0.01699
1,1,1-Trichloroethane (methyl chloroform) - HAP	H119	0.48	133.41	7.5183	42.34327	0.2552	0.0466	0.00315	0.00058	0.09759	0.01781
Methyl ethyl ketone - HAP/VOC	H120	7.09	72.11	111.0520	338.06211	2.0376	0.3719	0.02517	0.00459	0.77912	0.14219
Methyl isobutyl ketone - HAP/VOC	H123	1.87	100.16	29.2902	123.84848	0.7465	0.1362	0.00922	0.00168	0.28543	0.05209
Dichloromethane (methylene chloride) - HAP	H128	14.3	84.94	223.9836	803.16184	4.8410	0.8835	0.05980	0.01091	1.85101	0.33781
1,2-Dichloropropane (propylene dichloride) - HAP/VOC	H156	0.18	112.99	2.8194	13.44830	0.0811	0.0148	0.00100	0.00018	0.03099	0.00566
1,1,2,2-Tetrachloroethane - HAP/VOC	H166	1.11	167.85	17.3861	123.19671	0.7426	0.1355	0.00917	0.00167	0.28393	0.05182
Perchloroethylene (tetrachloroethylene) - HAP	H167	3.73	165.83	58.4237	409.00320	2.4652	0.4499	0.03045	0.00556	0.94261	0.17203
Toluene - No or Unknown Co-disposal - HAP/VOC	H169	39.3	92.13	615.5633	2,394.13365	14.4304	2.6335	0.17825	0.03253	5.51765	1.00697
1,1,2 Trichloroethane	H175										
Trichloroethylene (trichloroethene) - HAP/VOC	H176	2.82	131.4	44.1702	245.01871	1.4768	0.2695	0.01824	0.00333	0.5647	0.1031
Vinyl chloride - HAP/VOC	H184	7.34	62.5	114.9678	303.34081	1.8284	0.3337	0.02259	0.00412	0.6991	0.1276
1,1-Dichloroethene (vinylidene chloride) - HAP/VOC	H185	0.2	96.94	3.1326	12.81999	0.0773	0.0141	0.00095	0.00017	0.0295	0.0054
Xylenes - HAP/VOC	H186	12.1	106.16	189.5246	849.37808	5.1195	0.9343	0.06324	0.01154	1.9575	0.3572
Methyl mercaptan - VOC	T049	2.49	48.11	39.0013	79.21173	0.4774	0.0871	0.00590	0.00108	0.1826	0.0333
H2S		35.5	34.08	556.0431	799.98659	4.8218	0.8800	0.05956	0.01087	1.8437	0.3365
NMOC see note 1		159	86.18	2,490.4468	9,060.62974	54.6120	9.9667	0.67461	0.12312	20.8816	3.8109
PM-10 see note 2								7.95600	1.45197		
NO <sub>x</sub> see note 3								18.72000	3.41640		
SO <sub>x</sub> see note 4								21.94920	4.00573		
Carbon Monoxide see note 5								351.00000	64.05750		
HAPS see note 6								4.2975	0.7843	16.0783	2.9343
VOC see note 7								0.26310	0.04802	8.1438	1.4862
Hydrogen Chloride see note 8	H106	42	36.46					3.77807	0.68950		



## Annual Operating Report 2008

Leon County Solid Waste Management Facility, Leon County, Florida  
Permit No. 0730099-AV-005

### NOTES FROM TABLE A-2

#### *Pollutant Notes*

##### 1. NMOC Calculation

Per the Tier II testing, NMOC was determined as 159 ppmv.

##### 2. PM-10 Calculation

Per Title V Permit, the emission factor from the flare is 17 lb/10<sup>6</sup> dscf methane.

##### 3. NO<sub>x</sub> Calculation

Per Title V Permit, the emission factor from the flare is 40 lb/10<sup>6</sup> dscf methane.

##### 4. SO<sub>x</sub> Calculation

Per Title V permit, the emission factor from the flare is 46.9 lb/10<sup>6</sup> dscf methane.

##### 5. CO Calculation

Per Title V Permit, the emission factor from the flare is 750 lb/10<sup>6</sup> dscf methane.

##### 6. Total HAP Derivation

The total HAP emissions were calculated by summing each HAP constituent.

##### 7. VOC Calculation

Per footnote c to Table 2.4-2 of AP-42 (1998), 39% of the NMOC is VOC.  
Note that Title V permit assumes VOC same as NMOC.

##### 8. Hydrogen Chloride Calculation

Per method described in 2.4.4.2 using 42.0 ppmv (the default concentration.

$$UM_p = \frac{2 * \text{Methane to Flare} * \text{Concentration (42 ppm)} * MW * 1 \text{ atm} * 2.205 \text{ lb/kg}}{10^6 * 0.00008205 * 1,000 \text{ g/kg} * 288.7 \text{ K} * 365 \text{ days/year}}$$

#### *Column Notes*

Columns 2&3 Values from AP-42 Tables 2.4-1 and 2.4-2 unless otherwise noted.

Column 4 Volumetric Emission Calculation AP-42 (1998), equation (3)

$$Q_p = 2 * Q_{CH_4} * C_p / 10^6$$

where  $Q_{CH_4}$  is the total amount of CH<sub>4</sub> generated by the landfill, m<sup>3</sup>/yr (G on Table A-1)

$C_p$  is the concentration of pollutant P in the landfill gas, ppm

Column 5 Mass Emission Calculation AP-42 (1998), equation (4)

$$UM_p = Q_p * (\text{Molecular Weight} * 1 \text{ atm}) / [(8.205 * 10^{-5} \text{ m}^3\text{-atm/gmol-}^\circ\text{K})(1,000 \text{ g/kg})(273+15.7^\circ\text{K})]$$

assuming standard temperature of 15.7°C (60°F)

Columns 8 and 9 Collection efficiency is calculated to be 62.57% and flare efficiency assumed to be 98%.

Columns 10 and 11 Landfill gas not collected through the flare is assumed to be emitted as fugitive (i.e., not collected).

