

INTRODUCTION

LandGEM - Landfill Gas Emissions Model, Version 3.02

U.S. Environmental Protection Agency

Model Design:

Worksheet Name	Function
<u>INTRO</u>	Contains an overview of the model and important notes about using LandGEM
<u>USER INPUTS</u>	Allows users to provide landfill characteristics, determine model parameters, select up to four gases/pollutants (total landfill gas, methane, carbon dioxide, NMOC, and 46 air pollutants), and enter waste acceptance rates
<u>POLLUTANTS</u>	Allows users to edit air pollutant concentrations and molecular weights for existing pollutants and add up to 10 new pollutants
<u>INPUT REVIEW</u>	Allows users to review and print model inputs
<u>METHANE</u>	Calculates methane emission estimates using the first-order decomposition rate equation
<u>RESULTS</u>	Shows tabular emission estimates for up to four gases/pollutants (selected in the USER INPUTS worksheet) in megagrams per year, cubic meters per year, and user's choice of a third unit of measure (average cubic feet per minute, cubic feet per year, or short tons per year)
<u>GRAPHS</u>	Shows graphical emission estimates for up to four gases/pollutants (selected in the USER INPUTS worksheet) in megagrams per year, cubic meters per year, and user's choice of a third unit of measure (selected in the RESULTS worksheet)
<u>INVENTORY</u>	Displays tabular emission estimates for all gases/pollutants for a single year specified by users
<u>REPORT</u>	Allows users to review and print model inputs and outputs in a summary report

IMPORTANT NOTES!

The following user inputs **MUST** be completed in the USER INPUTS worksheet:

- Landfill open year
- Landfill closure year or Waste design capacity
- Annual waste acceptance rates from open year to current year or closure year

Other Important Notes:

- LandGEM is based on the gas generated from anaerobic decomposition of landfilled waste which has a methane content between 40 and 60 percent.
- When using LandGEM to comply with the CAA, the methane content of the landfill gas must remain fixed at 50% by volume (the model default value).
- Default pollutant concentrations used by LandGEM have already been corrected for air infiltration, as stated in AP-42. If a user-specified value for NMOC concentration is used based on site-specific data, then it must be corrected for air infiltration.
- When comparing results from LandGEM with measurements of extracted gas collected at a site, the landfill owner/operator must adjust for air infiltration prior to any comparisons.
- One megagram is equivalent to one metric ton.

About LandGEM:

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 Name or Identifier: _____

LANDFILL CHARACTERISTICS

Landfill Open Year	1978	
Landfill Closure Year (with 80-year limit)	1996	
<i>Actual Closure Year (without limit)</i>	1996	
Have Model Calculate Closure Year?	No	
Waste Design Capacity		<i>megagrams</i>

MODEL PARAMETERS

Methane Generation Rate, k	0,050	<i>year⁻¹</i>
Potential Methane Generation Capacity, L ₀	100	<i>m³/Mg</i>
NMOC Concentration	4 000	<i>ppmv as hexane</i>
Methane Content	50	<i>% by volume</i>

GASES / POLLUTANTS SELECTED

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

Description/Comments:

WASTE ACCEPTANCE RATES

Year	(Mg/year)	(short tons/year)
1978	288 888	317 777
1979	288 888	317 777
1980	288 888	317 777
1981	288 888	317 777
1982	288 888	317 777
1983	288 888	317 777
1984	288 888	317 777
1985	288 888	317 777
1986	288 888	317 777
1987	288 888	317 777
1988	288 888	317 777
1989	288 888	317 777
1990	288 888	317 777
1991	288 888	317 777
1992	288 888	317 777
1993	288 888	317 777
1994	288 888	317 777
1995	288 888	317 777
1996	0	0
1997	0	0
1998	0	0
1999	0	0
2000	0	0
2001	0	0
2002	0	0
2003	0	0
2004	0	0
2005	0	0
2006	0	0
2007	0	0
2008	0	0
2009	0	0
2010	0	0
2011	0	0
2012	0	0
2013	0	0
2014	0	0
2015	0	0
2016	0	0
2017	0	0
2018	0	0
2019	0	0
2020	0	0
2021	0	0
2022	0	0
2023	0	0

WASTE ACCEPTANCE RATES

Year	(Mg/year)	(short tons/year)
2024	0	0
2025	0	0
2026	0	0
2027	0	0
2028	0	0
2029	0	0
2030	0	0
2031	0	0
2032	0	0
2033	0	0
2034	0	0
2035	0	0
2036	0	0
2037	0	0
2038	0	0
2039	0	0
2040	0	0
2041	0	0
2042	0	0
2043	0	0
2044	0	0
2045	0	0
2046	0	0
2047	0	0
2048	0	0
2049	0	0
2050	0	0
2051	0	0
2052	0	0
2053	0	0
2054	0	0
2055	0	0
2056	0	0
2057	0	0

METHANE

Landfill Name or Identifier: _____

First-Order Decomposition Rate Equation:

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

Where,

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

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

 i = 1-year time increment

 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)

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

 j = 0.1-year time increment

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

Model Parameters from User Inputs:

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

 $k = 0,050 \text{ year}^{-1}$
 $L_o = 100 \text{ m}^3/Mg$
When Model Calculates Closure Year...

Final Non-Zero Acceptance Entered =	288 888 megagrams in	1995
Waste Design Capacity =	megagrams	
Closure Year (with 80-year limit) =	1996	
Actual Closure Year (without limit) =	1996	
Model Waste Acceptance Limit =	80 years	

Year	User Waste Acceptance Inputs (Mg/year)	User Waste-In-Place (Mg)	Waste Acceptance (Mg/year)	Waste-In-Place (Mg)
1978	288 888	0	288 888	0
1979	288 888	288 888	288 888	288 888
1980	288 888	577 776	288 888	577 776
1981	288 888	866 664	288 888	866 664
1982	288 888	1 155 552	288 888	1 155 552
1983	288 888	1 444 440	288 888	1 444 440
1984	288 888	1 733 328	288 888	1 733 328
1985	288 888	2 022 216	288 888	2 022 216
1986	288 888	2 311 104	288 888	2 311 104
1987	288 888	2 599 992	288 888	2 599 992
1988	288 888	2 888 880	288 888	2 888 880
1989	288 888	3 177 768	288 888	3 177 768
1990	288 888	3 466 656	288 888	3 466 656
1991	288 888	3 755 544	288 888	3 755 544
1992	288 888	4 044 432	288 888	4 044 432
1993	288 888	4 333 320	288 888	4 333 320
1994	288 888	4 622 208	288 888	4 622 208
1995	288 888	4 911 096	288 888	4 911 096
1996	0	5 199 984	0	5 199 984
1997	0	5 199 984	0	5 199 984
1998	0	5 199 984	0	5 199 984
1999	0	5 199 984	0	5 199 984
2000	0	5 199 984	0	5 199 984
2001	0	5 199 984	0	5 199 984
2002	0	5 199 984	0	5 199 984
2003	0	5 199 984	0	5 199 984
2004	0	5 199 984	0	5 199 984
2005	0	5 199 984	0	5 199 984
2006	0	5 199 984	0	5 199 984
2007	0	5 199 984	0	5 199 984
2008	0	5 199 984	0	5 199 984
2009	0	5 199 984	0	5 199 984
2010	0	5 199 984	0	5 199 984
2011	0	5 199 984	0	5 199 984
2012	0	5 199 984	0	5 199 984
2013	0	5 199 984	0	5 199 984
2014	0	5 199 984	0	5 199 984
2015	0	5 199 984	0	5 199 984
2016	0	5 199 984	0	5 199 984
2017	0	5 199 984	0	5 199 984
2018	0	5 199 984	0	5 199 984
2019	0	5 199 984	0	5 199 984
2020	0	5 199 984	0	5 199 984
2021	0	5 199 984	0	5 199 984
2022	0	5 199 984	0	5 199 984
2023	0	5 199 984	0	5 199 984
2024	0	5 199 984	0	5 199 984
2025	0	5 199 984	0	5 199 984
2026	0	5 199 984	0	5 199 984
2027	0	5 199 984	0	5 199 984
2028	0	5 199 984	0	5 199 984
2029	0	5 199 984	0	5 199 984
2030	0	5 199 984	0	5 199 984
2031	0	5 199 984	0	5 199 984
2032	0	5 199 984	0	5 199 984
2033	0	5 199 984	0	5 199 984
2034	0	5 199 984	0	5 199 984
2035	0	5 199 984	0	5 199 984
2036	0	5 199 984	0	5 199 984
2037	0	5 199 984	0	5 199 984

Year	User Waste Acceptance Inputs (Mg/year)	User Waste-In-Place (Mg)	Waste Acceptance (Mg/year)	Waste-In-Place (Mg)
2038	0	5 199 984	0	5 199 984
2039	0	5 199 984	0	5 199 984
2040	0	5 199 984	0	5 199 984
2041	0	5 199 984	0	5 199 984
2042	0	5 199 984	0	5 199 984
2043	0	5 199 984	0	5 199 984
2044	0	5 199 984	0	5 199 984
2045	0	5 199 984	0	5 199 984
2046	0	5 199 984	0	5 199 984
2047	0	5 199 984	0	5 199 984
2048	0	5 199 984	0	5 199 984
2049	0	5 199 984	0	5 199 984
2050	0	5 199 984	0	5 199 984
2051	0	5 199 984	0	5 199 984
2052	0	5 199 984	0	5 199 984
2053	0	5 199 984	0	5 199 984
2054	0	5 199 984	0	5 199 984
2055	0	5 199 984	0	5 199 984
2056	0	5 199 984	0	5 199 984
2057	0	5 199 984	0	5 199 984

RESULTS

Landfill Name or Identifier: _____

Closure Year (with 80-year limit) = 1996
 Methane = 50 % by volume

Please choose a third unit of measure to represent all of
 the emission rates below.

User-specified Unit:

Year	Waste Accepted		Waste-In-Place		Total Landfill gas			Methane			Carbon dioxide			NMOC		
	(Mg/year)	(short tons/year)	(Mg)	(short tons)	(Mg/year)	(m ³ /year)	(av ft ³ /min)	(Mg/year)	(m ³ /year)	(av ft ³ /min)	(Mg/year)	(m ³ /year)	(av ft ³ /min)	(Mg/year)	(m ³ /year)	(av ft ³ /min)
1978	288 888	317 777	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1979	288 888	317 777	288 888	317 777	3,528E+03	2,825E+06	1,898E+02	9,423E+02	1,412E+06	9,490E+01	2,585E+03	1,412E+06	9,490E+01	4,050E+01	1,130E+04	7,582E-01
1980	288 888	317 777	577 776	635 554	6,884E+03	5,512E+06	3,704E+02	1,839E+03	2,756E+06	1,852E+02	5,045E+03	2,756E+06	1,852E+02	2,205E+04	7,903E+01	1,481E+00
1981	288 888	317 777	866 664	953 330	1,008E+04	8,068E+06	5,421E+02	2,691E+03	4,034E+06	2,710E+02	7,384E+03	4,034E+06	2,710E+02	1,157E+02	3,227E+04	2,168E+00
1982	288 888	317 777	1 155 552	1 271 107	1,311E+04	1,050E+07	7,055E+02	3,502E+03	5,250E+06	3,527E+02	9,610E+03	5,250E+06	3,527E+02	1,505E+02	4,200E+04	2,822E+00
1983	288 888	317 777	1 444 440	1 588 884	1,600E+04	1,281E+07	8,609E+02	4,274E+03	6,406E+06	4,304E+02	1,173E+04	6,406E+06	4,304E+02	1,837E+02	5,125E+04	3,443E+00
1984	288 888	317 777	1 733 328	1 906 661	1,875E+04	1,501E+07	1,009E+03	5,008E+03	7,506E+06	5,043E+02	1,374E+04	7,506E+06	5,043E+02	2,152E+02	6,005E+04	4,035E+00
1985	288 888	317 777	2 022 216	2 224 438	2,136E+04	1,711E+07	1,149E+03	5,706E+03	8,553E+06	5,746E+02	1,566E+04	8,553E+06	5,746E+02	2,453E+02	6,842E+04	4,597E+00
1986	288 888	317 777	2 311 104	2 542 214	2,385E+04	1,910E+07	1,283E+03	6,370E+03	9,548E+06	6,415E+02	1,748E+04	9,548E+06	6,415E+02	2,738E+02	7,638E+04	5,132E+00
1987	288 888	317 777	2 599 992	2 859 991	2,621E+04	2,099E+07	1,410E+03	7,002E+03	1,049E+07	7,051E+02	1,921E+04	1,049E+07	7,051E+02	3,009E+02	8,396E+04	5,641E+00
1988	288 888	317 777	2 888 880	3 177 768	2,846E+04	2,279E+07	1,531E+03	7,602E+03	1,140E+07	7,656E+02	2,086E+04	1,140E+07	7,656E+02	3,268E+02	9,116E+04	6,125E+00
1989	288 888	317 777	3 177 768	3 495 545	3,060E+04	2,450E+07	1,646E+03	8,174E+03	1,225E+07	8,232E+02	2,243E+04	1,225E+07	8,232E+02	3,513E+02	9,802E+04	6,586E+00
1990	288 888	317 777	3 466 656	3 813 322	3,264E+04	2,613E+07	1,756E+03	8,718E+03	1,307E+07	8,780E+02	2,392E+04	1,307E+07	8,780E+02	3,747E+02	1,045E+05	7,024E+00
1991	288 888	317 777	3 755 544	4 131 098	3,457E+04	2,768E+07	1,860E+03	9,235E+03	1,384E+07	9,300E+02	2,534E+04	1,384E+07	9,300E+02	3,969E+02	1,107E+05	7,440E+00
1992	288 888	317 777	4 044 432	4 448 875	3,641E+04	2,916E+07	1,999E+03	9,727E+03	1,458E+07	9,796E+02	2,669E+04	1,458E+07	9,796E+02	4,181E+02	1,166E+05	7,837E+00
1993	288 888	317 777	4 333 320	4 766 652	3,817E+04	3,056E+07	2,053E+03	1,019E+04	1,528E+07	1,027E+03	2,797E+04	1,528E+07	1,027E+03	4,382E+02	1,222E+05	8,214E+00
1994	288 888	317 777	4 622 208	5 084 429	3,983E+04	3,190E+07	2,143E+03	1,064E+04	1,595E+07	1,072E+03	2,919E+04	1,595E+07	1,072E+03	4,573E+02	1,276E+05	8,572E+00
1995	288 888	317 777	4 911 096	5 402 206	4,142E+04	3,317E+07	2,228E+03	1,106E+04	1,658E+07	1,114E+03	3,035E+04	1,658E+07	1,114E+03	4,755E+02	1,327E+05	8,914E+00
1996	0	0	5 199 984	5 719 982	4,293E+04	3,437E+07	2,310E+03	1,147E+04	1,719E+07	1,155E+03	3,146E+04	1,719E+07	1,155E+03	4,928E+02	1,375E+05	9,238E+00
1997	0	0	5 199 984	5 719 982	4,083E+04	3,270E+07	2,197E+03	1,091E+04	1,635E+07	1,098E+03	2,993E+04	1,635E+07	1,098E+03	4,688E+02	1,308E+05	8,787E+00
1998	0	0	5 199 984	5 719 982	3,884E+04	3,110E+07	2,090E+03	1,037E+04	1,555E+07	1,045E+03	2,847E+04	1,555E+07	1,045E+03	4,459E+02	1,244E+05	8,359E+00
1999	0	0	5 199 984	5 719 982	3,695E+04	2,958E+07	1,988E+03	9,869E+03	1,479E+07	9,939E+02	2,708E+04	1,479E+07	9,939E+02	4,242E+02	1,183E+05	7,951E+00
2000	0	0	5 199 984	5 719 982	3,514E+04	2,814E+07	1,891E+03	9,387E+03	1,407E+07	9,454E+02	2,576E+04	1,407E+07	9,454E+02	4,035E+02	1,126E+05	7,563E+00
2001	0	0	5 199 984	5 719 982	3,343E+04	2,677E+07	1,799E+03	8,930E+03	1,338E+07	8,993E+02	2,450E+04	1,338E+07	8,993E+02	3,838E+02	1,071E+05	7,195E+00
2002	0	0	5 199 984	5 719 982	3,180E+04	2,546E+07	1,711E+03	8,494E+03	1,273E+07	8,555E+02	2,331E+04	1,273E+07	8,555E+02	3,651E+02	1,019E+05	6,844E+00
2003	0	0	5 199 984	5 719 982	3,025E+04	2,422E+07	1,627E+03	8,080E+03	1,211E+07	8,137E+02	2,217E+04	1,211E+07	8,137E+02	3,473E+02	9,689E+04	6,510E+00
2004	0	0	5 199 984	5 719 982	2,877E+04	2,304E+07	1,548E+03	7,686E+03	1,152E+07	7,741E+02	2,109E+04	1,152E+07	7,741E+02	3,304E+02	9,216E+04	6,192E+00
2005	0	0	5 199 984	5 719 982	2,737E+04	2,192E+07	1,473E+03	7,311E+03	1,096E+07	7,363E+02	2,006E+04	1,096E+07	7,363E+02	3,142E+02	8,767E+04	5,890E+00
2006	0	0	5 199 984	5 719 982	2,604E+04	2,085E+07	1,401E+03	6,954E+03	1,042E+07	7,004E+02	1,908E+04	1,042E+07	7,004E+02	2,989E+02	8,339E+04	5,603E+00
2007	0	0	5 199 984	5 719 982	2,477E+04	1,983E+07	1,332E+03	6,615E+03	9,916E+06	6,662E+02	1,815E+04	9,916E+06	6,662E+02	2,843E+02	7,933E+04	5,330E+00
2008	0	0	5 199 984	5 719 982	2,356E+04	1,866E+07	1,267E+03	6,293E+03	9,432E+06	6,337E+02	1,727E+04	9,432E+06	6,337E+02	2,705E+02	7,546E+04	5,070E+00
2009	0	0	5 199 984	5 719 982	2,241E+04	1,794E+07	1,206E+03	5,966E+03	8,972E+06	6,028E+02	1,642E+04	8,972E+06	6,028E+02	2,573E+02	7,178E+04	4,823E+00
2010	0	0	5 199 984	5 719 982	2,132E+04	1,707E+07	1,147E+03	5,694E+03	8,535E+06	5,734E+02	1,562E+04	8,535E+06	5,734E+02	2,447E+02	6,828E+04	4,587E+00
2011	0	0	5 199 984	5 719 982	2,028E+04	1,624E+07	1,091E+03	5,416E+03	8,118E+06	5,455E+02	1,486E+04	8,118E+06	5,455E+02	2,328E+02	6,495E+04	4,364E+00
2012	0	0	5 199 984	5 719 982	1,929E+04	1,544E+07	1,038E+03	5,152E+03	7,722E+06	5,189E+02	1,414E+04	7,722E+06	5,189E+02	2,214E+02	6,178E+04	4,151E+00
2013	0	0	5 199 984	5 719 982	1,835E+04	1,469E+07	9,871E+02	4,901E+03	7,346E+06	4,936E+02	1,345E+04	7,346E+06	4,936E+02	2,106E+02	5,877E+04	3,948E+00
2014	0	0	5 199 984	5 719 982	1,745E+04	1,397E+07	9,390E+02	4,662E+03	6,987E+06	4,695E+02	1,279E+04	6,987E+06	4,695E+02	2,004E+02	5,590E+04	3,756E+00
2015	0	0	5 199 984	5 719 982	1,660E+04	1,329E+07	8,932E+02	4,434E+03	6,647E+06	4,466E+02	1,217E+04	6,647E+06	4,466E+02	1,906E+02	5,317E+04	3,573E+00
2016	0	0	5 199 984	5 719 982	1,579E+04	1,265E+07	8,496E+02	4,218E+03	6,323E+06	4,248E+02	1,157E+04	6,323E+06	4,248E+02	1,813E+02	5,058E+04	3,398E+00
2017	0	0	5 199 984	5 719 982	1,502E+04	1,203E+07	8,082E+02	4,012E+03	6,014E+06	4,041E+02	1,101E+04	6,014E+06	4,041E+02	1,725E+02	4,811E+04	3,233E+00
2018	0	0	5 199 984	5 719 982	1,429E+04	1,144E+07	7,688E+02	3,817E+03	5,721E+06	3,844E+02	1,047E+04	5,721E+06	3,844E+02	1,640E+02	4,577E+04	3,075E+00
2019	0	0	5 199 984	5 719 982	1,359E+04	1,088E+07	7,313E+02	3,631E+03	5,442E+06	3,656E+02	9,961E+03	5,442E+06	3,656E+02	1,560E+02	4,353E+04	2,925E+00
2020	0	0	5 199 984	5 719 982	1,293E+04	1,035E+07	6,956E+02	3,453E+03	5,176E+06	3,478E+02	9,475E+03	5,176E+06	3,478E+02	1,484E+02	4,141E+04	2,782E+00
2021	0	0	5 199 984	5 719 982	1,230E+04	9,848E+06	6,617E+02	3,285E+03	4,924E+06	3,308E+02	9,013E+03	4,924E+06	3,308E+02	1,412E+02	3,939E+04	2,647E+00
2022	0	0	5 199 984	5 719 982	1,170E+04	9,368E+06	6,294E+02	3,125E+03	4,684E+06	3,147E+02	8,574E+03	4,684E+06	3,147E+02	1,343E+02	3,747E+04	2,518E+00
2023	0	0	5 199 984	5 719 982	1,113E+04	8,911E+06	5,987E+02	2,972E+03	4,455E+06	2,994E+02	8,156E+03	4,455E+06	2,994E+02	1,278E+02	3,564E+04	2,395E+00
2024	0	0	5 199 984	5 719 982	1,059E+04	8,476E+06	5,695E+02	2,827E+03	4,238E+06	2,848E+02	7,758E+03	4,238E+06	2,848E+02	1,215E+02	3,390E+04	2,278E+00
2025	0	0	5 199 984	5 719 982	1,007E+04	8,063E+06	5,417E+02	2,690E+03	4,031E+06	2,709E+02	7,380E+03	4,031E+06	2,709E+02	1,156E+02	3,225E+04	2,167E+00
2026	0	0	5 199 984	5 719 982	9,578E+03	7,670E+06	5,153E+02	2,558E+03	3,835E+06	2,577E+02	7,020E+03	3,835E+06	2,577E+02	1,100E+02	3,068E+04	2,061E+00
2027	0	0	5 199 984	5 719 982	9,111E+03	7,296E+06	4,902E+02	2,434E+03	3,648E+06	2,451E+02	6,677E+03	3,648E+06	2,451E+02	1,046E+02	2,918E+04	1,961E+00
2028	0	0	5 199 984	5 719 982	8,667E+03	6,940E+06	4,663E+02	2,315E+03	3,470E+06	2,331E+02	6,352E+03	3,470E+06	2,331E+02	9,950E+01	2,776E+04	1,865E+00
2029	0	0	5 199 984	5 719 982	8,244E+03	6,601E+06	4,435E+02	2,202E+03	3,301E+06	2,218E+02	6,042E+03	3,301E+06	2,218E+02	9,465E+01	2,641E+04	1,774E+00
2030	0	0	5 199 984	5 719 982	7,842E+03	6,279E+06	4,219E+02									

RESULTS

Landfill Name or Identifier: _____

Closure Year (with 80-year limit) = 1996
Methane = 50 % by volume

Please choose a third unit of measure to represent all of the emission rates below.

User-specified Unit: av ft³/min

Table with 15 columns: Year, Waste Accepted (Mg/year, short tons/year), Waste-In-Place (Mg, short tons), Total landfill gas (Mg/year, m³/year, av ft³/min), Methane (Mg/year, m³/year, av ft³/min), Carbon dioxide (Mg/year, m³/year, av ft³/min), and NMOC (Mg/year, m³/year, av ft³/min). Rows range from 2054 to 2118.

GRAPHS

Landfill Name or Identifier: _____

