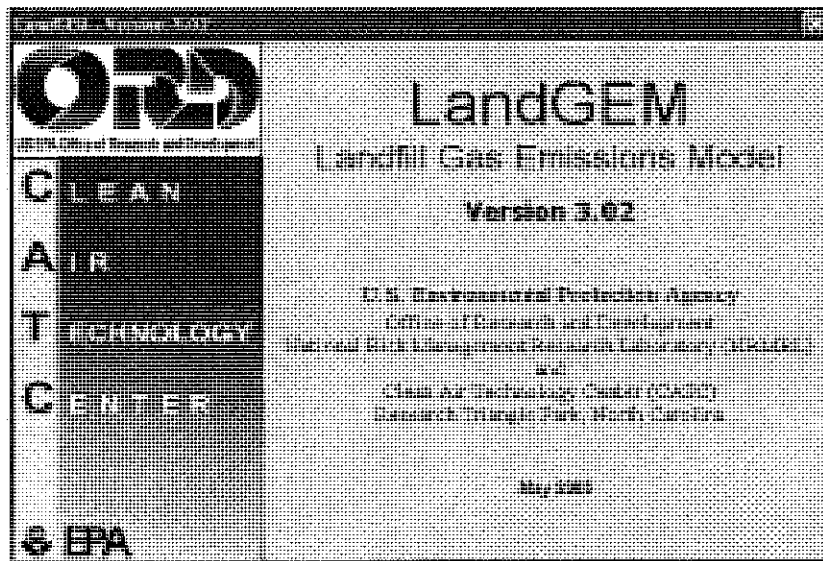


ANNEXE I

FICHIERS DE SORTIE DU MODÈLE LANDGEM



Summary Report

Landfill Name or Identifier: LET du Lac St-Jean

Date: 20 décembre 2010

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/Ma)

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

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	2014	
Landfill Closure Year (with 80-year limit)	2057	
Actual Closure Year (without limit)	2057	
Have Model Calculate Closure Year?	No	
Waste Design Capacity	2 125 000	<i>megagrams</i>

MODEL PARAMETERS

Methane Generation Rate, k	0,040	<i>year⁻¹</i>
Potential Methane Generation Capacity, L ₀	135	<i>m³/Mg</i>
NMOC Concentration	600	<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

WASTE ACCEPTANCE RATES

Year	Waste Accepted		Waste-In-Place	
	(Mg/year)	(short tons/year)	(Mg)	(short tons)
2014	50 000	55 000	0	0
2015	50 000	55 000	50 000	55 000
2016	50 000	55 000	100 000	110 000
2017	50 000	55 000	150 000	165 000
2018	50 000	55 000	200 000	220 000
2019	50 000	55 000	250 000	275 000
2020	50 000	55 000	300 000	330 000
2021	50 000	55 000	350 000	385 000
2022	50 000	55 000	400 000	440 000
2023	50 000	55 000	450 000	495 000
2024	50 000	55 000	500 000	550 000
2025	50 000	55 000	550 000	605 000
2026	50 000	55 000	600 000	660 000
2027	50 000	55 000	650 000	715 000
2028	50 000	55 000	700 000	770 000
2029	50 000	55 000	750 000	825 000
2030	50 000	55 000	800 000	880 000
2031	50 000	55 000	850 000	935 000
2032	50 000	55 000	900 000	990 000
2033	50 000	55 000	950 000	1 045 000
2034	50 000	55 000	1 000 000	1 100 000
2035	50 000	55 000	1 050 000	1 155 000
2036	50 000	55 000	1 100 000	1 210 000
2037	50 000	55 000	1 150 000	1 265 000
2038	50 000	55 000	1 200 000	1 320 000
2039	50 000	55 000	1 250 000	1 375 000
2040	50 000	55 000	1 300 000	1 430 000
2041	50 000	55 000	1 350 000	1 485 000
2042	50 000	55 000	1 400 000	1 540 000
2043	50 000	55 000	1 450 000	1 595 000
2044	50 000	55 000	1 500 000	1 650 000
2045	50 000	55 000	1 550 000	1 705 000
2046	50 000	55 000	1 600 000	1 760 000
2047	50 000	55 000	1 650 000	1 815 000
2048	50 000	55 000	1 700 000	1 870 000
2049	50 000	55 000	1 750 000	1 925 000
2050	50 000	55 000	1 800 000	1 980 000
2051	50 000	55 000	1 850 000	2 035 000
2052	50 000	55 000	1 900 000	2 090 000
2053	50 000	55 000	1 950 000	2 145 000

WASTE ACCEPTANCE RATES (Continued)

Year	Waste Accepted		Waste-In-Place	
	(Mg/year)	(short tons/year)	(Mg)	(short tons)
2054	50 000	55 000	2 000 000	2 200 000
2055	50 000	55 000	2 050 000	2 255 000
2056	25 000	27 500	2 100 000	2 310 000
2057	0	0	2 125 000	2 337 500
2058	0	0	2 125 000	2 337 500
2059	0	0	2 125 000	2 337 500
2060	0	0	2 125 000	2 337 500
2061	0	0	2 125 000	2 337 500
2062	0	0	2 125 000	2 337 500
2063	0	0	2 125 000	2 337 500
2064	0	0	2 125 000	2 337 500
2065	0	0	2 125 000	2 337 500
2066	0	0	2 125 000	2 337 500
2067	0	0	2 125 000	2 337 500
2068	0	0	2 125 000	2 337 500
2069	0	0	2 125 000	2 337 500
2070	0	0	2 125 000	2 337 500
2071	0	0	2 125 000	2 337 500
2072	0	0	2 125 000	2 337 500
2073	0	0	2 125 000	2 337 500
2074	0	0	2 125 000	2 337 500
2075	0	0	2 125 000	2 337 500
2076	0	0	2 125 000	2 337 500
2077	0	0	2 125 000	2 337 500
2078	0	0	2 125 000	2 337 500
2079	0	0	2 125 000	2 337 500
2080	0	0	2 125 000	2 337 500
2081	0	0	2 125 000	2 337 500
2082	0	0	2 125 000	2 337 500
2083	0	0	2 125 000	2 337 500
2084	0	0	2 125 000	2 337 500
2085	0	0	2 125 000	2 337 500
2086	0	0	2 125 000	2 337 500
2087	0	0	2 125 000	2 337 500
2088	0	0	2 125 000	2 337 500
2089	0	0	2 125 000	2 337 500
2090	0	0	2 125 000	2 337 500
2091	0	0	2 125 000	2 337 500
2092	0	0	2 125 000	2 337 500
2093	0	0	2 125 000	2 337 500

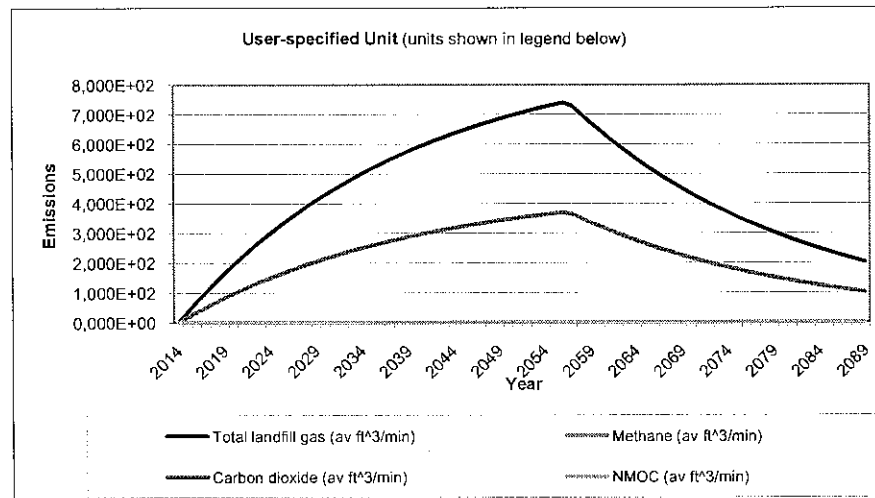
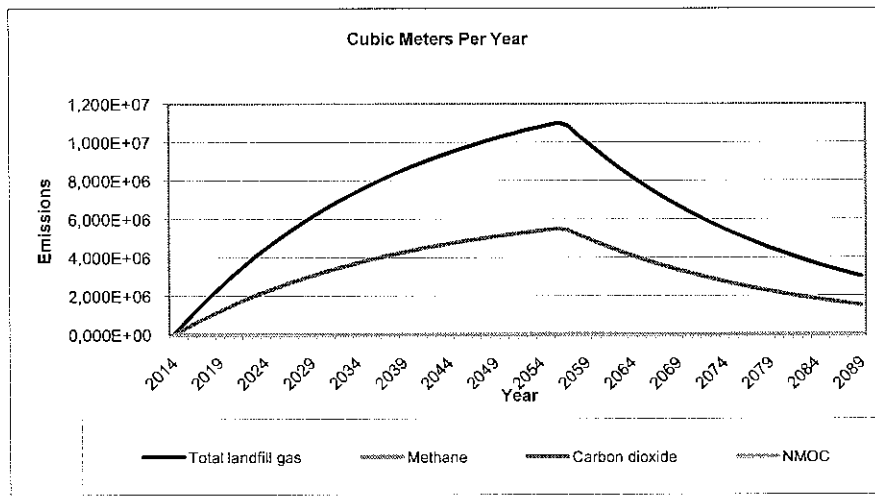
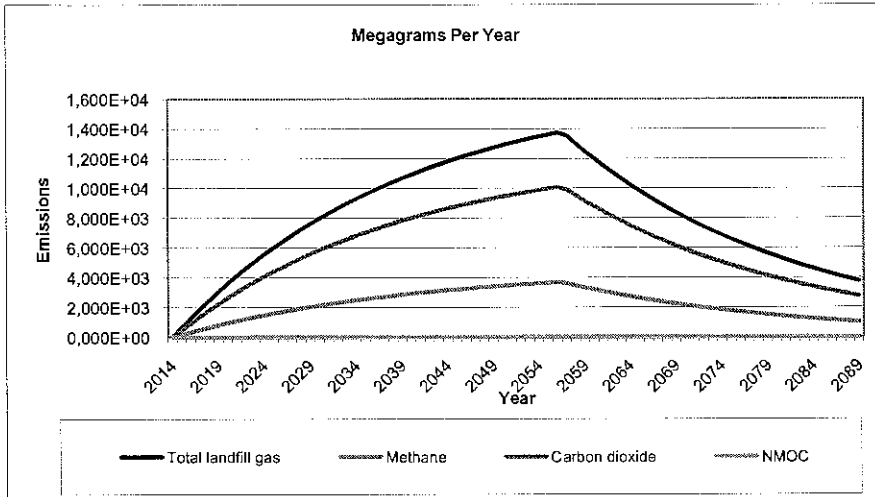
Pollutant Parameters**Gas / Pollutant Default Parameters:****User-specified Pollutant Parameters:**

	Compound	Concentration (ppmv)	Molecular Weight	Concentration (ppmv)	Molecular Weight
Gases	Total landfill gas		0,00		
	Methane		16,04		
	Carbon dioxide		44,01		
	NMOC	4 000	86,18		
Pollutants	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		

Pollutant Parameters (Continued)

Gas / Pollutant Default Parameters:			User-specified Pollutant Parameters:	
Compound	Concentration (ppmv)	Molecular Weight	Concentration (ppmv)	Molecular Weight
Ethyl mercaptan (ethanethiol) - VOC	2,3	62,13		
Ethylbenzene - HAP/VOC	4,6	106,16		
Ethylene dibromide - HAP/VOC	1,0E-03	187,88		
Fluorotrichloromethane - VOC	0,76	137,38		
Hexane - HAP/VOC	6,6	86,18		
Hydrogen sulfide	36	34,08		
Mercury (total) - HAP	2,9E-04	200,61		
Methyl ethyl ketone - HAP/VOC	7,1	72,11		
Methyl isobutyl ketone - HAP/VOC	1,9	100,16		
Methyl mercaptan - VOC	2,5	48,11		
Pentane - VOC	3,3	72,15		
Perchloroethylene (tetrachloroethylene) - HAP	3,7	165,83		
Propane - VOC	11	44,09		
t-1,2-Dichloroethene - VOC	2,8	96,94		
Toluene - No or Unknown Co-disposal - HAP/VOC	39	92,13		
Toluene - Co-disposal - HAP/VOC	170	92,13		
Trichloroethylene (trichloroethene) - HAP/VOC	2,8	131,40		
Vinyl chloride - HAP/VOC	7,3	62,50		
Xylenes - HAP/VOC	12	106,16		
Pollutants				

Graphs



Results

Year	Total landfill gas			Methane		
	(Mg/year)	(m ³ /year)	(av ft ³ /min)	(Mg/year)	(m ³ /year)	(av ft ³ /min)
2014	0	0	0	0	0	0
2015	6,624E+02	5,304E+05	3,564E+01	1,769E+02	2,652E+05	1,782E+01
2016	1,299E+03	1,040E+06	6,988E+01	3,469E+02	5,200E+05	3,494E+01
2017	1,910E+03	1,530E+06	1,028E+02	5,102E+02	7,648E+05	5,139E+01
2018	2,498E+03	2,000E+06	1,344E+02	6,672E+02	1,000E+06	6,719E+01
2019	3,062E+03	2,452E+06	1,648E+02	8,179E+02	1,226E+06	8,238E+01
2020	3,604E+03	2,886E+06	1,939E+02	9,628E+02	1,443E+06	9,696E+01
2021	4,126E+03	3,304E+06	2,220E+02	1,102E+03	1,652E+06	1,110E+02
2022	4,626E+03	3,704E+06	2,489E+02	1,236E+03	1,852E+06	1,244E+02
2023	5,107E+03	4,090E+06	2,748E+02	1,364E+03	2,045E+06	1,374E+02
2024	5,569E+03	4,460E+06	2,996E+02	1,488E+03	2,230E+06	1,498E+02
2025	6,013E+03	4,815E+06	3,235E+02	1,606E+03	2,408E+06	1,618E+02
2026	6,440E+03	5,157E+06	3,465E+02	1,720E+03	2,578E+06	1,732E+02
2027	6,850E+03	5,485E+06	3,685E+02	1,830E+03	2,742E+06	1,843E+02
2028	7,244E+03	5,800E+06	3,897E+02	1,935E+03	2,900E+06	1,949E+02
2029	7,622E+03	6,103E+06	4,101E+02	2,036E+03	3,052E+06	2,050E+02
2030	7,985E+03	6,394E+06	4,296E+02	2,133E+03	3,197E+06	2,148E+02
2031	8,335E+03	6,674E+06	4,484E+02	2,226E+03	3,337E+06	2,242E+02
2032	8,670E+03	6,943E+06	4,665E+02	2,316E+03	3,471E+06	2,332E+02
2033	8,993E+03	7,201E+06	4,838E+02	2,402E+03	3,600E+06	2,419E+02
2034	9,302E+03	7,449E+06	5,005E+02	2,485E+03	3,724E+06	2,502E+02
2035	9,600E+03	7,687E+06	5,165E+02	2,564E+03	3,844E+06	2,583E+02
2036	9,886E+03	7,916E+06	5,319E+02	2,641E+03	3,958E+06	2,659E+02
2037	1,016E+04	8,136E+06	5,467E+02	2,714E+03	4,068E+06	2,733E+02
2038	1,042E+04	8,348E+06	5,609E+02	2,785E+03	4,174E+06	2,804E+02
2039	1,068E+04	8,551E+06	5,745E+02	2,852E+03	4,275E+06	2,873E+02
2040	1,092E+04	8,746E+06	5,876E+02	2,917E+03	4,373E+06	2,938E+02
2041	1,116E+04	8,933E+06	6,002E+02	2,980E+03	4,467E+06	3,001E+02
2042	1,138E+04	9,113E+06	6,123E+02	3,040E+03	4,557E+06	3,062E+02
2043	1,160E+04	9,286E+06	6,240E+02	3,098E+03	4,643E+06	3,120E+02
2044	1,180E+04	9,453E+06	6,351E+02	3,153E+03	4,726E+06	3,176E+02
2045	1,200E+04	9,613E+06	6,459E+02	3,206E+03	4,806E+06	3,229E+02
2046	1,220E+04	9,766E+06	6,562E+02	3,258E+03	4,883E+06	3,281E+02
2047	1,238E+04	9,913E+06	6,661E+02	3,307E+03	4,957E+06	3,330E+02
2048	1,256E+04	1,006E+07	6,756E+02	3,354E+03	5,028E+06	3,378E+02
2049	1,273E+04	1,019E+07	6,848E+02	3,400E+03	5,096E+06	3,424E+02
2050	1,289E+04	1,032E+07	6,935E+02	3,443E+03	5,161E+06	3,468E+02
2051	1,305E+04	1,045E+07	7,020E+02	3,485E+03	5,224E+06	3,510E+02
2052	1,320E+04	1,057E+07	7,101E+02	3,525E+03	5,284E+06	3,550E+02
2053	1,334E+04	1,068E+07	7,179E+02	3,564E+03	5,342E+06	3,589E+02
2054	1,348E+04	1,080E+07	7,254E+02	3,601E+03	5,398E+06	3,627E+02
2055	1,362E+04	1,090E+07	7,326E+02	3,637E+03	5,452E+06	3,663E+02
2056	1,374E+04	1,101E+07	7,395E+02	3,671E+03	5,503E+06	3,697E+02
2057	1,354E+04	1,084E+07	7,283E+02	3,616E+03	5,420E+06	3,642E+02
2058	1,301E+04	1,041E+07	6,998E+02	3,474E+03	5,207E+06	3,499E+02
2059	1,250E+04	1,001E+07	6,723E+02	3,338E+03	5,003E+06	3,362E+02
2060	1,201E+04	9,614E+06	6,460E+02	3,207E+03	4,807E+06	3,230E+02
2061	1,154E+04	9,237E+06	6,206E+02	3,081E+03	4,618E+06	3,103E+02
2062	1,108E+04	8,875E+06	5,963E+02	2,960E+03	4,437E+06	2,981E+02
2063	1,065E+04	8,527E+06	5,729E+02	2,844E+03	4,263E+06	2,865E+02

Results (Continued)

Year	Total landfill gas			Methane		
	(Mg/year)	(m ³ /year)	(av ft ³ /min)	(Mg/year)	(m ³ /year)	(av ft ³ /min)
2064	1,023E+04	8,192E+06	5,504E+02	2,733E+03	4,096E+06	2,752E+02
2065	9,830E+03	7,871E+06	5,289E+02	2,626E+03	3,936E+06	2,644E+02
2066	9,444E+03	7,563E+06	5,081E+02	2,523E+03	3,781E+06	2,541E+02
2067	9,074E+03	7,266E+06	4,882E+02	2,424E+03	3,633E+06	2,441E+02
2068	8,718E+03	6,981E+06	4,691E+02	2,329E+03	3,491E+06	2,345E+02
2069	8,376E+03	6,707E+06	4,507E+02	2,237E+03	3,354E+06	2,253E+02
2070	8,048E+03	6,444E+06	4,330E+02	2,150E+03	3,222E+06	2,165E+02
2071	7,732E+03	6,192E+06	4,160E+02	2,065E+03	3,096E+06	2,080E+02
2072	7,429E+03	5,949E+06	3,997E+02	1,984E+03	2,974E+06	1,999E+02
2073	7,138E+03	5,716E+06	3,840E+02	1,907E+03	2,858E+06	1,920E+02
2074	6,858E+03	5,492E+06	3,690E+02	1,832E+03	2,746E+06	1,845E+02
2075	6,589E+03	5,276E+06	3,545E+02	1,760E+03	2,638E+06	1,773E+02
2076	6,331E+03	5,069E+06	3,406E+02	1,691E+03	2,535E+06	1,703E+02
2077	6,082E+03	4,871E+06	3,273E+02	1,625E+03	2,435E+06	1,636E+02
2078	5,844E+03	4,680E+06	3,144E+02	1,561E+03	2,340E+06	1,572E+02
2079	5,615E+03	4,496E+06	3,021E+02	1,500E+03	2,248E+06	1,510E+02
2080	5,395E+03	4,320E+06	2,902E+02	1,441E+03	2,160E+06	1,451E+02
2081	5,183E+03	4,150E+06	2,789E+02	1,384E+03	2,075E+06	1,394E+02
2082	4,980E+03	3,988E+06	2,679E+02	1,330E+03	1,994E+06	1,340E+02
2083	4,785E+03	3,831E+06	2,574E+02	1,278E+03	1,916E+06	1,287E+02
2084	4,597E+03	3,681E+06	2,473E+02	1,228E+03	1,841E+06	1,237E+02
2085	4,417E+03	3,537E+06	2,376E+02	1,180E+03	1,768E+06	1,188E+02
2086	4,244E+03	3,398E+06	2,283E+02	1,134E+03	1,699E+06	1,142E+02
2087	4,077E+03	3,265E+06	2,194E+02	1,089E+03	1,632E+06	1,097E+02
2088	3,917E+03	3,137E+06	2,108E+02	1,046E+03	1,568E+06	1,054E+02
2089	3,764E+03	3,014E+06	2,025E+02	1,005E+03	1,507E+06	1,012E+02
2090	3,616E+03	2,896E+06	1,946E+02	9,659E+02	1,448E+06	9,728E+01
2091	3,474E+03	2,782E+06	1,869E+02	9,280E+02	1,391E+06	9,346E+01
2092	3,338E+03	2,673E+06	1,796E+02	8,916E+02	1,337E+06	8,980E+01
2093	3,207E+03	2,568E+06	1,726E+02	8,567E+02	1,284E+06	8,628E+01
2094	3,081E+03	2,467E+06	1,658E+02	8,231E+02	1,234E+06	8,290E+01
2095	2,961E+03	2,371E+06	1,593E+02	7,908E+02	1,185E+06	7,965E+01
2096	2,845E+03	2,278E+06	1,530E+02	7,598E+02	1,139E+06	7,652E+01
2097	2,733E+03	2,188E+06	1,470E+02	7,300E+02	1,094E+06	7,352E+01
2098	2,626E+03	2,103E+06	1,413E+02	7,014E+02	1,051E+06	7,064E+01
2099	2,523E+03	2,020E+06	1,357E+02	6,739E+02	1,010E+06	6,787E+01
2100	2,424E+03	1,941E+06	1,304E+02	6,475E+02	9,705E+05	6,521E+01
2101	2,329E+03	1,865E+06	1,253E+02	6,221E+02	9,324E+05	6,265E+01
2102	2,238E+03	1,792E+06	1,204E+02	5,977E+02	8,959E+05	6,019E+01
2103	2,150E+03	1,722E+06	1,157E+02	5,743E+02	8,608E+05	5,783E+01
2104	2,066E+03	1,654E+06	1,111E+02	5,517E+02	8,270E+05	5,557E+01
2105	1,985E+03	1,589E+06	1,068E+02	5,301E+02	7,946E+05	5,339E+01
2106	1,907E+03	1,527E+06	1,026E+02	5,093E+02	7,634E+05	5,129E+01
2107	1,832E+03	1,467E+06	9,857E+01	4,893E+02	7,335E+05	4,928E+01
2108	1,760E+03	1,409E+06	9,470E+01	4,702E+02	7,047E+05	4,735E+01
2109	1,691E+03	1,354E+06	9,099E+01	4,517E+02	6,771E+05	4,549E+01
2110	1,625E+03	1,301E+06	8,742E+01	4,340E+02	6,505E+05	4,371E+01
2111	1,561E+03	1,250E+06	8,399E+01	4,170E+02	6,250E+05	4,200E+01
2112	1,500E+03	1,201E+06	8,070E+01	4,006E+02	6,005E+05	4,035E+01
2113	1,441E+03	1,154E+06	7,753E+01	3,849E+02	5,770E+05	3,877E+01
2114	1,385E+03	1,109E+06	7,449E+01	3,698E+02	5,544E+05	3,725E+01

Results (Continued)

Year	Total landfill gas			Methane		
	(Mg/year)	(m ³ /year)	(av ft ³ /min)	(Mg/year)	(m ³ /year)	(av ft ³ /min)
2115	1,330E+03	1,065E+06	7,157E+01	3,553E+02	5,326E+05	3,579E+01
2116	1,278E+03	1,023E+06	6,877E+01	3,414E+02	5,117E+05	3,438E+01
2117	1,228E+03	9,833E+05	6,607E+01	3,280E+02	4,917E+05	3,304E+01
2118	1,180E+03	9,448E+05	6,348E+01	3,152E+02	4,724E+05	3,174E+01
2119	1,134E+03	9,077E+05	6,099E+01	3,028E+02	4,539E+05	3,050E+01
2120	1,089E+03	8,721E+05	5,860E+01	2,909E+02	4,361E+05	2,930E+01
2121	1,046E+03	8,380E+05	5,630E+01	2,795E+02	4,190E+05	2,815E+01
2122	1,005E+03	8,051E+05	5,409E+01	2,686E+02	4,025E+05	2,705E+01
2123	9,660E+02	7,735E+05	5,197E+01	2,580E+02	3,868E+05	2,599E+01
2124	9,281E+02	7,432E+05	4,994E+01	2,479E+02	3,716E+05	2,497E+01
2125	8,917E+02	7,141E+05	4,798E+01	2,382E+02	3,570E+05	2,399E+01
2126	8,568E+02	6,861E+05	4,610E+01	2,289E+02	3,430E+05	2,305E+01
2127	8,232E+02	6,592E+05	4,429E+01	2,199E+02	3,296E+05	2,214E+01
2128	7,909E+02	6,333E+05	4,255E+01	2,113E+02	3,167E+05	2,128E+01
2129	7,599E+02	6,085E+05	4,088E+01	2,030E+02	3,042E+05	2,044E+01
2130	7,301E+02	5,846E+05	3,928E+01	1,950E+02	2,923E+05	1,964E+01
2131	7,015E+02	5,617E+05	3,774E+01	1,874E+02	2,808E+05	1,887E+01
2132	6,740E+02	5,397E+05	3,626E+01	1,800E+02	2,698E+05	1,813E+01
2133	6,475E+02	5,185E+05	3,484E+01	1,730E+02	2,593E+05	1,742E+01
2134	6,221E+02	4,982E+05	3,347E+01	1,662E+02	2,491E+05	1,674E+01
2135	5,977E+02	4,786E+05	3,216E+01	1,597E+02	2,393E+05	1,608E+01
2136	5,743E+02	4,599E+05	3,090E+01	1,534E+02	2,299E+05	1,545E+01
2137	5,518E+02	4,418E+05	2,969E+01	1,474E+02	2,209E+05	1,484E+01
2138	5,302E+02	4,245E+05	2,852E+01	1,416E+02	2,123E+05	1,426E+01
2139	5,094E+02	4,079E+05	2,741E+01	1,361E+02	2,039E+05	1,370E+01
2140	4,894E+02	3,919E+05	2,633E+01	1,307E+02	1,959E+05	1,317E+01
2141	4,702E+02	3,765E+05	2,530E+01	1,256E+02	1,883E+05	1,265E+01
2142	4,518E+02	3,618E+05	2,431E+01	1,207E+02	1,809E+05	1,215E+01
2143	4,341E+02	3,476E+05	2,335E+01	1,159E+02	1,738E+05	1,168E+01
2144	4,170E+02	3,339E+05	2,244E+01	1,114E+02	1,670E+05	1,122E+01
2145	4,007E+02	3,208E+05	2,156E+01	1,070E+02	1,604E+05	1,078E+01
2146	3,850E+02	3,083E+05	2,071E+01	1,028E+02	1,541E+05	1,036E+01
2147	3,699E+02	2,962E+05	1,990E+01	9,880E+01	1,481E+05	9,950E+00
2148	3,554E+02	2,846E+05	1,912E+01	9,492E+01	1,423E+05	9,560E+00
2149	3,414E+02	2,734E+05	1,837E+01	9,120E+01	1,367E+05	9,185E+00
2150	3,280E+02	2,627E+05	1,765E+01	8,763E+01	1,313E+05	8,825E+00
2151	3,152E+02	2,524E+05	1,696E+01	8,419E+01	1,262E+05	8,479E+00
2152	3,028E+02	2,425E+05	1,629E+01	8,089E+01	1,212E+05	8,146E+00
2153	2,910E+02	2,330E+05	1,565E+01	7,772E+01	1,165E+05	7,827E+00
2154	2,795E+02	2,238E+05	1,504E+01	7,467E+01	1,119E+05	7,520E+00

Results (Continued)

Year	Carbon dioxide			NMOC		
	(Mg/year)	(m ³ /year)	(av ft ³ /min)	(Mg/year)	(m ³ /year)	(av ft ³ /min)
2014	0	0	0	0	0	0
2015	4,855E+02	2,652E+05	1,782E+01	1,141E+00	3,182E+02	2,138E-02
2016	9,519E+02	5,200E+05	3,494E+01	2,237E+00	6,240E+02	4,193E-02
2017	1,400E+03	7,648E+05	5,139E+01	3,290E+00	9,178E+02	6,167E-02
2018	1,831E+03	1,000E+06	6,719E+01	4,301E+00	1,200E+03	8,063E-02
2019	2,244E+03	1,226E+06	8,238E+01	5,274E+00	1,471E+03	9,885E-02
2020	2,642E+03	1,443E+06	9,696E+01	6,207E+00	1,732E+03	1,164E-01
2021	3,024E+03	1,652E+06	1,110E+02	7,105E+00	1,982E+03	1,332E-01
2022	3,390E+03	1,852E+06	1,244E+02	7,967E+00	2,223E+03	1,493E-01
2023	3,743E+03	2,045E+06	1,374E+02	8,795E+00	2,454E+03	1,649E-01
2024	4,082E+03	2,230E+06	1,498E+02	9,591E+00	2,676E+03	1,798E-01
2025	4,407E+03	2,408E+06	1,618E+02	1,036E+01	2,889E+03	1,941E-01
2026	4,720E+03	2,578E+06	1,732E+02	1,109E+01	3,094E+03	2,079E-01
2027	5,020E+03	2,742E+06	1,843E+02	1,180E+01	3,291E+03	2,211E-01
2028	5,309E+03	2,900E+06	1,949E+02	1,247E+01	3,480E+03	2,338E-01
2029	5,586E+03	3,052E+06	2,050E+02	1,313E+01	3,662E+03	2,460E-01
2030	5,852E+03	3,197E+06	2,148E+02	1,375E+01	3,837E+03	2,578E-01
2031	6,108E+03	3,337E+06	2,242E+02	1,435E+01	4,004E+03	2,691E-01
2032	6,354E+03	3,471E+06	2,332E+02	1,493E+01	4,166E+03	2,799E-01
2033	6,591E+03	3,600E+06	2,419E+02	1,549E+01	4,321E+03	2,903E-01
2034	6,818E+03	3,724E+06	2,502E+02	1,602E+01	4,469E+03	3,003E-01
2035	7,036E+03	3,844E+06	2,583E+02	1,653E+01	4,612E+03	3,099E-01
2036	7,245E+03	3,958E+06	2,659E+02	1,703E+01	4,750E+03	3,191E-01
2037	7,447E+03	4,068E+06	2,733E+02	1,750E+01	4,882E+03	3,280E-01
2038	7,640E+03	4,174E+06	2,804E+02	1,795E+01	5,009E+03	3,365E-01
2039	7,826E+03	4,275E+06	2,873E+02	1,839E+01	5,130E+03	3,447E-01
2040	8,005E+03	4,373E+06	2,938E+02	1,881E+01	5,247E+03	3,526E-01
2041	8,176E+03	4,467E+06	3,001E+02	1,921E+01	5,360E+03	3,601E-01
2042	8,341E+03	4,557E+06	3,062E+02	1,960E+01	5,468E+03	3,674E-01
2043	8,499E+03	4,643E+06	3,120E+02	1,997E+01	5,572E+03	3,744E-01
2044	8,652E+03	4,726E+06	3,176E+02	2,033E+01	5,672E+03	3,811E-01
2045	8,798E+03	4,806E+06	3,229E+02	2,067E+01	5,768E+03	3,875E-01
2046	8,938E+03	4,883E+06	3,281E+02	2,100E+01	5,860E+03	3,937E-01
2047	9,073E+03	4,957E+06	3,330E+02	2,132E+01	5,948E+03	3,997E-01
2048	9,203E+03	5,028E+06	3,378E+02	2,163E+01	6,033E+03	4,054E-01
2049	9,328E+03	5,096E+06	3,424E+02	2,192E+01	6,115E+03	4,109E-01
2050	9,447E+03	5,161E+06	3,468E+02	2,220E+01	6,193E+03	4,161E-01
2051	9,562E+03	5,224E+06	3,510E+02	2,247E+01	6,269E+03	4,212E-01
2052	9,673E+03	5,284E+06	3,550E+02	2,273E+01	6,341E+03	4,261E-01
2053	9,779E+03	5,342E+06	3,589E+02	2,298E+01	6,411E+03	4,307E-01
2054	9,881E+03	5,398E+06	3,627E+02	2,322E+01	6,478E+03	4,352E-01
2055	9,979E+03	5,452E+06	3,663E+02	2,345E+01	6,542E+03	4,395E-01
2056	1,007E+04	5,503E+06	3,697E+02	2,367E+01	6,604E+03	4,437E-01
2057	9,921E+03	5,420E+06	3,642E+02	2,331E+01	6,504E+03	4,370E-01
2058	9,532E+03	5,207E+06	3,499E+02	2,240E+01	6,249E+03	4,199E-01
2059	9,158E+03	5,003E+06	3,362E+02	2,152E+01	6,004E+03	4,034E-01
2060	8,799E+03	4,807E+06	3,230E+02	2,068E+01	5,768E+03	3,876E-01
2061	8,454E+03	4,618E+06	3,103E+02	1,987E+01	5,542E+03	3,724E-01
2062	8,123E+03	4,437E+06	2,981E+02	1,909E+01	5,325E+03	3,578E-01
2063	7,804E+03	4,263E+06	2,865E+02	1,834E+01	5,116E+03	3,437E-01

Results (Continued)

Year	Carbon dioxide			NMOC		
	(Mg/year)	(m ³ /year)	(av ft ³ /min)	(Mg/year)	(m ³ /year)	(av ft ³ /min)
2064	7,498E+03	4,096E+06	2,752E+02	1,762E+01	4,915E+03	3,303E-01
2065	7,204E+03	3,936E+06	2,644E+02	1,693E+01	4,723E+03	3,173E-01
2066	6,922E+03	3,781E+06	2,541E+02	1,626E+01	4,538E+03	3,049E-01
2067	6,650E+03	3,633E+06	2,441E+02	1,563E+01	4,360E+03	2,929E-01
2068	6,389E+03	3,491E+06	2,345E+02	1,501E+01	4,189E+03	2,814E-01
2069	6,139E+03	3,354E+06	2,253E+02	1,443E+01	4,024E+03	2,704E-01
2070	5,898E+03	3,222E+06	2,165E+02	1,386E+01	3,867E+03	2,598E-01
2071	5,667E+03	3,096E+06	2,080E+02	1,332E+01	3,715E+03	2,496E-01
2072	5,445E+03	2,974E+06	1,999E+02	1,279E+01	3,569E+03	2,398E-01
2073	5,231E+03	2,858E+06	1,920E+02	1,229E+01	3,429E+03	2,304E-01
2074	5,026E+03	2,746E+06	1,845E+02	1,181E+01	3,295E+03	2,214E-01
2075	4,829E+03	2,638E+06	1,773E+02	1,135E+01	3,166E+03	2,127E-01
2076	4,640E+03	2,535E+06	1,703E+02	1,090E+01	3,042E+03	2,044E-01
2077	4,458E+03	2,435E+06	1,636E+02	1,047E+01	2,922E+03	1,964E-01
2078	4,283E+03	2,340E+06	1,572E+02	1,006E+01	2,808E+03	1,887E-01
2079	4,115E+03	2,248E+06	1,510E+02	9,670E+00	2,698E+03	1,813E-01
2080	3,954E+03	2,160E+06	1,451E+02	9,290E+00	2,592E+03	1,741E-01
2081	3,799E+03	2,075E+06	1,394E+02	8,926E+00	2,490E+03	1,673E-01
2082	3,650E+03	1,994E+06	1,340E+02	8,576E+00	2,393E+03	1,608E-01
2083	3,507E+03	1,916E+06	1,287E+02	8,240E+00	2,299E+03	1,545E-01
2084	3,369E+03	1,841E+06	1,237E+02	7,917E+00	2,209E+03	1,484E-01
2085	3,237E+03	1,768E+06	1,188E+02	7,606E+00	2,122E+03	1,426E-01
2086	3,110E+03	1,699E+06	1,142E+02	7,308E+00	2,039E+03	1,370E-01
2087	2,988E+03	1,632E+06	1,097E+02	7,022E+00	1,959E+03	1,316E-01
2088	2,871E+03	1,568E+06	1,054E+02	6,746E+00	1,882E+03	1,265E-01
2089	2,758E+03	1,507E+06	1,012E+02	6,482E+00	1,808E+03	1,215E-01
2090	2,650E+03	1,448E+06	9,728E+01	6,228E+00	1,737E+03	1,167E-01
2091	2,546E+03	1,391E+06	9,346E+01	5,983E+00	1,669E+03	1,122E-01
2092	2,446E+03	1,337E+06	8,980E+01	5,749E+00	1,604E+03	1,078E-01
2093	2,351E+03	1,284E+06	8,628E+01	5,523E+00	1,541E+03	1,035E-01
2094	2,258E+03	1,234E+06	8,290E+01	5,307E+00	1,480E+03	9,947E-02
2095	2,170E+03	1,185E+06	7,965E+01	5,099E+00	1,422E+03	9,557E-02
2096	2,085E+03	1,139E+06	7,652E+01	4,899E+00	1,367E+03	9,183E-02
2097	2,003E+03	1,094E+06	7,352E+01	4,707E+00	1,313E+03	8,823E-02
2098	1,924E+03	1,051E+06	7,064E+01	4,522E+00	1,262E+03	8,477E-02
2099	1,849E+03	1,010E+06	6,787E+01	4,345E+00	1,212E+03	8,144E-02
2100	1,777E+03	9,705E+05	6,521E+01	4,174E+00	1,165E+03	7,825E-02
2101	1,707E+03	9,324E+05	6,265E+01	4,011E+00	1,119E+03	7,518E-02
2102	1,640E+03	8,959E+05	6,019E+01	3,854E+00	1,075E+03	7,223E-02
2103	1,576E+03	8,608E+05	5,783E+01	3,702E+00	1,033E+03	6,940E-02
2104	1,514E+03	8,270E+05	5,557E+01	3,557E+00	9,924E+02	6,668E-02
2105	1,454E+03	7,946E+05	5,339E+01	3,418E+00	9,535E+02	6,407E-02
2106	1,397E+03	7,634E+05	5,129E+01	3,284E+00	9,161E+02	6,155E-02
2107	1,343E+03	7,335E+05	4,928E+01	3,155E+00	8,802E+02	5,914E-02
2108	1,290E+03	7,047E+05	4,735E+01	3,031E+00	8,457E+02	5,682E-02
2109	1,239E+03	6,771E+05	4,549E+01	2,912E+00	8,125E+02	5,459E-02
2110	1,191E+03	6,505E+05	4,371E+01	2,798E+00	7,807E+02	5,245E-02
2111	1,144E+03	6,250E+05	4,200E+01	2,689E+00	7,500E+02	5,040E-02
2112	1,099E+03	6,005E+05	4,035E+01	2,583E+00	7,206E+02	4,842E-02
2113	1,056E+03	5,770E+05	3,877E+01	2,482E+00	6,924E+02	4,652E-02
2114	1,015E+03	5,544E+05	3,725E+01	2,384E+00	6,652E+02	4,470E-02

Results (Continued)

Year	Carbon dioxide			NMOC		
	(Mg/year)	(m ³ /year)	(av ft ³ /min)	(Mg/year)	(m ³ /year)	(av ft ³ /min)
2115	9,750E+02	5,326E+05	3,579E+01	2,291E+00	6,391E+02	4,294E-02
2116	9,367E+02	5,117E+05	3,438E+01	2,201E+00	6,141E+02	4,126E-02
2117	9,000E+02	4,917E+05	3,304E+01	2,115E+00	5,900E+02	3,964E-02
2118	8,647E+02	4,724E+05	3,174E+01	2,032E+00	5,669E+02	3,809E-02
2119	8,308E+02	4,539E+05	3,050E+01	1,952E+00	5,446E+02	3,659E-02
2120	7,982E+02	4,361E+05	2,930E+01	1,876E+00	5,233E+02	3,516E-02
2121	7,669E+02	4,190E+05	2,815E+01	1,802E+00	5,028E+02	3,378E-02
2122	7,369E+02	4,025E+05	2,705E+01	1,732E+00	4,831E+02	3,246E-02
2123	7,080E+02	3,868E+05	2,599E+01	1,664E+00	4,641E+02	3,118E-02
2124	6,802E+02	3,716E+05	2,497E+01	1,598E+00	4,459E+02	2,996E-02
2125	6,535E+02	3,570E+05	2,399E+01	1,536E+00	4,284E+02	2,879E-02
2126	6,279E+02	3,430E+05	2,305E+01	1,475E+00	4,116E+02	2,766E-02
2127	6,033E+02	3,296E+05	2,214E+01	1,418E+00	3,955E+02	2,657E-02
2128	5,796E+02	3,167E+05	2,128E+01	1,362E+00	3,800E+02	2,553E-02
2129	5,569E+02	3,042E+05	2,044E+01	1,309E+00	3,651E+02	2,453E-02
2130	5,351E+02	2,923E+05	1,964E+01	1,257E+00	3,508E+02	2,357E-02
2131	5,141E+02	2,808E+05	1,887E+01	1,208E+00	3,370E+02	2,264E-02
2132	4,939E+02	2,698E+05	1,813E+01	1,161E+00	3,238E+02	2,176E-02
2133	4,746E+02	2,593E+05	1,742E+01	1,115E+00	3,111E+02	2,090E-02
2134	4,560E+02	2,491E+05	1,674E+01	1,071E+00	2,989E+02	2,008E-02
2135	4,381E+02	2,393E+05	1,608E+01	1,029E+00	2,872E+02	1,930E-02
2136	4,209E+02	2,299E+05	1,545E+01	9,890E-01	2,759E+02	1,854E-02
2137	4,044E+02	2,209E+05	1,484E+01	9,503E-01	2,651E+02	1,781E-02
2138	3,885E+02	2,123E+05	1,426E+01	9,130E-01	2,547E+02	1,711E-02
2139	3,733E+02	2,039E+05	1,370E+01	8,772E-01	2,447E+02	1,644E-02
2140	3,587E+02	1,959E+05	1,317E+01	8,428E-01	2,351E+02	1,580E-02
2141	3,446E+02	1,883E+05	1,265E+01	8,098E-01	2,259E+02	1,518E-02
2142	3,311E+02	1,809E+05	1,215E+01	7,780E-01	2,171E+02	1,458E-02
2143	3,181E+02	1,738E+05	1,168E+01	7,475E-01	2,085E+02	1,401E-02
2144	3,056E+02	1,670E+05	1,122E+01	7,182E-01	2,004E+02	1,346E-02
2145	2,937E+02	1,604E+05	1,078E+01	6,900E-01	1,925E+02	1,293E-02
2146	2,821E+02	1,541E+05	1,036E+01	6,630E-01	1,850E+02	1,243E-02
2147	2,711E+02	1,481E+05	9,950E+00	6,370E-01	1,777E+02	1,194E-02
2148	2,604E+02	1,423E+05	9,560E+00	6,120E-01	1,707E+02	1,147E-02
2149	2,502E+02	1,367E+05	9,185E+00	5,880E-01	1,640E+02	1,102E-02
2150	2,404E+02	1,313E+05	8,825E+00	5,650E-01	1,576E+02	1,059E-02
2151	2,310E+02	1,262E+05	8,479E+00	5,428E-01	1,514E+02	1,017E-02
2152	2,219E+02	1,212E+05	8,146E+00	5,215E-01	1,455E+02	9,776E-03
2153	2,132E+02	1,165E+05	7,827E+00	5,011E-01	1,398E+02	9,392E-03
2154	2,049E+02	1,119E+05	7,520E+00	4,814E-01	1,343E+02	9,024E-03