Annual Modeled CH4 Generation

Equation HH-1, 40 CFR 98.343

"ANNUAL MODELED CH4 GENERATION"								
EQUATION HH-1		40 CFR 98.343						
				where	Wx =	27000	Quantity of waste disposed in year x (Mg)	
					X=	2007	Year in which waste disposed	
					T=	2009	Reporting Year	
					k=	0.02	(per year) arid setting, no leachate recirculation	
					Lo=	0.067	(Mg CH4 per Mg waste) default from Table HH-1	
					Ox=	0.10	Oxidation Fraction, default	
					Waste Type =		Municipal Solid Waste	
X			**Wx**		**e^(-k(T-x-1))**	**e^(-k(T-x))**	**G CH4 partial**	**G CH4 summed**
			(Mg)				**WxLo((e^(-k(T-x-1))-e^(-k(T-x)))**	[Modelled CH4 Generation Rate
2009			65,795		1.02020134	1	89.05	in Reporting Year]
2008			61,960		1	0.980198673	82.20	**SUM(G CH4 Partial from x=S to x=T-1)**
2007			64,223		0.980198673	0.960789439	83.52	(Mg CH4)
2006			63,639		0.960789439	0.941764534	81.12	**1895.15**
2005			63,439		0.941764534	0.923116346	79.26	
2004			61,353		0.923116346	0.904837418	75.14	[CH4 Generation, Adjusted for Oxidation
2003			52,525		0.904837418	0.886920437	63.05	from Landfill, in Reporting Year]
2002			55,880		0.886920437	0.869358235	65.75	(EQ **HH-5**)
2001			54,825		0.869358235	0.852143789	63.23	(Mg CH4)
2000			55,548		0.852143789	0.835270211	62.80	**1705.64**
1999			57,299		0.835270211	0.818730753	63.50	
1998			55,077		0.818730753	0.802518798	59.82	
1997			69,195		0.802518798	0.786627861	73.67	For landfills without LFG Collection System,
1996			56,034		0.786627861	0.771051586	58.48	LFG emitted = LFG Generated
1995			46,448		0.771051586	0.755783741	47.51	(Mg CH4)
1994			41,020		0.755783741	0.740818221	41.13	**1705.64**
1993			40,254		0.740818221	0.726149037	39.56	
1992			39,502		0.726149037	0.711770323	38.06	but CH4 is
1991			38,764		0.711770323	0.697676326	36.60	21
1990			38,040		0.697676326	0.683861409	35.21	times more efficient than CO2
1989			37,329		0.683861409	0.670320046	33.87	in GHG effectiveness (**40 CFR 98 Table A-1**
1988			36,632		0.670320046	0.65704682	32.58	and **Equation A-1**)
1987			35,947		0.65704682	0.644036421	31.33	so **CO2e** for generated CH4 is (Mg)
1986			35,275		0.644036421	0.631283646	30.14	**35818**
1985			34,617		0.631283646	0.618783392	28.99	
1984			33,970		0.618783392	0.60653066	27.89	
1983			33,335		0.60653066	0.594520548	26.82	
1982			32,713		0.594520548	0.582748252	25.80	
1981			32,102		0.582748252	0.571209064	24.82	
1980			31,502		0.571209064	0.559898367	23.87	
1979			30,914		0.559898367	0.548811636	22.96	
1978			30,335		0.548811636	0.537944438	22.09	

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1977			29,769		0.537944438	0.527292424	21.25	
1976			29,213		0.527292424	0.516851334	20.44	
1975			28,667		0.516851334	0.506616992	19.66	
1974			28,132		0.506616992	0.496585304	18.91	
1973			27,606		0.496585304	0.486752256	18.19	
1972			27,090		0.486752256	0.477113916	17.49	
1971			26,585		0.477113916	0.467666427	16.83	
1970			26,087		0.467666427	0.458406011	16.19	
1969			25,600		0.458406011	0.449328964	15.57	
1968			25,122		0.449328964	0.440431655	14.98	
1967			24,653		0.440431655	0.431710523	14.41	
1966			24,192		0.431710523	0.423162082	13.86	
1965			23,740		0.423162082	0.414782912	13.33	
1964			23,296		0.414782912	0.40656966	12.82	
1963			22,861		0.40656966	0.398519041	12.33	
1962			22,435		0.398519041	0.390627835	11.86	
1961			22,015		0.390627835	0.382892886	11.41	
1960			21,604		0.382892886	0.375311099	10.97	
1959			21,200		0.375311099	0.367879441	10.56	
1958			20,805		0.367879441	0.36059494	10.15	
1957			20,415		0.36059494	0.353454682	9.77	
1956			20,034		0.353454682	0.34645581	9.39	
1955			19,660		0.34645581	0.339595526	9.04	
1954			19,293		0.339595526	0.332871084	8.69	
1953			18,932		0.332871084	0.326279795	8.36	
1952			18,578		0.326279795	0.319819022	8.04	
1951			18,231		0.319819022	0.313486181	7.74	
1950			17,891		0.313486181	0.307278739	7.44	
1949			17,556		0.307278739	0.301194212	7.16	
1948			17,228		0.301194212	0.295230167	6.88	
1947			16,906		0.295230167	0.289384218	6.62	
1946			16,581		0.289384218	0.283654026	6.37	
1945			16,281		0.283654026	0.2780373	6.13	
1944			15,976		0.2780373	0.272531793	5.89	
1943			15,678		0.272531793	0.267135302	5.67	