

Environmental Protection Agency

Pt. 98, Subpt. HH, Table HH-3

Factor	Default value	Units
F .....	0.5.	
OX .....	0.1.	
DE .....	0.99.	

<sup>a</sup>Recirculated leachate (in inches/year) is the total volume of leachate recirculated from company records or engineering estimates divided by the area of the portion of the landfill containing waste with appropriate unit conversions. Alternatively, landfills that use leachate recirculation can elect to use the k value of 0.057 rather than calculating the recirculated leachate rate.

<sup>b</sup>Use the lesser value when precipitation plus recirculated leachate is less than 20 inches/year. Use the greater value when precipitation plus recirculated leachate is greater than 40 inches/year. Use the average of the range of values when precipitation plus recirculated leachate is 20 to 40 inches/year (inclusive). Alternatively, landfills that use leachate recirculation can elect to use the greater value rather than calculating the recirculated leachate rate.

<sup>c</sup>Use the lesser value when the potential evapotranspiration rate exceeds the mean annual precipitation rate plus recirculated leachate. Use the greater value when the potential evapotranspiration rate does not exceed the mean annual precipitation rate plus recirculated leachate. Alternatively, landfills that use leachate recirculation can elect to use the greater value rather than assessing the potential evapotranspiration rate or recirculated leachate rate.

[75 FR 66473, Oct. 28, 2010]

TABLE HH-2 TO SUBPART HH OF PART 98—U.S. PER CAPITA WASTE DISPOSAL RATES

Year	Waste per capita ton/cap/yr	% to SWDS
1950 .....	0.63	100
1951 .....	0.63	100
1952 .....	0.63	100
1953 .....	0.63	100
1954 .....	0.63	100
1955 .....	0.63	100
1956 .....	0.63	100
1957 .....	0.63	100
1958 .....	0.63	100
1959 .....	0.63	100
1960 .....	0.63	100
1961 .....	0.64	100
1962 .....	0.64	100
1963 .....	0.65	100
1964 .....	0.65	100
1965 .....	0.66	100
1966 .....	0.66	100
1967 .....	0.67	100
1968 .....	0.68	100
1969 .....	0.68	100
1970 .....	0.69	100
1971 .....	0.69	100
1972 .....	0.70	100
1973 .....	0.71	100
1974 .....	0.71	100
1975 .....	0.72	100
1976 .....	0.73	100
1977 .....	0.73	100
1978 .....	0.74	100
1979 .....	0.75	100
1980 .....	0.75	100

Year	Waste per capita ton/cap/yr	% to SWDS
1981 .....	0.76	100
1982 .....	0.77	100
1983 .....	0.77	100
1984 .....	0.78	100
1985 .....	0.79	100
1986 .....	0.79	100
1987 .....	0.80	100
1988 .....	0.80	100
1989 .....	0.85	84
1990 .....	0.84	77
1991 .....	0.78	76
1992 .....	0.76	72
1993 .....	0.78	71
1994 .....	0.77	67
1995 .....	0.72	63
1996 .....	0.71	62
1997 .....	0.72	61
1998 .....	0.78	61
1999 .....	0.78	60
2000 .....	0.84	61
2001 .....	0.95	63
2002 .....	1.06	66
2003 .....	1.06	65
2004 .....	1.06	64
2005 .....	1.06	64
2006 .....	1.06	64

EDITORIAL NOTE: At 75 FR 66474, October 28, 2010, Table HH-2 to subpart HH was amended; however, the amendment could not be incorporated as instructed.

TABLE HH-3 TO SUBPART HH OF PART 98—LANDFILL GAS COLLECTION EFFICIENCIES

Description	Landfill Gas Collection Efficiency
A1: Area with no waste in-place .....	Not applicable; do not use this area in the calculation.
A2: Area without active gas collection, regardless of cover type .....	CE2: 0%.
A3: Area with daily soil cover and active gas collection .....	CE3: 60%.
A4: Area with an intermediate soil cover, or a final soil cover not meeting the criteria for A5 below, and active gas collection.	CE4: 75%.
A5: Area with a final soil cover of 3 feet or thicker of clay and/or geomembrane cover system and active gas collection.	CE5: 95%.
Area weighted average collection efficiency for landfills .....	CEave1 = (A2*CE2 + A3*CE3 + A4*CE4 + A5*CE5)/(A2+A3+A4+A5).

## § 98.350

[74 FR 56374, Oct. 30, 2009, as amended at 75 FR 66474, Oct. 28, 2010]

### Subpart II—Industrial Wastewater Treatment

SOURCE: 75 FR 39767, July 12, 2010, unless otherwise noted.

#### § 98.350 Definition of source category.

(a) This source category consists of anaerobic processes used to treat industrial wastewater and industrial wastewater treatment sludge at facilities that perform the operations listed in this paragraph.

- (1) Pulp and paper manufacturing.
- (2) Food processing.
- (3) Ethanol production.
- (4) Petroleum refining.

(b) An *anaerobic process* is a procedure in which organic matter in wastewater, wastewater treatment sludge, or other material is degraded by micro-organisms in the absence of oxygen, resulting in the generation of CO<sub>2</sub> and CH<sub>4</sub>. This source category consists of the following: anaerobic reactors, anaerobic lagoons, anaerobic sludge digesters, and biogas destruction devices (for example, burners, boilers, turbines, flares, or other devices).

(1) An *anaerobic reactor* is an enclosed vessel used for anaerobic wastewater treatment (e.g., upflow anaerobic sludge blanket, fixed film).

(2) An *anaerobic sludge digester* is an enclosed vessel in which wastewater treatment sludge is degraded anaerobically.

(3) An *anaerobic lagoon* is a lined or unlined earthen basin used for wastewater treatment, in which oxygen is absent throughout the depth of the basin, except for a shallow surface zone. Anaerobic lagoons are not equipped with surface aerators. Anaerobic lagoons are classified as deep (depth more than 2 meters) or shallow (depth less than 2 meters).

(c) This source category does not include municipal wastewater treatment plants or separate treatment of sanitary wastewater at industrial sites.

[75 FR 39767, July 12, 2010, as amended at 76 FR 73903, Nov. 29, 2011]

## 40 CFR Ch. I (7–1–12 Edition)

#### § 98.351 Reporting threshold.

You must report GHG emissions under this subpart if your facility meets all of the conditions under paragraphs (a) or (b) of this section:

(a) *Petroleum refineries and pulp and paper manufacturing.*

(1) The facility is subject to reporting under subpart Y of this part (Petroleum Refineries) or subpart AA of this part (Pulp and Paper Manufacturing).

(2) The facility meets the requirements of either § 98.2(a)(1) or (2).

(3) The facility operates an anaerobic process to treat industrial wastewater and/or industrial wastewater treatment sludge.

(b) *Ethanol production and food processing facilities.*

(1) The facility performs an ethanol production or food processing operation, as defined in § 98.358 of this subpart.

(2) The facility meets the requirements of § 98.2(a)(2).

(3) The facility operates an anaerobic process to treat industrial wastewater and/or industrial wastewater treatment sludge.

#### § 98.352 GHGs to report.

(a) You must report CH<sub>4</sub> generation, CH<sub>4</sub> emissions, and CH<sub>4</sub> recovered from treatment of industrial wastewater at each anaerobic lagoon and anaerobic reactor.

(b) You must report CH<sub>4</sub> emissions and CH<sub>4</sub> recovered from each anaerobic sludge digester.

(c) You must report CH<sub>4</sub> emissions and CH<sub>4</sub> destruction resulting from each biogas collection and biogas destruction device.

(d) You must report under subpart C of this part (General Stationary Fuel Combustion Sources) the emissions of CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O from each stationary combustion unit associated with the biogas destruction device, if present, by following the requirements of subpart C of this part.

[75 FR 39767, July 12, 2010, as amended at 76 FR 73903, Nov. 29, 2011]

#### § 98.353 Calculating GHG emissions.

(a) For each anaerobic reactor and anaerobic lagoon, estimate the annual mass of CH<sub>4</sub> generated according to the