

**Environmental Protection Agency**

**§ 503.43**

(p) *Total hydrocarbons* means the organic compounds in the exit gas from a sewage sludge incinerator stack measured using a flame ionization detection instrument referenced to propane.

(q) *Wet electrostatic precipitator* is an air pollution control device that uses both electrical forces and water to remove pollutants in the exit gas from a sewage sludge incinerator stack.

(r) *Wet scrubber* is an air pollution control device that uses water to remove pollutants in the exit gas from a sewage sludge incinerator stack.

[58 FR 9387, Feb. 19, 1993, as amended at 64 FR 42571, Aug. 4, 1999]

**§ 503.42 General requirements.**

No person shall fire sewage sludge in a sewage sludge incinerator except in compliance with the requirements in this subpart.

**§ 503.43 Pollutant limits.**

(a) Firing of sewage sludge in a sewage sludge incinerator shall not violate the requirements in the National Emission Standard for Beryllium in subpart C of 40 CFR part 61.

(b) Firing of sewage sludge in a sewage sludge incinerator shall not violate the requirements in the National Emission Standard for Mercury in subpart E of 40 CFR part 61.

(c) *Pollutant limit—lead.* (1) The average daily concentration for lead in sewage sludge fed to a sewage sludge incinerator shall not exceed the concentration calculated using Equation (4).

$$C = \frac{0.1 \times \text{NAAQS} \times 86,400}{\text{DF} \times (1 - \text{CE}) \times \text{SF}} \quad \text{Eq. (4)}$$

Where:

C = Average daily concentration of lead in sewage sludge.

NAAQS = National Ambient Air Quality Standard for lead in micrograms per cubic meter.

DF = Dispersion factor in micrograms per cubic meter per gram per second.

CE = Sewage sludge incinerator control efficiency for lead in hundredths.

SF = Sewage sludge feed rate in metric tons per day (dry weight basis).

(2) The dispersion factor (DF) in equation (4) shall be determined from an air dispersion model in accordance with § 503.43(e).

(i) When the sewage sludge stack height is 65 meters or less, the actual sewage sludge incinerator stack height shall be used in the air dispersion model to determine the dispersion factor (DF) for equation (4).

(ii) When the sewage sludge incinerator stack height exceeds 65 meters, the creditable stack height shall be determined in accordance with 40 CFR 51.100(ii) and the creditable stack height shall be used in the air dispersion model to determine the dispersion factor (DF) for equation (4).

(3) The control efficiency (CE) for equation (4) shall be determined from a performance test of the sewage sludge incinerator in accordance with § 503.43(e).

(d) *Pollutant limit—arsenic, cadmium, chromium, and nickel.* (1) The average daily concentration for arsenic, cadmium, chromium, and nickel in sewage sludge fed to a sewage sludge incinerator each shall not exceed the concentration calculated using equation (5).

$$C = \frac{\text{RSC} \times 86,400}{\text{DF} \times (1 - \text{CE}) \times \text{SF}} \quad \text{Eq. (5)}$$

Where:

C = Average daily concentration of arsenic, cadmium, chromium, or nickel in sewage sludge.

CE = Sewage sludge incinerator control efficiency for arsenic, cadmium, chromium, or nickel in hundredths.

DF = Dispersion factor in micrograms per cubic meter per gram per second.

RSC = Risk specific concentration for arsenic, cadmium, chromium, or nickel in micrograms per cubic meter.

SF = Sewage sludge feed rate in metric tons per day (dry weight basis).

(2) The risk specific concentrations for arsenic, cadmium, and nickel used in equation (5) shall be obtained from Table 1 of § 503.43.

TABLE 1 OF § 503.43.—RISK SPECIFIC CONCENTRATION FOR ARSENIC, CADMIUM, AND NICKEL

Pollutant	Risk specific concentration (micrograms per cubic meter)
Arsenic .....	0.023
Cadmium .....	0.057
Nickel .....	2.0

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(3) The risk specific concentration for chromium used in equation (5) shall be obtained from Table 2 of §503.43 or shall be calculated using equation (6).

TABLE 2 OF §503.43.—RISK SPECIFIC CONCENTRATION FOR CHROMIUM

Type of Incinerator	Risk specific concentration (micrograms per cubic meter)
Fluidized bed with wet scrubber .....	0.65
Fluidized bed with wet scrubber and wet electrostatic precipitator .....	0.23
Other types with wet scrubber .....	0.064
Other types with wet scrubber and wet electrostatic precipitator .....	0.016

$$RSC = \frac{0.0085}{r} \quad \text{Eq. (6)}$$

Where:

RSC=risk specific concentration for chromium in micrograms per cubic meter used in equation (5).

r=decimal fraction of the hexavalent chromium concentration in the total chromium concentration measured in the exit gas from the sewage sludge incinerator stack in hundredths.

(4) The dispersion factor (DF) in equation (5) shall be determined from an air dispersion model in accordance with §503.43(e).

(i) When the sewage sludge incinerator stack height is equal to or less than 65 meters, the actual sewage sludge incinerator stack height shall be used in the air dispersion model to determine the dispersion factor (DF) for equation (5).

(ii) When the sewage sludge incinerator stack height is greater than 65 meters, the creditable stack height shall be determined in accordance with 40 CFR 51.100(ii) and the creditable stack height shall be used in the air dispersion model to determine the dispersion factor (DF) for equation (5).

(5) The control efficiency (CE) for equation (5) shall be determined from a performance test of the sewage sludge incinerator in accordance with §503.43(e).

(e) *Air dispersion modeling and performance testing.* (1) The air dispersion model used to determine the dispersion factor in §503.43 (c)(2) and (d)(4) shall be

appropriate for the geographical, physical, and population characteristics at the sewage sludge incinerator site. The performance test used to determine the control efficiencies in §503.43 (c)(3) and (d)(5) shall be appropriate for the type of sewage sludge incinerator.

(2) For air dispersion modeling initiated after September 3, 1999, the modeling results shall be submitted to the permitting authority 30 days after completion of the modeling. In addition to the modeling results, the submission shall include a description of the air dispersion model and the values used for the model parameters.

(3) The following procedures, at a minimum, shall apply in conducting performance tests to determine the control efficiencies in §503.43(c)(3) and (d)(5) after September 3, 1999:

(i) The performance test shall be conducted under representative sewage sludge incinerator conditions at the highest expected sewage sludge feed rate within the design capacity of the sewage sludge incinerator.

(ii) The permitting authority shall be notified at least 30 days prior to any performance test so the permitting authority may have the opportunity to observe the test. The notice shall include a test protocol with incinerator operating conditions and a list of test methods to be used.

(iii) Each performance test shall consist of three separate runs using the applicable test method. The control efficiency for a pollutant shall be the arithmetic mean of the control efficiencies for the pollutant from the three runs.

(4) The pollutant limits in §503.43 (c) and (d) of this section shall be submitted to the permitting authority no later than 30 days after completion of the air dispersion modeling and performance test.

(5) Significant changes in geographic or physical characteristics at the incinerator site or in incinerator operating conditions require new air dispersion modeling or performance testing to determine a new dispersion factor or a new control efficiency that will be used to calculate revised pollutant limits.

[58 FR 9387, Feb. 19, 1993, as amended at 64 FR 42572, Aug. 4, 1999]