

**§ 503.46**

**40 CFR Ch. I (7-1-04 Edition)**

for the air pollution control device operating parameters from the performance test required by § 503.43 (c)(3) and (d)(5).

(g) Sewage sludge shall not be fired in a sewage sludge incinerator if it is likely to adversely affect a threatened or endangered species listed under section 4 of the Endangered Species Act or its designated critical habitat.

(h) The instruments required in § 503.45(a)-(d) shall be appropriate for the type of sewage sludge incinerator.

[58 FR 9387, Feb. 19, 1993, as amended at 64 FR 42573, Aug. 4, 1999]

**§ 503.46 Frequency of monitoring.**

(a) *Sewage sludge.* (1) The frequency of monitoring for beryllium shall be as required in subpart C of 40 CFR part 61, and for mercury as required in subpart E of 40 CFR part 61.

(2) The frequency of monitoring for arsenic, cadmium, chromium, lead, and nickel in sewage sludge fed to a sewage sludge incinerator shall be the frequency in Table 1 of § 503.46.

TABLE 1 OF § 503.46—FREQUENCY OF MONITORING—INCINERATION

Amount of sewage sludge <sup>1</sup> (metric tons per 365 day period)	Frequency
Greater than zero but less than 290 .....	Once per year.
Equal to or greater than 290 but less than 1,500 .....	Once per quarter (four times per year).
Equal to or greater than 1,500 but less than 15,000 .....	Once per 60 days (six times per year).
Equal to or greater than 15,000 .....	Once per month (12 times per year).

<sup>1</sup> Amount of sewage sludge fired in a sewage sludge incinerator (dry weight basis).

(3) After the sewage sludge has been monitored for two years at the frequency in Table 1 of § 503.46, the permitting authority may reduce the frequency of monitoring for arsenic, cadmium, chromium, lead, and nickel.

(b) *Total hydrocarbons, oxygen concentration, information to determine moisture content, and combustion temperatures.* The total hydrocarbons concentration and oxygen concentration in the exit gas from a sewage sludge incinerator stack, the information used to measure moisture content in the exit gas, and the combustion temperatures for the sewage sludge incinerator shall be monitored continuously.

(c) *Air pollution control device operating parameters.* For sewage sludge incinerators subject to the requirements in subpart O of 40 CFR part 60, the frequency of monitoring for the appropriate air pollution control device operating parameters shall be the frequency of monitoring in subpart O of 40 CFR part 60. For all other sewage sludge incinerators, the appropriate air pollution control device operating parameters shall be at least daily.

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[58 FR 9387, Feb. 19, 1993, as amended at 64 FR 42573, Aug. 4, 1999]

**§ 503.47 Recordkeeping.**

(a) The person who fires sewage sludge in a sewage sludge incinerator shall develop the information in § 503.47(b) through § 503.47(n) and shall retain that information for five years.

(b) The concentration of lead, arsenic, cadmium, chromium, and nickel in the sewage sludge fed to the sewage sludge incinerator.

(c) The total hydrocarbons concentrations in the exit gas from the sewage sludge incinerator stack.

(d) Information that indicates the requirements in the National Emission Standard for beryllium in subpart C of 40 CFR part 61 are met.

(e) Information that indicates the requirements in the National Emission Standard for mercury in subpart E of 40 CFR part 61 are met.

(f) The operating combustion temperatures for the sewage sludge incinerator.

(g) Values for the air pollution control device operating parameters.

(h) The oxygen concentration and information used to measure moisture content in the exit gas from the sewage sludge incinerator stack.

(i) The sewage sludge feed rate.

(j) The stack height for the sewage sludge incinerator.

(k) The dispersion factor for the site where the sewage sludge incinerator is located.

(l) The control efficiency for lead, arsenic, cadmium, chromium, and nickel for each sewage sludge incinerator.

(m) The risk specific concentration for chromium calculated using equation (6), if applicable.

(n) A calibration and maintenance log for the instruments used to measure the total hydrocarbons concentration and oxygen concentration in the exit gas from the sewage sludge incinerator stack, the information needed to determine moisture content in the exit gas, and the combustion temperatures.

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[58 FR 9387, Feb. 19, 1993, as amended at 64 FR 42573, Aug. 4, 1999]

**§ 503.48 Reporting.**

Class I sludge management facilities, POTWs (as defined in 40 CFR 501.2) with a design flow rate equal to or greater than one million gallons per day, and POTWs that serve a population of 10,000 people or greater shall submit the information in §503.47(b) through §503.47(h) to the permitting authority on February 19 of each year.

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**APPENDIX A TO PART 503—PROCEDURE TO DETERMINE THE ANNUAL WHOLE SLUDGE APPLICATION RATE FOR A SEWAGE SLUDGE**

Section 503.13(a)(4)(ii) requires that the product of the concentration for each pollutant listed in Table 4 of §503.13 in sewage sludge sold or given away in a bag or other container for application to the land and the annual whole sludge application rate (AWSAR) for the sewage sludge not cause the annual pollutant loading rate for the pollutant in Table 4 of §503.13 to be exceeded. This appendix contains the procedure used to determine the AWSAR for a sewage sludge that does not cause the annual pollutant loading rates in Table 4 of §503.13 to be exceeded.

The relationship between the annual pollutant loading rate (APLR) for a pollutant and the annual whole sludge application rate (AWSAR) for 1a sewage sludge is shown in equation (1).

$$APLR = C \times AWSAR \times 0.001 \quad (1)$$

Where:

APLR=Annual pollutant loading rate in kilograms per hectare per 365 day period.

C=Pollutant concentration in milligrams, per kilogram of total solids (dry weight basis).

AWSAR=Annual whole sludge application rate in metric tons per hectare per 365 day period (dry weight basis).

0.001=A conversion factor.

To determine the AWSAR, equation (1) is rearranged into equation (2):

$$AWSAR = \frac{APLR}{C \times 0.001} \quad (2)$$

The procedure used to determine the AWSAR for a sewage sludge is presented below.

**PROCEDURE:**

1. Analyze a sample of the sewage sludge to determine the concentration for each of the pollutants listed in Table 4 of §503.13 in the sewage sludge.
2. Using the pollutant concentrations from Step 1 and the APLRs from Table 4 of §503.13, calculate an AWSAR for each pollutant using equation (2) above.
3. The AWSAR for the sewage sludge is the lowest AWSAR calculated in Step 2.

**APPENDIX B TO PART 503—PATHOGEN TREATMENT PROCESSES**

**A. Processes to Significantly Reduce Pathogens (PSRP)**

1. Aerobic digestion—Sewage sludge is agitated with air or oxygen to maintain aerobic conditions for a specific mean cell residence time at a specific temperature. Values for the mean cell residence time and temperature shall be between 40 days at 20 degrees Celsius and 60 days at 15 degrees Celsius.
2. Air drying—Sewage sludge is dried on sand beds or on paved or unpaved basins. The sewage sludge dries for a minimum of three months. During two of the three months, the ambient average daily temperature is above zero degrees Celsius.
3. Anaerobic digestion—Sewage sludge is treated in the absence of air for a specific mean cell residence time at a specific temperature. Values for the mean cell residence time and temperature shall be between 15 days at 35 to 55 degrees Celsius and 60 days at 20 degrees Celsius.
4. Composting—Using either the within-vessel, static aerated pile, or windrow composting methods, the temperature of the sewage sludge is raised to 40 degrees Celsius or higher and remains at 40 degrees Celsius or higher for five days. For four hours during the five days, the temperature in the compost pile exceeds 55 degrees Celsius.
5. Lime stabilization—Sufficient lime is added to the sewage sludge to raise the pH of