

567—67.6(455B) Land application requirements for Class I sewage sludge.

67.6(1) Class I criteria. Class I sewage sludge is sewage sludge that meets the pollutant concentrations in 67.6(1)“a,” the Class A pathogen reduction requirements in 67.6(1)“b,” and the vector attraction reduction (VAR) requirements in 67.6(1)“c.”

a. Class I pollutant concentrations. The concentration of each pollutant in the sewage sludge shall not exceed the concentration for the pollutant in Table 1.

TABLE 1—POLLUTANT CONCENTRATIONS

Pollutant	Monthly average concentration in mg per kg, dry weight basis
Arsenic	41
Cadmium	39
Copper	1500
Lead	300
Mercury	17
Nickel	420
Selenium	100
Zinc	2800

b. Class I pathogen requirements (Class A). The sewage sludge shall comply with 67.6(1)“b”(1) and “b”(2).

(1) The sewage sludge shall comply with one of the following monitoring processes. Compliance with pathogen density shall not be based on an average value. Each individual sample result shall meet the numerical pathogen standards.

1. The fecal coliform density in the sewage sludge shall be less than 1,000 Most Probable Number (MPN) per gram of total solids (dry weight basis), or

2. The *Salmonella* sp. bacteria density in the sewage sludge shall be less than three MPN per four grams of total solids (dry weight basis).

(2) The sewage sludge shall comply with one of the following analytical and treatment processes:

1. The sewage sludge temperature shall be maintained at a specific value for a period of time using one of the procedures detailed below.

- When the percent solids of the sewage sludge is 7 percent or higher, the sewage sludge temperature shall be 50 degrees Celsius (°C) or higher; the time period shall be 20 minutes or longer; and the temperature and time period shall be determined using Equation 1, except when small particles of sewage sludge are heated by either warmed gases or an immiscible liquid.

- When the percent solids of the sewage sludge is 7 percent or higher and small particles of sewage sludge are heated by either warmed gases or an immiscible liquid, the sewage sludge temperature shall be 50°C or higher; the time period shall be 15 seconds or longer; and the temperature and time period shall be determined using Equation 1.

- When the percent solids of the sewage sludge is less than 7 percent and the time period is at least 15 seconds, but less than 30 minutes, the temperature and time period shall be determined using Equation 1.

$$\text{Equation 1: } D = 131,700,000/10^{0.1400t}$$

Where D = time in days; t = temperature in °C

- When the percent solids of the sewage sludge is less than 7 percent, the sewage sludge temperature is 50°C or higher, and the time period is 30 minutes or longer, the temperature and time period shall be determined using Equation 2.

$$\text{Equation 2: } D = 50,070,000/10^{0.1400t}$$

Where D = time in days; t = temperature in °C

2. The sewage sludge shall meet all of the following requirements:

- The sludge pH shall be raised to above 12 and shall remain above 12 for 72 hours;

- The sludge temperature shall be above 52°C for 12 hours or longer during the period that the sludge pH is above 12; and
- At the end of the 72-hour period during which the sludge pH is above 12, the sludge shall be air dried to achieve a percent solids in the sludge greater than 50 percent.

3. Sewage sludge treated in other known processes shall be analyzed prior to pathogen treatment to determine whether it contains enteric viruses and viable helminth ova. After pathogen treatment, the density of enteric viruses in the sewage sludge shall be less than one plaque-forming unit per four grams of total solids (dry weight basis), and the density of viable helminth ova shall be less than one per four grams of total solids (dry weight basis). Once the process has been demonstrated to achieve the required pathogen reduction, the process must be operated under the same conditions that were used during the demonstration.

4. Sewage sludge treated by unknown processes or by processes operating at conditions less stringent than the operating conditions at which the sewage sludge could qualify as Class I under other alternatives shall be analyzed prior to pathogen treatment to determine whether the sewage sludge contains enteric viruses and viable helminth ova. The density of enteric viruses in the sewage sludge shall be less than one plaque-forming unit per four grams of total solids (dry weight basis), and the density of viable helminth ova shall be less than one per four grams of total solids (dry weight basis).

5. Sewage sludge shall be treated in one of the Processes to Further Reduce Pathogens (PFRP) described in 67.10(2).

6. Sewage sludge shall be treated in a process that is equivalent to a PFRP, as determined by the department.

c. *Class I VAR requirements.* The sewage sludge shall meet one of the following VAR requirements.

(1) The mass of volatile solids in the sewage sludge shall be reduced by a minimum of 38 percent.

(2) A portion of the previously anaerobically digested sewage sludge shall be digested anaerobically in the laboratory in a bench-scale unit for 40 additional days at a temperature between 30°C and 37°C. If, at the end of the 40 days, the volatile solids in the sludge at the beginning of that period are reduced by less than 17 percent, VAR is achieved.

(3) A portion of the previously aerobically digested sewage sludge that has 2 percent solids or less shall be digested aerobically in the laboratory in a bench-scale unit for 30 additional days at 20°C. If, at the end of the 30 days, the volatile solids in the sludge at the beginning of that period is reduced by less than 15 percent, VAR is achieved.

(4) The specific oxygen uptake rate (SOUR) for sewage sludge treated in an aerobic process shall be equal to or less than 1.5 milligrams (mg) of oxygen per hour per gram of total solids (dry weight basis) at a temperature of 20°C.

(5) Sewage sludge shall be treated in an aerobic process for 14 days or longer. During that time, the sewage sludge temperature shall be higher than 40°C and the average sewage sludge temperature shall be higher than 45°C.

(6) The sewage sludge pH shall be raised to 12 or higher, measured at 25°C, by alkali addition and, without the addition of more alkali, shall remain at 12 or higher for two hours and then at 11.5 or higher for an additional 22 hours.

(7) The percent solids of sewage sludge that does not contain unstabilized solids generated in a primary wastewater treatment process shall be equal to or greater than 75 percent based on the moisture content and total solids prior to mixing with other materials.

(8) The percent solids of sewage sludge that contains unstabilized solids generated in a primary wastewater treatment process shall be equal to or greater than 90 percent based on the moisture content and total solids prior to mixing with other materials.

(9) Sewage sludge shall be injected below the land surface, and no significant amount of the sludge shall be present on the land surface within one hour after injection.

(10) Sewage sludge applied to the land surface or placed on a surface disposal site shall be incorporated into the soil within six hours after application to or placement on the land.

67.6(2) *Class I management practices.* Class I sewage sludge may be land applied in conformance with the following rules:

a. Class I sewage sludge may be applied to a lawn or a home garden.

b. Class I sewage sludge shall be applied to the land at an annual whole sludge application rate that is equal to or less than the agronomic nitrogen uptake rate, unless otherwise specified by the department.

c. An information sheet shall be provided to a person who receives Class I sewage sludge that is sold or given away in a container for land application. The information sheet shall contain:

- (1) The name and address of the sewage sludge generator;
- (2) A statement that land application of the sewage sludge is prohibited except in accordance with the instructions on the information sheet; and
- (3) The annual application rate for the sewage sludge.

67.6(3) Class I monitoring frequency.

a. The pollutants listed in Table 1, the pathogen density requirements, and the VAR requirements shall be monitored at the frequency stated in Table 2.

TABLE 2—MONITORING FREQUENCY

Amount of sewage sludge per 365-day period, dry weight basis	Monitoring Frequency
Greater than 0 but less than 290 metric tons (mt) (or 320 English tons)	once per year
Equal to or greater than 290 but less than 1,500 mt (320 to 1,653 English tons)	once per quarter (4 times per year)
Equal to or greater than 1,500 but less than 15,000 mt (1,653 to 16,535 English tons)	once per 60 days (6 times per year)
Equal to or greater than 15,000 mt (or 16,535 English tons)	once per month (12 times per year)

b. After the sewage sludge has been monitored for two years, the department may reduce the monitoring frequency, but in no case shall the monitoring frequency be less than once per year when sewage sludge is land applied.

67.6(4) Class I recordkeeping.

a. Both the generator and bulk sludge applicator of Class I sewage sludge shall develop the following information and retain it for five years:

- (1) The concentration of each pollutant listed in Table 1 in the sewage sludge.
- (2) The following certification statement: “I certify, under penalty of law, that the Class I sewage sludge requirements have been met. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment.”
- (3) Descriptions of how the PFRP are met, how one of the VAR requirements is met, and how the management practices are met for each site.

b. Treatment works with a design flow rate of 1 million gallons per day (mgd) or greater and treatment works that serve 10,000 people or more shall submit the above information to EPA, using EPA’s NPDES eReporting Tool (NeT), by February 19 of each year for the previous calendar year.

[ARC 9206C, IAB 5/14/25, effective 6/18/25]