567—67.8(455B) Land application requirements for Class II sewage sludge.

67.8(1) *Class II sludge criteria.* Class II sewage sludge is sewage sludge that meets the pollutant concentrations in paragraph 67.8(1)*"a,"* the pathogen reduction standards in paragraph 67.8(1)*"b,"* and the vector attraction reduction requirements in paragraph 67.8(1)*"c"* below.

a. Pollutant concentrations for Class II sewage sludge. The concentration of any pollutant in the sewage sludge shall not exceed the ceiling concentration for the pollutant in Table 3.

TABLE 3—CEILING CONCENTRATIONS

Pollutant	Ceiling Concentration milligrams per kilogram*
Arsenic	75
Cadmium	85
Copper	4300
Lead	840
Mercury	57
Molybdenum	75
Nickel	420
Selenium	100
Zinc	7500

*Dry weight basis

b. Pathogen reduction requirements for Class II sewage sludge. The sewage sludge shall meet one of the following three alternatives.

(1) Seven samples of the sewage sludge shall be collected at the time the sewage sludge is disposed, and the geometric mean of the density of fecal coliform shall be less than 2,000,000 Most Probable Number per gram of total solids (dry weight basis).

(2) Sewage sludge shall be treated in one of the Processes to Significantly Reduce Pathogens (PSRP) described in 567—67.11(455B).

(3) Sewage sludge shall be treated in a process that is equivalent to a Process to Significantly Reduce Pathogens (PSRP), as determined by the department.

c. Vector attraction reduction requirements for Class II sewage sludge. The sewage sludge shall meet one of the following vector attraction reduction requirements.

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

(2) Digest a portion of the previously anaerobically digested sewage sludge anaerobically in the laboratory in a bench-scale unit for 40 additional days at a temperature between 30 and 37 degrees Celsius. If, at the end of the 40 days, the volatile solids in the sewage sludge at the beginning of that period is reduced by less than 17 percent, vector attraction reduction is achieved.

(3) Digest a portion of the previously aerobically digested sewage sludge that has a percent solids of 2 percent or less aerobically in the laboratory in a bench-scale unit for 30 additional days at 20 degrees Celsius. If, at the end of the 30 days, the volatile solids in the sewage sludge at the beginning of that period is reduced by less than 15 percent, vector attraction reduction 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 of oxygen per hour per gram of total solids (dry weight basis) at a temperature of 20 degrees Celsius.

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

(6) The pH of sewage sludge shall be raised to 12 or higher, measured at 25 degrees Celsius, by alkali addition and, without the addition of more alkali, shall remain at 12 or higher for 2 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 surface of the land and no significant amount of the sewage sludge shall be present on the land surface within one hour after the sewage sludge is injected.

(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.

67.8(2) *Management practices for Class II sewage sludge.* Class II sewage sludge may be land applied in conformance with the following:

a. Class II sewage sludge shall not be applied to a lawn or a home garden.

b. Land application sites accepting Class II sewage sludge not meeting pollutant concentrations listed in Table 1 of subrule 67.7(1) are subject to the cumulative pollutant loading rates listed in Table 4.

TABLE 4—CUMULATIVE POLLUTANT LOADING RATES

Pollutant	Cumulative Pollutant kilograms per hectare	Loading Rate pounds per acre
Arsenic	41	36
Cadmium	39	34
Copper	1500	1335
Lead	300	267
Mercury	17	15
Nickel	420	373
Selenium	100	89
Zinc	2800	2490

c. Sewage sludge shall not be applied to the land 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.

d. 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.

e. The sewage sludge shall be applied only to soils classified as acceptable throughout the top 5 feet of soil profile. The sewage sludge shall not be applied to soils classified as sand, loamy sand and silt. The acceptability of a soil shall be determined using the USDA soil classifications.

f. Land application sites shall have soil pH maintained above 6.0, unless (1) crops prefer soils with lower pH conditions, (2) the sludge meets the pollution concentrations contained in Table 1, or (3) the site does not exceed calcium carbonate equivalent levels according to sound farm management practices. If the soil pH is below 6.0, it is acceptable to use agricultural lime to increase the pH to an acceptable level.

g. If the sewage sludge is applied to land on which the soil loss exceeds the soil loss limits established by the county soil conservation district, the sewage sludge shall be injected on the contour or shall be applied to the surface and mechanically incorporated into soil within 48 hours of application. The sewage sludge shall not be applied to ground having greater than 9 percent slope unless approved by the department.

h. Sewage sludge application on frozen or snow-covered ground should be avoided, unless special precautions are taken such as proven farm management practices to avoid runoff. If application on frozen

or snow-covered ground is necessary, it shall be limited to land areas of less than 5 percent slope unless approved by the department.

i. Sewage sludge shall not be applied to the land that is 35 feet or less from an open waterway. If sewage sludge is applied within 200 feet, but no closer than 35 feet, of a stream, lake, sinkhole or tile line surface intake located downgradient of the land application site, it shall be injected or applied to the surface and mechanically incorporated into the soil within 48 hours of application unless approved by the department.

j. If the sewage sludge is applied to land subject to flooding more frequently than once in ten years, the sludge shall be injected or shall be applied to the surface and mechanically incorporated into the soil within 48 hours. Information on which land is subject to flooding more frequently than once in ten years is available from the department.

k. Sewage sludge shall not be applied within 200 feet of an occupied residence or any well. Distances may be reduced to a minimum of 35 feet with the written agreement of both the owner and occupant and an approved farm management plan which addresses soil erodibility, harvest residuals, buffer strips, and other sound farm management practices. The farm management plan shall be approved by the local soil conservation district commission in accordance with rules implementing Iowa Code sections 161A.42 to 161A.51.

l. Food crops with harvested parts that touch the sewage sludge/soil mixture and that are totally above the land surface shall not be harvested for 14 months after application of sewage sludge.

m. Food crops, feed crops and fiber crops shall not be harvested for 30 days after application of sewage sludge.

n. Animals shall not be allowed to graze on the land for 30 days after application of sewage sludge.

o. Turf grown on land where sewage sludge is applied shall not be harvested for one year after application of the sewage sludge when the harvested turf is placed on either land with a high potential for public exposure or a lawn, unless otherwise specified by the department.

p. Public access to land with a high potential for public exposure shall be restricted for one year after application of sewage sludge.

q. Public access to land with a low potential for public exposure shall be restricted for 30 days after application of sewage sludge.

r. When required by the director, groundwater monitoring wells and surface monitoring points shall be installed and a monitoring program implemented. Samples must be analyzed by a laboratory which is equipped and competent to perform the tests required by the director. The results shall be forwarded to the department on a stipulated schedule.

s. The sewage sludge generator shall provide the notice and necessary information to comply with the requirements to the sewage sludge applicator and landowner.

t. The sewage sludge applicator shall provide written notice, prior to the initial application of sewage sludge, to the department. The notice shall include:

(1) The location, by legal description, of the land application site and the landowner.

(2) The name, address, telephone number, and National Pollutant Discharge Elimination System permit number (if appropriate) of the sewage sludge generator and the applicator.

67.8(3) *Frequency of monitoring for Class II sewage sludge.*

a. The frequency of monitoring for the pollutants listed in Table 3, the pathogen density requirements, and the vector attraction reduction requirements shall be at the frequency stated in Table 5.

TABLE 5—FREQUENCY OF MONITORING

Amount of sewage sludge per 365-day period dry weight basis	Monitoring Frequency
Greater than 0 but less than 290 metric tons (or 320 English tons)	once per year
Equal to or greater than 290 but less than 1,500 metric tons (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 metric tons (1,653 to 16,535 English tons)	once per 60 days (6 times per year)
Equal to or greater than 15,000 metric tons (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 frequency of monitoring, but in no case shall the frequency of monitoring be less than once per year when sewage sludge is applied to the land.

67.8(4) *Record keeping for Class II sewage sludge.*

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

(1) The concentration of each pollutant listed in Table 3 in the sewage sludge.

(2) The following certification statement: "I certify, under penalty of law, that the Class II 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) A description of how the Processes to Significantly Reduce Pathogens (PSRP) requirements are met.

(4) A description of how the vector attraction reduction requirements are met.

(5) A description of how the management practices for Class II sewage sludge are met for each site.

(6) The location and area of each site.

(7) The date and time and amount of sewage sludge applied to each site.

(8) If subjected to cumulative loading limits, the amount and cumulative amount of each pollutant listed in Table 4 of paragraph 67.8(2)*"b"* in the sewage sludge applied to each site.

(9) The amount of sewage sludge (i.e., metric tons) applied to each site.

b. Treatment works with a design flow rate of 1 million gallons per day or greater and treatment works that serve 10,000 people or more shall submit the above information to the EPA, using EPA's NPDES eReporting Tool (NeT), by February 19 of each year for the previous calendar year. In addition, a supplemental sewage sludge report that includes the land application information listed in subparagraphs 67.8(4)*"a"*(6) to (9) shall be submitted to the department by the same due date.

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