

For reference, the definition of solid waste in Chapter 100:

“Solid waste” has the same meaning as found in Iowa Code section 455B.301. Pursuant to Iowa Code paragraph 455B.301(29)“b,” the commission has determined that solid waste includes those wastes exempted from federal hazardous waste regulation pursuant to 40 CFR 261.4(b) as amended through [effective date of this rule], except to the extent that any such exempted substances are liquid wastes or wastewater. This definition applies to all chapters within Title VIII. To the extent that there is a conflict, this definition controls.

Move to Chapter 100:

“Industrial sludge” means any sludge produced by industrial activity.

“Land application” means the application of industrial sludge or solid waste to the surface of the ground. Land application may include subsurface injection. The industrial sludge or solid waste is applied at a uniform rate over a field.

“Sewage sludge” is defined in Iowa Code section 455B.171(34)

“Sludge” means any solid, semisolid, or liquid waste generated from a commercial or industrial wastewater treatment plant, water supply treatment plant or air pollution control facility.

“Stabilized sludge” means sludge that has been processed to a point where it has the ability to resist further change, produces minimal odor, and has achieved a substantial reduction in the pathogenic organism content. The department recognizes principles of stabilization other than the conventional biological processes. Whether these processes produce a stabilized sludge will be evaluated on an individual basis.

## DIVISION II LAND APPLICATION OF WASTE

**567—102.100(455B,17A) Purpose Applicability and Compliance** This chapter shall apply to the land application of solid waste and industrial sludge. It does not apply to wastewater, domestic septage, sewage sludge, animal manure, animal bedding, crop residue, waste registered as a fertilizer or soil conditioner with IDALS, waste registered as a liming agent with IDALS, or finished compost.

**567—102.101(455B) Definitions incorporated by reference.** The definitions in Iowa Code section 455B.301 and in 567—Chapter 100, shall apply to division II of this chapter.

### **567—102.102(455B) Land application of water supply sludge**

**102.102(1)** Only sludges generated from water supply treatment may be applied to lawns, gardens, flower beds or similar areas associated with residential use and crops that may be consumed by humans without prior heating or processing that are commonly available to the public in raw form (e.g., sweetcorn, lettuce, carrots asparagus, squash).

**102.102(2)** Land application of sludges generated from water supply treatment are exempt from the remainder of this division.

### **567—102.103(455B) Waste eligible for land application.**

**102.103(1)** The material must either meet the definition of solid waste or be a sludge resulting from wastewater treatment, water supply treatment, commercial or industrial wastewater treatment plant, water supply treatment plant or air pollution control facility.

**102.103(2)** The waste shall not contain constituents in excess of the levels specified below measured on a dry weight basis.

<u>Constituents</u>	<u>Levels</u>	<u>Cumulative Loading Rate</u>	
Arsenic	41 mg/kg	41 kg/ha	36 lb/ac
Cadmium	39 mg/kg	39 kg/ha	34 lb/ac
Chromium	1200 mg/kg	3000 kg/ha	2670 lb/ac

<u>Constituents</u>	<u>Levels</u>	<u>Cumulative Loading Rate</u>	
Copper	1500 mg/kg	1500 kg/ha	1335 lb/ac
Lead	300 mg/kg	300 kg/ha	267 lb/ac
Mercury	17 mg/kg	17 kg/ha	15 lb/ac
Molybdenum	75 mg/kg	75 kg/ha	66 lb/ac
Nickel	420 mg/kg	420 kg/ha	373 lb/ac
Selenium	36 mg/kg	100 kg/ha	89 lb/ac
Zinc	2800 mg/kg	2800 kg/ha	2490 lb/ac

**102.103(3)** If the waste has other toxic constituents, the toxic constituents shall not be in excess of levels where there is a threat to human, animal, or plant life as determined by the department.

**102.103(4)** The waste does not have a sodium absorption ratio in excess of levels where there is a threat to plant life. If high sodium absorption ratios are suspected, analytical testing may be required.

**102.103(5)** If the waste contains pathogens, the waste must be treated to reduce pathogen content by methods specified in 567—Chapter 67 prior to land application.

**102.103(6)** The waste shall not have direct process stream contact with or originate from a process which may release the following organic compounds;

- a. Petroleum products,
- b. organic solvents,
- c. pesticides,
- d. pharmaceuticals,
- e. polychlorinated biphenyls (PCBs).

**102.103(7)** The waste assimilates and would not be readily present in a visual analysis of a random sample collected two years following application.

**561-102.104(455B) Application site restrictions**

**102.104(1)** The waste shall not be applied to soils classified as sand, loamy sand or silt on the U.S.D.A. textural classification chart.



U.S.D.A. textural classification chart. Sand size particles, 2-0.05 mm; silt-sized particles, 0.05-.002 mm; and clay sized particles, less than .002 mm.

**102.104(2)** Land application sites shall have soil pH maintained between 6.5 and 8.4 for sludges with cadmium levels up to 15 mg/kg. The soil pH may be maintained below 6.5 but not below 6.0 if the cadmium level is 8.0 mg/kg or lower, or the sludge has been stabilized to a pH of 10-12. If the soil pH is below these levels, it is acceptable to use agricultural lime to increase the pH to an acceptable level prior to land application of sludge.

**102.104(3)** The waste shall not be applied to ground having greater than 9 percent slope unless specific permit conditions specify otherwise.

**102.104(4)** If the waste is applied to land subject to flooding more frequently than once in ten years, the waste shall be injected or shall be applied to the surface and mechanically incorporated into the soil within 48 hours.

**102.104(5)** Application on frozen or snow-covered ground shall be limited to areas of less than 5 percent slope unless specific permit conditions specify otherwise.

**102.104(6)** Waste shall not be applied within 200 feet of an occupied residence nor within 500 feet of a well

**102.104(7)** Crops that may be consumed by humans without prior heating or processing or those that are commonly available to the public in raw form shall not be harvested for 14 months following land application.

**102.104(8)** A site shall not be used for land application of waste from more than one generator in the same growing season or for a spring land application after land application the previous fall.

**561-102.105(455B) Operating requirements** All land application projects shall be operated in conformance the following.

**102.105(1)** If solid waste is applied within 200 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.

**102.105(2)** If waste is applied to land where crops being grown will be grazed by or fed to livestock

within two months of waste application, or where cereal grains will be harvested within two months of waste application, the waste shall be injected or shall be applied to the surface and mechanically incorporated into the soil unless specific permit conditions specify otherwise. The general public shall not be given access to the disposal site during waste disposal and for a minimum of two months after waste disposal operations have ceased,

**102.105(3)** If the waste is putrescible, it shall be injected or mechanically incorporated within 24 hours or otherwise managed to prevent runoff and odor problems.

**102.105(4)** Land application shall not take place during or immediately preceding expected rains or other occasions when runoff may result unless subsurface injection methods are utilized. Additionally, land application shall not take place during periods of high groundwater conditions or during flooding.

**102.105(5) *Macronutrients.*** The application of nitrogen phosphorus and potassium available from the waste and any other sources shall not exceed the acceptable agronomic application rates for the vegetation to be grown on the site over the next year.

**102.105(6)** Waste may be staged prior to application at the application site if the following requirements are met.

a. Putrescible waste shall not be staged for more than 48 hours.

b. Non-putrescible waste shall be staged no longer than 2 weeks.

c. Waste shall not be staged within 200 feet of an occupied residence nor within 500 feet of a well

d. The waste shall not be staged on soils classified as sand, loamy sand or silt on the U.S.D.A. textural classification chart shown in 567-102.104(6).

e. Runoff must be controlled at all times.

f. If weather or extenuating circumstances prevent application from taking place, the generator must notify the department.

**102.105(7)** When waste is supplied to other persons for land application, the generating facility shall do the following.

a. Inform the recipient of the applicable requirements of the waste disposal program.

b. If the generating facility determines that the recipient is not complying with applicable requirements of the waste disposal program or the land application criteria, the generating facility shall work with them to obtain compliance with the requirements. If subsequent compliance cannot be achieved, the generating facility shall not supply additional waste to the person.

c. Inform all persons involved in waste disposal operations of the potential health hazards associated with waste disposal, including informing them of the cautions and recommended practices which should be followed to minimize these hazards.

**102.105(8) *Record keeping.*** The generator shall maintain records of the following:

a. Analysis of waste to document compliance with 102.103(2)

b. Records of land application for each site shall be maintained for five years, be made available to the department upon request, and include: dates of application, application rate, and quantity of waste applied.

**561-102.106(455B) Permit exemption:** No permit is required for land application that meets 567-102.103, 567-102.104 and 567-102.105 and this rule.

**102.106(1)** The maximum application rate shall not exceed two tons per acre per year, measured on a dry weight basis. The maximum application rate shall be reduced if soil tests indicate that a two ton per acre per year rate would provide nutrient levels in excess of crop nutrient requirements or would provide heavy metals concentrations in the soil at levels which may be detrimental to crop production or hazardous to human health

**102.106(2)** The material shall not be staged at the application site longer than 2 weeks prior to land application. Staging site must be on ground eligible for land application as per 567-.102.104. Putrescible waste may be staged no more than 48 hours.

**102.106(3)** Notification. Before opening a disposal site, the department shall be notified in writing. This notice shall contain the following:

- a. The name and address of the generator of the waste
- b. Contact information for the responsible official,
- c. A description of the waste including the process to generate it, chemical analyses showing compliance with 567-102.103(2) and any additional analysis which the department may require to adequately define the waste. Chemical analysis shall be done by a laboratory certified pursuant to 567—Chapter 83.
- d. Quantities of waste to be land applied
- e. Application rate
- f. Legal description of the site
- g. An aerial photo with the site outlined and any areas ineligible for application marked off.
- h. Number of acres eligible for land application at the site
- i. The landowner's name and contact information

**567—102.107(455B) Permit.** Prior to any land application of solid waste not exempted in 567-102.102(455B) or 567-102.106(455B), a solid waste management permit as per 567-100.4(2) must be obtained by the waste generator.

**102.107(1) Permit Application.** In lieu of the permit application requirements in 100.5(1) all permit applications for land application shall include:

- a. The name, address, email and telephone number of:
  - The permit applicant (generator of the waste)
  - Official responsible for operation of the project
  - Agronomist
- b. Type, source, and expected volume or weight of waste to be handled per day, week and year.
- c. Information on the source, quantity, and method of treatment of the waste prior to disposal.
- d. Chemical analyses showing compliance with 567-102.103(2) and any additional analysis which the department may require to adequately define the waste. Chemical analysis shall be done by a laboratory certified pursuant to 567—Chapter 83.
- e. *Operations plan.* A detailed description of the land application process to be used, including the method and rate of application, and information indicating how the operational requirements of 567-102.105 will be met.
- f. A table of all application sites that includes the name of the site, legal description, township, county, acres eligible for land application and the name of the landowner.
- g. For each land application site include the following
  - (1) An aerial photograph of sufficient scale to show all homes, buildings, lakes, ponds, watercourses, wetlands, dry runs, roads and other applicable details.
  - (2) A map or aerial photo showing all wells located within 500 feet of the site.
  - (3) A soil map.
  - (4) Water table levels of the site, including the frequency and duration of any expected high-water table or flooding.
  - (5) Proof of the applicant's ownership of the site or legal entitlement to use the site for the disposal of waste.
- h. Other information as required by the department.

**102.107(2) Reporting requirements.**

a. The permit holder shall have a Certified Professional Agronomist perform an annual inspection of all sites utilized in the previous year to ensure soil properties and constituents being applied are suitable and will not exceed agronomic rates for the crop that will be produced the following summer. The agronomist will review soil test results to ensure that the application of the waste will not cause buildup of nutrients in the soil. The results of this inspection shall be submitted to the DNR Main Office by April 1<sup>st</sup> each year.

b. An annual report summarizing the records required in 102.105(8)b shall be submitted to the DNR Main Office on a form provided by the department. The report will be for July through June and due on October 1<sup>st</sup> of each year.

c. Sampling and analyses of the waste shall be performed and submitted to the department according to a schedule stipulated in the permit. At a minimum, an analysis shall be submitted with each permit renewal.

**102.107(3) Temporary Storage:**

a. The permit may allow for storage of stabilized sludge and solid waste at application sites if the following conditions are met.

(1) Waste shall not be stored within 200 feet of an occupied residence nor within 500 feet of a well

(2) The waste shall not be stored on soils classified as sand, loamy sand or silt on the U.S.D.A.

textural classification chart

(3) Amount stored may not exceed at that site the amount needed for the next application window for that site

(4) All material stored must be land applied the next application season

(5) If weather or extenuating circumstances prevent application from taking place, the applicant must notify the department.

(6) Runoff shall be controlled at all times.

(7) Financial assurance in accordance with 567-102.108 has been obtained.

b. The permit may allow for storage of stabilized sludge and solid waste at a consolidation point if the following conditions are met.

(1) Waste shall not be stored within 200 feet of an occupied residence nor within 500 feet of a well

(2) The surface shall be made of asphalt, concrete, compacted granular aggregate, clay or similar relatively impermeable material.

(3) All material stored must be land applied the next application season

(4) If weather or extenuating circumstances prevent application from taking place, the applicant must notify the department.

(5) Runoff shall be controlled at all times

(7) Financial assurance in accordance with 567-102.108 has been obtained.

**567—102.108(455B) Financial assurance.** The holder of a solid waste management permit for the land application of wastes that has received authorization to temporarily store waste at the application site(s) or a consolidation point must obtain and submit a financial assurance instrument to the department. The financial assurance instrument shall provide monetary funds for the purpose of properly disposing of or having a third-party land apply any stored wastes due to the permit holder's failure to properly land apply wastes in accordance with this division and the applicable permit provisions.

**102.108(1) Proof of compliance.** Proof of the establishment of the financial assurance instrument and compliance with this rule, including a current closure cost estimate, shall be submitted by at the time of application for a permit to land apply solid wastes. The owner or operator must provide continuous coverage for closure and submit proof of compliance, including an updated closure cost estimate, with each permit renewal thereafter until released from this requirement by the department.

**102.108(2) Financial assurance amounts required.** The estimate submitted to the department must be certified by a professional engineer and account for at least the following factors determined by the department to be minimal necessary costs for closure:

a. Third-party labor and transportation costs and total tip fees to properly dispose of all solid wastes equal to the maximum storage capacity of all approved storage areas, or

b. Third-party labor costs to land apply all solid wastes equal to the maximum storage capacity of all approved storage areas.

**102.108(3) Acceptable financial assurance instruments.** The financial assurance instrument shall be established in an amount equal to the cost estimate prepared in accordance with subrule 102.10(4) and shall not be canceled, revoked, disbursed, released, or allowed to terminate without the approval of the department. The language of the financial assurance instrument shall meet the criteria in 567—subrule 101.708(3). Financial assurance shall be provided by one of the following options:

a. Trust fund as per 567—subrule 101.707(1)

- b.* Surety bond, as per 567—subrule 101.707(2)
- c.* Letter of credit, as per 567—subrule 101.707(3)
- d.* Corporate Guarantee as per 567—subrule 101.707(7)

These rules are intended to implement Iowa Code sections 455B.173 and 455B.304.