7041.1200 MANAGEMENT PRACTICES AND LIMITATIONS.

Subpart 1. **Endangered species.** Bulk sewage sludge must 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 of 1973, United States Code, title 16, section 1533, as amended, or its designated critical habitat.

Subp. 2. **Frozen or flooded ground.**

A. Bulk sewage sludge must not be applied to agricultural land, forest, a public contact site, or a reclamation site that is flooded, frozen, or snow covered so that the bulk sewage sludge enters a wetland or other surface waters.

B. In addition to the requirements in subpart 3, item B, land application of dewatered or liquid bulk sewage sludge to frozen or snow covered ground is restricted to land with zero to two percent slopes. The application of liquid bulk sewage sludge is also restricted to a 15,000 gallon per acre hydraulic loading rate for the period when the ground is frozen or snow covered and must take place no closer than 600 feet from downgradient surface waters listed in subpart 3, item B.

C. Bulk sewage sludge must be injected or incorporated within 48 hours of surface application on ground which is subject to flooding unless specified otherwise in a site approval.

Subp. 3. **Suitable soil conditions, slopes, and separation distances.** The suitable soil conditions in item A and the suitable slopes and separation distances in item B must be met when bulk sewage sludge is applied to agricultural land application sites. These conditions and limitations must also be met when bulk sewage sludge is applied to nonagricultural sites such as reclamation, forest, or public contact sites unless approved by the commissioner under the requirements of part 7041.0800, subpart 5. Bulk sewage sludge must not be applied to agricultural land, forest, a public contact site, or a reclamation site that is 33 feet or less from surface waters or wetlands unless specified otherwise in a permit.

A. Suitable soil conditions are as follows:

(1) the soil texture, United States Department of Agriculture classification, at the zone of sewage sludge application must be fine sand, loamy sand, sandy loam, loam, silt, silt loam, sandy clay loam, clay loam, sandy clay, silty clay loam, silty clay, or clay;

(2) the pH of the soil must be 5.5 or greater;

(3) bulk sewage sludge application to a site must be suspended when the soil extractable phosphorus content determined by the Brays P-1 test exceeds 200 parts per million (400 pounds per acre) in the surface six inches of soil unless it is demonstrated through a management plan approved by the commissioner that all resource management

system level erosion control practices as determined necessary by the Natural Resources Conservation Service are in place and maintained;

(4) bulk sewage sludge application to a site must be suspended when the electrical conductivity of the saturation extract of the soil exceeds four millimhos per centimeter as determined by the soluble salt test;

(5) soil samples must be collected and analyzed for parameters in part 7041.0800, subpart 2, item C, at a minimum of once in the three-year time period prior to the land application of bulk sewage sludge unless stipulated otherwise in a site approval;

(6) liquid bulk sewage sludge must not be applied to soils with surface permeabilities of less than 0.2 inch per hour unless the sewage sludge is injected or incorporated within 48 hours of surface application; and

(7) organic soils or peat soils must not be used for bulk sewage sludge application unless subsurface drainage is provided by a system designed according to or equivalent to Natural Resources Conservation Service engineering criteria.

B. Suitable slopes and separation distances must be as described in this item. If applied through irrigation equipment, aerosol drift shall not be in contact with the feature specified.

BULK SEWAGE SLUDGE APPLIED TO THE LAND

SUITABLE SLOPES AND SEPARATION DISTANCES

Criteria	Surface Applied	Incorporation within 48 hrs.	Injection
Depth to bedrock	3[1] ft.	3[1] ft.	3[1] ft.
Depth to seasonal high water table[2] or drain tile[3]	3[1] ft.	3[1] ft.	3[1] ft.
Allowable slopes	0% to 6%	0% to 12%	0% to 12%
Distance to wells			
Private supply	200 ft.	200 ft.	200 ft.
Public supply	1000 ft.	1000 ft.	1000 ft.
Irrigation	50 ft.	25 ft.	25 ft.
Distance to residences[4]	200 ft.	200 ft.	100 ft.

Distance to residential development[4]	600 ft.	600 ft.	300 ft.
Distance to public contact site[4]	600 ft.	600 ft.	300 ft.
Down gradient[5] lakes, rivers, streams, type 3, 4, and 5 wetlands, intermittent streams[6], or tile inlets connected to these surface waters, and sinkholes			
Slope 0% to 6%	200 ft.	50 ft.	50 ft.
Slope >6 to 12%	N/A	100 ft.	100 ft.
Grassed Waterways[7]			
Slope 0% to 6%	100 ft.	33 ft.	33 ft.
Slope 6% to 12%	N/A	33 ft.	33 ft.

[1]The depth is calculated from the zone of sewage sludge application and the separation distance for highly permeable soils is 5 feet.

[2]For the purpose of this item, a perched water condition shall not be considered a seasonal high water table.

[3]The depth to subsurface drainage tiles shall be considered the depth to the seasonal high water table for sites with tile drainage systems that are designed according to or equivalent to Natural Resources Conservation Service engineering standards and criteria.

[4]Separation distances may be reduced with written permission from all persons responsible for residential developments and places of recreation and all persons inhabiting within the otherwise protected distance.

[5]If downgradient surface water does not receive runoff because the site is bermed, separation distances can be reduced to 33 feet.

[6]For the purpose of this item, intermittent stream means a drainage channel with definable banks that provides for runoff flow to any of the surface waters listed in this item during snow melt or rainfall events.

[7]Separation distances are from the centerline of grassed waterways. For grassed waterways which are wider than these separation distances, application is allowed to the edge of the grass strip. Grassed waterways are natural or constructed, typically broad and shallow, and seeded to grass as protection against erosion.

Subp. 4. **Agronomic rates.**

A. Bulk sewage sludge must be applied to agricultural land, forest, a public contact site, or a reclamation site at an application rate that is equal to or less than the agronomic rate, unless, in the case of a reclamation site, otherwise specified by the commissioner.

B. Bulk sewage sludge application rates, combined with other known sources of nitrogen such as manure, carry-over nitrogen from previous sewage sludge applications, or fertilizer, must supply no more available nitrogen than the rates as described in subitems (1) to (5).

(1) The maximum available nitrogen application rates calculated by methods provided by the commissioner which are based on realistic yield goals, soil organic matter content, and previously grown crops.

(2) For alfalfa and clovers which do not have recommended nitrogen application rates either:

(a) the maximum available nitrogen application rate must not exceed 200 pounds per acre for alfalfa and 100 pounds per acre for clover, alfalfa grass, and clover grass mixtures; or

(b) the maximum available nitrogen application rates may be calculated based on realistic yield goals and measured yields in tons per acre multiplied by 50 pounds of nitrogen per ton.

(3) For soybeans, the maximum available nitrogen application rate shall be calculated by multiplying the realistic yield goal in bushels per acre times 3.5 pounds of nitrogen per bushel.

(4) The maximum available nitrogen application rate for cover crops must not exceed 50 pounds per acre per year.

(5) The available nitrogen applied after the second cutting of a hay crop must be no more than 50 percent of the maximum available nitrogen application rate for the current cropping year.

C. Bulk sewage sludge must not be applied to the land during the months of June, July, and August unless a crop is growing on the land or a crop is seeded within fourteen days following the bulk sewage sludge application.

D. Bulk sewage sludge must not be applied to fallow land, which is land that is uncropped and kept cultivated throughout a growing season and has a vegetative cover of less than 25 percent. Any land that is uncropped and cultivated during the months of September through May where a crop will be grown the following growing season is not considered fallow land.

E. The calculation of available and carry-over nitrogen in sewage sludge must be performed as described in part 7041.3000.

Subp. 5. **Highly permeable soils.** In addition to those specified in subparts 3 and 4, the separation distances in item A and agronomic management practices in items B and C must be met when bulk sewage sludge is applied to highly permeable soils.

A. The minimum separation distance between the zone of bulk sewage sludge application and the seasonal high water table and bedrock is five feet.

B. Bulk sewage sludge must not be applied to the land during the months of June, July, August, or September unless a crop is growing on the land or a crop is seeded within 14 days following the bulk sewage sludge application.

C. Bulk sewage sludge applied in October shall be surface applied or applied with a nitrification stabilizer which extends the time the nitrogen component remains in the soil in the ammoniacle form.

Subp. 6. **Prohibited sites and other limits.** The prohibited sites and other limits in items A to G apply to bulk sewage sludge applied to the land.

A. Bulk sewage sludge must not be applied on areas ponded with water or sewage sludge.

B. Bulk sewage sludge must not be applied or run onto adjoining property, roads, and the shoulders and drainage ditches alongside a road.

C. The boundary of a land application site must be identified prior to and during application with the use of conspicuous flags placed to achieve a clear and positive identification of the suitable site boundary unless apparent boundaries, such as fence rows, roads, tree lines, type of vegetation, or steep slopes, exist.

D. Bulk sewage sludge must not be applied on any land without the permission of the owner.

E. Bulk sewage sludge must be applied to land in such a manner as to provide uniform application.

F. Bulk sewage sludge must not be disposed of or placed into any cave, or sinkhole. Except as part of a reclamation project, sewage sludge must not be disposed of or placed on any mine or quarry.

G. Daily surface applications of liquid sewage sludge must not exceed the following: coarse-textured soils, 25,000 gallons per acre; medium-textured soils, 15,000 gallons per acre; or fine-textured soils, 10,000 gallons per acre.

Subp. 7. **Short-term storage.** Items A to C apply to the short-term storage of dewatered bulk sewage sludge.

A. The short-term storage of bulk sewage sludge shall not exceed 30 days.

B. Separation distances for short-term bulk sewage sludge storage areas shall be those provided in subpart 3, item B, except that short-term storage of bulk sewage sludge shall not occur within 100 feet of any adjoining property without the written permission of the owner or within 100 feet of any road or drainage ditch.

C. Short-term storage of bulk sewage sludge shall not take place on land with a slope greater than two percent unless measures are taken to control water runoff or the bulk sewage sludge is being spread concurrent with the unloading of bulk sewage sludge delivery trucks and will not be stockpiled overnight.

Subp. 8. **Long-term storage.** Items A to G apply to the long-term storage of dewatered bulk sewage sludge.

A. Long-term storage of bulk sewage sludge is only allowed at land application sites where the stored bulk sewage sludge is to be applied. Long-term storage of bulk sewage sludge that is intended for application at several land application sites is allowed provided that all sites are owned by the same person and all sites are within a one-half mile radius.

B. Long-term storage of bulk sewage sludge for land application areas of 40 acres or less shall not take place within 400 feet from any residence. This separation distance shall increase 100 feet for every additional ten acres of land application area, or portion thereof, up to a maximum of 1,000 feet. Separation distances may be reduced if written permission is obtained from all persons residing within the otherwise protected distance.

C. Long-term storage of bulk sewage sludge shall not take place within 1,000 feet of any residential development or public contact site.

D. Long-term storage of bulk sewage sludge shall not take place within 1,000 feet of any downgradient surface waters and wetlands listed in subpart 3, item B, tile inlets, or sinkholes unless measures are taken to control runoff in which case the separation distance may be reduced to 200 feet.

E. Long-term storage of bulk sewage sludge shall not be allowed on land with greater than a two percent slope.

F. Long-term bulk sewage sludge storage areas shall be located in areas where the texture of all the horizons in the soil profile to a depth of five feet is sandy loam or finer unless an impervious pad with a drainage collection system is constructed.

G. Long-term bulk sewage sludge storage shall not take place on the same area for two or more consecutive years unless an impervious pad with a drainage collection system is constructed.

Subp. 9. **Labeling.** A label must be affixed to the bag or other container in which sewage sludge is sold or given away for application to the land or an information sheet must be provided to the person who receives sewage sludge in an other container. The label or information sheet must contain the following information:

A. the name and address of the person who prepared the sewage sludge that is sold or given away in a bag or other container;

B. a statement that application of the sewage sludge to the land is prohibited except according to the instructions on the label or information sheet; and

C. the annual whole sludge application rate for the sewage sludge that does not cause any of the annual pollutant loading rates in part 7041.1100, subpart 4, item D, to be exceeded.

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