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DOCUMENT #541832

Ohio Administrative Code

Rule 901:10-2-06 Manure storage pond and manure treatment lagoon.

Effective: November 1, 2026

(A) A manure storage pond or manure treatment lagoon subject to this rule shall be designed and the plans signed and stamped by a professional engineer. The following design and construction criteria shall be followed:

(1) An exploratory trench shall be excavated a minimum of four feet below natural grade to investigate for subsurface drainage lines in the immediate area of the manure storage pond or manure treatment lagoon. Any lines found shall be removed or relocated to provide for a minimum separation distance of not less than fifty feet between the top inner perimeter of the manure storage pond or manure treatment lagoon and the subsurface drainage line unless the subsurface drainage line is necessary to comply with paragraph ((A)(7)(a) of this rule.

(2) If not already installed at the facility, a liquid level board, staff gauge, depth marker, or other appropriate device, approved by the director, shall be installed within the interior of the liquid manure storage pond or manure treatment lagoon to monitor manure levels. This device shall indicate levels every one foot in vertical elevation, as well as the levels as described in paragraph (D)(1) of rule 901:10-2-08 of the Administrative Code.

(3) Any locations where pipes outlet into a manure storage pond, manure treatment lagoon, or any necessary agitation or pump-out locations, shall be designed to have scour protection with locations and details shown on the plans. Scour protection for outlet pipes is required to have proper curbing to ensure the integrity of any liner system associated with a manure storage pond or treatment lagoon.

(4) Embankments.

(a) The minimum embankment top width shall be eight feet for embankments less than fifteen feet in height, ten feet for embankments ranging in height from fifteen to less than twenty feet, and twelve feet for embankments ranging from twenty to twenty-five feet in height, as measured vertically from the lowest point of the downstream toe on the existing ground surface to the top of the embankment centerline.

(b) If the embankment is to be traversed by farm equipment, the minimum top width shall be twelve feet. The height of the embankment shall be no greater than twenty-five feet, as measured vertically from the lowest point of the downstream toe on the existing ground surface to the top of the embankment centerline.

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(c) Embankments shall have side slopes not steeper than two horizontal to one vertical.

(d) The combined side slopes of settled embankments shall not be less than five horizontal to one vertical.

(e) Vegetative cover shall be established on any exposed embankment, including the exposed portion of the interior embankment down to the level as described in paragraph (D)(1) of rule 901:10-2-08 of the Administrative Code, and mowed or otherwise maintained to control erosion or other embankment deterioration. In the alternative, the director may approve other means or materials to control erosion.

(5) Storage period.

Manure storage pond and manure treatment lagoon systems shall have a combined minimum storage period of one hundred eighty days, based on manure production unless alternative use and design is otherwise approved by the director or the director determines additional manure storage is necessary for the purposes of complying with the manure management plan.

(6) Freeboard.

Freeboard shall be provided for a manure storage pond and manure treatment lagoon. The operating level of the total manure storage volume shall be less than the elevation that provides adequate storage to contain a twenty-five year, twenty-four hour precipitation event, plus an additional one foot of freeboard measured from the lowest elevation of the settled embankment.

(7) Liners.

The owner or operator shall include the use of a liner as part of the manure storage pond or manure treatment lagoon that achieves a hydraulic conductivity of at least one times ten to the minus seven centimeters per second (1 X 10 -7 cm/sec) or less to ensure the integrity of the manure storage pond or manure treatment lagoon. A minimum of three feet of in situ soils with a hydraulic conductivity of one times ten to the minus seven centimeters per second or less will satisfy this requirement. The following design and construction criteria shall be followed:

(a) Ground water seepage shall be prevented from entering the bottom of the manure storage pond or manure treatment lagoon after construction by installing and/or maintaining a liner with a minimum liner thickness of three feet of in situ soil between the highest ground water elevation

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identified in the geological exploration report, specifically paragraph (C)(1)(b)(i) of rule 901:10-2-03 of the Administrative Code, and the bottom of the manure storage pond or manure treatment lagoon. In order to meet this requirement, the ground water elevation may be lowered by use of subsurface drainage lines that are properly designed by the engineering geologist or professional engineer and approved by the director.

(b) Soil liners shall be designed and constructed using procedures in

(i) Section 651.1080 of the "United States Department of Agriculture, Natural Resources Conservation Service Agricultural Waste Management Field Handbook, Chapter Ten, Geotechnical Design and Construction, August 2009"; and

(ii) The "United States Department of Agriculture, Ohio Natural Resources Conservation Service, Section IV, Field Office Technical Guide Conservation Practice Standard 520, Pond Sealing and Lining, Compacted Soil Treatment" (July 2017).

(c) Design and construction alternatives for ground water protection.

(i) As a result of the subsurface geological exploration conducted pursuant to rule 901:10-2-03 of the Administrative Code and the findings of the report submitted in accordance with that rule, an engineering geologist, professional engineer or the director may determine that installation of an additional liner is required to ensure the integrity of the manure storage pond or manure treatment lagoon and to protect groundwater.

(ii) If an additional or alternative liner protection is required as set forth in paragraph (A)(7)(c)(i) of this rule, then one or more of the following may be required by the director:

(a) Concrete liners that have a minimum thickness of five inches and include non-metallic water stops for all joints;

(b) Flexible plastic membranes that are installed under the supervision of the manufacturer or the manufacturer's representative and include written certification that the liner was installed in accordance with the manufacturer's recommendations.

(c) Geosynthetic clay liners that are installed under the supervision of the manufacturer or the manufacturer's representative and

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include written certification that the liner was installed in accordance with the manufacturer's recommendations; or

(d) Other liner designs or materials will be considered at the discretion of the director if the minimum criteria of this paragraph of this rule are met.

(8) Manure treatment lagoons shall be designed in accordance with the methods set forth in the appendix to this rule.