

567—65.206 (459A) Unformed animal truck wash effluent structure—investigation, design and construction requirements. An unformed animal truck wash effluent structure required to be constructed pursuant to a construction permit issued pursuant to Iowa Code section 459A.205 shall meet the design and construction requirements set forth in this rule.

65.206(1) Drainage tile investigation and removal. Prior to constructing an unformed animal truck wash effluent structure, the owner of the animal truck wash facility shall investigate the site for the animal truck wash effluent structure for a drainage tile line. The investigation shall be made by digging a core trench to a depth of at least six feet from ground level at the projected center of the berm of the animal truck wash effluent structure. A written record of the investigation shall be submitted as part of the construction certification required in 567—65.207(459A). If a drainage tile line is discovered, one of the following solutions shall be implemented:

a. The drainage tile line shall be rerouted around the perimeter of the unformed animal truck wash effluent structure at a distance of at least 25 feet horizontally separated from the outside toe of the berm of the unformed animal truck wash effluent structure. For an area of the unformed animal truck wash effluent structure where there is not a berm, the drainage tile line shall be rerouted at least 50 feet horizontally separated from the edge of the unformed animal truck wash effluent structure.

b. The drainage tile line shall be replaced with a nonperforated tile line under the unformed animal truck wash effluent structure floor. The nonperforated tile line shall be continuous and without connecting joints. There must be a minimum of three feet between the nonperforated tile line and the unformed animal truck wash effluent structure floor.

65.206(2) Soils and hydrogeologic report. An unformed animal truck wash effluent structure required to be constructed pursuant to a construction permit issued pursuant to rule 567—65.202(459A) shall meet design standards as required by a soils and hydrogeologic report. The report shall be submitted with the construction permit application as provided in rule 567—65.204(459A). The report shall include all of the following:

a. A description of the steps taken to determine the soils and hydrogeologic conditions at the proposed construction site, a description of the geologic units encountered, and a description of the effects of the soil and groundwater elevation and direction of flow on the construction and operation of the unformed animal truck wash effluent structure.

b. The subsurface soil classification of the site. A subsurface soil classification shall be based on ASTM international designation D 2487-92 or D 2488-90.

c. The results of a soils investigation conducted at a minimum of three locations within the area of the unformed animal truck wash effluent structure reflecting the continuous soil profile existing within the area of the unformed animal truck wash effluent structure. The soils investigation results shall be used in determining subsurface soil characteristics and groundwater elevation and direction of flow at the proposed site. The soils investigation shall be conducted and utilized as follows:

(1) By a qualified person ordinarily engaged in the practice of performing soils investigations.

(2) At locations that reflect the continuous soil profile conditions existing within the area of the proposed unformed animal truck wash effluent structure, including conditions found near the corners and the deepest point of the proposed unformed animal truck wash effluent structure. The soils investigation shall be conducted to a minimum depth of ten feet below the proposed bottom elevation of the unformed animal truck wash effluent structure.

(3) By methods which identify the continuous soil profile and do not result in mixing of soil layers. Soil corings using hollow-stem augers and other suitable methods may be used.

(4) If located in karst terrain or potential karst terrain, at least one soil coring shall be taken to a minimum depth of 25 feet below the bottom elevation of the unformed animal truck wash effluent structure or into bedrock, whichever is shallower.

(5) Soil corings may be used to determine current groundwater levels by completing the corings as temporary monitoring wells as provided in 65.206(3) “a”(1) and measuring the water levels in these wells no earlier than seven days after installation as provided in 65.206(3) “a”(2).

(6) Upon abandonment of soil core holes, all soil core holes, including those developed as temporary water level monitoring wells, shall be plugged with concrete, Portland cement concrete grout, bentonite, or similar materials.

(7) If excavation methods are used in conducting the soils investigation, upon closure these excavations must be filled with suitable materials and adequately compacted to ensure they will not compromise the integrity of the unformed animal truck wash effluent structure liner.

65.206(3) Hydrology.

a. Determination of groundwater table. For purposes of this rule, the groundwater table is the seasonal high-water table determined by a professional engineer, a groundwater professional certified pursuant to 567—Chapter 134, or qualified staff from the department or NRCS. If a construction permit is required, the department must approve the groundwater table determination.

(1) Current groundwater levels shall be measured as provided in this subparagraph for an unformed animal truck wash effluent structure. Three temporary monitoring wells shall be installed. The top of the well screen shall be within five feet of the ground surface. Each well shall be extended to at least two feet below the proposed top of the liner of an unformed animal truck wash effluent structure or to at least two feet below the proposed bottom of the footings of a formed animal truck wash effluent structure. In addition, the wells must be installed as follows:

1. Unformed animal truck wash effluent structure. For an unformed animal truck wash effluent structure, the monitoring wells may be installed in the soil core holes developed as part of conducting the soils investigation required in paragraph 65.206(2) “c.”

2. Formed animal truck wash effluent structure. For a formed animal truck wash effluent structure, at least three temporary monitoring wells shall be installed as close as possible to three corners of the structure, with one of the wells close to the corner of deepest excavation. If the formed animal truck wash effluent structure is circular, the three monitoring wells shall be equally spaced and one well shall be placed at the point of deepest excavation.

(2) The seasonal high-water table shall be determined by considering all relevant data, including the groundwater levels measured in the temporary monitoring wells not earlier than seven days following installation, NRCS soil survey information, soil characteristics such as color and mottling, other existing water table data, and other pertinent information. If a drainage system for artificially lowering the groundwater table will be installed in accordance with the requirements of paragraph 65.206(3) “c,” the level to which the groundwater table will be lowered will be considered to represent the seasonal high-water table.

b. The unformed animal truck wash effluent structure shall be constructed with a minimum separation of two feet between the top of the liner of the unformed animal truck wash effluent structure and the seasonal high-water table.

c. If a drainage tile line around the perimeter of the basin is installed a minimum of two feet below the top of the unformed animal truck wash effluent structure liner to artificially lower the seasonal high-water table, the top of the unformed animal truck wash effluent structure’s liner may be a maximum of four feet below the seasonal high-water table which existed prior to installation of the perimeter tile system. The seasonal high-water table may be artificially lowered by gravity flow tile lines or other similar system. However, the following shall apply:

(1) Except as provided in subparagraph (2), an animal truck wash facility shall not use a nongravity mechanical system that uses pumping equipment.

(2) If the animal truck wash facility was constructed before July 1, 2005, the operation may continue to use its existing nongravity mechanical system that uses pumping equipment or it may construct a new nongravity mechanical system that uses pumping equipment. However, an animal truck

wash facility that expands the area of its animal truck wash facility on or after April 1, 2011, shall not use a nongravity mechanical system that uses pumping equipment.

(3) Drainage tile lines may be installed to artificially lower the seasonal high-water table at an unformed animal truck wash effluent structure, if all of the following conditions are satisfied:

1. A device to allow monitoring of the water in the drainage tile lines and a device to allow shutoff of the flow in the drainage tile lines are installed, if the drainage tile lines do not have a surface outlet accessible on the property where the unformed animal truck wash effluent structure is located.

2. Drainage tile lines are installed horizontally at least 25 feet away from the outside toe of the berm of the unformed animal truck wash effluent structure. Drainage tile lines shall be placed in a vertical trench and encased in granular material which extends upward to the level of the seasonal high-water table which existed prior to installation of the perimeter tile system.

65.206(4) Karst terrain.

a. Construction prohibited. Unformed animal truck wash effluent structures shall not be constructed in areas which drain to known sinkholes or in karst terrain. Structure sites located within one mile of karst terrain shall be considered to be located in karst terrain, unless site-specific geologic information is submitted documenting that 25 feet of suitable materials exist between the bottom of an unformed animal truck wash effluent storage structure and carbonated bedrock or limestone or dolomite.

b. The use of formed structures is required to store animal truck wash effluent in karst terrain.

(1) Formed structures constructed of concrete in karst terrain shall comply with the provisions of 65.15(14).

(2) The use of formed structures constructed of materials other than concrete and located in areas which drain to known sinkholes or located in karst terrain may be approved by the department if the proposed structures are designed by a professional engineer, a minimum of five feet vertical separation is maintained between the structure bottom and carbonated bedrock, and the engineer certifies and provides data showing that the permeability of the geologic material below the structure's base is sufficiently low to provide an adequate barrier to prevent percolation into carbonated bedrock or groundwater.

c. Construction of an unformed animal truck wash effluent structure is allowed in areas identified as karst terrain if site-specific geologic information is submitted documenting that 25 feet of suitable materials exist between the bottom of an unformed animal truck wash effluent storage structure and carbonated bedrock or limestone or dolomite.

65.206(5) Bedrock separation. An unformed animal truck wash effluent structure shall be constructed with at least four feet of separation between the bottom of the unformed animal truck wash effluent structure and a bedrock formation.

65.206(6) Floodplain requirements.

a. *Construction in floodplains.* Animal truck wash facilities located on a floodplain or within a floodway of a river or stream may be required to obtain department permits and provide protection from inundation by flood waters, as specified in 567—Chapters 71 and 72. If the animal truck wash facility structure is located in alluvial soils, then a floodplain determination or floodway elevation shall be requested from the department. The AFO Siting Atlas may be a tool used to assist in the floodplain and alluvial soil determinations.

b. *Permits for dam construction.* Animal truck wash facility structures exceeding storage capacity or dam height thresholds may be required to obtain department permits, as specified in 567—71.3(455B) and 567—72.3(455B).

65.206(7) *Liner design and construction.* The liner of an unformed animal truck wash effluent structure shall comply with all of the following:

a. The liner shall comply with any of the following permeability standards:

(1) The liner shall be constructed to have a percolation rate that shall not exceed one-sixteenth inch per day at the design depth of the unformed animal truck wash effluent structure as determined by percolation tests conducted by the professional engineer. If a clay soil liner is used, the liner shall be constructed with a minimum thickness of 12 inches or the minimum thickness necessary to comply with the percolation rate in this subparagraph, whichever is greater.

(2) The liner shall be constructed to have a percolation rate that shall not exceed one-sixteenth inch per day at the design depth of the unformed animal truck wash effluent structure. The design of the liner will specify a moisture content, compaction requirement, and liner thickness that will comply with the maximum allowable percolation requirement and will be based on moisture content and percentage of maximum density as determined by a standard 5-point proctor test performed in accordance with ASTM D698 (Method A). The liner thickness will be based on laboratory tests of the compacted material, with a minimum liner thickness of 12 inches. Appropriate field or laboratory testing during construction shall be provided to verify the design requirements are met.

b. If a synthetic liner is used, the liner shall be installed to comply with the percolation rate required in 65.206(7)“a”(1).

65.206(8) *Berm erosion inspection and repair.* The owner of an animal truck wash facility using an unformed animal truck wash effluent structure shall inspect the berms of the unformed animal truck wash effluent structure at least semiannually for evidence of erosion. If the inspection reveals erosion which may impact the unformed animal truck wash effluent structure’s structural stability or the integrity of the unformed animal truck wash effluent structure’s liner, the owner shall repair the berms.

65.206(9) *Basins containing confinement manure and animal truck wash effluent.* Basins containing confinement manure and animal truck wash effluent shall meet the confinement construction standards and separation distance requirements provided in Division I of this chapter. The basin design shall ensure adequate storage including two feet of freeboard for an unformed animal truck wash effluent structure or one foot of freeboard for a formed animal truck wash effluent structure. The basin shall contain the annual manure generated from all confinement animals.

65.206(10) *Formed animal truck wash effluent structures.* An animal truck wash facility electing to use a formed animal truck wash effluent structure may submit, in lieu of an engineering report, a construction design statement that meets the requirements in subrule 65.9(6).