

NEBRASKA ADMINISTRATIVE CODE

TITLE 130 - NEBRASKA DEPARTMENT OF WATER, ENERGY, AND ENVIRONMENTAL QUALITY

Chapter 8 - WASTE CONTROL METHODS: DESIGN CRITERIA AND CONSTRUCTION REQUIREMENTS

001 Livestock waste control facilities shall be designed and constructed to allow application or utilization of livestock wastes at those times compatible with crop management and available waste handling equipment. Factors to account for include, but are not limited to, the maximum length of time anticipated between emptying events, the frequency of emptying events or dewatering, the hydraulic limitations of the land application areas, the nutrient content and concentration in the storage structure, and the appropriate timing of land application as specified in the applicable technical standards for nutrient management.

002 The minimum design storage capacity for construction or modification of a livestock waste control facility for any concentrated animal feeding operation shall provide adequate storage capacity for all manure, litter, and process wastewater (process wastewater includes runoff which has come into contact with animal waste) generated during the storage period; all runoff or the runoff from a 25-year, 24-hour rainfall event (whichever criterion is applicable as identified in Chapter 7); any net positive amount from normal precipitation less evaporation during the storage period; and any additional storage needed to meet management goals or other regulatory requirements. The storage period shall be no less than the maximum length of time between planned land application or disposal events. Specific minimums apply for certain types of operations as follows:

002.01 For open lot animal feeding operations, the minimum storage period capacity shall be no less than the calculated average runoff for the month of June, runoff from a 25-year, 24-hour rainfall event, and any manure, litter, and process wastewater produced for the month of June.

002.02 The minimum storage period for totally housed operations shall be no less than 180 days. Except, the applicant may request the Director to establish a substantially equivalent alternative storage period which is less than 180 days based upon a satisfactory demonstration that the proposed alternative time period will achieve overall environmental performance which is at least equal to that achieved by providing adequate storage for the specified 180 days. The Director may require any additional supporting information deemed necessary to support such a request.

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003 Freeboard is required for all storage structures and is a separate requirement from the minimum design storage capacity above. Freeboard is no less than the required vertical separation from the elevation at which liquid will flow out of the facility down to the required minimum storage capacity. Freeboard varies for different types of facilities as follows:

003.01 For earthen structures such as holding ponds whether using an earthen liner or synthetic liner, 1.5 feet;

003.02 For uncovered vertical walled structures such as concrete or steel tanks, twelve inches; and

003.03 For covered vertical wall structures such as underfloor pits, six inches.

004 For small and medium animal feeding operations, the applicant may propose a substantially equivalent alternative storage period or design subject to the Department's approval.

005 Surface drainage shall be diverted around the production area and livestock waste control facility to the maximum extent possible by diversion terrace, berm, ditch, or similar diversion, subject to Department approval. Any such diversion shall be designed and constructed to convey all runoff or at least the runoff and the direct precipitation from the peak discharge of a 25-year, 24-hour rainfall event (whichever criterion is applicable as identified in Chapter 7). Any open diversion will not be less than 1.5 feet in channel depth.

006 Percolation for existing livestock waste control facilities, as defined in these regulations, and for those facilities permitted prior to February 20, 2000, shall not exceed 0.25 inches per day (7.35×10^{-6} cm/sec), except that facilities that are subsequently modified in capacity or structure shall meet the percolation requirements for new construction. The Department may request that the applicant or permittee provide an engineering evaluation or assessment as outlined in Chapter 2.

007 Any new livestock waste control facilities or any expansion of a livestock waste control facility shall be constructed in a location and with soils that are structurally capable of supporting the liner and meeting the percolation limits as applicable. Earthen liners shall be constructed of materials and with construction methods so that percolation does not exceed 0.13 inches per day (3.82×10^{-6} cm/sec). The design shall specify liner thickness. Where a flexible membrane liner is used, a properly compacted soil sub-base shall be constructed below the liner with a minimum thickness of six inches. Structural determinations are required for earthen structures that are steeper than 2 horizontal to 1 vertical for proposed facilities. Verification of the

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percolation rate is required, in a manner approved by the Department, for all earthen liners. Seam testing for flexible membrane liners is required to verify watertight seams.

008 A method for measuring accumulations of manure, litter, and process wastewater is required. For underfloor pits, tanks, and similar storage devices or structures with limited access, the applicant may propose a method of measuring manure, litter, or process wastewater accumulations, subject to the Department's approval. A permanent depth marker is required for all other storage or treatment structures, including runoff holding ponds, liquid manure storage pits, and treatment lagoons. The marker shall be made of a durable material, permanently fixed, referenced to a permanently fixed bench mark or fixed elevation reference point adjacent to and outside of the waste containment area, located where the depth marks can be easily and safely viewed for facility management and inspections, clearly marked in at least one-foot increments, with a reference number or numbers, and with the following clearly marked:

008.01 The freeboard level;

008.02 The level indicating the volume needed to contain all runoff and direct precipitation, or the runoff and direct precipitation of the 25-year, 24-hour rainfall event, as appropriate. Pumping shall begin as soon as possible anytime this storage level is exceeded. This can be identified as the "must pump level";

008.03 The level indicating the volume needed for the minimum design storage capacity. The capacity required for the storage period volume shall be available prior to the start of the storage period. In no case shall the minimum storage period be less than needed to provide adequate storage through the winter months. This can be identified as the "winter pumpdown level"; and

008.04 For lagoons, the level needed for the minimum treatment volume, marked on the depth marker or clearly posted on a sign adjacent to the lagoon. The minimum treatment volume is the amount of liquid needed to maintain proper lagoon function to be considered a lagoon for land application purposes and this volume shall be maintained above any sludge accumulations.

009 Security devices and methods are required to prevent tampering with drain valves, where such valves are used on irrigation distribution systems or equipment loading areas.

Enabling Legislation: Neb. Rev. Stat. § 81-1504(10)(11)(12)(13)(20)(21); § 81-1505(10)(11);
§ 54-2416 to § 54-2438

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