

CHAPTER 33-20-07.1
SMALL VOLUME INDUSTRIAL WASTE LANDFILLS AND SPECIAL
WASTE LANDFILLS

Section

33-20-07.1-01	Performance and Design Criteria
33-20-07.1-02	Closure Criteria

33-20-07.1-01. Performance and design criteria. In addition to the requirements of section 33-20-01.1-08 and chapter 33-20-04.1, the owner or operator of an industrial waste landfill or a special waste landfill shall comply with the design, construction, and operating standards as follows:

1. On all areas of the landfill where final cover or additional solid waste will not be placed within six months, eight inches [20.3 centimeters] or more of compacted clay-rich soil material, similar material, or a synthetic cover must be placed to prevent ponding of surface water, to minimize infiltration of surface water, and to control windblown dust.
2. Solid waste disposal in industrial waste landfills and special waste landfills must be limited to those wastes identified in the permit application or permit. Regulated infectious waste, used oil as a free liquid, hazardous waste, and radioactive waste may not be accepted for disposal at the landfill.
3. All solid wastes deposited at the landfill must be spread and compacted as densely as practicable to minimize waste volume and promote drainage of surface water.
4. Any new or lateral expansion of an industrial waste landfill must be designed with an appropriate hydraulic barrier and leachate management system capable of collecting and removing leachate and contaminated surface water within the disposal unit.
 - a. The liner and leachate removal system must be compatible with the waste and leachate.
 - b. The liner and leachate removal system must maintain its integrity during the operating period and through the postclosure period.
 - c. The system must have a collection efficiency of ninety percent or better and must be capable of maintaining a hydraulic head of twelve inches [30.5 centimeters] or less above the liner.
 - d. For landfills that receive wastes containing water soluble constituents, the liner must consist of at least four feet [1.2 meters] of compacted natural soil having a hydraulic conductivity not to exceed 1×10^{-7} centimeters per second. This requirement does

not apply to landfills receiving only oilfield drilling cuttings and drilling mud.

- e. A composite liner is required for landfills receiving wastes which may contain leachable organic constituents. The liner must consist of at least three feet [91.4 centimeters] of recompacted clay with a hydraulic conductivity not to exceed 1×10^{-7} centimeters per second overlain with at least a sixty mil flexible membrane liner.
- f. The drainage layer must have a hydraulic conductivity of 1×10^{-3} centimeters per second or greater throughout. The drainage layer must have a sufficient thickness to provide a transmissivity of 3×10^{-2} centimeters squared per second or greater.
- g. The liner and leachate removal system in combination with the final cover must achieve a site efficiency of at least ninety-eight and one-half percent or better for collection or rejection of the precipitation that falls on the site.
- h. The requirements of this subsection for a liner, leachate collection system, or both liner and leachate collection system may be modified by the department if the permit applicant demonstrates that, based on factors such as geology and hydrology of the site, characteristics of the waste, and engineering design, any leachate migration can be prevented or controlled.

History: Effective December 1, 1992; amended effective August 1, 1993; October 1, 1994.

General Authority: NDCC 23-29-04

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33-20-07.1-02. Closure criteria. In addition to sections 33-20-04.1-05 and 33-20-04.1-09, at closure, an owner or operator shall cover an existing unit with a layer of compacted soil material having a thickness of eighteen inches [45.7 centimeters] or more, and a saturated hydraulic conductivity of 1×10^{-7} centimeters per second or less. A second layer of twelve inches [30.5 centimeters] or more of clay-rich soil material suitable for serving as a plant root zone must be placed over the compacted layer. At least six inches [15.2 centimeters] of suitable plant growth material must be placed over the covered landfill and the facility planted with adapted grasses. The total depth of final cover must be three feet [91.4 centimeters] or more. The requirements of this section may be modified by the department if the permit applicant demonstrates that an alternative design will appropriately limit percolation of liquid into the waste.

- 1. If the permit applicant wishes to pursue an alternative cover design, one of the following methods shall be used to demonstrate that the alternative cover design will appropriately limit the amount of percolation that may enter the waste:

- a. Hydrologic modeling;
 - b. Lysimetry or instrumentation using a field-scale test section;
 - c. Comparison of the soil and climatic conditions of the site with the soil and climatic conditions at a site where the department has previously approved the same alternative cover design; or
 - d. Other method approved by the department.
2. To demonstrate that an alternative cover design will appropriately limit percolation of liquid into the waste, the alternative cover design must be shown to limit the average rate of percolation of liquid into wastes to an equal or lower value than the final cover design described in this section or to an average long-term percolation rate less than 0.2 inches [5.0 millimeters] per year.

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