

## **CHAPTER 33-20-10**

### **LARGE VOLUME INDUSTRIAL WASTE AND MSW ASH LANDFILLS**

#### **Section**

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#### **33-20-10-01. Applicability.**

The requirements of this chapter apply to the treatment and disposal of solid wastes which meet the criteria of subsections 1 and 3 of section 33-20-01.1-11.

**History:** Effective August 1, 1993.

**General Authority:** NDCC 23-29-04

**Law Implemented:** NDCC 23-29-04

#### **33-20-10-02. MSW ash treatment.**

The owner or operator must propose treatment of municipal waste (MSW) incinerator ash for department approval.

**History:** Effective August 1, 1993.

**General Authority:** NDCC 23-29-04

**Law Implemented:** NDCC 23-29-04

#### **33-20-10-03. Waste disposal.**

In addition to the requirements of section 33-20-01.1-08 and chapter 33-20-04.1, the owner or operator of a landfill shall comply with the performance and design criteria as follows:

1. Any new or lateral expansion of a landfill must be designed with a hydraulic barrier and leachate management system.
  - a. Synthetic liners, leachate detection systems, and leachate removal systems must be compatible with solid waste disposed and the waste's leachate.
  - b. Leachate removal and management systems must be capable of collecting and removing leachate and contaminated surface water.
  - c. Synthetic liners and leachate removal systems must withstand all physical and chemical stresses during the operating period and through the postclosure period.
  - d. The synthetic liners and leachate removal systems must have a collection efficiency of ninety-seven percent or better of precipitation falling on the fill area before closure and must be capable of removing leachate to limit the hydraulic head above the upper liner, exclusive of collection sumps, to twelve inches [30.5 centimeters] or less within thirty-six hours of a precipitation event.
  - e. A composite liner is required which includes at a minimum from bottom to top:
    - (1) At least three feet [91.4 centimeters] of recompact clay with a hydraulic conductivity not to exceed  $1 \times 10^{-7}$  centimeters per second;
    - (2) A synthetic flexible membrane liner at least sixty mil thick;

- (3) A secondary drainage layer with a hydraulic conductivity of  $1 \times 10^{-3}$  centimeters per second or greater throughout and with sufficient thickness to provide a transmissivity of  $3 \times 10^{-2}$  centimeters squared per second or greater;
  - (4) A synthetic flexible membrane liner at least eighty mil thick; and
  - (5) A drainage layer with a hydraulic conductivity of  $1 \times 10^{-3}$  centimeters per second or greater and with sufficient thickness to provide a transmissivity of  $3 \times 10^{-2}$  centimeters squared per second or greater.
- f. No composite liner may be exposed to freezing more than one winter season. At least three feet of solid waste or other material approved by the department must be placed above the upper drainage layer on all lined areas by December first. No disposal may take place after December first in areas which have not met this requirement without first testing the composite liner's integrity and receiving approval from the department.
2. The facility must include a leachate detection and removal system and an onsite leachate management system or offsite leachate management.
  - a. The amount of leachate collected for onsite or offsite management must be measured and recorded.
  - b. The quality of the leachate must be periodically evaluated on a schedule proposed by the facility owner and approved by the department.
  - c. The department may require the construction of onsite surface impoundments to achieve the equivalent or better design standards of onsite landfills, based on site specific factors such as hydrogeological characteristics, anticipated leachate quality, anticipated static head or expected duration of use.
  - d. The department may require an owner or operator to control wildlife access to onsite surface impoundments based upon leachate quality and site circumstances.
3. Runoff must be contained, collected, and transferred to an onsite surface impoundment, unless another management method is approved by the department.
4. Solid waste disposal in landfills must be limited to those wastes identified in the permit application, waste acceptance plan, or permit. Regulated infectious waste, used oil as a free liquid which can be recovered or recycled, and hazardous waste may not be accepted for disposal at the landfill. TENORM waste may only be accepted under the provisions of chapter 33-20-11.
5. All solid wastes deposited at the landfill must be placed, spread, or compacted to minimize or prevent settlement and to promote drainage of surface water. The sequence and direction of below-grade operations must be conducted to prevent surface water from entering the active fill area.
6. On all areas of the landfill where final cover or additional solid waste will not be placed within one month, 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.
7. The composite liner in combination with the final cover after closure must achieve an efficiency of at least ninety-nine and nine-tenths percent or better for collection or rejection of the precipitation that falls on the landfill.

**History:** Effective August 1, 1993; amended effective October 1, 1994; January 1, 2016.

**General Authority:** NDCC 23-20.1-04, 23-29-04

**Law Implemented:** NDCC 23-20.1-03, 23-20.1-04, 23-29-04

**33-20-10-04. Landfill cover and closure.**

1. The owner or operator must place intermittent cover on all exposed solid waste according to the approved operation plan.
  - a. Unless specified otherwise in the operation plan, the solid waste must not be left uncovered for more than forty-eight hours. Cover must be provided by additional waste or with a suitable material proposed by the landfill owner and approved by the department.
  - b. The cover materials used and cover depth must be sufficient to cover the solid waste completely.
2. The final cover at closure must be eight feet [2.74 meters] or more, and meet the requirement of subsection 7 of section 33-20-10-03. In addition, the final cover must include, at a minimum from bottom to top:
  - a. A barrier layer consisting of at least twenty-four inches [61.0 centimeters] of compacted earthen materials with a hydraulic conductivity no greater than  $1 \times 10^{-7}$  centimeters per second;
  - b. A synthetic flexible membrane liner which is at least sixty mil thick;
  - c. A drainage layer consisting of at least six inches [15.2 centimeters] with a transmissivity of  $3 \times 10^{-2}$  centimeters squared per second or greater;
  - d. A layer which is at least thirty-six inches [91.4 centimeters] thick to protect the synthetic liner and barrier layer from freezing, the upper twelve inches [30.5 centimeters] of this layer must be suitable as a plant root zone; and
  - e. A top layer at least six inches [15.2 centimeters] thick consisting of suitable plant growth material.

**History:** Effective August 1, 1993.

**General Authority:** NDCC 23-29-04

**Law Implemented:** NDCC 23-29-04

**33-20-10-05. Facility inspector.**

The owner or operator shall provide the funds necessary to employ an inspector for conducting onsite inspection services at the facility. The owner or operator shall provide funds by July thirty-first of each year for salary, wages, and operating expenses associated with employing an inspector for the facility.

**History:** Effective August 1, 1995.

**General Authority:** NDCC 23-29-04

**Law Implemented:** NDCC 23-01-22, 23-29-04