



Wastes - Non-Hazardous Waste - Municipal Solid Waste

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Closure and Post-Closure Care Requirements for Municipal Solid Waste Landfills (MSWLFs)

The closure and post-closure care requirements for municipal solid waste landfills (MSWLFs) establish the minimum requirements with which MSWLF owner/operators must comply once the landfill stops receiving waste and begins closure. Owner/operators also are required to continue monitoring and maintaining the landfill once it is closed to protect against the release of hazardous constituents to the environment. The closure and post-closure care regulations can be found at [40 CFR Part 258, Subpart F - Closure and Post-Closure Care](#).



For more information, see:

- [Closure](#)
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Closure

Final Cover Systems

The closure standards for MSWLFs require owner/operators to install a final cover system to minimize infiltration of liquids and soil erosion. The permeability of the final cover must be less than the underlying liner system, but no greater than 1.0×10^{-5} cm/sec. The reason for this requirement is to prevent the "bathtub effect" where liquids infiltrate through the overlying cover system but are contained by a more permeable underlying liner system. This causes the landfill to fill up with water (like a bathtub), increasing the hydraulic head on the liner system that can lead to the contaminated liquid (leachate) escaping and contaminating groundwater supplies.

The final cover system must consist of an infiltration layer of at least 18 inches of earthen material covered by an erosion layer of at least 6 inches of earthen material that is capable of sustaining native plant growth. An alternative cover design may be used as long as it provides equivalent protection against infiltration and erosion. Such alternative designs must be approved by the director of an approved/authorized state program.

Closure Plans

Every MSWLF is required to prepare a written closure plan that describes the steps necessary to close the unit in accordance with the closure requirements. This plan must include:

- A description of the final cover design and its installation methods and procedures.
- An estimate of the largest area of the landfill requiring a final cover.

- An estimate of the maximum inventory of waste on site during the landfill's active life.
- A schedule for completing all required closure activities.

Once a MSWLF has received its final shipment of waste, it must begin closure operations within 30 days. A MSWLF, however, may delay closure for up to one year if additional capacity remains. Any further delays after one year require approval from the state director. After beginning, all closure activities must be completed within 180 days (with the exception of an extension from the state director). After closure is complete, the owner/operators then must certify that the closure has been completed in accordance with the official closure plan. This certification must be signed by an independent, registered professional engineer or the state director. At this time, the MSWLF owner/operators also must make a notation on the property deed indicating that the land was used as a landfill and that its future use for other activities is restricted.

Post-Closure Care

Post-closure care activities consist of monitoring and maintaining the waste containment systems and monitoring groundwater to ensure that waste is not escaping and polluting the surrounding environment. The required post-closure care period is 30 years from site closure, but this can be shortened or extended by the director of an approved state program as necessary to ensure protection of human health and the environment.

Specific post-closure care requirements consist of maintaining the integrity and effectiveness of the:

- Final cover system
- Leachate collection system
- Groundwater monitoring system
- Methane gas monitoring system

The owner/operator of a closed MSWLF must prepare a written post-closure care plan that provides:

- A description of all required monitoring and maintenance activities, including the frequency with which each activity will be performed.
- The name, address, and telephone number of the person to contact during the post-closure care period.
- A description of planned uses of the land during the post-closure care period.

Any use of the land during this period must not disturb the integrity or operation of any of the waste containment systems or the monitoring systems. At the end of the post-closure care period, the owner/operator must certify that the post-closure care has been completed in accordance with the official post-closure care plan. This certification must be signed by an independent, registered professional engineer or the state director. Once signed, the certification is placed in the facility's operating record.

Federal Register Final Rules

Revisions to Criteria for Municipal Solid Waste Landfills; Final Rule and Proposed Rule. 62 FR 40708; July 29, 1997 (PDF). (7 pp, 45 K, [about PDF](#)) This direct final rule codifies the flexibility options mandated by Congress in The Land Disposal Program Flexibility Act of 1996. It allows the director of approved states to grant additional flexibility to small MSWLFs by allowing alternatives to daily cover, methane monitoring, and final cover requirements.

Solid Waste Disposal Facility Criteria; Final Rule; Corrections. 57 FR 28626; June 26, 1992. Clarifies the interpretation of final cover requirements for MSWLFs and corrects other errors in preamble and rule language. (Currently not available online.)

Solid Waste Disposal Facility Criteria; Final Rule. 56 FR 50978; October 9, 1991. Establishes and describes the design and operational criteria for all MSWLFs. Includes discussion of the closure and post-closure care requirements. (Currently not available online.)

Other Resources

Municipal Solid Waste Landfill Criteria - Technical Manual: Chapter 6, Subpart F - Closure and Post-Closure (PDF). (31 pp, 239 K, [about PDF](#)) This 1993 manual is a companion to the Municipal Solid Waste Landfills Criteria promulgated on October 9, 1991 as 40 CFR Part 258. Chapter 6 provides owners/operators with guidance for complying with the MSWLF Criteria.

[RCRA Training Module Introduction to Municipal Solid Waste Disposal Facility Criteria \(PDF\)](#). (27 pp, 123 K, [about PDF](#)) Introduces all of the design and operation criteria for MSWLFs, including details on the closure and post-closure care requirements.

[RCRA Orientation Manual: Chapter 2. Managing Nonhazardous Waste \(PDF\)](#). (14 pp, 331 K, [about PDF](#)) Includes information on the regulations for municipal solid waste landfills.

[Criteria for Solid Waste Disposal Facilities: A Guide for Owners/Operators \(PDF\)](#). (22 pp, 2.3MB, [About PDF](#))

This booklet, written primarily for owners/operators of municipal solid waste landfills, summarizes the federal municipal solid waste landfill regulations.

[Safer Disposal for Solid Waste: The Federal Regulations for Landfills \(PDF\)](#). (18 pp, 624K, [About PDF](#)).

This booklet helps citizens understand the federal regulations for municipal solid waste landfills.

[RCRA Online Database](#) Indexes thousands of letters, memoranda, publications, and questions and answers issued by EPA's Office of Resource Conservation and Recovery (ORCR). These documents represent EPA Headquarters interpretations of the RCRA regulations governing the management of solid, hazardous, and medical waste.

[RCRA FAQ Database](#) Enables users to search frequently asked questions, or submit their own question/comment on a variety of RCRA issues and topics.