

## Section 11: Closure and Post-Closure

### 11.1 Introduction

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**Regulatory reference** Minimum requirements for closure plans and post-closure plans for MSW landfills are specified in the Department's Financial Assurance Rule, OAR 340-94-100 through 145. The closure and post-closure requirements for Subtitle D landfills differ from those of non-Subtitle D MSW landfills (i.e., closing facilities).

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**Types of plans** There are two separate categories of closure and post-closure plans:

Subtitle D ("worst case") Closure and Post-closure Plans are based on a hypothetical "worst case" scenario for closure and post-closure costs. This scenario establishes a conservative basis for estimating financial assurance funding requirements.

The Final Engineered Site Closure and Post-closure Plans are linked to the Closure Permit which must be obtained at least 5 years prior to anticipated final closure. The Final Engineered plans reflect the intended closure design. The Final Engineered plans contain all the elements of and replace the Subtitle D plans.

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**How to respond: Subtitle D facilities** Landfills subject to Subtitle D should:

- prepare a "Worst-case" (Subtitle D) Closure Plan and a "Worst-case" (Subtitle D) Post-closure Plan for determining appropriate costs for financial assurance planning. Place the plans in the facility operating record and notify the Director of that action
- prepare a Final Engineered Closure Plan and a Final Engineered Post-closure Plan and submit them to the Department five years before the anticipated final closure date
- revise financial assurance cost estimates based on the final engineered plans

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<b>How to respond: Closing facilities</b>	Non-Subtitle D facilities (closing facilities) are within the five-year final closure window and therefore should: <ul style="list-style-type: none"><li>• prepare a Final Engineered Closure Plan and a Final Engineered Post-closure Plan and submit the plans to the Department at the date specified in the permittee's closure permit</li><li>• determine closure and post-closure costs for financial assurance planning, based on the Final Engineered Closure and Post-closure Plans</li></ul>
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<b>Approval</b>	The Final Engineered Site Closure Plan and Final Engineered Site Post-Closure Plan must be submitted to the Department for review and written approval.
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<b>In this section</b>	This section describes the contents of the closure and post-closure plans.
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## 11.2 Closure Plans

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<b>Subtitle D “Worst-Case” Closure Plan</b>	The Subtitle D “Worst-Case” Closure Plan should include all elements specified in 40 CFR 258.60: <ul style="list-style-type: none"><li>• a description of the steps necessary to close all landfill cells at any point during their active life</li><li>• a description of the final cover system</li><li>• an estimate of the largest area of the landfill ever requiring a final cover</li><li>• an estimate of the maximum inventory of wastes ever on site over the active life of the landfill</li><li>• a schedule for completing all activities necessary to satisfy the closure criteria in 40 CFR 258.60</li></ul>
<b>Final Engineered Site Closure Plan</b>	The Final Engineered Site Closure Plan should supplement all the elements of the “Worst Case” Closure Plan by adding the following: <ul style="list-style-type: none"><li>• detailed design plans and specifications for the closure improvements, including final cover system, gas control system, runoff/run-on control system, leachate treatment and disposal system</li><li>• an updated final grading (topographic) plan for the site</li><li>• an end use plan</li><li>• a landscaping plan</li><li>• an assessment of long-term settlement and its potential effects on the integrity of the closure</li><li>• a detailed description of the design, function, and operation of all environmental control systems</li><li>• a description (plan) of how and when the facility will be closed (i.e., the procedures that will be used to ensure that facility operations are compatible with closure objectives and requirements)</li><li>• a detailed description of the environmental monitoring system;</li><li>• a schedule for implementing the closure plan</li><li>• a detailed closure cost estimate, and</li><li>• other information requested in the closure permit or otherwise required to comply with all applicable DEQ and federal regulations</li></ul>
<b>Previously submitted information</b>	If some of the required information has been previously submitted, review and updated it to reflect current conditions and any proposed changes in the closure program.



## 11.3 Post-Closure Plans

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<b>"Subtitle D" Post-closure Plans</b>	The "Subtitle D" Post-closure Plan should identify and describe the post-closure activities required to properly monitor and maintain the closed landfill site. This post-closure plan should address all elements specified in 40 CFR 258.61 and include procedures for the following: <ul style="list-style-type: none"><li>• maintaining the integrity and effectiveness of the final cover system</li><li>• maintaining and operating the leachate collection, treatment, and disposal systems</li><li>• maintaining and operating the environmental monitoring systems</li><li>• conducting Environmental quality monitoring (groundwater, surface water, landfill gas, leachate, air, etc.)</li><li>• maintaining and operating the landfill gas control system</li><li>• maintaining and operating the surface water runoff/run-on control systems</li><li>• providing overall, site-wide monitoring and security, and</li><li>• establishing appropriate uses of the property during the post-closure care period</li></ul>
<b>Final Engineered Post-closure Plan</b>	Incorporate in the Final Engineered Post-closure plan all elements of the "Subtitle D" post-closure plan, along with detailed closure design information. Include the following: <ul style="list-style-type: none"><li>• a detailed schedule for post-closure monitoring, inspection, and maintenance and repairs</li><li>• detailed operation and maintenance procedures for all environmental monitoring and control systems that will be in active use during the post-closure period, and</li><li>• any other information required to comply with DEQ and federal regulations</li></ul>
<b>Previously submitted information</b>	Review and update any previously submitted post-closure information to reflect current conditions and any proposed changes in closure or post-closure activities.

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## 11.4 Additional Resources

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<b>References</b>	<u>Technical Manual for Solid Waste Disposal Criteria - 40 CFR Part 258, Subpart F (Chapter 6)</u> . U.S. EPA, November 1993.
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