Texas Commission on Environmental Quality

Post-Closure Care Cost Estimate Form for
Municipal Solid Waste Type I Landfills

This form is for use by applicants or site operators to provide post-closure care cost estimates for post-closure care of MSW Type I landfills to meet the requirements in 30 Texas Administrative Code (TAC) Chapter 330, Section 330.63(j) and 30 TAC Chapter 330 Subchapter L. The costs to be provided herein are cost estimates for hiring a third party to conduct post-closure care of the largest waste fill area that has been certified closed in writing by the TCEQ executive director.

If you need assistance in completing this form, please contact the MSW Permits Section in the Waste Permits Division at (512) 239-2335.

# General Information

Facility Name:

MSW Permit No.:

Date:

Revision Number:

Site Operator/Permittee Name and Mailing Address:

Total Post-Closure Care Cost Estimate (20   Dollar Amount):

# Professional Engineer’s Statement, Seal, and Signature

I am a licensed professional engineer in the State of Texas. To the best of my knowledge, this Post- Closure Care Cost Estimate has been completed in substantial conformance with the facility Post-Closure Care Plan and, in my professional opinion, is in compliance with Title 30 of the Texas Administrative Code, Chapter 330.

Name:       Title:

Date:

Company Name:       Firm Registration Number:

Professional Engineer’s Seal

Signature

# Annual Review of Permit Conditions, Cost Estimates, Adjustments for Inflation, and Financial Assurance

The site operator/permittee acknowledges that he/she will:

1. Revise and increase the post-closure care cost estimate and the amount of financial assurance provided whenever changes in the post-closure care plan or the landfill conditions increase the maximum cost of post-closure care at any time during the remaining active life of the landfill and until the facility is officially released from the post-closure care period in writing by the executive director.
2. Request a reduction in the post-closure care cost estimate and the amount of financial assurance as a permit modification whenever the post-closure care cost estimate exceeds the maximum cost of post-closure care remaining over the post-closure period. The permit modification will include a detailed justification for the reduction of the post-closure care cost estimate and the amount of financial assurance.
3. Establish financial assurance for post-closure care of the unit in an amount no less than the current post-closure care cost estimate in accordance with 30 TAC Chapter 37
4. Adjust the current post-closure care cost estimate for inflation within 60 days prior to the anniversary date of the first establishment of the financial assurance mechanism.
5. Provide annual inflation adjustments to the post-closure care costs and financial assurance during the active life of the facility and during the post closure care period. The adjustment will be made using an inflation factor derived from the most recent annual Implicit Price Deflator for Gross National Product published by the United States Department of Commerce in its Survey of Current Business, as specified in 30 TAC Chapter 37. The inflation factor is the result of dividing the latest published annual Deflator by the Deflator for the previous year.
6. Provide continuous financial assurance coverage for post-closure care until the facility is officially released in writing by the executive director from the post-closure care period in accordance with all requirements of the post-closure care plan.

# Description of Worksheet Items of the Post-Closure Care Cost Estimates

The following descriptions of the worksheet items provide guidance for identifying the minimum work or cost elements for estimating the unit or lump sum cost of each item as applicable. Enter additional detail for each item in the field following the item as necessary and as site-specific conditions warrant. The cost items are grouped under post-closure care costs for engineering, construction, and leachate management. Include attachments to detail any additional work and associated costs necessary for the post-closure care of the unit or facility that is not already included as a line item on the worksheet. Reference the attachments and list the work or cost items in the fields under “Additional Engineering Cost Items Not Listed on the Worksheet,” “Additional Construction Cost Items Not Listed on the Worksheet,” or Additional Leachate Management Costs Not Listed on the Worksheet” as applicable. Provide the total cost of additional work or cost items in each cost category on the worksheet line that precedes the cost subtotal for each cost group.

1. Engineering Costs
	1. Site Inspection and Recordkeeping

Regularly scheduled and event-driven site inspection must be performed to identify areas experiencing settlement, subsidence, erosion, or other drainage related problems, and note the conditions of the environmental control and monitoring systems, including leachate collection, groundwater monitoring, and landfill gas monitoring systems. Enter additional site inspection and recordkeeping work or cost element detail as site-specific conditions warrant.

* 1. Correctional Plans and Specifications

The cost for an engineering consultant to prepare corrective measure construction plans and specifications to correct problems identified during site inspections. Enter additional work or cost element details for correctional plans and specifications as site-specific conditions warrant.

* 1. Site Monitoring

The cost of performing semiannual groundwater (including costs for sampling and analyzing parameters, and assessment and reporting) and quarterly landfill gas monitoring (including costs for sampling and reporting) and the monitoring of other site-specific systems at the landfill during the post-closure period. Enter additional site monitoring work or cost element details as site-specific conditions warrant.

* 1. Additional Engineering Cost Items Not Listed on the Worksheet

List the Attachments detailing additional post-closure care engineering cost items not already included as a line item on the worksheet. (Also, reference these Attachments in the “Units” column of this line of the worksheet. Provide the total cost of all additional engineering cost items in the “Cost” column).

1. Construction Costs
	1. Cap and Sideslopes Repairs and Revegetation

The cost of repair of the cap and cap drainage control structures due to erosion or structural integrity failures and maintaining final cover vegetation to minimize erosion. Enter additional cap and sideslopes repair and revegetation work or cost element details as site-specific conditions warrant.

* 1. Mowing and Vegetation Control

The cost of controlling vegetation growth on the final cover and other areas of the landfill. Enter additional mowing and vegetation control work or cost element details as site-specific conditions warrant.

* 1. Groundwater Monitoring System Maintenance

The cost of repairs/replacement and routine maintenance. Enter additional groundwater monitoring system maintenance work or cost element details as site-specific conditions warrant.

* 1. LFG Monitoring Probes Maintenance

The cost of repairs/replacement and routine maintenance. Enter additional LFG monitoring probes maintenance work or cost element details as site-specific conditions warrant.

* 1. LFG Collection System Maintenance

The cost of repairs and routine maintenance. Enter additional LFG collection system maintenance work or cost element details as site-specific conditions warrant.

* 1. Perimeter Fence and Gates Maintenance

The cost of maintaining perimeter fence and gates to restrict unauthorized access to the closed landfill. Enter additional perimeter fence and gates maintenance work or cost element details as site-specific conditions warrant.

* 1. Access and Rights of Way Maintenance

The cost of maintaining the access roads and other rights of way to the closed landfill to conduct inspections, environmental sampling, routing maintenance and other post-closure activities. Enter additional access and rights of way maintenance work or cost element details as site-specific conditions warrant.

* 1. Drainage System Cleanout and Repairs

The cost to include costs for maintaining and repairing ditches, conveyance structures, and ponds/basins. Enter additional drainage system cleanout and repairs work or cost element details as site-specific conditions warrant.

* 1. Additional Construction and Maintenance Cost Items Not Listed on the Worksheet

List the Attachments detailing any additional construction and maintenance cost items necessary for post-closure care that are not already covered on the worksheet. (Also, reference these Attachments in the “Units” column on this line of the worksheet. Provide the total cost of all additional construction and maintenance cost items in the “Cost” column.)

1. Leachate Management Costs
	1. Leachate Collection and Removal System Operation and Maintenance

The cost of operation, routine maintenance and repairs. Enter additional work or cost element details for leachate collection and removal system operation and maintenance as site-specific conditions warrant.

* 1. Leachate Disposal

The cost of leachate disposal off-site. Enter additional work or cost element details for leachate disposal as site-specific conditions warrant.

* 1. Additional leachate management cost items not listed on the worksheet.

List the Attachments detailing any additional leachate management cost items necessary for post-closure care that are not already covered on the worksheet. (Also, reference these Attachments in the “Units” column on this line of the worksheet. Provide the total cost of all additional leachate management cost items in the “Cost” column.)

1. Sum of Cost Subtotals

Enter the sum of engineering, construction, and storage and leachate management post-closure care cost subtotals from lines 1.5.1, 2.10.1, and 3.5.1.

1. Contingency

The cost added to cover unanticipated events during implementation of post-closure activities. (Enter additional work or cost element information as necessary)

1. Third Party Administration and Project Management Costs

The cost for the third party hired by TCEQ to administer the post-closure activities. (Enter additional work or cost element information as necessary)

# Post-Closure Care Cost Estimates Worksheet

Post-Closure Care Period – 30 years

Total Permitted Acreage:       acres

Total Permitted Waste Footprint:       acres

Number of Groundwater Monitoring Wells:

Number of GW Monitoring Events:      /year

Number of Gas Probes:

Number of LFG Monitoring Events:      /year

The unit or lump sum cost for each item is based on the work items and cost elements described in Section III of this Post-Closure Cost Estimate document:

Yes [ ]  No [ ]  Partially [ ]

If “No” or “Partially” is checked, please attach a written description of work items and cost elements which form the bases of unit or lump sum cost for the affected items.

(NOTE: If any item listed in this worksheet is not applicable to the subject facility, enter Not Applicable (N/A) in the affected fields)

Attachments

Additional Engineering, Construction, and Leachate Management Cost Items Details.

Table 1: Post-Closure Care Cost Estimates

| Item No. | Item Description | Units | Annual Qty. | Unit Cost | Annual Cost | Source of Unit Cost Estimate[[1]](#endnote-1) |
| --- | --- | --- | --- | --- | --- | --- |
| 1.0 Engineering Costs |
| 1.1 | Site Inspection andRecordkeeping[[2]](#endnote-2) | specify |       |       |       |       |
| 1.2 | Correctional Plans and Specifications | specify |       |       |       |       |
| 1.3 Site Monitoring |
| 1.3.1 Groundwater Monitoring System |
| 1.3.1(a) | Sampling and Analysis of GW Monitoring Wells (Quantity = 2 x Number of wells) | Wells |       |       |       |       |
| 1.3.1(b) | Piezometers/Well Abandonment | Each |       |       |       |       |
| 1.3.2 LFG Monitoring System |
| 1.3.2(a) | LFG Quarterly Monitoring (Quarterly) | Each |       |       |       |       |
| 1.3.2(b) | LFG Probe Plugging and Abandonment | Each |       |       |       |       |
| 1.4 Additional Engineering Cost Items (Detail in Attachments) |
| 1.4.1 | Additional Engineering Cost Items (describe in attachments) | Identify attachments | NA | NA |       | NA |
| 1.5 Engineering Costs Subtotal |
| 1.5.1 | Engineering Costs Subtotal | NA | NA | NA |       | NA |
| 2.0 Construction and Maintenance Costs |
| 2.1 | Cap and Sideslopes Repairs and Revegetation | Acres |       |       |       |       |
| 2.2 | Mowing and Vegetation Management | Acres |       |       |       |       |
| 2.3 | Groundwater Monitoring System Maintenance | specify |       |       |       |       |
| 2.4 | LFG Monitoring Probes Maintenance | specify |       |       |       |       |
| 2.5 | LFG Collection System Maintenance | specify |       |       |       |       |
| 2.6 | Perimeter Fence and Gates Maintenance | specify |       |       |       |       |
| 2.7 | Access Roads Maintenance | specify |       |       |       |       |
| 2.8 | Drainage System Cleanout/Repairs | specify |       |       |       |       |
| 2.9 Additional Construction and Maintenance Cost Items (Details in Attachments) |
| 2.9.1 | Additional Construction and Maintenance Cost Items (details in attachments) | Identify attachments | NA | NA |       | NA |
| 2.10 Construction and Maintenance Costs Subtotal |
| 2.10.1 | Construction and Maintenance Costs Subtotal | NA | NA | NA |       | NA |
| 3.0 Leachate Management |
| 3.1 | Leachate Management System Operation and Maintenance | specify |       |       |       |       |
| 3.2 | Leachate Disposal | Gals |       |       |       |       |
| 3.3 Additional Leachate Management Cost Items (Details in Attachments) |
| 3.4 | Additional Leachate Management Cost Items (details in attachments) | Identify attachments | NA | NA |       |       |
| 3.5 Leachate Management Costs Subtotal |
| 3.5.1 | Leachate Management Costs Subtotal | NA | NA | NA |       | NA |
| 4.0 Sum of Engineering, Construction, and Leachate Management Costs |
| 4.1 | Sum of Engineering, Construction, and Leachate Management Cost Subtotals | NA | NA | NA |       | NA |
| 5.0 Contingency |
| 5.1 | Contingency (10% of Sum of Engineering, Construction, and Leachate Management Cost Subtotals) | NA | NA | NA |       | NA |
| 6.0 Third Party Administration and Project Management Costs |
| 6.1 | Third Party Administration and Project Management Costs (2.5% of Sum of Engineering, Construction, and Leachate Management Cost Subtotals) | NA | NA | NA |       | NA |
| 7. Total Post-Closure Cost |
| 7.1 | Total Annual Post-Closure Cost (Sum of amounts in Sections 4, 5, and 6) | NA | NA | NA |       | NA |
| 7.2 | 30 Year Post-Closure Costs (Total Annual Post-Closure Cost x 30) | NA | NA | NA |       | NA |

1. Sources of Unit Cost Estimates may include:

(1) Published Cost Estimator Manuals (e.g., RS Means);

(2) Third Party Quotes (e.g., Environmental Field Services Contractors); or

(3) Verifiable Data based on Actual Operations [↑](#endnote-ref-1)
2. Example Description for Item No. 1.1 – “Includes costs for site inspection performed at least annually for identification of areas experiencing settlement or subsidence, erosion or other drainage-related problems, inspection of the leachate collection system, gas monitoring system and LFG monitoring system.” [↑](#endnote-ref-2)