

US EPA ARCHIVE DOCUMENT

# Items to Submit for RCRA Closure Cost Estimate

## 1. **Facility Unit Outline** [\*Click here for example of Facility Unit Outline\*](#)

Use Part A to create the outline separate units by type  
Outline Should Contain the Following for Each Unit:

**Maximum Capacity**

**Secondary Containment Dimensions**

**Equipment Surface Area** (*cement kilns, incinerator, any other misc. equipment,...etc*)

**Estimated Amount of Decon Fluid need to clean areas**

**Amount of Samples including QA/QC** *\*(Include appropriate test methods for all constituents)*

**Labor and Equipment Cost per Unit Summary** *\*(Decon, Sampling, PPE, Loading/Unloading)*

**Transportation Summary** *\*(Include facility name and location if applicable)*

**Treatment/Disposal Summary** *\*(Include facility name and location if applicable)*

**Other Requirements:**

### **Engineering Expenses**

Typically engineering expenses cover items such as:

Food, travel, lodging, engineering management/design, post closure landfill cap installation oversight ....etc..etc

*\*(engineering expenses do not directly include closure certification costs)*

Facilities usually also include a contingency based on 10% of the closure certification cost for engineering expenses.

*\*Can be lumped together in Unit Summary Grand Total or can be calculated per section.  
Please note; if costs are combined they cannot be deducted for a single unit.*

### **Closure Certification Costs**

Typically closure certification costs cover items such as:

All expenses incurred for engineering review of documentation, physical inspection, and closure certification report preparation.

*\*Can be lumped all together in Unit Summary Grand Total or can be calculated per section.  
Please note; if costs are combined they cannot be deducted for a single unit.*

### **Contingency Costs**

In accordance with standard engineering practices, unit-specific summary worksheets incorporate an additional 10-20% of the total cost of all specified closure or post-closure care activities into the final cost to account for contingencies and unforeseen expenses.

*\*Can be lumped together in Unit Summary Grand Total or can be calculated per section  
Please note; if costs are combined they cannot be deducted for a single unit.*

## 2. Cost Estimate Checklists

[Click here for examples of unit components to consider for cost estimate](#)

***\*Double click on pushpins to access the spreadsheet corresponding to the unit.***

[Container Storage](#)

[Post-Closure Care](#)

[Containment Buildings](#)

[Tanks](#)

[Cement Kilns](#)

[Incinerators](#)

Supporting Sheets (These are attached to the main checklist sheets above):

Treatment and Disposal Worksheet  
 Labor and Equipment Worksheet  
 Sampling and Analysis Worksheet  
 Test Method Cost Worksheet  
 Engineering Review Worksheet

***\*If available, please provide copies of any quotes for items listed on the supporting sheets. The department will review submitted quotes and make a determination for acceptance. If quotes are not available, supportive data values from tools such as CostPro and RACER will be used at default levels. Please note; the default values from these tools are usually more conservative than quotes from contractors.***

## 3. Unit Summary Grand Total Spreadsheet

## 4. Any Other Tables, Charts, or Spreadsheets to Support Data

Make sure that you can identify: (don't forget to look at EPA checklists noted above as references)

1. Types of waste and containers that will be treated or disposed in all hazardous waste units  
*\*(ex...waste type:liquids/solids and container type:55gallon drums. roll-offs, bulk liquids in tanker truck)*
2. Any cost associated with the dismantling of tanks, pipes, or other miscellaneous equipment.
3. Any cost associated with the loading and unloading, rental equipment, and or labor for all units on-site.
4. Identify the amount of decontamination fluid required to clean a specific area and any tanks, miscellaneous units, or other ancillary equipment in a certain area.
5. All closure sampling requirements and the amount of samples required for each area.  
 A breakdown of solid vs. liquid samples for each area and appropriate test methods for each constituent necessary for the site. Please include the corresponding EPA test methods for all constituents that are managed in that unit. *\*(don't forget to include QC, rinsate, or any other necessary samples)*

6. Possible destination for each waste to be treated or disposed and or any agreements with facilities to handle that waste.
7. Numbers of samples site wide (or per unit) for groundwater monitoring, sampling frequency and appropriate test methods for each constituent necessary for the site.

Points to Remember:

[40 CFR 264.142 \(a\)\(2\), \(a\)\(3\), & \(a\)\(4\)](#)

*“(2) The closure cost estimate must be based on the costs to the owner or operator of hiring a third party to close the facility. A third party is a party who is neither a parent nor a subsidiary of the owner or operator. (See definition of parent corporation in §[264.141\(d\)](#).) The owner or operator may use costs for on-site disposal if he can demonstrate that on-site disposal capacity will exist at all times over the life of the facility.*

*(3) The closure cost estimate may not incorporate any salvage value that may be realized with the sale of hazardous wastes, or non-hazardous wastes if applicable under §[264.113\(d\)](#), facility structures or equipment, land, or other assets associated with the facility at the time of partial or final closure.*

*(4) The owner or operator may not incorporate a zero cost for hazardous wastes, or non-hazardous wastes if applicable under §[264.113\(d\)](#), that might have economic value.”*

**\*Don't forget to perform an inflation update based upon IPD per [40 CFR 246.142\(b\)](#) consult your state financial assurance coordinator for state specific guidelines on this information.**

# Resources for Guidance on Cost Estimates

[40 CFR 264.110-120](#) “Closure and Post-Closure”

[40 CFR 264.142](#) “Cost Estimate for Closure”

[40 CFR 264.144](#) “Cost Estimate for Post-Closure Care”

All EPA documents can be found by typing in the EPA document number **without** the word “EPA”, dashes or slashes using the [EPA National Service Center for Environmental Publications](#) page. For OSWER document numbers enter in the word OSWER **with** all characters following “OSWER” **without** dashes and slashes.

[“Introduction to Closure/Post-Closure Guidance”](#) (EPA/530-K-05-009)

[“Final Guidance Manual: Cost Estimates for Closure and Post-Closure Care Plans”](#) (OSWER9476.00-6)

[“RCRA Guidance Manual for Subpart G Closure and Post Closure Care Standards and Subpart H Cost Estimating Requirements”](#) (EPA/530-SW-87-010)

[Cost Estimating for RCRA Financial Assurance Presentation](#)

[RCRA Permit Training Reviewing the Permit Application \(Closure Plan Section\)](#)

[Costpro Cost Estimation Software](#)

RACER contact info e-mail address: [racer@earthtech.com](mailto:racer@earthtech.com)

Azimuth ECHOS (Environmental Cost Handling Options and Solutions)

[R.S. Means Building Construction Cost Data and Means Site Work and Landscape Cost Data guides](#)

US Department of Commerce Bureau of Economic Analysis (BEA) <http://www.bea.gov/>

(BEA Table 1.1.9. Implicit Price Deflators for Gross Domestic Product)

<http://www.bea.gov/national/nipaweb/TableView.asp?SelectedTable=13&Freq=Qtr&FirstYear=2007&LastYear=2009>

## Specific Cost Estimate Guidance from other states

1. California  
[http://www.dtsc.ca.gov/HazardousWaste/Permits/upload/HWM\\_POL\\_PermitWriterInstructions\\_Closure\\_ch3\\_13.pdf](http://www.dtsc.ca.gov/HazardousWaste/Permits/upload/HWM_POL_PermitWriterInstructions_Closure_ch3_13.pdf)
2. Texas  
<http://www.tceq.state.tx.us/assets/public/permitting/waste/ihw/tg10rv.pdf>
3. Utah  
[http://www.hazardouswaste.utah.gov/SWBranch/SWSection/Adobe/SolidWaste/Closure\\_cost\\_guidance.pdf](http://www.hazardouswaste.utah.gov/SWBranch/SWSection/Adobe/SolidWaste/Closure_cost_guidance.pdf)
4. Virginia  
<ftp://ftp.deq.virginia.gov/pub/forms/waste/costestform.xls>
5. Washington  
(Very useful spreadsheet tool that utilizes Costpro style sheets with 2005 RS Means Data)  
<http://www.ecy.wa.gov/biblio/0504009.html>