Solid Waste Disposal Facility
Cost Estimate Form

Facility Name:	Bremo Power Station - Facility Estimate			Permit No. SWP	618
Address:	1038 Bremo Bluff Road				
City:	Bremo Bluff	State:	Virginia	Zip:	23022
FA Holder:					
Estimate Prepared By:	Golder Associates Inc.				

Indicate the plan versions for which this cost estimate was prepared, identifying the following information for each plan:

Closure Plan				**Post-Closure Care Plan**			
Title:	Inactive CCR Surface Impoundments			Title:	Inactive CCR Surface Impoundments		
Plan Date:	Mar. 2016	Approved:		Plan Date:	Mar. 2016	Approved:	
Consultant:	Golder Associates Inc.			Consultant:	Golder Associates Inc.		
Corrective Action Plan				**Corrective Action Monitoring Plan**			
Title:				Title:			
Plan Date:		Approved:		Plan Date:		Approved:	
Consultant:				Consultant:			

Cost Estimate Summary	
Total Closure Cost:	$ 36,043,950
Total Post-Closure Cost:	$ 1,851,387
Total Corrective Action Cost:	$
TOTAL:	**$ 37,895,337**

References

Please indicate references used to develop this cost estimate:

Please see attached sheets.

Certification by Preparer:

This is to certify that the cost estimates pertaining to the engineering features and monitoring requirements of this solid waste management facility have been prepared by me and are representative of the design specified in the facility's approved Closure, Post-Closure and Corrective Action Plans. The estimate is based on the cost of hiring a third party and does not incorporate any salvage value that may be realized by the sale of wastes, facility structures, or equipment, land or other facility assets at the time of partial or final closure. In my professional judgment, the cost estimates are a true, correct, and complete representation of the financial liabilities for closure, post-closure care, and corrective action of the facility and comply with the requirements of 9 VAC 20-70 and all other DEQ rules and statutes of the Commonwealth of Virginia.

Name:	Ron DiFrancesco, P.E.	Signature:	
Title:	Professional Engineer	Date:	3/16/16

Acknowledgement by Owner/Operator :

Name:	David Craymer	Signature:	
Title:	Vice President	Date:	3/16/16

Instructions for Completing DEQ Form CE SWDF

DEQ Form CE SWDF should be submitted by solid waste disposal facilities providing a new or updated cost estimate in accordance with a new permit or permit modification affecting the existing financial assurance cost estimate. If the facility is increasing an existing cost estimate for inflation to meet the annual financial assurance demonstration, this worksheet is not necessary. This form is designed to provide summary information regarding the individual cost estimates developed to cover the cost of facility closure, post-closure care, and groundwater corrective action and certification that the estimates are true, correct and complete. Separate from this form, the Department has revised the closure and post-closure cost estimate worksheets, now referred to as CEW-01 and CEW-02, respectively, to assist in development of closure and post-closure cost estimates. A worksheet has not been developed for corrective action cost estimates since corrective action remedies are site-specific and vary based on the remediation selected.

These instructions are designed to assist solid waste management facilities with the completion of this form and forms CEW-01 and CEW-02. The descriptions below are listed in the order as they appear on DEQ Form CE SWDF.

Facility Name:
Enter the name of the facility as it should appear or as it currently appears on the existing DEQ Part B Permit.

Permit No. SWP
Indicate the 3-digit number assigned to the facility. The permit number is usually written as SWP###.

Address, City, State, Zip:
Provide the street address of the facility's physical location (may be Rural Route/Box No. if 911 address is not available)

FA Holder:
Indicate the entity responsible for maintaining the financial assurance mechanism. This entity should be either the owner or operator of the facility listed, and should match the SCC documentation filed for the facility.

Estimate Prepared By:
Indicate the person and entity preparing this form and the attached cost estimate worksheets. For example, if the form is prepared by a facility representative, this box should contain his/her name along with the facility name. If a consultant prepared the form, the consultant's name along with the consultant's company should be listed.

Closure, Post-Closure Care, Corrective Action and Corrective Action Monitoring Plans

For each plan, indicate the following information:

Title: Indicate the title of the approved plan on file with the Department. If a closure or post-closure plan has not been approved the facility should provide a cost estimate for the standard regulatory cap and post-closure care required per the Virginia Solid Waste Management Regulations.

Plan Date: Specify the plan's date. If the plan has been revised, enter the date of the last revision.

Approved: Indicate date of the plan's approval. The approval date should be the date of any Department correspondence indicating the plan is administratively complete/technically adequate (for stand-alone plans) or the date of the permit modification incorporating the plan into the facility's Part B permit.
Consultant: Indicate the consulting firm who prepared the plan or latest revision.

Cost Estimate Summary

Total Closure Cost: Enter the estimated total cost of closure activities. This amount should match the total determined using worksheet CEW-01 or other worksheet prepared for closing the facility. Worksheet CEW-01 or alternate should be attached to DEQ Form CE SWDF.

Total Post-Closure Cost: Enter the estimated total cost of post-closure care activities. The amount should match the total determined using worksheet CEW-02 or other worksheet prepared for operating the facility during the post-closure care period. Worksheet CEW-02 or alternate should be attached to DEQ Form CE SWDF.

Total Corrective Action Cost: Enter the estimated total cost of corrective action. The amount should match the total determined using a worksheet prepared based on the cost of the proposed corrective action activities. The worksheet prepared to estimate corrective action costs should be attached to DEQ Form CE SWDF.

References

In the space provided, list references used to prepare the cost estimate. These references can be bids or actual cost data from previous projects, RSMeans values, or other applicable data. References listed should include dates associated with the documentation. If valuable to support the worksheets provided, please provide copies of references to this form.

Certification by Preparer

The person responsible for preparing the cost estimate should read the certification statement and provide his/her name, title, signature, and date to certify that the facility cost estimate provided is true, correct, and complete.

Acknowledgement by Owner/Operator

If DEQ Form CE SWDF and the attached cost estimate worksheets are prepared by a third party (i.e. consultant), a responsible official representing the FA Holder should indicate his/her acknowledgement of the cost estimate. If this estimate is prepared by a responsible official representing the FA Holder then this line can be left blank so long as the Certification by Preparer is signed.

Worksheets CEW-01 & CEW-02: Format for the Estimation of Closure & Post-Closure Care Costs

The previous Landfill Cost Estimate Form included four worksheet tabs: a summary worksheet, a worksheet for estimating closure costs (Worksheet 1), a worksheet for estimating post-closure care costs (Worksheet 2), and a final worksheet providing suggested and minimum default values to be used in Worksheets 1 and 2 (Worksheet 3). With this revision, the summation sheet has been separated and is now a stand-alone form (DEQ CE SWDF) to be used for all cost estimates.

The new worksheets, CEW-01 and CEW-02, have been revised to group similar items and include comments provided throughout to assist the preparer with determining what information goes in some of the boxes. Comments are present on cells with a small red triangle in the upper right hand corner of the cell. To see the comment, you need to hover your cursor over the cell with this red triangle. Any facility-specific items not included on CEW-01 or CEW-02 should be added to ensure a complete and true cost estimate is provided.

Previous Worksheet 3 containing the default values has not been revised and is no longer provided with the new worksheets. The default values have been removed in favor of facilities supplying site-specific cost factors to develop accurate closure and post-closure care cost estimates.

Facilities are not required to use Worksheets CEW-01 and CEW-02; these forms are merely provided for facility use in an effort to show the depth of items to be addressed when preparing closure and post-closure cost estimates. Facility-specific or alternate worksheets will be accepted for review and should accompany a certified DEQ Form CE SWDF.

Worksheet CEW-01: FORMAT FOR THE ESTIMATION OF CLOSURE COSTS

Facility Name: Bremo Power Station
Permit Number: 618
Facility Address: 1038 Bremo Bluff Road
Bremo Bluff, Virginia 23022
Facility Owner: Virginia Electric and Power Company
Owner Representative: David Craymer
Representative Completing Format: Golder Associates Inc., Ron DiFrancesco, P.E.
Date Completed: Revised March 2016

Total Permitted Footprint	21.5 ac.	
Developed Ash Pond Area (To be Closed)	**21.5 ac.**	**Clean Closure Option**
Remaining Undeveloped Area	0 ac.	

Soil Cap Components

				Calculation or Conversion	
I.	**Slope & Fill**				
a.	Area to be capped	21.5	acres	x 4,840yd2/ac	104,060 yd2
b.	Depth of soil needed for slope and fill	28	inches	x 1yd/36in	0.78 yd
c.	Quantity of soil needed			a x b	80,936 yd3
d.	Percentage of soil from off-site	100%			
e.	Purchase unit cost for off-site material	$11.65	/yd3		
f.	Percentage of soil from on-site	0		(1 - d)	0%
g.	Excavation unit cost (on-site material)	$0.00	/yd3		0
h.	Total soil unit cost			(d x e) + (f x g)	$11.65 /yd3
i.	Hauling, Placement and Spreading unit cost	$4.90	/yd3		0
j.	Compaction unit cost	$0.00	/yd3		
k.	Total soil unit cost			h + i + j	$16.55 /yd3
l.	Soil subtotal			k x b	$1,339,483
m.	Percent compaction	20%			
	Total Slope & Fill Cost			l x (1 + m)	***$1,607,380***
II.	**Erosion Control / Protective Cover Soil**				
a.	Area to be capped	0	acres	x 4,840yd2/ac	0 yd2
b.	Depth of soil needed	0	inches	x 1yd/36in	0.00 yd
c.	Quantity of soil needed			a x b	0 yd3
d.	Percentage of soil from off-site	100%			
e.	Purchase unit cost for off-site material	$11.65	/yd3		
f.	Percentage of soil from on-site	0		(1 - d)	0%
g.	Excavation unit cost (on-site material)	$0.00	/yd3		
h.	Total erosion/protective soil unit cost			(d x e) + (f x g)	$11.65 /yd3
i.	Hauling, Placement and Spreading unit cost	$4.90	/yd3		
j.	Compaction unit cost	$0.00	/yd3		
k.	Total soil unit cost			h + i + j	$16.55 /yd3
l.	Erosion/Protective soil subtotal			k x b	$0
m.	Percent compaction	20%			
	Total Erosion Control/Protective Cover Soil Cost			l x (1 + m)	***$0***

III. Vegetative support soil (Topsoil)

a.	Area to be capped	0	acres	x 4,840yd2/ac	0 yd2
b.	Depth of topsoil needed	0	inches	x 1yd/36in	0.00 yd
c.	Quantity of topsoil needed			a x b	0 yd3
d.	Percentage of topsoil from off-site	100%			
e.	Purchase unit cost for off-site material	$11.65	/yd3		
f.	Percentage of topsoil from on-site	0		(1 - d)	0%
g.	Excavation unit cost (on-site material)	$0.00	/yd3		
h.	Total topsoil unit cost			(d x e) + (f x g)	$11.65 /yd3
i.	Hauling, Placement and Spreading unit cost	$4.90	/yd3		
j.	Total soil unit cost			h + i	$16.55 /yd3
	Total Topsoil Cost			c x j	***$0***

IV. Vegetative Cover

a.	Area to be vegetated	21.5	acres
b.	Vegetative cover (seeding) unit cost	$2,350	/acre
b.	Erosion Control Matting Quantity	0	yd2
c.	Erosion control matting unit cost	$0.00	/yd2
	Total Vegetative Cover Cost		a x (b + c) ***$50,525***

Soil Cap Component Subtotal: $1,657,905

Geosynthetic Barrier & Infiltration Layers

V. Flexible Membrane Liner

				Calculation or Conversion	
a.	Quantity of FML needed	0	acres	x 43,560ft2/ac	0 ft2
b.	Purchase unit cost	$0.24	/ft2		
c.	Installation unit cost	$0.16	/ft2		
d.	Total FML unit cost			b + c	$0.40
	Total FML cost			a x d	***$0***

VI. Geosynthetic Clay Liner

a.	Quantity of GCL needed	0	acres	x 43,560ft2/ac	0 ft2
b.	Purchase unit cost	$0.00	/ft2		
c.	Installation unit cost	$0.00	/ft2		
d.	Total GCL unit cost			b + c	$0.00 /ft2
	Total GCL Cost			a x d	***$0***

Geosynthetic Layers Subtotal: $0

Drainage Components

VII. Sand or Gravel Drainage

				Calculation or Conversion	
a.	Area to be capped	0	acres	x 4,840yd2/ac	0 yd2
b.	Depth of sand or gravel needed	0	inches	x 1yd/36in	0.00 yd
c.	Quantity of drainage material needed			a x b	0 yd3
d.	Percentage of media from off-site	0%			
e.	Purchase unit cost for off-site material	$0.00	/yd3		
f.	Percentage of material from on-site			(1 - d)	100%
g.	Excavation unit cost (on-site material)	$0.00	/yd3		
h.	Total drainage material unit cost			(d x e) + (f x g)	$0.00 /yd3
i.	Hauling, Placement and Spreading unit cost	$0.00	/yd3		
j.	Compaction unit cost	$0.00	/yd3		
k.	Total drainage material unit cost			h + i + j	$0.00 /yd3
l.	Drainage material subtotal			k x b	$0.00
m.	Percent compaction	0%			
	Total drainage material cost			l x (1 + m)	***$0***

VIII. Geotextile

a.	Quantity of geotextile needed	0	acres	x 43,560ft2/ac	0 ft2
b.	Purchase unit cost	$0.00	/ft2		
c.	Installation unit cost	$0.00	/ft2		
d.	Total geotextile unit cost			b + c	$0.000 /ft2
	Total Geotextile Cost			a x d	***$0***

IX. Geonet Composite

a.	Quantity of geonet composite needed	0	acres	x 43,560ft2/ac	0 ft2
b.	Purchase unit cost	$0.39	/ft2		
c.	Installation unit cost	$0.19	/ft2		
d.	Total geonet composite unit cost			b + c	$0.58 /ft2
	Total Geonet Composite Cost			a x d	***$0***

X. Cap Underdrain System

a.	Length of Cap Underdrain needed	0	LF		
a.	Length of Channel Underdrain needed	0	LF		
b.	Purchase unit cost (Cap Underdrain)	$28.15	/LF		
c.	Purchase unit cost (Channel Underdrain)	$46.75	/LF		
	Total Underdrain Cost			a x d	***$0***

XI. Stormwater Controls

Rip Rap

g.	Quantity of Rip Rap needed	500	ton		
h.	Rip rap unit cost	$55.30	/ton		
i.	*Total rip rap cost*			g x h	*$27,650*

Additional Stormwater Controls

k.	Additional Stormwater Controls	$30,000.00			
	Total Stormwater Control			c + f + i + l	***$57,650***

Drainage Component Subtotal: $57,650

Miscellaneous

				Calculation		
XII.	**Removal and Disposal of Stockpiled Material**					
a.	Quantity of stockpiled CCR	100,000	ton			
b.	Loading and Hauling unit cost	$76.25	/ton			
c.	Disposal unit cost	$0.00	/ton			
d.	***Total Removal/Disposal Cost***			a x (b + c)	***$7,625,000***	
XIII.	**Erosion/Sediment Control**					
a.	Quantity of silt fence needed	3,000	LF			
b.	Silt Fence unit cost	$2.05	/LF			
	Total Silt Fence Cost			a x b	***$6,150***	
XIV.	**Site Security**					
Fencing						
a.	Length of fencing needed	-	ft			
b.	Fence unit cost	$0.00	/ft			
c.	*Subtotal fencing cost*			a x b	*$0*	
Gate or Barrier						
d.	Number of gates required	-				
e.	Gate unit cost	$0.00	/gate			
f.	*Subtotal gate cost*			d x e	*$0*	
Closed Sign						
g.	Number of signs required	-				
h.	Sign unit cost	$0.00	/sign			
i.	*Subtotal sign cost*			g x h	*$0*	
	Total site security cost			c + f + i	***$0***	
XV.	**Mobilization / Demobilization**					
a.	Cost for mobilization/demobilization	$41,000				
	Total mobilization/demobilization cost				***$41,000***	
					Miscellaneous Subtotal:	**$7,672,150**

Closure Cost Subtotal (CCS):	(I + … + XIX)	$9,387,705	
Contingency (8%):	CCS x 0.08	$751,016	
Engineering & Documentation:			
Construction QA/QC (10%)	CCS x 0.10	$938,771	
Closure Certification and CQA Report (1%)	included above	n/a	
Survey and as-builts (2%)	included above	n/a	
Construction Documents (1%)	CCS x 0.01	$93,877	
Cost for survey and deed notation		$7,500	
Total Engineering & Documentation Costs		***$1,040,148***	
Total Closure Cost:	CCS + Contingency + Engineering		**$11,178,869**
	Per acre closure cost estimate		**$519,947.40**

Notes:
1. Construction QA/QC includes the following
   a. Field time and travel time
   b. Visual observation and inspections
   c. Clean closure certification

Worksheet CEW-01: FORMAT FOR THE ESTIMATION OF CLOSURE COSTS

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Permit Number: 618
Facility Address: 1038 Bremo Bluff Road
Bremo Bluff, Virginia 23022
Facility Owner: Virginia Electric and Power Company
Owner Representative: David Craymer
Representative Completing Format: Golder Associates Inc., Ron DiFrancesco, P.E.
Date Completed: Revised March 2016

Total Permitted Footprint	67.5 ac.	
Developed Ash Pond Area (To be Closed)	**67.5 ac.**	**Closure in Place Option**
Remaining Undeveloped Area	0 ac.	

Soil Cap Components

				Calculation or Conversion	
I.	**Slope & Fill**				
b.	Quantity of soil needed for SW pond embankment	0	yd3		0 yd3
d.	Percentage of soil from off-site	100%			
e.	Purchase unit cost for off-site material	$11.65	/yd3		
f.	Percentage of soil from on-site			(1 - d)	0%
g.	Excavation unit cost (on-site material)	$0.00	/yd3		
h.	Hauling, placing, spreading unit cost	$4.90			
i.	Soil compaction unit cost	$0.00			
j.	Total soil unit cost			(d x e) + (f x g) + h + i	$16.55 /yd3
k.	Soil subtotal			j x c	$0.00
l.	Volume of CCR to be compacted ("skirt" area)	152,000	yd3		
m.	CCR earthwork cost ("skirt")	$5.00	/yd3		
n.	CCR compaction subtotal			m x n	$760,000
	Total Slope & Fill Cost			j + n	***$760,000***
II.	**Erosion Control / Protective Cover Soil**				
a.	Area to be capped	67.5	acres	x 4,840yd2/ac	326,700 yd2
b.	Depth of soil needed	18	inches	x 1yd/36in	0.50 yd
c.	Quantity of soil needed			a x b	163,350 yd3
d.	Percentage of soil from off-site	100%			
e.	Purchase unit cost for off-site material	$11.65	/yd3		
f.	Percentage of soil from on-site	0		(1 - d)	0%
g.	Excavation unit cost (on-site material)	$0.00	/yd3		
h.	Total erosion/protective soil unit cost			(d x e) + (f x g)	$11.65 /yd3
i.	Hauling, Placement and Spreading unit cost	$4.90	/yd3		
j.	Compaction unit cost	$0.00	/yd3		
k.	Total soil unit cost			h + i + j	$16.55 /yd3
l.	Erosion/Protective soil subtotal			k x b	$2,703,443
m.	Percent compaction	20%			
	Total Erosion Control/Protective Cover Soil Cost			l x (1 + m)	***$3,244,131***

III. Vegetative support soil (Topsoil)

a.	Area to be capped	67.5	acres	x 4,840yd2/ac	326,700 yd2
b.	Depth of topsoil needed	6	inches	x 1yd/36in	0.17 yd
c.	Quantity of topsoil needed			a x b	54,450 yd3
d.	Percentage of topsoil from off-site	100%			
e.	Purchase unit cost for off-site material	$11.65	/yd3		
f.	Percentage of topsoil from on-site	0		(1 - d)	0%
g.	Excavation unit cost (on-site material)	$0.00	/yd3		
h.	Total topsoil unit cost			(d x e) + (f x g)	$11.65 /yd3
i.	Hauling, Placement and Spreading unit cost	$4.90	/yd3		
j.	Total soil unit cost			h + i	$16.55 /yd3
	Total Topsoil Cost			c x j	***$901,148***

IV. Vegetative Cover

a.	Area to be vegetated	67.5	acres
b.	Vegetative cover (seeding) unit cost	$2,350	/acre
b.	Erosion Control Matting Quantity	70,000	yd2
c.	Erosion control matting unit cost	$4.40	/yd2
	Total Vegetative Cover Cost		a x (b + c) ***$466,625***

Soil Cap Component Subtotal: $5,371,904

Geosynthetic Barrier & Infiltration Layers

V. Flexible Membrane Liner

				Calculation or Conversion	
a.	Quantity of FML needed	67.5	acres	x 43,560ft2/ac	2,940,300 ft2
b.	Purchase unit cost	$0.24	/ft2		
c.	Installation unit cost	$0.16	/ft2		
d.	Total FML unit cost			b + c	$0.40
	Total FML cost			a x d	***$1,173,180***

VI. Geosynthetic Clay Liner

a.	Quantity of GCL needed	0	acres	x 43,560ft2/ac	0 ft2
b.	Purchase unit cost	$0.00	/ft2		
c.	Installation unit cost	$0.00	/ft2		
d.	Total GCL unit cost			b + c	$0.00 /ft2
	Total GCL Cost			a x d	***$0***

Geosynthetic Layers Subtotal: $1,173,180

Drainage Components

VII. Sand or Gravel Drainage

				Calculation or Conversion	
a.	Area to be capped	0	acres	x 4,840yd2/ac	0 yd2
b.	Depth of sand or gravel needed	0	inches	x 1yd/36in	0.00 yd
c.	Quantity of drainage material needed			a x b	0 yd3
d.	Percentage of media from off-site	0%			
e.	Purchase unit cost for off-site material	$0.00	/yd3		
f.	Percentage of material from on-site			(1 - d)	100%
g.	Excavation unit cost (on-site material)	$0.00	/yd3		
h.	Total drainage material unit cost			(d x e) + (f x g)	$0.00 /yd3
i.	Hauling, Placement and Spreading unit cost	$0.00	/yd3		
j.	Compaction unit cost	$0.00	/yd3		
k.	Total drainage material unit cost			h + i + j	$0.00 /yd3
l.	Drainage material subtotal			k x b	$0.00
m.	Percent compaction	0%			
	Total drainage material cost			l x (1 + m)	***$0***

VIII. Geotextile

a.	Quantity of geotextile needed	0	acres	x 43,560ft2/ac	0	ft2
b.	Purchase unit cost	$0.00	/ft2			
c.	Installation unit cost	$0.00	/ft2			
d.	Total geotextile unit cost			b + c	$0.000	/ft2
	Total Geotextile Cost			a x d	***$0***	

IX. Geonet Composite

a.	Quantity of geonet composite needed	67.5	acres	x 43,560ft2/ac	2,940,300	ft2
b.	Purchase unit cost	$0.39	/ft2			
c.	Installation unit cost	$0.19	/ft2			
d.	Total geonet composite unit cost			b + c	$0.58	/ft2
	Total Geonet Composite Cost			a x d	***$1,699,493***	

X. Cap Underdrain System

a.	Length of Cap Underdrain needed	8,700	LF		
a.	Length of Channel Underdrain needed	5,600	LF		
b.	Purchase unit cost (Cap Underdrain)	$28.15	/LF		
c.	Purchase unit cost (Channel Underdrain)	$46.75	/LF		
	Total Underdrain Cost			a x d	***$506,705***

XI. Stormwater Controls

Rip Rap

g.	Quantity of Rip Rap needed	10,000	ton		
h.	Rip rap unit cost	$55.30	/ton		
i.	*Total rip rap cost*			g x h	*$553,000*

Additional Stormwater Controls

k.	Additional Stormwater Controls	$720,000.00			
	Total Stormwater Control			c + f + i + l	***$1,273,000***

Drainage Component Subtotal: $3,479,198

Miscellaneous

				Calculation	
XII.	**Removal and Disposal of Stockpiled Material**				
a.	Quantity of stockpiled CCR	-	ton		
b.	Loading and Hauling unit cost	$76.25	/ton		
c.	Disposal unit cost	$0.00	/ton		
d.	***Total Removal/Disposal Cost***			a x (b + c)	***$0***
XIII.	**Erosion/Sediment Control**				
a.	Quantity of silt fence needed	1,800	LF		
b.	Silt Fence unit cost	$2.05	/LF		
	Total Silt Fence Cost			a x b	***$3,690***
XIV.	**Site Security**				
Fencing					
a.	Length of fencing needed	-	ft		
b.	Fence unit cost	$0.00	/ft		
c.	*Subtotal fencing cost*			a x b	*$0*
Gate or Barrier					
d.	Number of gates required	-			
e.	Gate unit cost	$0.00	/gate		
f.	*Subtotal gate cost*			d x e	*$0*
Closed Sign					
g.	Number of signs required	-			
h.	Sign unit cost	$0.00	/sign		
i.	*Subtotal sign cost*			g x h	*$0*
	Total site security cost			c + f + i	***$0***
XV.	**Mobilization / Demobilization**				
a.	Cost for mobilization/demobilization	$170,000			
	Total mobilization/demobilization cost				***$170,000***
XVI.	**Construction Dewatering**				
b.	Cost for Dewatering and Water Treatment	$3,550,000			
	Total mobilization/demobilization cost				***$3,550,000***

Miscellaneous Subtotal: $3,723,690

Closure Cost Subtotal (CCS):	(I + … + XIX)	$13,747,972
Contingency (8%):	CCS x 0.08	$1,099,838
Engineering & Documentation:		
Construction QA/QC (10%)	CCS x 0.10	$1,374,797
Closure Certification and CQA Report (1%)	included above	n/a
Survey and as-builts (2%)	included above	n/a
Construction Documents (1%)	CCS x 0.01	$137,480
Cost for survey and deed notation		$7,500
Total Engineering & Documentation Costs		***$1,519,777***

Total Closure Cost:	CCS + Contingency + Engineering	**$16,367,586**
	Per acre closure cost estimate	**$242,482.76**

Notes:
1. Construction QA/QC includes the following
   a. Field time and travel time
   b. Visual observation and inspections
   c. Soil and compaction testing
   d. Geosynthetics laboratory testing
   e. Geosynthetics installation documentation
   f. Closure in place documentation

Worksheet CEW-01: FORMAT FOR THE ESTIMATION OF CLOSURE COSTS

Facility Name: Bremo Power Station
Permit Number: 618
Facility Address: 1038 Bremo Bluff Road
Bremo Bluff, Virginia 23022
Facility Owner: Virginia Electric and Power Company
Owner Representative: David Craymer
Representative Completing Format: Golder Associates Inc., Ron DiFrancesco, P.E.
Date Completed: Revised March 2016

Total Permitted Footprint	27.4 ac.	
Developed Ash Pond Area (To be Closed)	**27.4 ac.**	**Closure in Place Option**
Remaining Undeveloped Area	0 ac.	

Soil Cap Components

				Calculation or Conversion	
I.	**Slope & Fill**				
b.	Quantity of soil needed for SW pond embankment	26,000	yd3		26,000 yd3
d.	Percentage of soil from off-site	100%			
e.	Purchase unit cost for off-site material	$11.65	/yd3		
f.	Percentage of soil from on-site			(1 - d)	0%
g.	Excavation unit cost (on-site material)	$0.00	/yd3		
h.	Hauling, placing, spreading unit cost	$4.90			
i.	Soil compaction unit cost	$0.00			
j.	Total soil unit cost			(d x e) + (f x g) + h + i	$16.55 /yd3
k.	Soil subtotal			j x c	$430,300.00
l.	Volume of CCR to be compacted ("skirt" area)	145,000	yd3		
m.	CCR earthwork cost ("skirt")	$5.00	/yd3		
n.	CCR compaction subtotal			m x n	$725,000
	Total Slope & Fill Cost			j + n	***$1,155,300***
II.	**Erosion Control / Protective Cover Soil**				
a.	Area to be capped	27.4	acres	x 4,840yd2/ac	132,616 yd2
b.	Depth of soil needed	18	inches	x 1yd/36in	0.50 yd
c.	Quantity of soil needed			a x b	66,308 yd3
d.	Percentage of soil from off-site	100%			
e.	Purchase unit cost for off-site material	$11.65	/yd3		
f.	Percentage of soil from on-site	0		(1 - d)	0%
g.	Excavation unit cost (on-site material)	$0.00	/yd3		
h.	Total erosion/protective soil unit cost			(d x e) + (f x g)	$11.65 /yd3
i.	Hauling, Placement and Spreading unit cost	$4.90	/yd3		
j.	Compaction unit cost	$0.00	/yd3		
k.	Total soil unit cost			h + i + j	$16.55 /yd3
l.	Erosion/Protective soil subtotal			k x b	$1,097,397
m.	Percent compaction	20%			
	Total Erosion Control/Protective Cover Soil Cost			l x (1 + m)	***$1,316,877***

III. Vegetative support soil (Topsoil)

a.	Area to be capped	27.4	acres	x 4,840yd2/ac	132,616 yd2
b.	Depth of topsoil needed	6	inches	x 1yd/36in	0.17 yd
c.	Quantity of topsoil needed			a x b	22,103 yd3
d.	Percentage of topsoil from off-site	100%			
e.	Purchase unit cost for off-site material	$11.65	/yd3		
f.	Percentage of topsoil from on-site	0		(1 - d)	0%
g.	Excavation unit cost (on-site material)	$0.00	/yd3		
h.	Total topsoil unit cost			(d x e) + (f x g)	$11.65 /yd3
i.	Hauling, Placement and Spreading unit cost	$4.90	/yd3		
j.	Total soil unit cost			h + i	$16.55 /yd3
	Total Topsoil Cost			c x j	***$365,799***

IV. Vegetative Cover

a.	Area to be vegetated	27.4	acres
b.	Vegetative cover (seeding) unit cost	$2,350	/acre
b.	Erosion Control Matting Quantity	50,000	yd2
c.	Erosion control matting unit cost	$4.40	/yd2
	Total Vegetative Cover Cost		a x (b + c) ***$284,390***

Soil Cap Component Subtotal: $3,122,366

Geosynthetic Barrier & Infiltration Layers

V. Flexible Membrane Liner

				Calculation or Conversion	
a.	Quantity of FML needed	27.6	acres	x 43,560ft2/ac	1,202,294 ft2
b.	Purchase unit cost	$0.24	/ft2		
c.	Installation unit cost	$0.16	/ft2		
d.	Total FML unit cost			b + c	$0.40
	Total FML cost			a x d	***$479,715***

VI. Geosynthetic Clay Liner

a.	Quantity of GCL needed	0	acres	x 43,560ft2/ac	0 ft2
b.	Purchase unit cost	$0.00	/ft2		
c.	Installation unit cost	$0.00	/ft2		
d.	Total GCL unit cost			b + c	$0.00 /ft2
	Total GCL Cost			a x d	***$0***

Geosynthetic Layers Subtotal: $479,715

Drainage Components

VII. Sand or Gravel Drainage

				Calculation or Conversion	
a.	Area to be capped	0	acres	x 4,840yd2/ac	0 yd2
b.	Depth of sand or gravel needed	0	inches	x 1yd/36in	0.00 yd
c.	Quantity of drainage material needed			a x b	0 yd3
d.	Percentage of media from off-site	0%			
e.	Purchase unit cost for off-site material	$0.00	/yd3		
f.	Percentage of material from on-site			(1 - d)	100%
g.	Excavation unit cost (on-site material)	$0.00	/yd3		
h.	Total drainage material unit cost			(d x e) + (f x g)	$0.00 /yd3
i.	Hauling, Placement and Spreading unit cost	$0.00	/yd3		
j.	Compaction unit cost	$0.00	/yd3		
k.	Total drainage material unit cost			h + i + j	$0.00 /yd3
l.	Drainage material subtotal			k x b	$0.00
m.	Percent compaction	0%			
	Total drainage material cost			l x (1 + m)	***$0***

VIII. Geotextile

a.	Quantity of geotextile needed	0	acres	x 43,560ft2/ac	0 ft2
b.	Purchase unit cost	$0.00	/ft2		
c.	Installation unit cost	$0.00	/ft2		
d.	Total geotextile unit cost			b + c	$0.000 /ft2
	Total Geotextile Cost			a x d	***$0***

IX. Geonet Composite

a.	Quantity of geonet composite needed	27.4	acres	x 43,560ft2/ac	1,193,544 ft2
b.	Purchase unit cost	$0.39	/ft2		
c.	Installation unit cost	$0.19	/ft2		
d.	Total geonet composite unit cost			b + c	$0.58 /ft2
	Total Geonet Composite Cost			a x d	***$689,868***

X. Cap Underdrain System

a.	Length of Cap Underdrain needed	4,000	LF		
a.	Length of Channel Underdrain needed	5,000	LF		
b.	Purchase unit cost (Cap Underdrain)	$28.15	/LF		
c.	Purchase unit cost (Channel Underdrain)	$46.75	/LF		
	Total Underdrain Cost			a x d	***$346,350***

XI. Stormwater Controls

Rip Rap

g.	Quantity of Rip Rap needed	3,000	ton		
h.	Rip rap unit cost	$55.30	/ton		
i.	*Total rip rap cost*			g x h	*$165,900*

Additional Stormwater Controls

k.	Additional Stormwater Controls	$500,000.00			
	Total Stormwater Control			c + f + i + l	***$665,900***

Drainage Component Subtotal: $1,702,118

Miscellaneous

				Calculation	
XII.	**Removal and Disposal of Stockpiled Material**				
a.	Quantity of stockpiled CCR	-	ton		
b.	Loading and Hauling unit cost	$76.25	/ton		
c.	Disposal unit cost	$0.00	/ton		
d.	***Total Removal/Disposal Cost***			a x (b + c)	***$0***
XIII.	**Erosion/Sediment Control**				
a.	Quantity of silt fence needed	5,000	LF		
b.	Silt Fence unit cost	$2.05	/LF		
	Total Silt Fence Cost			a x b	***$10,250***
XIV.	**Site Security**				
Fencing					
a.	Length of fencing needed	-	ft		
b.	Fence unit cost	$0.00	/ft		
c.	*Subtotal fencing cost*			a x b	*$0*
Gate or Barrier					
d.	Number of gates required	-			
e.	Gate unit cost	$0.00	/gate		
f.	*Subtotal gate cost*			d x e	*$0*
Closed Sign					
g.	Number of signs required	-			
h.	Sign unit cost	$0.00	/sign		
i.	*Subtotal sign cost*			g x h	*$0*
	Total site security cost			c + f + i	***$0***
XV.	**Mobilization / Demobilization**				
a.	Cost for mobilization/demobilization	$380,000			
	Total mobilization/demobilization cost				***$380,000***
XVI.	**Construction Dewatering**				
b.	Cost for Dewatering and Water Treatment	$1,440,000			
	Total mobilization/demobilization cost				***$1,440,000***

Miscellaneous Subtotal: $1,830,250

Closure Cost Subtotal (CCS):	(I + … + XIX)	$7,134,450
Contingency (8%):	CCS x 0.08	$570,756
Engineering & Documentation:		
Construction QA/QC (10%)	CCS x 0.10	$713,445
Closure Certification and CQA Report (1%)	included above	n/a
Survey and as-builts (2%)	included above	n/a
Construction Documents (1%)	CCS x 0.01	$71,344
Cost for survey and deed notation		$7,500
Total Engineering & Documentation Costs		***$792,289***
Total Closure Cost:	CCS + Contingency + Engineering	**$8,497,495**
	Per acre closure cost estimate	**$310,127.56**

Notes:
1. Construction QA/QC includes the following
   a. Field time and travel time
   b. Visual observation and inspections
   c. Clean closure certification for non-capped areas
   d. Soil and compaction testing
   e. Geosynthetics laboratory testing
   f. Geosynthetics installation documentation
   g. Closure in place documentation

Worksheet CEW-02: FORMAT FOR THE ESTIMATION OF POST-CLOSURE COSTS

Facility Name: Bremo Power Station
Permit Number: 618
Facility Address: 1038 Bremo Bluff Road
Bremo Bluff, Virginia 23022
Facility Owner: Virginia Electric and Power Company
Owner Representative: David Craymer
Representative Completing Format: Golder Associates Inc., Ron DiFrancesco, P.E.
Date Completed: Revised March 2016

Total Permitted Footprint	94.9 ac.	
Developed Ash Pond Area (To be Closed)	**94.9 ac.**	**Closure in Place Option**
Remaining Undeveloped Area	0 ac.	

				Calculation or Conversion		
I.	**Groundwater Monitoring**					
a.	Total number of monitoring wells	16	wells			
b.	Total number of sampling events/year	2	events/yr	a x b	32	samples/yr
c.	Quantity of additional samples (e.g. QA/QC)	2	samples/event	b x c	4	samples/yr
d.	Total samples per year			b + c	36	samples/yr
e.	Analysis unit cost (CCR constituents)	$2,500.00	/sample			
f.	*Total Analysis cost*			d x e	*$90,000.00*	/yr
g.	GW Monitoring unit cost	$2,400.00	/event			
i.	*Total sampling cost*			f + (g x b)	*$94,800.00*	/yr
j.	Engineering fees & reports	$12,500	/yr			
	Yearly Groundwater Monitoring Cost			i + j	***$107,300***	***/yr***
II.	**Cap Maintenance & Repair**					
a.	Closed Landfill Area	94.9	acres			
Mowing & Fertilization						
b.	Mowing frequency	3	visits/yr			
c.	Mowing unit cost	$77.97	/acre/visit			
d.	*Total mowing cost*			a x b x c	*$22,198.06*	/yr
e.	Fertilizer frequency	1	visits/yr			
f.	Fertilizer unit cost	$76.00	/acre/visit			
g.	*Total fertilizer cost*			a x e x f	*$7,212.40*	/yr
Cap Erosion & Repair						
h.	Area to reseed/year			33% x a	31.32	acres
i.	Reseeding unit cost	$383.33	/acre			
j.	*Total reseeding cost*			h x i	*$12,004.75*	/yr
k.	Area of cap erosion/year			10% x a	9.49	acres
l.	Cap erosion repair unit cost	$150.00	/acre			
m.	Mobilization/Demobilization	$2,500.00	/yr			
n.	*Total cap erosion repair cost*			(k x l) + m	*$3,923.50*	/yr
	Yearly Cap Maintenance & Repair cost			d + g + j + n	***$45,339***	***/yr***

III. Sediment Basin Maintenance & Repair

a.	Sediment basin cleanout frequency, 1 per	5	years	1 / a	0.20 event/yr
b.	Sediment basin cleanout unit cost	$0	/event		
c.	Mobilization/Demobilization	$0	/event		
d.	*Total sediment basin maintenance cost*			a x (b + c)	*$0 /yr*
e.	Total number of stormwater sampling locations	-	locations		
f.	Stormwater sampling frequency	-	events/yr		
g.	Total number of stormwater samples			e x f	0 samples/yr
h.	Analysis unit cost (VPDES permit parameters)	$0	/sample		
i.	*Total Analysis cost*			g x h	*$0 /yr*
j.	Mobilization unit cost	$0.00	/event		
k.	Technician field unit cost	$0.00	/event		
l.	*Total sampling cost*			f x (j + k)	*$0.00 /yr*
m.	Engineering fees & reports	$0	/yr		
n.	*Total Stormwater Sampling & Analysis cost*			i + l + m	*$0 /yr*
	Yearly Sediment Basin Maintenance & Repair			d + n	***$0 /yr***

IV. Post-Closure Care General Inspections

a.	General Inspection unit cost	$2,500	/inspection	**Inspections cover both East and North Ponds, so the default DEQ cost was halved*
b.	Number of post-closure inspections per year	12		
c.	Dam Safety inspections per year	1		
	Yearly Post-Closure Care General Inspection Cost			a x b ***$32,500 /yr***

Annual Post-Closure Care Cost (APCC)				$185,139 /yr
Length of post-closure care (LPCC)	10	years		
Post-Closure Care Cost			APCC x LPCC	$1,851,387
Engineering & Documentation			Engineering Sum	$0
Post-Closure Care Evaluation	$0			
Post-Closure Care Certification	$0			
Cost for survey and deed notation (if not completed at time of landfill closure)	$0			
FA Mechanism Maintenance Cost		/yr	FA maintenance x LPCC	$0
Total Post-Closure Care Cost			Post-Closure Cost + Engineering + FA Maintenance	**$1,851,387**

DEQ Default Costs

Item	description	cost	unit	source
I. Native soil				
native soil	excavation	1.63	CY	Means 02315 400 0200
loading	add 15%	0.24	CY	Means 02315 400 0020
hauling	12 CY truck 1/2 mile onsite	2.52	CY	Means 02320 200 0320
TOTAL	Native Soil Excavation	4.39	CY	Means
spread native soil	spread by dozer 50" haul	1.50	CY	Means 02315 300 5600
compact native soil	sheepsfoot 2 passes	0.37	CY	Means 02315 300 5600
II. Topsoil				
topsoil	purchase price delivered	13.1	CY	Means 02315 0200 7000
spread topsoil	spread by dozer 50' haul	1.5	CY	Means 02315 410 2020
compact topsoil	sheepsfoot 2 passes	0.37	CY	Means 02315 300 5600
III. Drainage				
stone	purchase price delivered	7.5	CY	Means 02315 200 5000
spread stone	spread by dozer 50' haul	1.31	CY	Means 02315 410 2000
IV. and V.	**Clay onsite and offsite**			
clay	purchase price delivered	4.11	CY	Means
soil	excavation	1.63	CY	Means 02315 400 0200
clay	add 60% for clay	0.97	CY	Mans 02315 400 4100
loading	add 15%	0.24	CY	Means 02315 400 0020
hauling	12 CY truck 1/2 mile onsite	2.52	CY	Means 02320 200 0320
TOTAL	clay excavation	5.36	CY	Means
spread clay	spread by dozer 50' haul	1.38	CY	Means 02314 505 0010
compact clay	sheepsfoot 4 passes	0.83	CY	Means 02315 300 6030
compact clay	vibrating roller 4 passes	0.96	CY	Means 02315 300 6220
TOTAL	clay compaction	1.79	CY	Means
VI. Drainage tile				
pipe	6"pvc	4.22	LF	Means 02620 210 3020
trenching	48" deep compact add 50%	0.99	LF	Means 02315 940 2600
VII. Synthetic Membrane				
60 mil HDPE		0.38	SF	Means 33 08 0572
40 mil PVC		0.25	SF	Means 33 08 0563
40 mil VFPE		0.28	SF	Means 33 08 0543
installation and testing	Means has a mistake here	0.1	SF	Local Installer Aug 2000
VIII. Geotextile Filter Fabric				
10 oz Geotextile		0.73	SF	Means 33 080533
installation	Means has a mistake here	0.06		Local Installer Aug 2000
Geonet/geocomposite				
Geonet .25 inch		0.14	SF	Means 33 08 0511
Geonet Geotextile 1 side		0.3	SF	Means 33 08 0512
geonet Geotextile 2 sides		0.35	SF	Means 33 08 0513
installation	Means has a mistake here	0.08	SF	Local Installer Aug 2000
Geosynthetic clay liner				
bentomat	Installed cost	0.4	SF	Local Installer Aug 2000
XI. Soil Testing				
Density	5/acre 35.36 EA	177.8	AC	Means 33 08 0506 02231 2101
Moisture Density Curve	1/acre	71.13	AC	Means 33 08 0506 02231 2301
Grain Size	1/acre	55.57	AC	Means 33 08 0506 02231 2302
Moisture	5/acre 10.48 ea	52.4	AC	Means 33 08 0506 02231 2303

DEQ Default Costs

Undisturbed Permiability	3/acre 18" soil 400.48EA	1201.4	AC	Means 33 08 0506 02231 2306
Atterburg Limits	1/acre	82.93	AC	Means 3308 0506 02231 2310
TOTAL	Soil Testing	1641.23	AC	
XII. Vegetative cover				
hydroseeding	seed and fertilizer	1895	AC	Means 029 308 4600, 1995
XIII. Landfill Gas Management System				
Probe Cost	Assume 50' Probe, 20' Screen, 45' filter pack			
boring	11" hollow stem auger (50' @ 25.17/LF)	1258.5	EA	Means 33 23 1103
screen	2" schedule 40 (20' @ 9.85/LF)	197	EA	Means 33 23 0211
casing	2" schudule 40 (30'@6.86/LF)	205.8	EA	Means 33 23 0101
filter pack	2" screen filter pack (45'@7.54/LF)	339.3	EA	Means 33 23 1401
bentonite seal		27.41	EA	Means 33 23 2101
surface pad		154.18	EA	Means 33 23 1502
TOTAL	Probe Cost	2182.19	EA	Means
Gas Vent	Assume 40' vent,20' screen, 30" diam.			
drilling	bored piles 30" dia (40'@41/LF)	1640	EA	Means 02465 600 0300
screen	6" sch 40 (20'@21.90/LF)	438	EA	Means 33 23 0203
casing	6" sch 40 (20'@11.89/LF)	237.8	EA	Means 33 23 0103
stone	5.93 CY @ 26.00/CY	154	EA	Means 023 15 130 0100
bentonite seal	Use 12" Means 160.30/CF	1282.4	EA	Means 33 23 1806
TOTAL	Vent Cost	3752.2		
XIV. Groundwater Monitoring				
well boring, hollow stem auger	Up to 100 foot depth (50' @ 16.11/LF)	805.5	EA	Means 33 23 1101
casing	2" diameter pvc, sch 40 (40'@6.86/LF)	274.4	EA	Means 33 23 0101
screen	2" diameter pvc, sch 40 (10'@9.85/lf)	98.5	EA	Means 33 23 0201
		1178.4		Means
Groundwater Monitoring				
conductivity		11.75	EA	Means 33 02 0505
pH		9.13	EA	Means 33 02 0505
TOC		23.33	EA	Means 33 02 0505
TOX		90	EA	Means 33 02 0505
hardness		11.5	EA	Means 33 02 1639
sodium		11.56	EA	Means 33 02 0508
chloride		16.67	EA	Means 33 02 1653
iron		11.56	EA	Means 33 02 0508
lead		11.56	EA	Means 33 02 0508
Cost of Analysis/sample		197.06	EA	Means Analysis
mobilization	$75/man assume 4 wells = 37.5/well	37.5	Well	Means 33 01 0204
	2 field engineers @ 20.38/hr, 1hr/well	40.76	Well	Means
TOTAL	Sampling and Analysis	275.32	Well	Means

From: Edward P. Farrell@OPM@DEQ
Subject: re: Cost Estimate Worksheet
Date: 09/27/2000 9:30 AM
good suggestions. GW unit sample cost are:
$500 for Phase I and Detection
1500 for Phase II, Phase III, Assessment Monitoring.
Corrective Action is site specific.

DEQ Default Costs

Gas Monitoring				
Hnu Daily Rental		85	day	Means 33 02 0342
mobilization	$75 100 miles	75	event	Means 33 01 02 04
field technician	1 technician @ 20.38/hr for 8 hours	163.04	event	Means
engineer	report preparation @ $70/hr for 4 hours	280	event	estimate
		603.04		
Leachate Management				
Routine Mainteneance and Repairs				
Mowing	1.82/1000sf=79.00/acre	79	AC	Means 029 0700 4200, 1995
reseeding	1895/acre once/5 years 379/year	379	AC	Means 029 308 4600, 1995
erosion repair				
native soil	excavation	1.63	CY	Means 02315 400 0200
loading	add 15%	0.24	CY	Means 02315 400 0020
hauling	12 CY truck 1/2 mile onsite	2.52	CY	Means 02320 200 0320
TOTAL	Native Soil Excavation	4.39	CY	Means
spread native soil	spread by dozer 50" haul	1.5	CY	Means 02315 300 5600
compact native soil	sheepsfoot 2 passes	0.37	CY	Means 02315 300 5600
TOTAL	erosion repair	6.26	CY	
Assume 1% area repaired yearly	24 CY/acre/year post closure	150.24	ACRE	Assumption
Leachate Management				
Treatment at POTW	based on 1.50/1000 gal	0.15	Gal	Means 33 19 7103
hauling		0.25	Gal	Means 33 19 7103

Closure Unit Costs

Item	Unit Cost	Unit	Source
III. Erosion Control / Protective Cover Soil			
Purchase unit cost for off-site material	$11.65	CY	Ryan Bid
Hauling, Placement, and Spreading unit cost	$4.90	CY	Ryan Bid
IV. Vegetative support soil (Topsoil)			
Purchase unit cost for off-site material	$11.65	CY	Ryan Bid
Hauling, Placement and Spreading unit cost	$4.90	CY	Ryan Bid
V. Vegetative Cover			
Vegetative cover (seeding) unit cost	$2,350.00	AC	Ryan Bid
Erosion Control Matting	$4.40	yd2	Ryan Bid
VI. Flexible Membrane Liner			
Purchase unit cost	$0.24	SF	Ryan Bid
Installation unit cost	$0.16	SF	Ryan Bid
X. Geonet Composite			
Purchase unit cost	$0.39	SF	Ryan Bid
Installation unit cost	$0.19	SF	Ryan Bid
XI. Stormwater Controls			
Rip Rap	$55.30	TON	Ryan Bid
XII. Removal and Disposal of Stockpiled Material			
Loading and Hauling Cost (includes disposal)	$76.25	TON	Ryan Bid
XIII Erosion/Sediment Control			
Silt Fence	$2.05	LF	Ryan Bid
XV. Mobilization / Demobilization			
Cost for mobilization/demobilization	$50,000.00	LS	DEQ Default Value

Post-Closure Unit Costs

	Item	Unit Cost	Unit	Source
I.	**Cap Maintenance & Repair**			
	Mowing unit cost	$77.97	Ac/visit	RSMeans 2014
	Fertilizer unit cost	$76.00	Ac/visit	DEQ Default
	Reseeding unit cost	$383.33	AC	RSMeans 2014
	Cap erosion repair unit cost	$150.00	AC	DEQ Default
	Mobilization/Demobilization	$5,000.00	YR	RSMeans 2014
II.	**Sediment Basin Maintenance & Repair**			
	Sediment basin cleanout unit cost	$50,000.00	Event	RSMeans 2014
III.	**Post-Closure Care General Inspections**			
	General Inspection unit cost	$2,500.00	EA	DEQ Default