



September 7, 2006

ATTN: Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, DC. 20555-0001

Subject: Reading Slag File Site Decommission Plan
Revised Decommissioning Cost Estimate
License No. SMC-1562
Docket Number 40-9027

Document Control:

Please find enclosed one copy of the subject document.

Please contact Mr. Theodore Smith of the NRC if you have any questions.

Sincerely,

A handwritten signature in black ink, appearing to read 'Wayne M. Reiber'.

Wayne M. Reiber

Corporate Manager,
Environmental Assessment and Remediation

CC: Theodore Smith, NRC
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Enclosure

LMSSO1



CLIENT	STEP, Inc.	SUBJECT	Riprap Construction Cost Estimate	Prepared by:	DMH	7/7/2006
PROJECT	Cabot			Reviewed by:	RDS	7/29/2006
	Reading Slag Pile					

TASK: Estimate the construction cost for the riprap placement at the Cabot Site in Reading, PA

REFERENCE: 2005 RSMEANS Building Construction Cost Data 63rd Annual Edition

QUANTITY ESTIMATE:

Slope	1.5H:1V	$\tan^{-1}(1/1.5)$	$\alpha =$	33.7 °
Plan Width	parallel to river		W =	250 ft
Plan length of slope			L =	108 ft
Effective Length	=W/cos(α)		L' =	130 ft
Plan Area			A =	27,000 sf
				3,000 sy
				0.62 acre
Effective Area	=W x L'		A' =	32,450 sf
				3,606 sy
				0.74 acre
Slope toe			elevation	210 ft
Slope crest			elevation	282 ft
Slope height				72 ft

Material Size and Gradation

NSA No.	Graded Rock Size (in)		
	Max	d50	Min
R-4	12	6	3
R-6	24	12	6
R-7	30	18	12
FS-2	2	#4	#100
FS-3	6.5	2.5	#16

R-4	(to be placed above elevation 230)		
	Length of Slope above 230	$= (282-230) / \sin(33.7^\circ \cdot \pi / 180) =$	94 ft
	Upper apron length		15 ft
	Thickness = 2 x d50		1 ft
	Volume =	$= (94+15) \cdot 1 \cdot 250 / 27$	1,007 cy
	Total Weight	$= 1007 \cdot 27 \text{ cf/cy} \cdot 185 \text{ lbs/cf} / 2000 \text{ lbs/ton} \cdot (1-0.35) =$	1635 tons*
R-6	(to be placed below elevation 230)		
	Length of Slope above 230	$= (230-210) / \sin(33.7^\circ \cdot \pi / 180) =$	36 ft
	Thickness = 2 x d50		2 ft
	Volume =	$= 36 \cdot 2 \cdot 250 / 27$	668 cy
	Total Weight	$= 668 \cdot 27 \text{ cf/cy} \cdot 185 \text{ lbs/cf} / 2000 \text{ lbs/ton} \cdot (1-0.35) =$	1084 tons*
R-7	Apron Length		25 ft
	Thickness		4.5 ft
	Volume =	$= 25 \cdot 4.5 \cdot 250 / 27$	1,042 cy
	Total Weight	$= 1042 \cdot 27 \text{ cf/cy} \cdot 185 \text{ lbs/cf} / 2000 \text{ lbs/ton} \cdot (1-0.35) =$	1691 tons*



CALCULATION SHEET

CLIENT	STEP, Inc.	SUBJECT	Riprap Construction Cost Estimate	Prepared by:	DMH	7/7/2006
PROJECT	Cabot			Reviewed by:	RDS	7/29/2006
	Reading Slag Pile					

FS-2 Underlying R-4
 Thickness 0.5 ft
 Volume = $= (94+15) * 0.5 * 250 / 27$ 503 cy
 Total Weight $= 503 * 27 \text{ cf/cy} * 185 \text{ lbs/cf} / 2000 \text{ lbs/ton} * (1-0.35) =$ 817 tons*

FS-3 Underlying R-6 & R-7
 Thickness under R-6 0.67 ft
 Thickness under R-7 1 ft
 Volume under R-6 $= 36 * 0.67 * 250 / 27$ 224 cy
 Volume under R-7 $= 25 * 1 * 250 / 27$ 231 cy
 Total Volume 455 cy
 Total Weight $= 455 * 27 \text{ cf/cy} * 185 \text{ lbs/cf} / 2000 \text{ lbs/ton} * (1-0.35) =$ 739 tons*

TOTAL OF ALL ROCK 3,675 cy
 Weight based on porosity of 0.35 and rock density of 185 lbs/cf 5,966 tons

SCHEDULE

Section	Description	Unit	Quantity	Output	Extended	Subtotal
02370-450-0100	Machine placed	cy	3,675	62.00	59.27	
OR						
02370-450-0200	18" Min thickness (mat.)	sy	3,606	53.00	58.15	

MATERIAL COST (Delivered)

Section/Description	Description	Unit	Quantity*	Unit Cost	Extended	Subtotal
	R-4	ton	1,635	15.75	25,744.37	
	R-6	ton	1,084	18.85	20,431.87	
	R-7	ton	1,691	19.60	33,143.91	
	FS-2	ton	817	12.00	9,807.38	
	FS-3	ton	739	12.00	8,866.73	97,994.26

CONSTRUCTION COST (2005 dollars)

Site Clearing						
02230-100-0300	Cut & Chip heavy trees 24"	acre	0.74	10,800.00	8,045.44	
02230-100-0350	Grub and remove stumps	acre	0.74	5,850.00	4,357.95	
Erosion and Sedimentation Control, RIPRAP						
02370-450-0100	Machine placed (lab,O&P)	cy	959	24.50	23,485.83	
02370-450-0200	18" Min thickness (lab,O&P)	sy	3,606	61.45	221,561.13	
INFLATION						
	CPI Increase form June 2005 to June 2006			4.30%	11,070.36	268,520.71



**GeoSystems
Consultants, Inc.**

CALCULATION SHEET

CLIENT	<u>STEP, Inc.</u>	SUBJECT	<u>Riprap Construction Cost Estimate</u>	Prepared by:	<u>DMH</u>	Project No.	<u>03G324</u>
PROJECT	<u>Cabot</u>			Reviewed by:	<u>RDS</u>		<u>7/7/2006</u>
	<u>Reading Slag Pile</u>						<u>7/29/2006</u>

ENGINEERING

QA/QC	Quarry	day	15	450	6,750.00	
	Slope	day	60	450	27,000.00	
Consultation		hours	75	120	9,000.00	42,750.00

SUBTOTAL 302,270.71 366,514.97

CONTINGENCY 25% 91,628.74

TOTAL 458,143.71

RANGE 450,000 to 500,000