March 13, 2015

Mr. Ed Mussler, III, PE, Supervisor
Permitting Branch, Solid Waste Section
Division of Waste Management, NCDENR
1646 Mail Service Center
Raleigh NC 27699

Dear Mr. Mussler,

On behalf of Green Meadow, LLC and Charah, Inc., HDR provides the enclosed Addendum 3 regarding the permit application entitled:

> *Permit Application, Colon Mine Site, Structural Fill, Charah, Inc., Sanford, North Carolina*. Prepared for Charah, Inc. Prepared by HDR Inc. November 2014. DIN 22354.

This addendum revises the financial assurance calculation and Closure Plan to set the largest area available for closure area to 31.9 acres. This area matches the largest Cell area that will be constructed at one time

Financial Assurance Letter
The attached financial assurance letter will replace the letter dated November 11, 2014 currently in the permit application.

Closure-Post Closure Plan
Section 2.5 of the Closure-Post Closure Plan has been revised to identify 31.9 acres as the largest area to require closure at one time.

Revisions in narrative documents are shown with deletions struckthrough (~~struckthrough~~) and additions underlined (underlined) along with a change line indicator in the left margin. As requested, upon completion of the permit application process the revisions will be combined into a final permit application document for the record.

Please contact me should you have any questions. We hope you find these design enhancements acceptable and we look forward to discussing them with you.

Sincerely,
HDR Engineering, Inc. of the Carolinas

Michael D. Plummer, PE
Project Manager

Enclosures: Financial Assurance
Closure-Post Closure Plan (revised page only)

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March 13, 2015

Mr. Norman Divers
Senior Engineer
12601 Plantside Drive
Louisville, KY 40299

RE: Colon Mine Site Structural Fill
Financial Assurance Estimate
HDR Project No. 235691

Dear Mr. Divers,

North Carolina General Statute (NCGS) §130A-309.217 (a) requires that a financial assurance be established to ensure sufficient funds are available for a structural fill for facility closure, post-closure care, corrective action, and to satisfy any potential liability for sudden and non-sudden accidental occurrences. The purpose of this letter is to provide an estimate of the expenses to meet the financial assurance requirements in NCGS §130A-309.217.

Closure

The cost for closure is provided per acre in the Closure and Post-Closure Plan in the permit application for the Colon Mine Site Structural Fill. There are two different types of final cover caps that can be built over the Colon Mine Site Structural Fill. In addition, the final cover cap thickness varies based on the location of the cap; whether on top of the structural fill or on the side slope of the structural fill. The highest final cover cap estimate in the Closure and Post-Closure Plan is $171,300 per acre (for a cap with a geocomposite on the top of the structural fill). The largest cell area requiring closure is 31.9 acres. Therefore approximately $5,464,470 needs to be set aside in order to cover the closure costs for the largest area requiring closure at any time at the Colon Mine Site Structural Fill.

Post-Closure Care

The cost for post-closure care is provided in the Closure and Post-Closure Plan in the permit application for the Colon Mine Site Structural Fill. The Closure and Post-Closure Plan estimates a post-closure care cost of $2,916,000.

Corrective Action

The Corrective Action costs assume a one time release, which includes assessment monitoring, an assessment of corrective measure report/selection of a remedy, and implementation of corrective action. It is assumed that corrective action occurs in post-closure and that monitored natural attenuation would be the selected remedy. The total cost for corrective action is estimated to be approximately $1,383,400. The North Carolina Department of Environment and Natural Resources Division of Waste Management requires that at least $2 million be set aside for corrective action for

solid waste management facilities. Because the state is requiring a permit be obtained from the Division of Waste Management, HDR has assumed that the $2 million corrective action threshold also applies to structural fills.

Total

The total amount to be set aside for financial assurance is $10,380,470, as detailed in the calculation below.

Closure Costs	$5,464,470
Post-Closure Costs	$2,916,000
Corrective Action Costs	$2,000,000
Total Costs	**$10,380,470**

If you have any questions about this cost estimate, please feel free to contact me at (704) 338-6700.

Sincerely,
HDR Engineering, Inc. of the Carolinas

Michael D. Plummer, PE
Project Manager

Enclosures

Closure Cost Estimate – Soil/Geomembrane Cap

The following is an estimate of closure costs; actual costs may vary.

				Soil/Geomembrane Cap					
				Top			Side Slope		
Item	Description	Unit Price	Unit	Thickness (in)	Quantity	Total	Thickness (in)	Quantity	Total
1	Mobilization, Administration & Bonds	4%	of Items 2-9		4%	$ 4,000		4%	$ 3,200
2	Surveying & Control	$ 1,600	Acres		1	$ 1,600		1	$ 1,600
3	Topsoil Layer	$ 11.60	CY	6	900	$ 10,400	6	900	$ 10,400
4	Low Permeable Soil Layer*	$ 6.70	CY	12	1,700	$ 11,400	12	1,700	$ 11,400
5	Unclassified Soil Layer*	$ 6.70	CY	24	3,300	$ 22,100	12	1,700	$ 11,400
6	Drainage Soil Layer*	$ 6.70	CY	30	4,100	$ 27,500	18	2,500	$ 16,800
7	Geocomposite Drainage Layer	$ 0.70	SF		0	$ -		0	$ -
8	Geomembrane (40 mil double sided textured polyethylene)	$ 0.60	SF		43,560	$ 26,100		43,560	$ 26,100
9	Seeding/Fertilizing/Mulching	$ 1,500	Acre		1	$ 1,500		1	$ 1,500
10	Contingency	10%	of Items 1-9		10%	$ 10,500		10%	$ 8,200
11	Engineering - Plans & Specs	6%	of Items 1-9		6%	$ 6,300		6%	$ 4,900
12	CQA & Certification	6%	of Items 1-9		6%	$ 6,300		6%	$ 4,900
13	Construction Management	5%	of Items 1-9		5%	$ 5,200		5%	$ 4,100
					Cost Per Acre	$ 132,900		Cost Per Acre	$ 104,500

*The permeabilities for the soil layers may be different; however, the costs have been assumed to be the same with the exception of the topsoil.

Closure Cost Estimate – Soil/Geocomposite Drainage Layer/Geomembrane Cap

The following is an estimate of closure costs; actual costs may vary.

				Soil/Geocomposite Drainage Layer/Geomembrane Cap					
				Top			Side Slope		
Item	Description	Unit Price	Unit	Thickness (in)	Quantity	Total	Thickness (in)	Quantity	Total
1	Mobilization, Administration & Bonds	4%	of Items 2-9		4%	$ 5,200		4%	$ 4,300
2	Surveying & Control	$ 1,600	Acres		1	$ 1,600		1	$ 1,600
3	Topsoil Layer	$ 11.60	CY	6	900	$ 10,400	6	900	$ 10,400
4	Low Permeable Soil Layer*	$ 6.70	CY	66	8,900	$ 59,600	42	5,700	$ 38,200
5	Unclassified Soil Layer*	$ 6.70	CY		0	$ -		0	$ -
6	Drainage Soil Layer*	$ 6.70	CY		0	$ -		0	$ -
7	Geocomposite Drainage Layer	$ 0.70	SF		43,560	$ 30,500		43,560	$ 30,500
8	Geomembrane (40 mil double sided textured polyethylene)	$ 0.60	SF		43,560	$ 26,100		43,560	$ 26,100
9	Seeding/Fertilizing/Mulching	$ 1,500	Acre		1	$ 1,500		1	$ 1,500
10	Contingency	10%	of Items 1-9		10%	$ 13,500		10%	$ 11,300
11	Engineering - Plans & Specs	6%	of Items 1-9		6%	$ 8,100		6%	$ 6,800
12	CQA & Certification	6%	of Items 1-9		6%	$ 8,100		6%	$ 6,800
13	Construction Management	5%	of Items 1-9		5%	$ 6,700		5%	$ 5,600
					Cost Per Acre	$ 171,300		Cost Per Acre	$ 143,100

*The permeabilities for the soil layers may be different; however, the costs have been assumed to be the same with the exception of the topsoil.

Annual Post-Closure Care Cost Estimate

The following is an estimate of post-closure costs; actual costs may vary.

1	Quarterly Site Inspections	4	Events	$5,000	$20,000
2	Cap System Maintenance				
	a. Seeding/Fertilizing/Mulching	1	acres	$1,500	$1,500
	b. Topsoil Replacement	400	CY	$11.60	$4,600
	c. Protective Cover Replacement	400	CY	$6.70	$2,700
3	Stormwater Management	1	LS	$2,000	$2,000
4	Stormwater Monitoring	2	Events	$1,200	$2,400
5	Utilities	12	Events	$500	$6,000
6	Mowing	2	Events	$2,850	$5,700
7	Fence Repairs and Security	1	LS	$500	$500
8	Administration	1	Events	$2,000	$2,000
9	Leachate System Maintenance	1	Events	$2,500	$2,500
10	Leachate Collection and Treatment	1,085,600	gallons	$0.0235	$25,500
11	Water Quality Monitoring & Report	2	Events	$6,000	$12,000
12	Groundwater Monitoring System Maintenance	1	Events	$1,000	$1,000
13	Contingency	10%		$88,400	$8,800
	Annual Total				$97,200
	30-YR Total				$2,916,000

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Closure and Post-Closure Plan

Colon Mine Site Structural Fill

Charah, Inc.

Sanford, NC

November 2014
Revised January 2015
Revised March 2015

pressure construction equipment meeting the requirements of the project specifications. The topsoil will be a six-inch thick layer of soil capable of promoting the growth of vegetation. The total thickness of the final cover shall be at least six feet on the top of the structural fill and at least four feet on the side slopes of the structural fill.

2.2 Surface Water Runoff and Run-on

Surface water running off the structural fill during and after a rainfall event will be collected and routed off the cover by erosion control benches and slope drains. Surface water that flows toward the structural fill from uphill areas (run-on) will be intercepted and channeled away from the structural fill and final cover surface by diversion channels and perimeter berms.

2.3 Erosion Control

Erosion will be controlled by vegetation, erosion control benches and diversion of run-off. Vegetation will aid in reducing soil erosion. Benches break the velocity of sheet flow over the closed structural fill, control development of erosion features before they damage the final cover, and divert runoff into manageable flow volumes. Sediment laden runoff will be collected in the sediment basins.

2.4 Dust Control

Dust control during closure construction will be managed as outlined in the Operations Plan and appropriate for closure construction.

2.5 Estimate of Largest Area to Require Closure

NCGS §130A-309.218 (b) (1) b. requires the Closure Plan to provide an estimate of the largest area of the structural fill project that will require a cap at any time during the overall construction period. The largest area requiring closure at any time will be ~~51.2~~31.9 acres.

2.6 Estimate of Maximum Inventory of Coal Combustion Products

NCGS §130A-309.218 (b) (1) c. requires the Closure Plan to provide an estimate of the maximum inventory of CCPs ever onsite over the construction duration of the structural fill. The structural fill is sized to hold an estimated total of approximately 7.25 million cubic yards of CCPs in five cells.

2.7 Closure Schedule

NCGS §130A-309.218 (b) (1) d. requires the Closure Plan to provide a schedule for completing all activities necessary to satisfy the closure criteria. In accordance with NCGS §130A-309.218 (a) (1), cap application will start no later than 30 working days or 60 calendar days, whichever is less, after CCP placement has ceased. Closure construction is anticipated to take up to a year to complete. Refer to the Reclamation Timeline in the Earthwork Calculations section for the anticipated closure schedule.