

January 30, 2014

Permit No.	Date	DIN
<b>06-03</b>	<b>February 10, 2014</b>	<b>20539</b>

Mr. Allen Gaither  
North Carolina Dept. of Environment and Natural Resources  
Asheville Regional Office  
Division of Waste Management - Solid Waste Section  
2090 U.S. 70 Highway  
Swannanoa, NC 28778

RECEIVED  
**February 3, 2014**  
Solid Waste Section  
Asheville Regional Office

**RE: Avery County C&D Landfill, Permit No. 06-03  
Newland, N.C.  
Revised Financial Assurance Calculation**

Dear Allen:

Earlier this month, a financial assurance calculation was included with the Construction Quality Assurance Certification for the recent final cover project at the Avery County C&D Landfill. Based on our email correspondence last week, we have discovered an error in the calculations in the spreadsheet. The Financial Assurance Post-closure cost estimate (**attached**) dated January 27, 2014 is to replace the previously submitted estimate. For completeness, we have also included the estimate of Closure Construction Costs, which is unchanged from the previous submittal.

As we discussed in our email correspondence dated January 22, 2014, the previously submitted "POST CLOSURE AND REMEDIAL COSTS" estimated added the monitoring cost estimate and the \$2 million remedial action requirement, then adjusted the sum for inflation. Since the \$2 million is a statutory requirement, it should not be adjusted by the inflation factors. The revised submittal makes the correction, as well as the following changes:

- Monitoring Estimate is in 2011 dollars. The costs for items A through D of the Post Closure Estimate are in 2011 dollars.
- Adjusted Total is in 2013 dollars. The inflation factors for 2012 and 2013 have been applied to the estimate to convert the cost to 2013. This line (in bold font) is included in the spreadsheet for ease of review.
- Control System Vents. The value for the "Control System Vents" monitoring (under item B, Landfill Gas Management) has been rounded to seven (7). The previous spreadsheet used a fractional value based on the landfill area. However, vents are either installed or not installed, so the number of vents

will always be an integer. The cost difference is less than \$10 per year, so the change is primarily cosmetic.

If you have any additional comments or questions, please do not hesitate to call me at the number below, or by email.

Sincerely,

**SMITH GARDNER, INC.**



Gregory G. Mills, P.E.  
Sr. Pro. Engineer

Attachment

Cc: Buddy Norris  
Tim Greene

H:\Projects\Avery County (NC)\01 AC Site Information\Financial Assurance\20140130 rev. Financial Transmittal.docx

## Avery County C&D Landfill (NC SW Permit No. 06-03) Engineer's Post Closure Estimate

Item	Quantity or Cost	Unit	Comments
<b>A. Groundwater Monitoring</b>			
Monitoring wells	4	wells	Reference 1
Surface water point	2	points	Reference 1
Sampling frequency	2	events	Reference 1
Field sampling, collection, and shipping.	\$ 800.00	per event	S+G estimate
Laboratory Analysis	\$ 325.00	per well	S+G estimate
Data review, statistics, and reporting	\$ 2,000.00	per event	S+G estimate
Maintenance and repair	\$ 1,000.00	per well	S+G historical estimate
<b>Subtotal Cost</b>	<b>\$ 13,500.00</b>	<b>per year</b>	
<b>B. Landfill Gas Management</b>			
Control System Vents	7	vents	Per Ref. 1 (pro-rated @ one (1) per acre)
Sub-Surface Perimeter Monitoring Probes	4	probes	Per Ref. 1
Control system monitoring, maintenance and repair	\$ 50.00	per vent per year	S+G estimate
Semi-Annual Perimeter Monitoring	\$ 50.00	per probe per year	S+G estimate
<b>Subtotal Cost</b>	<b>\$ 550.00</b>	<b>per year</b>	Averaged over post-closure period
<b>C. Final Cover Management</b>			
Area of maintenance	7.19	acres	Extends to area immediately around landfill.
Mowing	\$ 100.00	per acre	Site historical estimate
Erosion and sediment control maintenance	\$ 200.00	per acre	Site historical estimate
Topdressing (seed & fertilizer)	\$ 150.00	per acre	Site historical estimate
Vector and rodent control	\$ 10.00	per acre	Site historical estimate
Maintenance Mobilization	\$ 1,000.00	per year	Site historical estimate
<b>Subtotal Cost</b>	<b>\$ 4,307.40</b>	<b>per year</b>	
<b>D. Administration, Inspections, and Reporting</b>			
Administration and record keeping	\$ 1,000.00	per year	Site historical estimate
Inspection	\$ 1,000.00	per year	Site historical estimate
Miscellaneous engineering	\$ 1,500.00	per year	Site historical estimate
<b>Subtotal Cost</b>	<b>\$ 3,500.00</b>	<b>per year</b>	
<b>E. Subtotal Post-Closure Costs</b>			
Number of Years for Post-Closure	30	years (see Note 1)	
Estimated Average Annual Costs	\$ 21,857	per year (2013\$)	
Cost per Acre	\$ 3,039.97	per year	
Subtotal Post Closure Costs	\$ 655,722.00	(2011\$) (See Note 2)	
<b>Subtotal Post Closure Costs</b>	<b>\$ 681,543.02</b>	<b>(2013\$) (See Note 2)</b>	
<b>F. Potential Assessment and Corrective (Remedial) Action</b>			
Minimum amount required by NCDENR Division of Waste Management	\$ 2,000,000	lump sum	Regulatory requirement (Session Law 2011-262)
<b>Subtotal Remedial Cost</b>	<b>\$ 2,000,000</b>	<b>lump sum</b>	
<b>Total Post Closure and Remedial Costs</b>	<b>\$ 2,681,543</b>	(2013\$) (See Note 2)	
<b>Total Closure, Post Closure, and Remedial Costs</b>	<b>\$ 2,896,851</b>	(2013\$) (See Note 2)	

**Notes:**

- All costs are presented in current dollars and should be increased at the inflation rate prescribed by the NCDENR Division of Waste Management website at <http://portal.ncdenr.org/web/wm/sw/financialassurance> if additional review is not performed annually.
- This ESTIMATE has been prepared for financial assurance purposes only and shall not be considered a replacement for an actual bid from a licensed contractor. The estimate is intended to be accurate to within +/- 10% of the Total Estimated Cost.

**References:**

- Avery County Construction and Demolition Landfill Phase III Permit to Construct Application by Richardson Smith Gardner & Associates, Inc. dated February 2009 with revisions through August 2009.

**Avery County C&D Landfill (NC SW Permit No. 06-03)  
Engineer's Closure Construction Cost Estimate**

Year	Inflation Factor
2012	1.021
2013	1.018

Item No.	Item Description	Unit	Contractor			Comments
			Quantity	Unit Price	Total Price	
<b>Closure Area (Horizontal Plan) ----&gt;</b>		<b>AC</b>	<b>3.75</b>			
<b>1.0</b>	<b>Pre-Construction</b>			<b>Pre-Construction Subtotal:</b>	<b>\$ 17,539.50</b>	
1.1	Construction Documents & Bidding	AC	3.75	\$12k + \$500/AC	\$ 17,539.50	S+G Estimate
<b>2.0</b>	<b>Construction</b>			<b>Construction Subtotal:</b>	<b>\$ 176,591.62</b>	References 1, 2, and 3.
2.1	Surveys and Layout	AC	3.75	\$ 1,559.07	\$ 5,846.50	Inflation Adjusted 2011 Estimate
2.2	#VALUE!	AC	3.75	\$ 1,039.38	\$ 3,897.67	
2.3	Site Preparation (repairs to intermediate cover layer)	AC	3.75	\$ 519.69	\$ 1,948.83	
2.4	18" On-site Low Permeability Soil	CY	9,075.00	\$ 7.90	\$ 71,685.90	
2.5	18" Vegetative Support Layer	CY	9,075.00	\$ 5.98	\$ 54,236.04	
2.6	Landfill Gas Venting System	AC	3.75	\$ 1,247.25	\$ 4,677.20	
2.7	Cap Drainage Structures (berms, piping, etc.)	AC	3.75	\$ 5,196.89	\$ 19,488.34	
2.8	Erosion & Sediment Control (grading, silt fence, maintenance, etc.)	AC	3.75	\$ 831.50	\$ 3,118.13	Inflation Adjusted 2011 Estimate
2.9	Revegetation	AC	3.75	\$ 3,118.13	\$ 11,693.00	Inflation Adjusted 2011 Estimate
<b>3.0</b>	<b>Quality Assurance, Certification, &amp; Deed Notation</b>			<b>COA Subtotal:</b>	<b>\$ 16,305.24</b>	
3.1	Field Monitoring	AC	3.75	\$ 1,559.07	\$ 5,846.50	Inflation Adjusted 2011 Estimate
3.2	Laboratory Testing	AC	3.75	\$ 1,039.38	\$ 3,897.67	Inflation Adjusted 2011 Estimate
3.3	Surveying and Deed Notation	AC	3.75	\$ 103.94	\$ 389.77	Inflation Adjusted 2011 Estimate
3.4	Engineering Certification	AC	3.75	\$5k + \$250/AC	\$ 6,171.31	S+G Estimate
<b>4.0</b>	<b>Miscellaneous Costs to Close</b>			<b>Misc. Costs Subtotal:</b>	<b>\$ 4,872.08</b>	
4.1	Erosion and Stormwater Control (outside landfill footprint)	AC	3.75	\$ 1,039.38	\$ 3,897.67	Inflation Adjusted 2011 Estimate
4.2	Engineering and Reporting	AC	3.75	\$ 259.84	\$ 974.42	Inflation Adjusted 2011 Estimate
<b>5.0</b>	<b>Total Closure Costs</b>					
<b>Construction Estimate ----&gt;</b>				<b>\$ 215,308.45</b>		(2013\$)
<b>Cost per Acre ----&gt;</b>				<b>\$ 57,415.59</b>		
<b>Total Estimate ----&gt;</b>				<b>\$ 215,308.45</b>		(2013\$) [See Note 1]

Notes:

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- This ESTIMATE has been prepared for financial assurance purposes only and shall not be considered a replacement for an actual bid from a licensed contractor. The ESTIMATE is intended to be accurate to within +/- 10% of the Total Estimated Cost.
- The unit price for each line item as been adjusted from the submitted 2012 Financial Assurance documents to show the inflation factor.
- Some rounding errors may occur due to multiplying the inflation factors and the acreage.

References:

- Avery County Construction and Demolition Landfill Phase III Permit to Construct Application by Richardson Smith Gardner & Associates, Inc. dated February 2009 with revisions through August 2009.
- Correspondence dated March 17, 2010 regarding approval of the site suitability including lateral expansion of Phase 2 following purchase of the Lechler parcel to Mr. Buddy Norris, Avery County from Mr. Zinith Barbee, NCDENR.