



**Baldwin County Solid Waste**  
**15140 County Road 49**  
**Summerdale, AL 36580**  
**251-972-6878**

# MEMO

To: John Marino  
From: Terri Graham *Terri Graham*  
Date: October 28, 2019  
Subject: Cubic Yards in Lined Cell

We received 206,715.50 cubic yards of material that went into the lined cell for the period October 1, 2018 to September 30, 2019.

If you have any questions, please let me know.

Journal Voucher Number

## Closure & Post Closure Liability Fund 510

Date:

Description	Account No.	Amount-DR	Amount-CR
Closure & Post Closure FY19	54300.5470	435,471.10	
Current Year Part	510.26802.01		435,471.10
Remove Prior Year Balance *	510.26802.01	516,622.61	
Add to Non-Current Balance	510.26802		516,622.61
Totals		952,093.71	952,093.71

Prepared By / Date:

Suzanne Doughty 10/28/19

*\* Prior Year Balance is a combination of both FY17 & FY18 current liability calculations. Normally, the previous year's calculated liability moves to the cumulative account of 510.26802. The overall liability was correctly stated for FY18 Year End as \$3,861,661.62.*

**Closure & Post Closure Liability Calculation Fund 510**

**FY19**

Closure Cost 2019	7,065,768.19
Post Closure Cost 2019	5,929,650.00
Total 2019	<u>12,995,418.19</u>

2019 Increase by CPI (5.9%)	0.00
Already included in cost calculation by CDG per letter dated 07/16/19	<u>12,995,418.19</u>

**Total Capacity = 12,137,439 cubic yards**  
 Revised per letter dated 08/19/15 from CDG Engineers  
 & Associates, Inc.

2010 Capacity Used 223,568.71 cubic yards  
 2011 Capacity Used 225,258.44 cubic yards  
 2012 Capacity Used 216,405.80 cubic yards  
 2013 Capacity Used 216,989.97 cubic yards  
 2014 Capacity Used 215,473.90 cubic yards  
 2015 Capacity Used 107,089.10 cubic yards  
 from 12/14/14 to 09/30/15  
 2016 Capacity Used 199,798.06 cubic yards  
 2017 Capacity Used 184,160.31 cubic yards  
 2018 Capacity Used 198,398.48 cubic yards  
 2019 Capacity Used 206,715.50 cubic yards

**Formula:**

$$\frac{\text{Estimated Total Current Cost X Cumulative Capacity Used}}{\text{Total Estimated Capacity}} - \text{Amount Previously Recognized} = \text{Amount to Record in FY}$$

**Calculation:**

$$\frac{\$12,995,418.19 \times (206,715.50 \text{ cubic yards} + 3,806,718.95 \text{ cubic yards})}{12,137,439 \text{ cubic yards}} - \$3,861,667.62 = \underline{\underline{\$435,471.10}}$$

See attached letters for supporting documentation of amounts used in the calculations.

Baldwin County Solid Waste Department	15140 County Road 49	
	Summerdale, AL 36580	
	P 251-972-6878	
Period:	10/1/2018 to 9/30/2019	
Facility:	BCC-MAGNOLIA, BCC- TRANSFER & BCC-COM	
Report:	Lined Subtitle D Cell	
<u>Material</u>	<u>Description</u>	<u>Tons</u>
L1	RESIDENTIAL	79,283.47
L1-TRS	RESIDENTIAL TRS	1,860.47
L1-ELBERTA	RESIDENTIAL	488.12
L10	ASBESTOS	18.90
L1P	RESIDENTIAL GARBAGE PERMITTED	3.25
L2	COMMERCIAL	77,314.79
L2-TRS	COMMERCIAL TRS	11,588.97
L3	TREATED LUMBER	184.52
L4	INERT/GARBAGE MIX	191.83
L4-TRS	INERT/GARBAGE MIX TRS	308.02
L5	SPECIAL HANDLING	5,095.67
L5-TRS	SPECIAL HANDLING TRS	155.06
L6	CARRION	28.03
L6-TRS	CARRION TRS	0.54
L9	INBOUND FROM MCB	96.10
Grand Totals		176,617.73
Compaction Ratio 1,708.7 lbs/cy per CDG 1/20/2015		2,000.00
		1,708.80
		1.170411985
2019 Capacity Used		206,715.50
Generated by: COREASPLTFTGRAHAM on 10/22/2018 at 10:17:42AMP:\EnCORE\LTf\Reports\Scaling\ADEM Reports\ADEM Lined subtitle D Cell.rptPage -1 of 1		



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1840 East Three Notch Street

Andalusia, AL 36421

Post Office Box 278

Andalusia, AL 36420

Tel (334) 222-9431

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January 20, 2015

Mr. Ed Fox  
Magnolia Sanitary Landfill  
Baldwin County Commission  
15140 County Road 49  
Summerdale, Alabama 36580

RE: **Landfill Airspace Report**  
**Magnolia Sanitary Landfill**

Dear Mr. Fox,

It is a pleasure for CDG Engineers and Associates to submit the requested Landfill Airspace Report for the Magnolia Sanitary Landfill. The report focuses on the MSW disposal operations during a study period defined as April 2007 through December 2014. The report includes methodology, results, and Figures depicting fill sequencing as defined during report development.

#### **Capacity Analysis**

Aerial Topography of the MSW waste disposal footprint was performed by Southern Resource Mapping, Inc. on December 13, 2014. To determine the capacity utilized during the study period the December 2014 Aerial Topo was compared to a previously completed topographic survey completed in April 2007. The gross capacity utilized during the period of analysis was determined to be **1,491,533** cubic yards (CY).

CDG determined remaining capacity of the constructed footprint (Cells 1-8) to current height by comparing the December 2014 Aerial topography with an Intermediate Fill plan representing current operational height (134' MSL). This comparison yielded a remaining capacity of **1,678,136** cubic yards (CY).

CDG utilized the software program InRoads v.8i, by Bentley Systems, to compute the gross airspace volume. InRoads compares triangulated irregular network models (TINs) representing the scenario to compute the gross volumetric cut/fill volumes.

#### **Compaction Analysis**

To determine operational efficiency of the Magnolia MSW disposal operations, CDG compared the tonnage disposed in the MSW area during the study period with the capacity utilized over the same period to determine the Compaction Ratio. The **Compaction Ratio** was calculated to be **1,708.8 lbs/cy**, or approximately **1.20 cy/ton**.

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**Estimate of Remaining Life**

Using the Compaction Ratio, Intermediate Fill Plans, and 2014 disposal tonnage, CDG calculated the remaining lifespan for the facility. The remaining lifespan at current disposal tonnages (no growth) indicates approximately **8.3 years** of remaining life.

Should you have any questions regarding this report, feel free to give me a call, 334-222-9431.

Sincerely,

**CDG Engineers & Associates, Inc.**

A handwritten signature in blue ink that reads "Sarah Sightler". The signature is fluid and cursive, with the first name "Sarah" being more prominent than the last name "Sightler".

Sarah Sightler  
Project Manager

Enc.

cc: file

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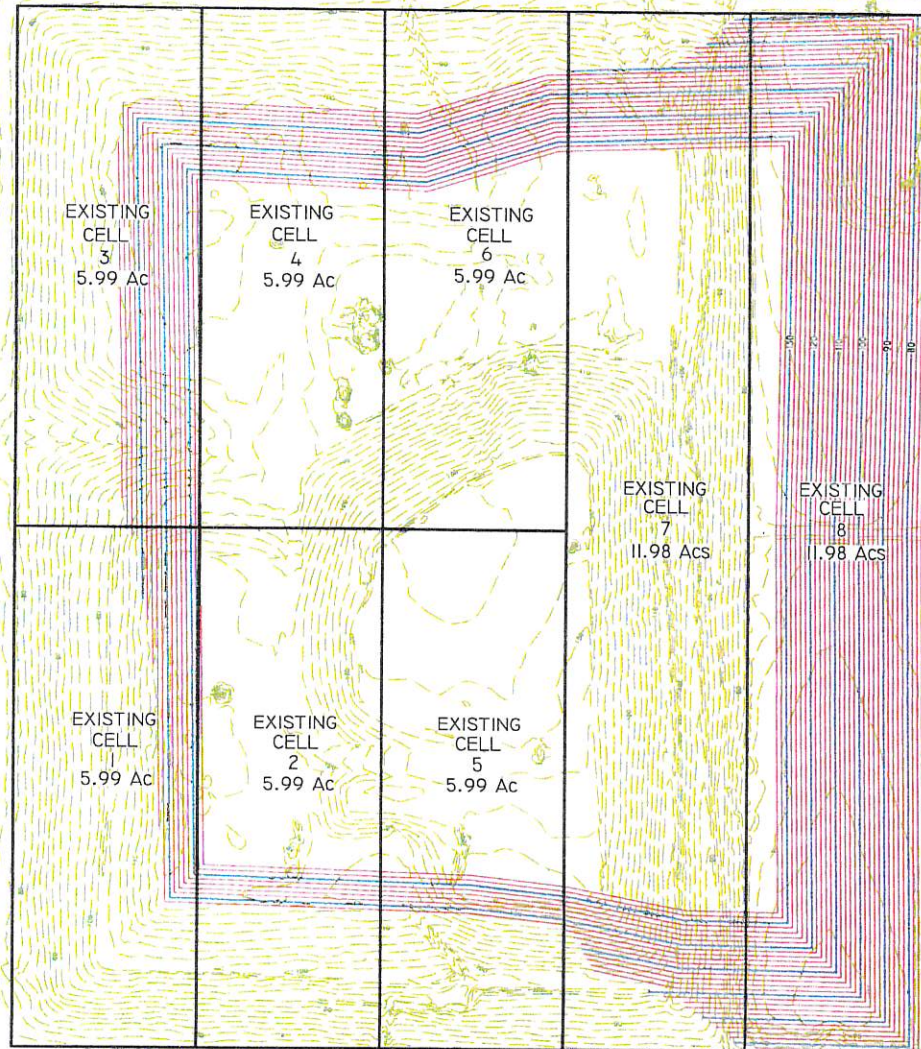
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FIGURE 1.  
FILL TO CURRENT  
OPERATIONAL ELEVATION

ELEV: 134.00

GROSS VOLUME: 1,678,136 CYDS

REMAINING LIFESPAN: 8.3 YEARS



SCALE 1:200



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Jul 16, 2019

Blake Holden  
Alabama Department of Environmental Mgmt.  
P.O. Box 301463  
1400 Coliseum Boulevard (36110)  
Montgomery, AL 36130

**Re: Magnolia Sanitary Landfill, Permit No. 02-03  
Financial Assurance Update**

Dear Mr. Holden,

Please find attached the updated Financial Assurance cost estimate for the Magnolia Sanitary Landfill. CDG has also included a summary of the Financial Assurance requirements and the County's commitment for each.

**Closure**

As required by ADEM regulations 335-13-4-.28(2)(a) "the owner or operator shall have a detailed written estimate, in current dollars, of the cost of hiring a third party to close the largest area of all landfill cells at the MSWLF ever requiring final cover as required in 335-134-.20."

CDG has updated the cost estimate prepared in 2018 of the constructed footprint at the Magnolia Sanitary Landfill, which includes Cells 1-8 using the current Producer Price Index and will do so annually. The 2019 closure cost estimate for the Magnolia Sanitary Landfill is **\$7,065,768.19.**

**Post-Closure**

As required by ADEM regulations 335-13-4-.28(3)(a) "The owner or operator shall have a detailed written estimate, in current dollars, of the cost of hiring a third party to conduct post-closure care for the MSWLF in compliance with the post-closure requirements in 335-13-4-.20(3). The post-closure cost estimate used to demonstrate financial assurance in 335-13-4-.28(3)(b) shall account for the total costs of conducting post-closure care, including annual and periodic costs as described in the post-closure plan over the entire post-closure care period."

The post-closure estimate for the Magnolia Sanitary Landfill takes into account the following monitoring and maintenance items:

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Monitoring:

- Groundwater
- Surface Water
- Perimeter Gas
- New Source Performance Standards (NSPS)

Maintenance:

- Leachate Systems
- Groundwater Wells
- LFG Collection and Conveyance System
- Stormwater Conveyance
- Erosion Repair

The annual cost of post-closure care is **\$197,655.00**. ADEM requires a 30 year post closure care period, requiring the long term financial commitment for post-closure to be estimated at **\$5,929,650.00**.

Financial Assurance Instrument

As stated by ADEM regulations 335-13-4-.28(5) "Allowable mechanisms used to demonstrate financial assurance under 335-13-4-.28 shall ensure that the funds necessary to meet the costs of closure, post-closure care, and corrective action for known releases will be available whenever they are needed. Owners and operators shall choose from the options specified in 334-13-4-.28(5)(a) through (j)."

Baldwin County has chosen to use the Local Government Financial Test, as outlined in 335-13-4-.28(5)(f), to satisfy the requirements of 335-13-4-.28(5). As of 7/15/2019, the Financial Assurance Trust (used for Closure Costs) contained **\$5,347,050.20** and the Solid Waste Trust (used for Post-Closure Costs) contained **\$1,671,156.64**.

Should you have any questions regarding this Financial Assurance cost estimate, please feel free to give me a call.

Sincerely,

**CDG Engineers & Associates, Inc.**

A handwritten signature in blue ink, appearing to read "Sarah Sightler".

Sarah Sightler  
Project Manager

A handwritten signature in blue ink, appearing to read "R. Daniel Wells".

R. Daniel Wells, PE  
Principal Engineer



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Jul 16, 2019

Terri Graham  
Development and Environmental Director  
Baldwin County Commission  
15140 County Road 49  
Summerdale, AL 36580

**Re: Magnolia Sanitary Landfill  
Financial Assurance Update**

Please find included the updated Financial Assurance Letter for the Magnolia Sanitary Landfill. As required by ADEM regulations 335-13-4.28(2)(a) "the owner or operator shall have a detailed written estimate, in current dollars, of the cost of a third party to close the largest area of all landfill cells at the MSWLF ever requiring final cover as required in 335-134-.20 at any time during the active life in accordance with the closure plan." CDG has updated the cost estimate prepared in 2018 of the constructed footprint at the Magnolia Sanitary Landfill, which includes Cells 1-8 using the current Producer Price Index (PPI). The PPI-Final Demand Construction for Government as of June 2019 is 5.9%.

Please submit the Financial Assurance Update Letter to the Alabama Department of Environmental Management, Attention: Blake Holden.

Sincerely,  
**CDG Engineers & Associates, Inc.**

Sarah Sightler  
Project Manager

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July 24, 2019

Mrs. Terri Graham, Dev. and Environmental Director  
Magnolia Sanitary Landfill  
Baldwin County Commission  
15140 County Road 49  
Summerdale, AL 36580

**Re: 2018-2019 Capacity Report  
Magnolia Landfill**

Mrs. Graham,

CDG has evaluated the gross capacity consumed within the MSW disposal area of the Magnolia Sanitary Landfill. In determining the gross airspace consumed, CDG compared the survey performed on June 27, 2018 to the survey from July 17, 2019 for Cells 1 through 8. The annual airspace consumed through the date was found to be 224,886 CY for a total airspace consumed of **4,058,371 CY**.

Per the Financial Assurance Report Update October 2000, prepared by ESA, Inc., the total gross capacity of the Magnolia Sanitary Landfill is reported as **12,137,439 CY**. The remaining airspace available as of July 17, 2019 for all permitted MSW disposal areas is **8,079,068 CY**.

A comparative analysis of the gross capacity consumed as of July 17, 2019 with the gross capacity reported by ESA in 2000, approximately 33.4% of the total gross capacity of the permitted disposal area has been consumed.

If you have any questions concerning the method of calculation or results, please feel free to call.

Sincerely,  
**CDG Engineers & Associates, Inc.**

Laura Kate Young  
Project Engineer

Sarah Sightler  
Project Manager

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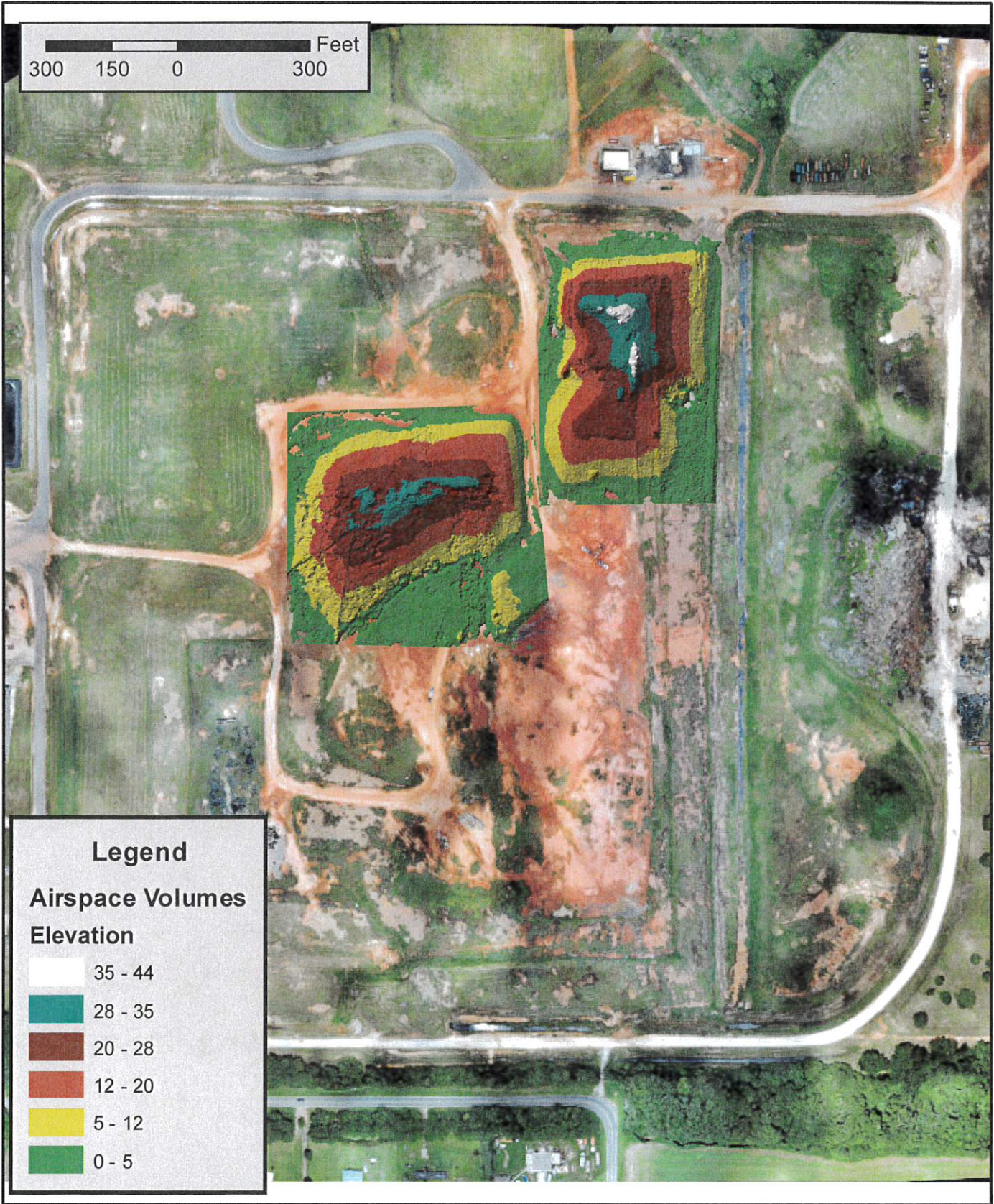
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Airspace Layout  
**Magnolia Landfill**  
**Summerdale, AL**



Sheet No.  
2

Drawn By: LKY  
Checked By: SJS  
Date: July 2019