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cdge.com

September 5, 2023

Terri Graham
Baldwin County Commission
Solid Waste Director
15140 County Road 49
Summerdale, AL 36580

**Re: 2022-2023 Capacity Report
Magnolia Sanitary Landfill**

Dear Mrs. Graham:

It is a pleasure for CDG, Inc. to submit the requested 2022-2023 Capacity Report for the Magnolia Sanitary Landfill.

Methodology

UAS topography was collected on June 16, 2022 and July 6, 2023. CDG utilized the software program Civil3D, by Autodesk, in conjunction with the CAD files to compute the volume of airspace consumed for the landfill. The County provided CDG in-gate tonnages as reported to the Alabama Department of Environmental Management (ADEM).

In order to calculate airspace consumed, CDG used the following method:

- In-gate recorded tonnages were reviewed and it was determined that **223,416 tons** of MSW waste was disposed of during that time.
- By comparing the topographic surveys, CDG was able to calculate that **296,721 CY** of net fill had taken place during the reported timeframe.
- Using the two topographic surveys, along with the in-gate tonnages, CDG was able to calculate the site-specific compaction rate of **1,506 lbs/CY**.



Calculations

Below is the summary and description of each volumetric calculation for the Magnolia Sanitary Landfill:

Table 1. Current FY Volumetric Calculations

Airspace Utilization	Cubic Yards
1. Gross Theoretical Airspace	12,137,439
2. Airspace Consumed through Previous FY	4,717,801
3. Current FY Airspace Consumed (MSW and Operational Soil)	296,721
4. Total Airspace Consumed to Date	5,014,522
5. Remaining Airspace to Date	7,122,917
6. Capacity Used as of July 6, 2023	41%

(1) Gross Theoretical Airspace

Refers to the total volume expressed in cubic yards between the permitted top of clay layer and bottom final cap of the permitted landfill footprint. (Calculated using a comparison between the base grade and final grade surfaces.)

(2) Total Airspace Consumed through Previous FY

The total airspace consumed as reported in the previous FY Airspace Report.
(Total Airspace Consumed to Date from previous year's report)

(3) Current FY Airspace Consumed (MSW and Operational Soil)

The total airspace consumed during the reported time frame.

(4) Total Airspace Consumed to Date

The total airspace consumed to date was calculated as the total volume consumed through Current FY.

(5) Remaining Airspace Available

The remaining airspace to date was calculated by subtracting the total airspace consumed to date from the net theoretical airspace.

(6) Capacity Used as of July 6, 2023

The total capacity consumed of the permitted footprint
(The percentage of Total Airspace Consumed to Date/Net Theoretical Airspace)



In addition to the volumetric analysis above, area calculations were performed in the **Magnolia Sanitary Landfill**:

Table 2. Current FY Area Calculations

Landfill Area Calculations	Permitted Footprint (acres)
Total Permitted Waste Footprint	95.9
Total Constructed Waste Footprint	71.9
Percent of Permitted Footprint Constructed	75%

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

Sincerely,

CDG, Inc.

A handwritten signature in blue ink that reads "Gabby Sanders".

Gabby Sanders, P.E.
Project Manager

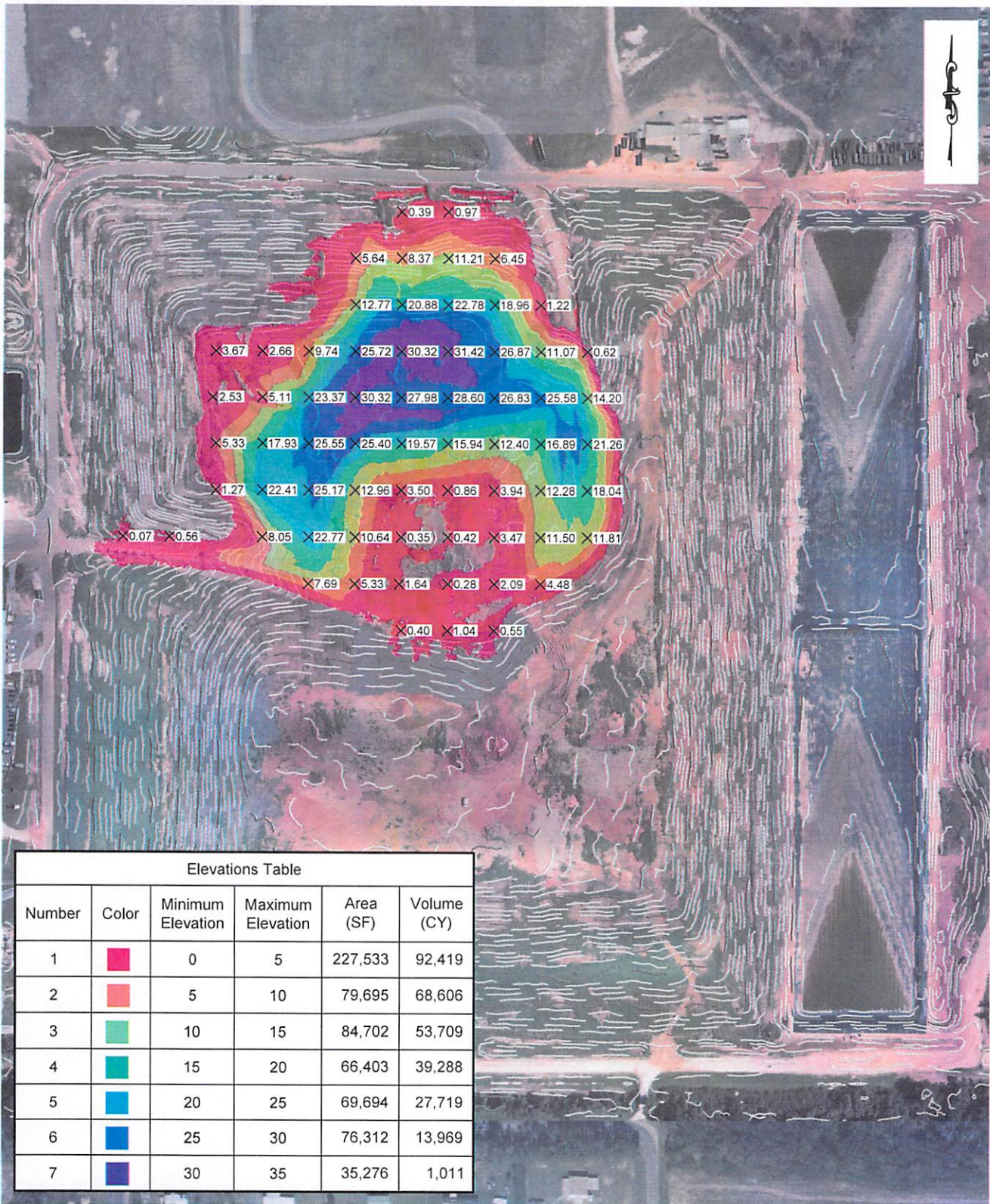


Figure 1

AIRSPACE CONSUMED: 296,721 CY
(06-16-2022 to 07-06-2023)

Drawn By:
AGS

Scale:
1" = 300'

Date:
9/5/2023

Airspace Consumed 2023

Magnolia Landfill

CDG Project No: R079322350



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September 27, 2023

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 335-13-4-.20."

CDG has updated the cost estimate prepared in 2021 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 2023 closure cost estimate for the Magnolia Sanitary Landfill is **\$9,048,127.57**.

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 considers the following monitoring and maintenance items:



Engineering. Environmental. Answers.

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 **\$258,151.00**. ADEM requires a 30-year post closure care period, requiring the long-term financial commitment for post-closure to be estimated at **\$7,744,530.00**.

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)."

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

Sincerely,
CDG, Inc.

A handwritten signature in blue ink that reads "Gabby Sanders". The signature is fluid and cursive, with the first name "Gabby" and last name "Sanders" clearly legible.

Gabby Sanders, P.E.
Project Manager

FINANCIAL ASSURANCE COST ESTIMATE

Date: September 27, 2023

I. GENERAL INFORMATION:

Facility Name: Magonia Sanitary Landfill

Permit/Application No.: 02-03

Expiration Date: 3/25/2024

Facility Address: 15140 County Road 49 Summerdale, AL 36580

Permittee: Baldwin County Commission

Mailing Address: 312 Courthouse Square, Suite 12 Bay Minette, AL 36507-4809

Solid Waste Disposal Units Included in Estimate:

Cell	Acres	Total Acres Requiring Closure
<u>1</u>	<u>5.99</u>	<u>5.99</u>
<u>2</u>	<u>5.99</u>	<u>11.98</u>
<u>3</u>	<u>5.99</u>	<u>17.97</u>
<u>4</u>	<u>5.99</u>	<u>23.96</u>
<u>5</u>	<u>5.99</u>	<u>29.95</u>
<u>6</u>	<u>5.99</u>	<u>35.94</u>
<u>7</u>	<u>11.98</u>	<u>47.92</u>
<u>8</u>	<u>11.98</u>	<u>59.90</u>
		<u>59.90</u>

Total Landfill Acreage included in this estimate. 65.89 Closure
59.90 Long-Term Care

II. TYPE OF FINANCIAL ASSURANCE DOCUMENT (Check Type)

 Letter of Credit*

 Insurance Certificate

 Surety Bond*

 Escrow Account

 Trust Fund Agreement

 X Financial Test

III. ESTIMATED CLOSURE COST

DESCRIPTION	UNIT	QUANTITY	UNIT COST	TOTAL
1. Proposed Monitoring Wells				
	EA	-	\$ -	\$ -
2. Slope and Fill (bedding layer between waste and barrier layer):				
Grading of Waste	LS	1	\$ 17,360.00	\$ 17,360.00
On-Site Foundation Material	CY	100,000	\$ 3.26	\$ 326,000.00
Subtotal Slope and Fill:				\$ 343,360.00
3. Cover Material (Barrier Layer):				
18" Protective Cover (Off-site)	CY	159,454	\$ 13.02	\$ 2,076,091.08
Synthetics-30 mil LLDPE	SF	2,870,168	\$ 0.74	\$ 2,123,924.32
Geocomposite (10 oz/SY)	SF	2,870,168	\$ 0.79	\$ 2,267,432.72
Topsoil (6" thick)	CY	53,151	\$ 8.69	\$ 461,882.19
Subtotal Cover Material:				\$ 6,929,330.31
4. Vegetative Layer				
Seeding / Grassing	AC	66	\$ 2,160.00	\$ 142,560.00
Fertilizer	AC	66	\$ 2,160.00	\$ 142,560.00
Mulching	AC	66	\$ 1,155.00	\$ 76,230.00
Drainage Matting	SY	23,183	\$ 2.90	\$ 67,230.70
Subtotal Vegetative Layer:				\$ 428,580.70
5. Stormwater Control System:				
Piping (12" PE)	LF	2,000	\$ 46.29	\$ 92,580.00
Control Structures	EA	34	\$ 1,445.86	\$ 49,159.24
Subtotal Stormwater Controls:				\$ 141,739.24
6. Gas Control: Active Extraction				
Wells	EA	8	\$14,458.79	\$115,670.32
Collection System	LF	6000	\$43.37	\$260,220.00
Condensate Control System	LS	2	\$21,600.00	\$43,200.00
Blowers	EA	1	\$21,600.00	\$21,600.00
Flare Station	EA	-	\$144,500.00	\$0.00
Subtotal Active Gas Extraction:				\$440,690.32

DESCRIPTION	UNIT	QUANTITY	UNIT COST	TOTAL
7. Security System:				
Fencing	LF	-		\$ -
Gate(s)	EA	-		\$ -
Sign (s)	EA	2	\$ 2,892.00	\$ 5,784.00
Subtotal Security System:				\$ 5,784.00
8. Engineering:				
Closure Plan Report	LS	1	\$ 43,400.00	\$ 43,400.00
QA/QC Construction Management	LS	1	\$ 202,300.00	\$ 202,300.00
Final Survey	LS	1	\$ 32,100.00	\$ 32,100.00
Certification of Closure	LS	1	\$ 12,100.00	\$ 12,100.00
Subtotal Engineering:				\$ 289,900.00
Subtotal of 1-8 Above:				\$8,579,384.57
Contingency (20%)				\$468,743.00
Total Closure Cost				\$9,048,127.57

IV. ANNUAL COST FOR LONG-TERM CARE

Description	Sampling Frequency (events/yr.)	Number of Wells	\$/Event	\$/Year
1. Groundwater Monitoring				
Semi-Annual	2	6	\$ 14,060.00	\$ 28,120.00
2. Surface Water Monitoring				
Quarterly	4	1	\$ 480.00	\$ 1,920.00
3. Gas Monitoring				
Quarterly	4	53	\$ 1,790.00	\$ 7,160.00
4. UIC Monitoring				
Quarterly	4		\$8,470.00	\$ 33,880.00
5. NSPS Monitoring and Reporting				
Surface Emission Monitoring				
Quarterly	4		\$ 2,610.00	\$ 10,440.00
Well Field				
Monthly	12		\$ 3,210.00	\$ 38,520.00
6. Leachate Collection/Treatment Systems Maintenance				
Maintenance				
Lift Stations		EA 4	\$ 2,160.00	\$ 8,640.00
Cleaning		LS 1	\$ 7,250.00	\$ 7,250.00
Impoundments				
Liner Repair		LS 1	\$ 3,610.00	\$ 3,610.00
Sludge Removal		LS 1	\$ 21,710.00	\$ 21,710.00
* Assumes sludge removed from aeration pond once every 10 years				
Aeration Systems				
Floating Aerators		EA 1	\$ 7,250.00	\$ 7,250.00
* Assumes replacement of 1 aerator every 3 years				
Subtotal Leachate Collection/Treatment System Maintenance				\$ 48,460.00
7. Maintenance of Groundwater Monitoring Wells				
Replacement		EA 1	\$ 7,250.00	\$ 7,250.00
Abandonment		EA 1	\$ 711.00	\$ 711.00
Subtotal Groundwater Monitoring Well Maintenance:				\$ 7,961.00

DESCRIPTION	UNIT	QUANTITY	UNIT COST	TOTAL
8. Gas System Maintenance				
Gas Well (replacement of 1/year)	LS	<u>1</u>	<u>\$ 2,160.00</u>	<u>\$ 2,160.00</u>
Electrical Costs	LS	<u>1</u>	<u>\$ 43,370.00</u>	<u>\$ 43,370.00</u>
Subtotal Erosion Repair and Cover Maintenance:				<u>\$ 45,530.00</u>
9. Erosion Repair & Cover Maintenance				
	LS	<u>1</u>	<u>\$ 21,710.00</u>	<u>\$ 21,710.00</u>
Subtotal Erosion Repair and Cover Maintenance:				<u>\$ 21,710.00</u>
10. Stormwater Management System Maintenance				
Conveyance Maintenance	LS	<u>1</u>	<u>\$ 14,450.00</u>	<u>\$ 14,450.00</u>
Subtotal Stormwater System Maintenance:				<u>\$ 14,450.00</u>
ANNUAL LONG-TERM CARE COST (\$/Year):				<u>\$ 258,151.00</u>
NUMBER OF YEARS OF LONG-TERM CARE				<u>30</u>
TOTAL LONG-TERM CARE COST (\$)				<u>\$ 7,744,530.00</u>

G/L ACCOUNT - MASTER INQUIRY

Org code: 510 Solid Waste Fund
 Object code: 26820 Closure and Post Closure
 Project code:

Type: B L
 Status: A
 Budgetary: N

Fund 510 Solid Waste Fund
 Function 00 No Function
 Cost Ctr 00000 No Cost Center
 Future 1 000 Future 1
 Future 2 00000 Future 2
 Future 3 00 Future 3
 Future 4 0000 Future 4

Full description: Closure Post Closure

Short desc: Closure

----- CURRENT YEAR MONTHLY AMOUNTS -----				
PER	ACTUAL	ENCUMBRANCE	BUD TRANSFER	BUDGET
00	-4,932,470.75	.00	.00	.00
01	.00	.00	.00	.00
02	.00	.00	.00	.00
03	.00	.00	.00	.00
04	.00	.00	.00	.00
05	.00	.00	.00	.00
06	.00	.00	.00	.00
07	.00	.00	.00	.00
08	.00	.00	.00	.00
09	.00	.00	.00	.00
10	.00	.00	.00	.00
11	.00	.00	.00	.00
12	.00	.00	.00	.00
13	.00	.00	.00	.00
Tot:	-4,932,470.75	.00	.00	.00

----- CURRENT YEAR TOTAL AMOUNTS -----			
Actual (Memo)	-4,932,470.75	Original Budget	.00
Encumbrances	.00	Budget Tranfr In	.00
Requisitions	.00	Budget Tranfr Out	.00
Total	-4,932,470.75	Carry Fwd Budget	.00
Available Budget	.00	Carry Fwd Bud Tfr	.00
Percent Used	.00	Revised Budget	.00
Inceptn to SOY	.00	Inceptn Orig Bud	.00
		Inceptn Revsd Bud	.00
Encumb-Last Yr	.00		.00
Actual-Last Yr	.00		.00
Estim-Actual	.00		.00
			.00
			.00

G/L ACCOUNT - MASTER INQUIRY

PER	ACTUAL	LAST YEAR MONTHLY AMOUNTS ENCUMBRANCE	BUDGET
00	-4,616,927.26	.00	.00
01	.00	.00	.00
02	.00	.00	.00
03	.00	.00	.00
04	.00	.00	.00
05	.00	.00	.00
06	.00	.00	.00
07	.00	.00	.00
08	.00	.00	.00
09	.00	.00	.00
10	.00	.00	.00
11	.00	.00	.00
12	.00	.00	.00
13	-315,543.49	.00	.00
Tot:	-4,932,470.75	.00	.00

----- PRIOR YEARS TOTAL AMOUNTS -----			
2022 Actual	-4,932,470.75	2022 Orig Budget	.00
2022 Closed @ YE	-4,932,470.75	2022 Bud Tfr In	.00
2022 Encumbrance	.00	2022 Bud Tfr Out	.00
2022 Memo Bal	-4,932,470.75	2022 C Fwd Budget	.00
2021 Actual	-4,616,927.26	2022 Revsd Budget	.00
2020 Actual	-4,297,138.72		
2019 Actual	.00	2021 Orig Budget	.00
2018 Actual	.00	2021 Revsd Budget	.00
2017 Actual	.00	2020 Orig Budget	.00
2016 Actual	.00	2020 Revsd Budget	.00
2015 Actual	.00		
2014 Actual	.00		
2013 Actual	.00		

----- FUTURE YEAR AMOUNTS -----			
PER	2024 BUDGET		BUDGET
00	.00	2024	.00
01	.00	2024	.00
02	.00	2024	.00
03	.00	2024	.00
04	.00	2024	.00
05	.00	2024 Revised	.00
06	.00	2025 Estimate	.00
07	.00	2026 Estimate	.00
08	.00	2027 Estimate	.00
09	.00	2028 Estimate	.00
10	.00		
11	.00	2024 Memo Bal	.00
12	.00	2024 Encumbrance	.00
13	.00	2024 Requisition	.00
Tot:	.00		

----- ACCOUNT NOTES -----

** END OF REPORT - Generated by Terri L. Graham **

G/L ACCOUNT - MASTER INQUIRY

Org code: 510 Solid Waste Fund Type: B L
 Object code: 26821 Current Closure Post Closure Status: A
 Project code: Budgetary: N

Fund 510 Solid Waste Fund
 Function 00 No Function
 Cost Ctr 00000 No Cost Center
 Future 1 000 Future 1
 Future 2 00000 Future 2
 Future 3 00 Future 3
 Future 4 0000 Future 4

Full description: Current Closure Post Closure Short desc: curclosure

----- CURRENT YEAR MONTHLY AMOUNTS -----				
PER	ACTUAL	ENCUMBRANCE	BUD TRANSFER	BUDGET
00	-1,023,598.14	.00	.00	.00
01	.00	.00	.00	.00
02	.00	.00	.00	.00
03	.00	.00	.00	.00
04	.00	.00	.00	.00
05	.00	.00	.00	.00
06	.00	.00	.00	.00
07	.00	.00	.00	.00
08	.00	.00	.00	.00
09	.00	.00	.00	.00
10	.00	.00	.00	.00
11	.00	.00	.00	.00
12	.00	.00	.00	.00
13	.00	.00	.00	.00
Tot:	-1,023,598.14	.00	.00	.00

----- CURRENT YEAR TOTAL AMOUNTS -----			
Actual (Memo)	-1,023,598.14	Original Budget	.00
Encumbrances	.00	Budget Tranfr In	.00
Requisitions	.00	Budget Tranfr Out	.00
Total	-1,023,598.14	Carry Fwd Budget	.00
Available Budget	.00	Carry Fwd Bud Tfr	.00
Percent Used	.00	Revised Budget	.00
Inceptn to SOY	.00	Inceptn Orig Bud	.00
		Inceptn Revsd Bud	.00
Encumb-Last Yr	.00		.00
Actual-Last Yr	.00		.00
Estim-Actual	.00		.00
			.00
			.00

G/L ACCOUNT - MASTER INQUIRY

PER	ACTUAL	LAST YEAR MONTHLY AMOUNTS ENCUMBRANCE	BUDGET
00	-315,543.49	.00	.00
01	.00	.00	.00
02	.00	.00	.00
03	.00	.00	.00
04	.00	.00	.00
05	.00	.00	.00
06	.00	.00	.00
07	.00	.00	.00
08	.00	.00	.00
09	.00	.00	.00
10	.00	.00	.00
11	.00	.00	.00
12	.00	.00	.00
13	-708,054.65	.00	.00
Tot:	-1,023,598.14	.00	.00

----- PRIOR YEARS TOTAL AMOUNTS -----	
2022 Actual	-1,023,598.14
2022 Closed @ YE	-1,023,598.14
2022 Encumbrance	.00
2022 Memo Bal	-1,023,598.14
2021 Actual	-315,543.49
2020 Actual	-319,788.54
2019 Actual	.00
2018 Actual	.00
2017 Actual	.00
2016 Actual	.00
2015 Actual	.00
2014 Actual	.00
2013 Actual	.00

----- FUTURE YEAR AMOUNTS -----	
PER	2024 BUDGET
00	.00
01	.00
02	.00
03	.00
04	.00
05	.00
06	.00
07	.00
08	.00
09	.00
10	.00
11	.00
12	.00
13	.00
Tot:	.00

----- ACCOUNT NOTES -----

*** END OF REPORT - Generated by Terri L. Graham ***

Report:	Scale Transactions By	Revised for CY Rate	
Dates:	For the period: 10/1/2022 to 9/30/2023		
Codes:	L9E,L9,L7,L6-TRS,L6,L5-TRS,L5 - SAND,L5 - OIL,L5,L4-TRS,L4,L3-TRS,L3,L2-TRS,L2,L1P,L11,L10,L1-TRS,L1-ELBERTA,L1,L0E,L0		
Material	Tons	Revenue	Ticket Count
MAGNOLIA & TRANSFER			
Landfill Site: L			
L1	95,555.63	\$2,876,030.74	13,167
L10	321.01	\$12,588.05	34
L1-ELBERTA	652.96	\$19,440.48	84
L1P	4.79	\$378.01	103
L2	82,673.66	\$2,710,972.89	11,030
L3	1,711.66	\$30,789.45	700
L4	645.15	\$25,711.63	244
L5	21,252.49	\$848,509.75	1,235
L5S	1,006.97	\$55,383.35	98
L6	33.48	\$1,447.30	173
L7	1.39	\$55.60	1
L9	21.61	\$0.00	7
L9E	100.73	\$0.00	42
L1-TRS	4,030.10	\$119,899.79	426
L2-TRS	10,576.31	\$505,376.64	1,654
L3-TRS	0.94	\$31.02	1
L4-TRS	451.84	\$24,694.20	153
L5-TRS	184.70	\$10,113.76	40
L6-TRS	30.04	\$1,640.19	78
L1-BCSW	\$58.75	0	37
TOTALS	219,314.20	\$7,243,062.85	29,307
Compaction Ration 1,506 lbs/yd	2,000.00		
per CDG 9/5/2023	1,506.00		
	1.33		
FY2023 Capicity Used	291,253.92		