PASCO COUNTY FLORIDA
OPEN SPACES. VIBRANT PLACES.

WEST PASCO CLASS I LANDFILL
FINANCIAL ASSURANCE
CLOSURE AND LONG-TERM CARE ESTIMATES

DISPOSAL CELLS A1, A2, A3, A4, SW1, AND SW2

Facility I.D. Number 45799
Permit No. PA87-23

Prepared for:

Pasco County Public Infrastructure
14230 Hays Road
Spring Hill, FL 34610

Prepared by:

JMG Engineering, Inc.
3825 Henderson Blvd., Suite 604
Tampa, FL 33629

August 2023

JMG Engineering, Inc. has prepared this Financial Assurance Closure and Long-term Care Cost Estimates document for the Ash Monofill Cells and the Solid Waste Cells located at the West Pasco Solid Waste Facility (WACS No. 45799) in accordance with Rule 62-701.630, F.A.C. The cost estimates were completed using FDEP Form 62-701.900 (28) and signed by the authorized representative of the Owner of the facility and signed and sealed by the Engineer of Record. These forms are provided in Part 2 of this report.

Accompanying the cost estimate forms is a Cost Estimate Report provided in Part 3. The Report includes general information regarding the cost estimates, the assumptions and calculations used in preparing the cost estimates, and the unit cost references associated with each line item. The source information for the cost references and contractors' quotes used in Part 3 is provided in Part 4. The references to the landfill design used in Part 3 are provided in Part 5. JMG either requested unit costs from third party vendors/contractors, or used unit costs from RS Means® construction cost estimating software with unit costs adjusted for the Tampa, Florida area.

Unit cost estimates for closure and long-term care of the facility are being calculated in accordance with the February 2015 revisions to FDEP 62-701.630(3)(d).

PART 2

FINANCIAL ASSURANCE COST ESTIMATE FORMS

Print Form | Reset Form

Florida Department of Environmental Protection

Bob Martinez Center
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

DEP Form # 62-701.900(28), F.A.C.
Form Title: Closure Cost Estimating Form For Solid Waste Facilities
Effective Date: January 6, 2010
Incorporated in Rule 62-701.630(3), F.A.C.

CLOSURE COST ESTIMATING FORM FOR SOLID WASTE FACILITIES

Date of DEP Approval: _____

I. GENERAL INFORMATION:

Facility Name: West Pasco Class I Landfill - Solid Waste Disposal Cells WACS ID: 45799

Permit Application or Consent Order No.: PA87-23 Expiration Date: _____

Facility Address: 14230 Hays Road, Spring Hill, FL 34610

Permittee or Owner/Operator: Pasco County Utilities

Mailing Address: same

Latitude: 28 ° 22 ' 30 " Longitude: 82 ° 34 ' 00 "

Coordinate Method: _____ Datum: _____

Collected by: _____ Company/Affiliation: _____

Solid Waste Disposal Units Included in Estimate:

Phase / Cell	Acres	Date Unit Began Accepting Waste	Active Life of Unit From Date of Initial Receipt of Waste	If active: Remaining life of unit	If closed: Date last waste received	If closed: Official date of closing
SW1	10	Feb 1991	40	10		
SW2	10	Jan 2001	40	10		

Total disposal unit acreage included in this estimate: Closure: 20 Long-Term Care: 20

Facility type: (Check all that apply) ☒ Class I ☐ Class III ☐ C&D Debris Disposal ☐ Other: _____

II. TYPE OF FINANCIAL ASSURANCE DOCUMENT (Check type)

☐ Letter of Credit* ☐ Insurance Certificate ☒ Escrow Account
☐ Performance Bond* ☐ Financial Test ☐ Form 29 (FA Deferral)
☐ Guarantee Bond* ☐ Trust Fund Agreement

* - Indicates mechanisms that require the use of a Standby Trust Fund Agreement

Northwest District
160 Government Center
Pensacola, FL 32502-5794
850-595-8360

Northeast District
7825 Baymeadows Way, Ste. B200
Jacksonville, FL 32256-7590
904-807-3300

Central District
3319 Maguire Blvd., Ste. 232
Orlando, FL 32803-3767
407-894-7555

Southwest District
13051 N. Telecom Pky.
Temple Terrace, FL 33637
813-632-7600

South District
2295 Victoria Ave., Ste. 364
Fort Myers, FL 33901-3881
239-332-6975

Southeast District
400 N. Congress Ave., Ste. 200
West Palm Beach, FL 33401
561-681-6600

III. ESTIMATE ADJUSTMENT

40 CFR Part 264 Subpart H as adopted by reference in Rule 62-701.630, Florida Administrative Code, (F.A.C.) sets forth the method of annual cost estimate adjustment. Cost estimates may be adjusted by using an inflation factor or by recalculating the maximum costs of closure in current dollars. Select one of the methods of cost estimate ajustment below.

☐ **(a) Inflation Factor Adjustment** ☒ **(b) Recalculated or New Cost Estimates**

Inflation adjustment using an inflation factor may only be made when a Department approved closure cost estimate exists and no changes have occurred in the facility operation which would necessitate modification to the closure plan. The inflation factor is derived from the most recent Implicit Price Deflator for Gross National Product published by the U.S. Department of Commerce in its survey of Current Business. The inflation factor is the result of dividing the latest published annual Deflatory by the Deflator for the previous year. The inflation factor may also be obtained from the Solid Waste website www.dep.state.fl.us/waste/categories/swfr or call the Financial Coordinator at (850) 245-8706.

This adjustment is based on the Department approved closing cost estimate dated: _____

Latest Department Approved **Closing Cost** Estimate:		Current Year Inflation Factor, ***e.g. 1.02***		Inflation Adjusted Closing Cost Estimate:
_____	×	_____	=	_____

This adjustment is based on the Department approved long-term care cost estimate dated: _____

Latest Department Approved Annual **Long-Term Care** Cost Estimate:		Current Year Inflation Factor, ***e.g. 1.02***		Inflation Adjusted Annual Long-Term Care Cost Estimate:
_____	×	_____	=	_____

Number of Years of Long Term Care Remaining: × _____

Inflation Adjusted Long-Term Care Cost Estimate: = _____

Signature by: ☐ **Owner/Operator** ☒ **Engineer** (check what applies)

Signature

Jason Gorrie, President
Name & Title

8/29/2023
Date

(813) 605-0706
Telephone Number

3825 Henderson Blvd., Suite 604
Address

Tampa, FL 33629
City, State, Zip Code

jason@jmg-eng.com
E-Mail Address

IV. ESTIMATED CLOSING COST (check what applies)

☒ **Recalculated Cost Estimate** ☐ **New Facility Cost Estimate**

Notes: 1. Cost estimates for the time period when the extent and manner of landfill operation makes closing most ex
2. Cost estimate must be certified by a professional engineer.
3. Cost estimates based on third party suppliers of material, equipment and labor at fair market value.
4. In some cases, a price quote in support of individual item estimates may be required.

Description	Unit	Number of Units	Cost / Unit	Total Cost
1. Proposed Monitoring Wells	**(Do not include wells already in existence.)**			
	EA	0	$0.00	
			Subtotal Proposed Monitoring Wells:	
2. Slope and Fill (bedding layer between waste and barrier layer):				
Excavation	CY			
Placement and Spreading	CY	35,574	$2.00	$71,148.00
Compaction	CY	35,574	$3.48	$123,797.52
Off-Site Material	CY	35,574	$4.00	$142,296.00
Delivery	CY			
			Subtotal Slope and Fill:	$337,241.52
3. Cover Material (Barrier Layer):				
Off-Site Clay	CY			
Synthetics - 40 mil	SY	101,640	$4.95	$503,118.00
Synthetics - GCL	SY			
Synthetics - Geonet	SY			
Synthetics - Other (explain) Geocomposite	SY	101,640	$6.42	$652,528.80
			Subtotal Cover Material:	$1,155,646.80
4. Top Soil Cover:				
Off-Site Material	CY	88,935	$4.00	$355,740.00
Delivery	CY	88,935	$4.00	$355,740.00
Spread	CY	88,935	$2.00	$177,870.00
			Subtotal Top Soil Cover:	$889,350.00
5. Vegetative Layer				
Sodding	SY	101,640	$3.78	$384,199.20
Hydroseeding	AC			
Fertilizer	AC	21	$802.00	$16,842.00
Mulch	AC			
Other (explain)				
			Subtotal Vegetative Layer:	$401,041.20
6. Stormwater Control System:				
Earthwork	CY	29,472	$8.86	$261,121.92
Grading	SY			
Piping	LF	2,600	$11.26	$29,276.00
Ditches	LF			
Berms	LF	1,600		
Control Structures	EA	7	$2,850.23	$19,951.61
Other (explain) pipe trenches	CY	7,046	$8.86	$62,427.56
			Subtotal Stormwater Control System:	$372,777.09

Description	Unit	Number of Units	Cost / Unit	Total Cost
7. Passive Gas Control:				
Wells	EA			
Pipe and Fittings	LF			
Monitoring Probes	EA			
NSPS/Title V requirements	LS	1		
			Subtotal Passive Gas Control:	
8. Active Gas Extraction Control:				
Traps	EA			
Sumps	EA			
Flare Assembly	EA			
Flame Arrestor	EA			
Mist Eliminator	EA			
Flow Meter	EA			
Blowers	EA			
Collection System	LF			
Other (explain)				
			Subtotal Active Gas Extraction Control:	
9. Security System:				
Fencing	LF			
Gate(s)	EA			
Sign(s)	EA	1	$2,500.00	$2,500.00
			Subtotal Security System:	$2,500.00
10. Engineering:				
Closure Plan Report	LS	1	$120,000.00	$120,000.00
Certified Engineering Drawings	LS	1	$275,000.00	$275,000.00
NSPS/Title V Air Permit	LS	1		
Final Survey	LS	1	$20,000.00	$20,000.00
Certification of Closure	LS	1	$5,000.00	$5,000.00
Other (explain)				
			Subtotal Engineering:	$420,000.00

Description	Hours	Cost / Hour	Hours	Cost / Hour	Total Cost
11. Professional Services					
	Contract Management		Quality Assurance		
P.E. Supervisor	640	$150.0(	640	$150.0(	$192,000.00
On-Site Engineer			640	$125.0(	$80,000.00
Office Engineer	320	$125.0(	320	$125.0(	$80,000.00
On-Site Technician				$90.00	
Other (explain)	960	$50.00			$48,000.00
Admin Assistant					

Description	Unit	Number of Units	Cost / Unit	Total Cost
Quality Assurance Testing	LS	1	$50,000.00	$50,000.00
			Subtotal Professional Services:	$450,000.00

		Subtotal of 1-11 Above:	$4,028,556.61
12. Contingency	5 % of Subtotal of 1-11 Above		$201,427.83
		Subtotal Contingency:	$201,427.83
		Estimated Closing Cost Subtotal:	$4,229,984.44

Description	Total Cost
13. Site Specific Costs	
Mobilization	
Waste Tire Facility	
Materials Recovery Facility	
Special Wastes	
Leachate Management System Modification	
Other (explain) _____	
_____ Subtotal Site Specific Costs:	

TOTAL ESTIMATED CLOSING COSTS ($): $4,229,984.44

V. ANNUAL COST FOR LONG-TERM CARE

See 62-701.600(1)a.1., 62-701.620(1), 62-701.630(3)a. and 62-701.730(11)b. F.A.C. for required term length. For landfills certified closed and Department accepted, enter the remaining long-term care length as "Other" and provide years remaining.

(Check Term Length) ☐ 5 Years ☐ 20 Years ☒ 30 Years ☐ Other, ___ Years

Notes: 1. Cost estimates must be certified by a professional engineer.

2. Cost estimates based on third party suppliers of material, equipment and labor at fair market value.

3. In some cases, a price quote in support of individual item estimates may be required.

All items must be addressed. Attach a detailed explanation for all entries left blank.

Description	Sampling Frequency (Events / Year)	Number of Wells	(Cost / Well) / Event	Annual Cost
1. Groundwater Monitoring [62-701.510(6), and (8)(a)]				
Monthly	12			
Quarterly	4			
Semi-Annually	2	9	$1,100.00	$19,800.00
Annually	1			
			Subtotal Groundwater Monitoring:	$19,800.00
2. Surface Water Monitoring [62-701.510(4), and (8)(b)]				
Monthly	12			
Quarterly	4			
Semi-Annually	2			
Annually	1			
			Subtotal Surface Water Monitoring:	
3. Gas Monitoring [62-701.400(10)]				
Monthly	12			
Quarterly	4	6	$24.50	$588.00
Semi-Annually	2			
Annually	1			
			Subtotal Gas Monitoring:	$588.00
4. Leachate Monitoring [62-701.510(5), (6)(b) and 62-701.510(8)c]				
Monthly	12			
Quarterly	4			
Semi-Annually	2			
Annually	1			
Other (explain) EA	1	1	$400.00	$400.00
TCLP Analysis			Subtotal Leachate Monitoring:	$400.00

Description	Unit	Number of Units / Year	Cost / Unit	Annual Cost
5. Leachate Collection/Treatment Systems Maintenance				
Maintenance				
Collection Pipes	LF			
Sumps, Traps	EA			
Lift Stations	EA			
Cleaning	LS	1	$9,000.00	$9,000.00
Tanks	EA			

Description	Unit	Number of Units / Year	Cost / Unit	Annual Cost
5. (continued)				
Impoundments				
Liner Repair	SY			
Sludge Removal	CY			
Aeration Systems				
Floating Aerators	EA			
Spray Aerators	EA			
Disposal				
Off-site (Includes transportation and disposal)	1000 gallon	450	$6.08	$2,736.00
			Subtotal Leachate Collection / Treatment Systems Maintenance:	$11,736.00
6. Groundwater Monitoring Well Maintenance				
Monitoring Wells	LF			
Replacement	EA	4	$5,100.00	$20,400.00
Abandonment	EA			
			Subtotal Groundwater Monitoring Well Maintenance:	$20,400.00
7. Gas System Maintenance				
Piping, Vents	~~LF~~ LS	6	$3,500.00	$21,000.00
Blowers	EA			
Flaring Units	EA			
Meters, Valves	EA			
Compressors	EA			
Flame Arrestors	EA			
Operation	LS	1		
			Subtotal Gas System Maintenance:	$21,000.00
8. Landscape Maintenance				
Mowing	AC	20	$180.00	$3,600.00
Fertilizer	AC			
			Subtotal Landscape Maintenance:	$3,600.00
9. Erosion Control and Cover Maintenance				
Sodding	SY	4,840	$4.50	$21,780.00
Regrading	AC	0.1	$9,750.00	$975.00
Liner Repair	SY			
Clay	CY			
			Subtotal Erosion Control and Cover Maintenance:	$22,755.00
10. Storm Water Management System Maintenance				
Conveyance Maintenance	LS	1	$3,150.00	$3,150.00
			Subtotal Storm Water Management System Maintenance:	$3,150.00
11. Security System Maintenance				
Fences	LS	1	$1,210.00	$1,210.00
Gate(s)	EA	2	$40.00	$80.00
Sign(s)	EA			
			Subtotal Security System Maintenance:	$1,290.00

Description	Unit	Number of Units / Year	Cost / Unit	Annual Cost
12. Utilities	LS	1	$660.00	$660.00
			Subtotal Utilities:	$660.00
13. Leachate Collection/Treatment Systems Operation				
Operation				
P.E. Supervisor	HR			
On-Site Engineer	HR			
Office Engineer	HR			
OnSite Technician	HR	2,080	$35.00	$72,800.00
Materials	LS	1		
	Subtotal Leachate Collection/Treatment Systems Operation:			$72,800.00
14. Administrative				
P.E. Supervisor	HR			
On-Site Engineer	HR			
Office Engineer	HR			
OnSite Technician	HR	2,080	$25.00	$52,000.00
Other				
			Subtotal Administrative:	$52,000.00
			Subtotal of 1-14 Above:	$230,179.00
15. Contingency	10	% of Subtotal of 1-14 Above		$23,017.90
			Subtotal Contingency:	$23,017.90

Description	Unit	Number of Units / Year	Cost / Unit	Annual Cost
16. Site Specific Costs				
			Subtotal Site Specific Costs:	
			ANNUAL LONG-TERM CARE COST ($ / YEAR):	$253,196.90
			Number of Years of Long-Term Care:	30
			TOTAL LONG-TERM CARE COST ($):	$7,595,907.00

VI. CERTIFICATION BY ENGINEER

This is to certify that the Cost Estimates pertaining to the engineering features of this solid waste management facility have been examined by me and found to conform to engineering principles applicable to such facilities. In my professional judgment, the Cost Estimates are a true, correct and complete representation of the financial liabilities for closing and/or long-term care of the facility and comply with the requirements of Rule 62-701.630 F.A.C. and all other Department of Environmental Protection rules, and statutes of the State of Florida. It is understood that the Cost Estimates shall be submitted to the Department annually, revised or adjusted as required by Rule 62-701.630(4), F.A.C.

Signature

3825 Henderson Blvd., Suite 604
Mailing Address

Jason Gorrie, President
Name and Title (please type)

Tampa, FL 33629
City, State, Zip Code

8/29/2023
Date

jason@jmg-eng.com
E-Mail address (if available)

55341
Florida Registration Number

(813) 605-0706
Telephone Number

(please affix seal)

JASON M. GORRIE LICENSE No. 55341 STATE OF FLORIDA PROFESSIONAL ENGINEER

VII. SIGNATURE BY OWNER/OPERATOR

Signature of Applicant

14855 Softwind Lane
Mailing Address

Justin Roessler, Director
Name and Title (please type)

Spring Hill, FL 34610
City, State, Zip Code

jroessler@pascocountyfl.net
E-Mail address (if available)

(727) 856-0119
Telephone Number

Print Form Reset Form

Florida Department of Environmental Protection

Bob Martinez Center
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

DEP Form # 62-701.900(28), F.A.C.
Form Title: Closure Cost Estimating Form For Solid Waste Facilities
Effective Date: January 6, 2010
Incorporated in Rule 62-701.630(3), F.A.C.

CLOSURE COST ESTIMATING FORM FOR SOLID WASTE FACILITIES

Date of DEP Approval: _____

I. GENERAL INFORMATION:

Facility Name: West Pasco Class I Landfill - Ash Disposal Cells WACS ID: 45799

Permit Application or Consent Order No.: PA87-23 Expiration Date: _____

Facility Address: 14230 Hays Road, Spring Hill, FL 34610

Permittee or Owner/Operator: Pasco County Utilities

Mailing Address: same

Latitude: 28 ° 22 ' 30 " Longitude: 82 ° 34 ' 00 "

Coordinate Method: _____ Datum: _____

Collected by: _____ Company/Affiliation: _____

Solid Waste Disposal Units Included in Estimate:

Phase / Cell	Acres	Date Unit Began Accepting Waste	Active Life of Unit From Date of Initial Receipt of Waste	If active: Remaining life of unit	If closed: Date last waste received	If closed: Official date of closing
A1	10	Feb 1991	20	10		
A2	10	Dec 1996	20	10		
A3	10	Jan 2003	20	10		
A4	20	Jul 2009	40	20		

Total disposal unit acreage included in this estimate: Closure: 50 Long-Term Care: 50

Facility type: (Check all that apply) ☒ Class I ☐ Class III ☐ C&D Debris Disposal ☐ Other: _____

II. TYPE OF FINANCIAL ASSURANCE DOCUMENT (Check type)

☐ Letter of Credit* ☐ Insurance Certificate ☒ Escrow Account
☐ Performance Bond* ☐ Financial Test ☐ Form 29 (FA Deferral)
☐ Guarantee Bond* ☐ Trust Fund Agreement

* - Indicates mechanisms that require the use of a Standby Trust Fund Agreement

Northwest District
160 Government Center
Pensacola, FL 32502-5794
850-595-8360

Northeast District
7825 Baymeadows Way, Ste. B200
Jacksonville, FL 32256-7590
904-807-3300

Central District
3319 Maguire Blvd., Ste. 232
Orlando, FL 32803-3767
407-894-7555

Southwest District
13051 N. Telecom Pky.
Temple Terrace, FL 33637
813-632-7600

South District
2295 Victoria Ave., Ste. 364
Fort Myers, FL 33901-3881
239-332-6975

Southeast District
400 N. Congress Ave., Ste. 200
West Palm Beach, FL 33401
561-681-6600

III. ESTIMATE ADJUSTMENT

40 CFR Part 264 Subpart H as adopted by reference in Rule 62-701.630, Florida Administrative Code, (F.A.C.) sets forth the method of annual cost estimate adjustment. Cost estimates may be adjusted by using an inflation factor or by recalculating the maximum costs of closure in current dollars. Select one of the methods of cost estimate ajustment below.

☐ **(a) Inflation Factor Adjustment** ☒ **(b) Recalculated or New Cost Estimates**

Inflation adjustment using an inflation factor may only be made when a Department approved closure cost estimate exists and no changes have occurred in the facility operation which would necessitate modification to the closure plan. The inflation factor is derived from the most recent Implicit Price Deflator for Gross National Product published by the U.S. Department of Commerce in its survey of Current Business. The inflation factor is the result of dividing the latest published annual Deflatory by the Deflator for the previous year. The inflation factor may also be obtained from the Solid Waste website www.dep.state.fl.us/waste/categories/swfr or call the Financial Coordinator at (850) 245-8706.

This adjustment is based on the Department approved closing cost estimate dated: _____

Latest Department Approved **Closing Cost** Estimate:		Current Year Inflation Factor, ***e.g. 1.02***		Inflation Adjusted Closing Cost Estimate:
_____	×	_____	=	_____

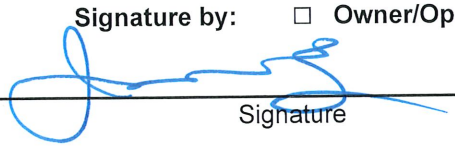
This adjustment is based on the Department approved long-term care cost estimate dated: _____

Latest Department Approved Annual **Long-Term Care** Cost Estimate:		Current Year Inflation Factor, ***e.g. 1.02***		Inflation Adjusted Annual Long-Term Care Cost Estimate:
_____	×	_____	=	_____

Number of Years of Long Term Care Remaining: × _____

Inflation Adjusted Long-Term Care Cost Estimate: = _____

Signature by: ☐ **Owner/Operator** ☒ **Engineer** (check what applies)



Signature

Jason Gorrie, Principal Engineer
Name & Title

8/29/2023
Date

(813) 605-0706
Telephone Number

3825 Henderson Blvd., Suite 604
Address

Tampa, FL 33629
City, State, Zip Code

jason@jmg-eng.com
E-Mail Address

IV. ESTIMATED CLOSING COST (check what applies)

☒ **Recalculated Cost Estimate** ☐ **New Facility Cost Estimate**

Notes: 1. Cost estimates for the time period when the extent and manner of landfill operation makes closing most ex
2. Cost estimate must be certified by a professional engineer.
3. Cost estimates based on third party suppliers of material, equipment and labor at fair market value.
4. In some cases, a price quote in support of individual item estimates may be required.

Description	Unit	Number of Units	Cost / Unit	Total Cost
1. Proposed Monitoring Wells	**(Do not include wells already in existence.)**			
	EA	0	$0.00	
			Subtotal Proposed Monitoring Wells:	
2. Slope and Fill (bedding layer between waste and barrier layer):				
Excavation	CY			
Placement and Spreading	CY	88,935	$2.00	$177,870.00
Compaction	CY	88,935	$3.48	$309,493.80
Off-Site Material	CY	88,935	$4.00	$355,740.00
Delivery	CY			
			Subtotal Slope and Fill:	$843,103.80
3. Cover Material (Barrier Layer):				
Off-Site Clay	CY			
Synthetics - 40 mil	SY	254,100	$4.95	$1,257,795.00
Synthetics - GCL	SY			
Synthetics - Geonet	SY			
Synthetics - Other (explain)	SY	254,100	$6.42	$1,631,322.00
Geocomposite			Subtotal Cover Material:	$2,889,117.00
4. Top Soil Cover:				
Off-Site Material	CY	177,870	$4.00	$711,480.00
Delivery	CY	177,870	$4.00	$711,480.00
Spread	CY	177,870	$2.00	$355,740.00
			Subtotal Top Soil Cover:	$1,778,700.00
5. Vegetative Layer				
Sodding	SY	266,805	$3.78	$1,008,522.90
Hydroseeding	AC			
Fertilizer	AC	21	$802.00	$16,842.00
Mulch	AC			
Other (explain)				
			Subtotal Vegetative Layer:	$1,025,364.90
6. Stormwater Control System:				
Earthwork	CY	73,680	$8.86	$652,804.80
Grading	SY			
Piping	LF	3,800	$11.26	$42,788.00
Ditches	LF			
Berms	LF			
Control Structures	EA	7	$2,850.00	$19,950.00
Other (explain)	CY	10,298	$8.86	$91,240.28
pipe trenches			Subtotal Stormwater Control System:	$806,783.08

Description	Unit	Number of Units	Cost / Unit	Total Cost
7. Passive Gas Control:				
Wells	EA			
Pipe and Fittings	LF			
Monitoring Probes	EA			
NSPS/Title V requirements	LS	1		
			Subtotal Passive Gas Control:	
8. Active Gas Extraction Control:				
Traps	EA			
Sumps	EA			
Flare Assembly	EA			
Flame Arrestor	EA			
Mist Eliminator	EA			
Flow Meter	EA			
Blowers	EA			
Collection System	LF			
Other (explain)				
			Subtotal Active Gas Extraction Control:	
9. Security System:				
Fencing	LF			
Gate(s)	EA			
Sign(s)	EA	1	$2,500.00	$2,500.00
			Subtotal Security System:	$2,500.00
10. Engineering:				
Closure Plan Report	LS	1	$120,000.00	$120,000.00
Certified Engineering Drawings	LS	1	$275,000.00	$275,000.00
NSPS/Title V Air Permit	LS	1		
Final Survey	LS	1	$20,000.00	$20,000.00
Certification of Closure	LS	1	$5,000.00	$5,000.00
Other (explain)				
			Subtotal Engineering:	$420,000.00

Description	Hours	Cost / Hour	Hours	Cost / Hour	Total Cost
11. Professional Services					
	Contract Management		Quality Assurance		
P.E. Supervisor	640	$150.0(	640	$150.0(	$192,000.00
On-Site Engineer			640	$125.0(	$80,000.00
Office Engineer	320	$125.0(	320	$125.0(	$80,000.00
On-Site Technician				$90.00	
Other (explain)	960	$50.00			$48,000.00
Admin Assistant					

Description	Unit	Number of Units	Cost / Unit	Total Cost
Quality Assurance Testing	LS	1	$50,000.00	$50,000.00
			Subtotal Professional Services:	$450,000.00

		Subtotal of 1-11 Above:	$8,215,568.78
12. Contingency	5 % of Subtotal of 1-11 Above		$410,778.44
		Subtotal Contingency:	$410,778.44
		Estimated Closing Cost Subtotal:	$8,626,347.22

Description		**Total Cost**
13. Site Specific Costs		
Mobilization		
Waste Tire Facility		
Materials Recovery Facility		
Special Wastes		
Leachate Management System Modification		
Other (explain) _____		
_____	Subtotal Site Specific Costs:	

TOTAL ESTIMATED CLOSING COSTS ($): $8,626,347.22

V. ANNUAL COST FOR LONG-TERM CARE

See 62-701.600(1)a.1., 62-701.620(1), 62-701.630(3)a. and 62-701.730(11)b. F.A.C. for required term length. For landfills certified closed and Department accepted, enter the remaining long-term care length as "Other" and provide years remaining.

(Check Term Length) ☐ 5 Years ☐ 20 Years ☒ 30 Years ☐ Other, ___ Years

Notes: 1. Cost estimates must be certified by a professional engineer.

2. Cost estimates based on third party suppliers of material, equipment and labor at fair market value.

3. In some cases, a price quote in support of individual item estimates may be required.

All items must be addressed. Attach a detailed explanation for all entries left blank.

Description	Sampling Frequency (Events / Year)	Number of Wells	(Cost / Well) / Event	Annual Cost
1. Groundwater Monitoring [62-701.510(6), and (8)(a)]				
Monthly	12			
Quarterly	4			
Semi-Annually	2	18	$1,100.00	$39,600.00
Annually	1			
			Subtotal Groundwater Monitoring:	$39,600.00
2. Surface Water Monitoring [62-701.510(4), and (8)(b)]				
Monthly	12			
Quarterly	4			
Semi-Annually	2			
Annually	1			
			Subtotal Surface Water Monitoring:	
3. Gas Monitoring [62-701.400(10)]				
Monthly	12			
Quarterly	4			
Semi-Annually	2			
Annually	1			
			Subtotal Gas Monitoring:	
4. Leachate Monitoring [62-701.510(5), (6)(b) and 62-701.510(8)c]				
Monthly	12			
Quarterly	4			
Semi-Annually	2			
Annually	1			
Other (explain) EA	1	1	$400.00	$400.00
TCLP Analysis			Subtotal Leachate Monitoring:	$400.00

Description	Unit	Number of Units / Year	Cost / Unit	Annual Cost
5. Leachate Collection/Treatment Systems Maintenance				
Maintenance				
Collection Pipes	LF			
Sumps, Traps	EA			
Lift Stations	EA			
Cleaning	LS	1	$9,000.00	$9,000.00
Tanks	EA			

Description	Unit	Number of Units / Year	Cost / Unit	Annual Cost
5. (continued)				
Impoundments				
Liner Repair	SY			
Sludge Removal	CY			
Aeration Systems				
Floating Aerators	EA			
Spray Aerators	EA			
Disposal				
Off-site (Includes transportation and disposal)	1000 gallon			
			Subtotal Leachate Collection / Treatment Systems Maintenance:	$9,000.00
6. Groundwater Monitoring Well Maintenance				
Monitoring Wells	LF			
Replacement	EA	9	$5,100.00	$45,900.00
Abandonment	EA			
			Subtotal Groundwater Monitoring Well Maintenance:	$45,900.00
7. Gas System Maintenance				
Piping, Vents	LF			
Blowers	EA			
Flaring Units	EA			
Meters, Valves	EA			
Compressors	EA			
Flame Arrestors	EA			
Operation	LS	1		
			Subtotal Gas System Maintenance:	
8. Landscape Maintenance				
Mowing	AC	70	$180.00	$12,600.00
Fertilizer	AC			
			Subtotal Landscape Maintenance:	$12,600.00
9. Erosion Control and Cover Maintenance				
Sodding	SY	12.1	$4.50	$54.45
Regrading	AC	0.4	$9,750.00	$3,900.00
Liner Repair	SY			
Clay	CY			
			Subtotal Erosion Control and Cover Maintenance:	$3,954.45
10. Storm Water Management System Maintenance				
Conveyance Maintenance	LS	1	$3,150.00	$3,150.00
			Subtotal Storm Water Management System Maintenance:	$3,150.00
11. Security System Maintenance				
Fences	LS	1	$1,210.00	$1,210.00
Gate(s)	EA	2	$40.00	$80.00
Sign(s)	EA			
			Subtotal Security System Maintenance:	$1,290.00

Description	Unit	Number of Units / Year	Cost / Unit	Annual Cost
12. Utilities	LS	1	$1,200.00	$1,200.00
			Subtotal Utilities:	$1,200.00
13. Leachate Collection/Treatment Systems Operation				
Operation				
P.E. Supervisor	HR			
On-Site Engineer	HR			
Office Engineer	HR			
OnSite Technician	HR	2,080	$35.00	$72,800.00
Materials	LS	1		
	Subtotal Leachate Collection/Treatment Systems Operation:			$72,800.00
14. Administrative				
P.E. Supervisor	HR			
On-Site Engineer	HR			
Office Engineer	HR			
OnSite Technician	HR	2,080	$25.00	$52,000.00
Other				
			Subtotal Administrative:	$52,000.00
			Subtotal of 1-14 Above:	$241,894.45
15. Contingency	10	% of Subtotal of 1-14 Above		$24,189.44
			Subtotal Contingency:	$24,189.44

Description	Unit	Number of Units / Year	Cost / Unit	Annual Cost
16. Site Specific Costs				
			Subtotal Site Specific Costs:	
			ANNUAL LONG-TERM CARE COST ($ / YEAR):	$266,083.90
			Number of Years of Long-Term Care:	30
			TOTAL LONG-TERM CARE COST ($):	$7,982,516.85

VI. CERTIFICATION BY ENGINEER

This is to certify that the Cost Estimates pertaining to the engineering features of this solid waste management facility have been examined by me and found to conform to engineering principles applicable to such facilities. In my professional judgment, the Cost Estimates are a true, correct and complete representation of the financial liabilities for closing and/or long-term care of the facility and comply with the requirements of Rule 62-701.630 F.A.C. and all other Department of Environmental Protection rules, and statutes of the State of Florida. It is understood that the Cost Estimates shall be submitted to the Department annually, revised or adjusted as required by Rule 62-701.630(4), F.A.C.

Signature

3825 Henderson Blvd., Suite 604
Mailing Address

Jason Gorrie, President
Name and Title (please type)

Tampa, FL 33629
City, State, Zip Code

8/29/2023
Date

jason@jmg-eng.com
E-Mail address (if available)

55341
Florida Registration Number

(813) 605-0706
Telephone Number

(please affix seal)

JASON M. GORRIE LICENSE No. 55341 STATE OF FLORIDA PROFESSIONAL ENGINEER

VII. SIGNATURE BY OWNER/OPERATOR

Signature of Applicant

14855 Softwind Lane
Mailing Address

Justin Roessler, Director
Name and Title (please type)

Spring Hill, FL 34610
City, State, Zip Code

jroessler@pascocountyfl.net
E-Mail address (if available)

(727) 856-0119
Telephone Number

PART 3

COST ESTIMATE REPORT

CLOSURE COST ESTIMATES REPORT

August 2023

Pursuant to Rule 62-701.630(4)(b) F.A.C., unit cost estimates for closure and long-term care of the facility are being calculated in accordance with the February 2015 revisions to FDEP 62-701.630(3)(d), F.A.C. Note that some of the quantities have been obtained from previously calculated and approved Financial Assurance Cost Estimates (FACE).

GENERAL INFORMATION AND ASSUMPTIONS

Ash Monofill Cells (A1, A2, A3, and A4)

Surface area of Ash Monofill Cells = ~ 50 acres

For Closure Items 2 through 4, assume an overall loss factor of 5% to count for soil losses & testing, geosynthetics losses & testing, and miscellaneous materials uses (such as installation of anchor trenches) during construction.

Geosynthetics:

Area (incorporating 5% loss factor) = 52.5 acres = 2,286,900 ft^2 = 254,100 yd^2

Soils:

2,286,900 ft^2 x 0.25 ft (3") cover = 571,725 ft^3 / 27 = 21,175 yd^3
2,286,900 ft^2 x 0.5 ft (6") cover = 1,143,450 ft^3 / 27 = 42,350 yd^3
2,286,900 ft^2 x 1.0 ft (12") cover = 2,286,900 ft^3 /27 = 84,700 yd^3
2,286,900 ft^2 x 2.0 ft (24") cover = 4,573,800 ft^3/27 = 169,400 yd^3

Solid Waste Cells (SW-1 and SW-2)

Surface area of Solid Waste Cells = ~20 acres

For Closure Items 2 through 4, assume an overall loss factor of 5% to count for soil losses & testing, geosynthetics loses & testing, and miscellaneous materials uses (such as installation of anchor trenches) during construction. Following quantities for geosynthetics & soils are calculated using 5% loss factor.

Geosynthetics:

Area (incorporating 5% loss factor) = 21 acres = 914,760 ft^2 = 101,640 yd^2

Soils:

914,760 ft^2 x 0.25 ft (3") cover = 228,690 ft^3 / 27 = 8,470 yd^3
914,760 ft^2 x 0.5 ft (6") cover = 457,380 ft^3 / 27 = 16,940 yd^3
914,760 ft^2 x 1.0 ft (12") cover = 914,760 ft^3 /27 = 33,880 yd^3
914,760 ft^2 x 2.5 ft (30") cover = 2,286,900 ft^3/27 = 84,700 yd^3

Unit Cost Estimations and Calculations:

All unit costs are explained in the following parts for each item. The RS Means® 3rd Quarter 2023 cost estimating software was used to estimate some unit costs. The cost references third party contractors' quotes, recent construction costs at nearby landfills, and RS Means® pages have been provided in Part 4.

CLOSURE COSTS

Item No. 1 Proposed Monitoring Wells

No additional monitoring wells are proposed for closure of either the ash monofill cells or the solid waste cells.

Item No. 2 Slope and Fill

The slope and intermediate cover will be maintained during the operation of the landfill. During closure, there will be a need to shape and compact the intermediate cover existing at the time of closure. The currently approved closure design for the ash cells is depicted in **Figure 1** and the currently approved closure design for the solid waste cells is depicted in **Figure 2**. These design concepts were used to generate grading/compaction costs associated with the intermediate cover and cap foundation layer. Soil quantities were increased by an additional 5% to account for shrinkage & bulking losses.

Ash Cells (A1, A2, A3, and A4): Quantity of 12" soil fill (intermediate cover + cap foundation layer) = 84,700 CY * 1.05 = 88,935 CY

Solid Waste Cells (SW1 and SW2): Quantity of 12" soil fill (intermediate cover + cap foundation layer) = 33,880 CY * 1.05 = 35,574 CY

Off-site soils will be purchased and delivered for closure purposes. Unit cost estimates are based on a third party quotations and on RS Means®.

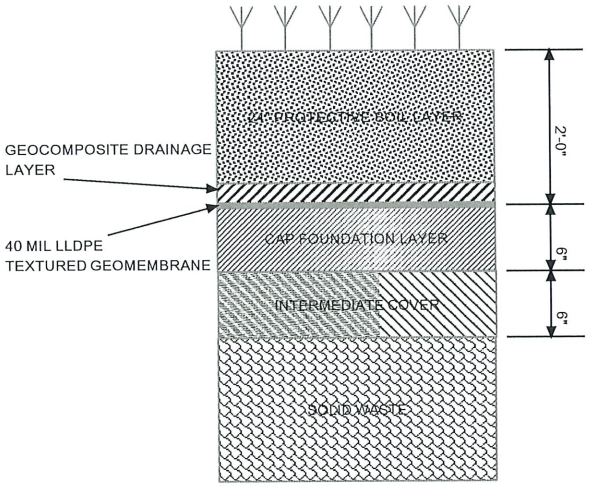


Figure 1
Permitted Ash Cell Closure Cap Design

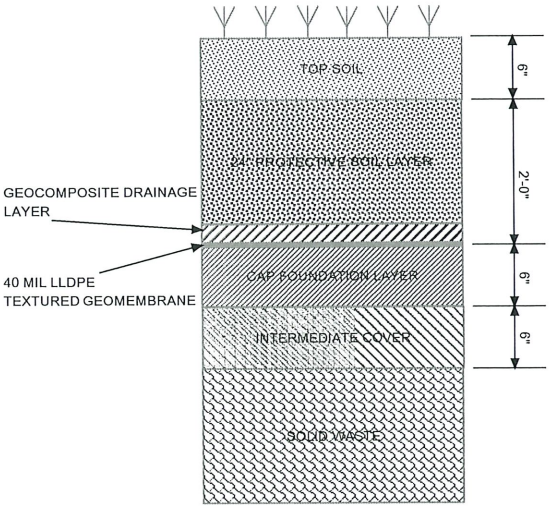


Figure 2
Permitted SW Cell Closure Cap Design

Item No. 3 Barrier Layer

The landfill barrier layers will consist of a layer of 40-mil textured LLDPE (linear low-density polyethylene) geomembrane and a geocomposite drainage layer, as depicted in Figures 1 and 2

Ash Cells (A1, A2, A3, and A4): Quantity of geosynthetics = 254,100 SY

Solid Waste Cells (SW1 and SW2): Quantity of geosynthetics = 101,640 SY

Geosynthetics costs are based on bid pricing by a third party contractor. To verify this cost, third party contractors' quotations for landfill closure projects at similar landfill facilities in Florida were obtained and compared. The estimates used to determine unit cost for the installed geosynthetics are provided in Part 4 of this document.

Item No. 4 Final Cover Material

The quantity for this item was based on 24 inches of top vegetative soil layer above the geosynthetics for the Ash Cells and 30 inches of top vegetative soil layer above the geosynthetics for the Solid Waste Cells. Also, soil quantities were increased by additional 5% to count for shrinkage & bulking losses.

Ash Cells (A1, A2, A3, and A4): Quantity of 24" topsoil layer = 169,400 CY * 1.05 = 177,870 CY

Solid Waste Cells (SW1 and SW2): Quantity of 30" topsoil layer = 84,700 CY * 1.05 = 88,935 CY

Topsoil cost is based on bid pricing by a third party contractor. The bid price included the costs of excavation, transportation, placement, and grading. Compaction unit pricing was obtained from the RS Means® software.

Item No. 5 Vegetative Cover

When closed, the landfill will be covered with 24" of protective soil (accounted for in Item 4 above) with the upper 6" capable of supporting vegetative growth. The upper layer will be sodded.

Ash Cells (A1, A2, A3, and A4): Quantity of sod placed on top of 24" soil layer = 254,100 SY * 1.05 = 266,805 SY

Solid Waste Cells (SW1 and SW2): Quantity of sod placed on top of 6" soil layer = 96,800 SY * 1.05 = 101,640 SY

Sodding cost is based on a quotation from a local landscaping and general site development contractor.

Item No. 6 Stormwater Control Systems

At closure, the interstices between all existing cells will be filled, thus creating a single merged ash cell and a single merged solid waste cell. The stormwater control systems for each merged cell will ultimately be designed to shed water from the horizontal surfaces to the existing perimeter swale system. The system components used to accomplish this will include construction of new berms, downchutes, and control structures similar to that depicted in **Figure 3**. For financial planning purposes[1], is assumed that the number of downchute structures at final closure for each cell will be consistent with that depicted in Figure 3.

[1] Until Final Closure Design of the merged cells is complete, the total number and length of stormwater downcomer structures can only be estimated.

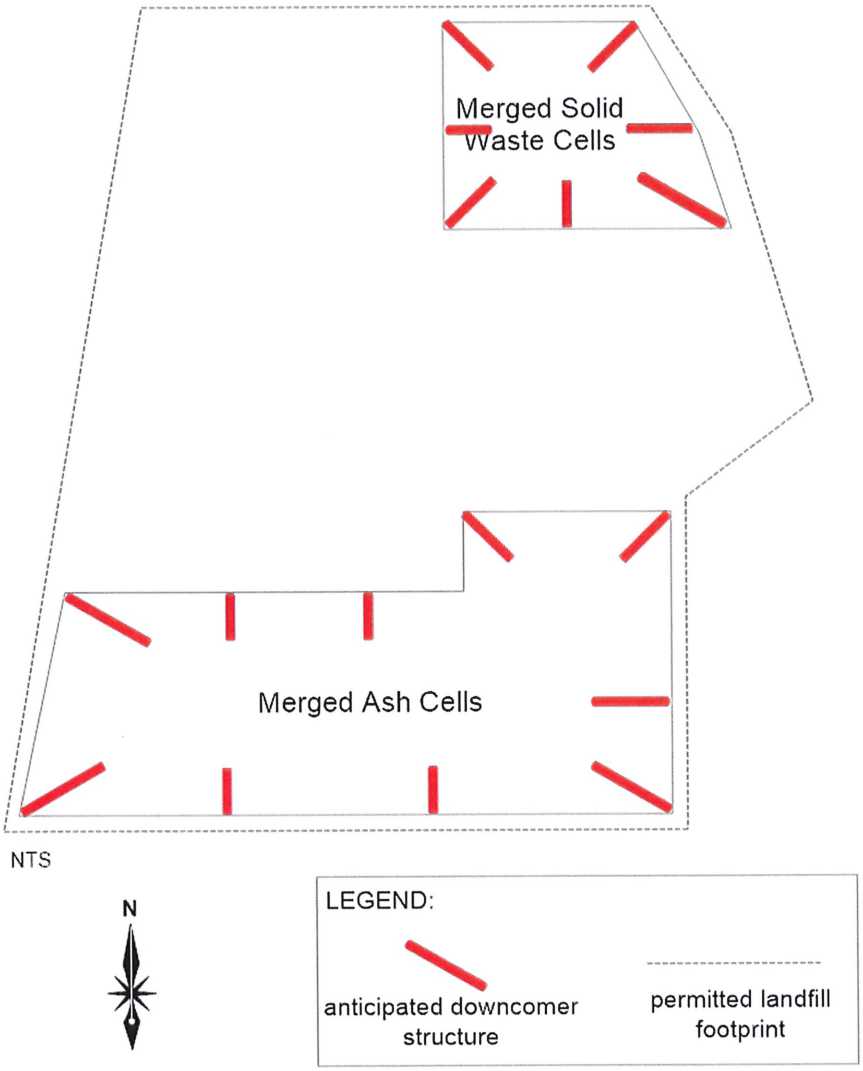


Figure 3
Approximation of Stormwater Downcomer Structures at Closure

Table 1 Conceptual Stormwater Downchute Control System at Closure			
Disposal Cell	Approximate Footprint (Acres)	Anticipated Number of Downchutes	Approximate Total Linear Feet
Merged Ash Cells	110	10	3,800
Merged Solid Waste Cells	50	7	2,660

A typical downchute is comprised of three major components: 24" corrugated HDPE pipe, a mitered end section at the inlet, and an FDOT Index 261 endwall at the discharge (see Part 5). The earthwork associated with the anticipated stormwater control systems/structures includes perimeter berms and trenching. For the ash cells, the estimated volume of earthwork was determined to be 18.42 cubic yards

per linear foot of berm, with an estimated 4,000 linear feet of berms; and 2.71 cubic yards per linear foot of downchutes (pipe trenching), with an estimated 3,800 linear feet of downchutes.

Stormwater Control System Components Ash Monofill Cells (A1, A2, A3, A4)					
Item	Component	Quantity	Unit	Unit Cost	Total
Control Structure	Fabriform Riprap	1,500	SY	$85.66	$128,490
Control Structure	FDOT Index 261 Endwall	10	EA	$2,850	$28,500
Downchute	12" Corrugated HDPE Pipe	3,800	LF	$11.26	$42,788
Downchute	Excavation and Fill – pipe trenches	10,298	CY	$8.86	$91,240
Diversion Berm	Excavation and Fill	4,000 (73,680)	LF (CY)	$8.86	$652,804

For the solid waste cells, the estimated volume of earthwork was determined to be 18.42 cubic yards per linear foot of berm, with an estimated 1,600 linear feet of berms; and 2.71 cubic yards per linear foot of downchutes (pipe trenching) with an estimated 2,600 linear feet of downchutes.

Stormwater Control System Components Solid Waste Cells (SW1, SW2)					
Item	Component	Quantity	Unit	Unit Cost	Total
Control Structure	Fabriform Riprap	1,050	SY	$85.66	$89,943
Control Structure	FDOT Index 261 Endwall	7	EA	$2,850	$19,950
Downchute	12" Corrugated HDPE Pipe	2,600	LF	$11.26	$29,276
Downchute	Excavation and Fill – pipe trenches	7,046	CY	$8.86	$62,428
Diversion Berm	Excavation and Fill	1,600 (29,472)	LF (CY)	$8.86	$261,122

Item No. 7 Passive Gas Control

Because no putrescible waste will be placed in the ash cells, there is no potential for the generation of landfill gas and no gas control systems are envisioned.

The gas collection system for the solid waste cells, and any additional passive vents that must be installed in the future, is considered to be an operational cost, therefore, no additional closure costs are included.

Item No. 8 Active Gas Extraction Control

Because no putrescible waste will be placed in the ash cells, there is no potential for the generation of landfill gas and no gas control systems are envisioned.

The gas collection system for the solid waste cells is considered to be an operational cost, therefore, no additional closure costs are included.

Item No. 9 Security System

Perimeter fencing, gates and signs already exist at the facility. A $2,500 lump sum is allocated in the cost estimates for additional signs or fence modifications required at the time of closure.

Item No. 10 Engineering

The engineering costs associated with closing the ash cells and the solid waste cells is estimated to be approximately $420,000.

Item No. 11 Professional Services

The cost for professional services related to contract management and quality assurance for closure is estimated to be approximately $450,000.

Item No. 12 Contingency

A contingency of 5% is added to the subtotal of items 1 through 11.

Item No. 13 Site Specific Costs

There are no Site Specific Costs identified at this time

LONG TERM CARE COST ESTIMATE

(Note: These estimates are for the entire Class I Landfill, inclusive of A1, A2, A3, A4, SW1, and SW2)

August 2023

1. **Groundwater Monitoring [62-701.510 (6), and (8)(a)]**

   The West Pasco Class I Landfill has 27 groundwater monitoring wells (18 associated with the ash cells and 9 associated with the solid waste cells) that are sampled semi-annually. Sampling and analysis is contracted out to a third party. Included in Part 4 are the unit costs estimates provided by the currently utilized third party (SCS Engineers) to obtain the required groundwater samples and to analyze them for the required constituents. Annual groundwater sampling and analysis is estimated to be **$60,000.**

2. **Surface Water Monitoring [62-701.510(4), and (8)(b)]**

   It is not anticipated that the existing stormwater system will discharge from the site. Accordingly, there is no cost associated with surface water monitoring.

3. **Gas Monitoring [62-701.400(10)]**

   Landfill gas from the solid waste cells is monitored at 6 gas monitoring locations on a quarterly basis. Sample analysis is conducted in-situ, so the only costs associated with the gas monitoring program are employee time and mileage. Annual costs associated with the gas monitoring program are:

   - Quarterly samples (four hours on site at $25/hr, four 30-mile trips @ $0.65/mile) = $488 (add $100 for conservancy)

   Annual gas monitoring is estimated to be approximately **$588.**

4. **Leachate Monitoring [62-701.510(5),(6)(b) and 62-701.510(8)(c).**

   Currently, leachate is collected and periodically hauled off-site for disposal. The disposal site requires an annual demonstration that the leachate does not exhibit the toxicity characteristic defined at 40 CFR 261.24. The annual cost to conduct a TCLP analysis is approximately $400.

   Annual leachate monitoring is estimated to be **$400.**

5. **Leachate Collection/Treatment Systems Maintenance**

   Routine maintenance of the leachate collection system is a high-pressure cleaning of all laterals and collection mains every five years. A third-party contractor recently conducted this maintenance at a cost of $21,700 (see **Part 4**). Though not deemed necessary following the last routine pressure cleaning, it is possible that additional video-inspection *could* become necessary

in the future. Therefore, for purposes of estimating long-term care costs, Pasco County will apply a safety factor to this estimate and assume an annual cost of **$9,000** per year for the ash cells and **$9,000** per year for the solid waste cells.

Leachate from the solid waste cells is pumped directly to the adjacent Shady Hills Wastewater Treatment Facility from four collection manholes. The current price charged by the Shady Hills Wastewater Treatment Facility is approximately $6.08/thousand gallon. The nature of the leachate from the ash cells prohibit disposal at the Shady Hills WWTP. Leachate from the ash cells is collected in a 2 million gallon above ground storage tank and disposed through an on-site injection well.

Once the landfill (both the ash cells and the solid waste cells) is in long term care, the amount of leachate generated will be minimal because of the landfill cover. To approximate the amount of leachate that will be generated following installation of the final cover systems, leachate generation rates for the closed East Pasco Class I landfill were reviewed. The East Pasco Landfill was used for this analysis because the closure design is similar to that anticipated for the West Pasco landfill. The portion of the East Pasco Landfill that incorporates a leachate collection system is approximately 80 acres in size. Monthly leachate generation rates for East Pasco show that the average monthly volume of leachate collected in the capped and closed landfill is approximately 150,000 gallons per month. Extrapolating this value out over a 12-month period results in an estimated annual leachate generation rate of 1.8 million gallons at the closed 80 acre East Pasco landfill, or 22,500 gallons per acre.

At $6.08/ thousand gallon for disposal, this equates to approximately **$2,736** per year in leachate disposal costs for the 20 acre West Pasco solid waste cells. Annual costs associated with the leachate generated by the ash cells include labor to maintain the injection well and administrative costs to maintain compliance with the injection well regulatory requirements. A conservative value of **$50,000** per year is assumed to maintain and keep the injection well operational.

6. Groundwater Monitoring Well Maintenance

The RS Means® estimating software reports that the construction of a new well in the Tampa area, installed to a depth of approximately 30 feet (the average depth of a surficial aquifer monitoring well at the site) is approximately $3,800. Applying a safety factor and a well abandonment factor, JMG assumes a unit cost of $5,100 per well. Assuming that half of the existing monitoring wells will be replaced at some point during the 30-year long term care period, total replacement cost will be $137,700 ($5,100 x 4 solid waste cell wells and 19 ash cell wells). For simplicity, it is conservatively assumed that a new well will be installed every other year over the 30 year long term care period.

7. Gas System Maintenance

The gas monitoring system at SW-1 and SW-2 consists of passive vents designed to reduce the potential for lateral gas migration beyond the property boundary. The estimated cost to design, permit, and construct a passive vent is assumed to be approximately $17,500 (based on installation of passive vents at the East Pasco Class I Landfill). Assuming that routine maintenance over the course of the 30-year long term care period will require replacement of a single vent every five years, the estimated annual cost for gas system maintenance is assumed to be **$3,500** ($17,500 / 5 years).

8. **Landscape Maintenance**

Pasco County Utilities will contract out the mowing and landscape services necessary at the landfill. **Part 4** provides a Pasco County Bid Tabulation for a county-wide Request for Bid associated with the landscape maintenance activities. The prevailing bidder provided a cost of $18/acre and the estimated acreage will be approximately 70 acres (20 for the solid waste cells and 50 for the ash cells). JMG assumes a conservative value of $20/acre. Assuming a mowing frequency of 9 times per year, the annual cost associated with landscape maintenance is **$3,600** ($20/acre x 20 acres x 9 events/year) for the solid waste cells and **$22,500** ($20/acre x 50 acres x 9 events/year) for the ash cells.

9. **Erosion Control and Cover Maintenance**

It is estimated that approximately 0.5% of the landfill surface area requires re-sodding every year. This equates to approximately 3.5 acres (1.0 acre for the solid waste cells and 2.5 acres for the ash cells) of sod per year. Assuming a conservative cost for sod of $0.50 per square foot, the total estimated annual cost for re-sodding is approximately **$76,230** for the solid waste cells and the ash cells combined.

To estimate the amount the amount of cover soil, it is assumed that 6 inches of soil will need to be placed and graded for every 0.125 acres of sod placed each year. This results in a required volume of 0.4 acres x 0.5 ft x 43,560 ft^2/acre = 8,712 ft^3 = 325 cubic yds. Assuming a conservative unit rate of $10/$yd^3$, the total annual cost for soil is estimated to be **$3,250**.

The estimated total annual cost for cover soil and sod is approximately **$78,480**

10. **Stormwater Management System Maintenance**

In order to maintain the stormwater system in its current capacity of precluding off-site discharges, it will be necessary to maintain the drainage swale system by removing vegetation from the swales. To accomplish this, it is assumed that a portion of the annual landscape maintenance costs can be applied to the stormwater system. For purposes of this estimate, it is assumed that annual swale maintenance can be achieved at approximately 25% of the annual landscape maintenance cost, or approximately **$29,400.**

11. **Security System Maintenance**

The site security system consists of a 6' chain link fence and multiple rolling chain-link gates. It is estimated that there will be approximately 50 feet of fence that must be replaced each year for the 30 years of long term care, at a cost of approximately $25 per linear foot. In addition, it is

anticipated that 2 gates will need to be replaced at least once in the next 30 years. This results in an annual estimated cost of **$1,290** (50 feet x $25/ft + $1,200/30 years).

12. Utility Costs

It is assumed that electricity from the Waste-to-Energy Facility will not be available during the long term care period of the landfill and that electrical power to operate the leachate pumps and other electrical equipment must be purchased from the local electric utility. A review of annual purchases from Withlacoochee Electrical Cooperative (included in Part 4) shows that the site currently purchases approximately **$2,300** worth of electricity annually. For convenience it will be assumed that $1,640 is associated with the ash cells and $660 is associated with the solid waste cells.

13. Leachate Collection/Treatment System Operation

It is assumed that a full-time operator will be assigned to the landfill throughout the closure period to maintain the leachate collection system and perform daily site security functions. At a fully loaded labor rate of $35/hr, this results in an annual cost of approximately **$145,600** per year ($72,800 for the solid waste cells and $72,800 for the ash cells).

14. Administrative

In addition to the full-time operator detailed in Item 13 above, it is assumed that a full-time administrative assistant will be employed by the County at the landfill. At a fully loaded rate of $25/hr, this results in an annual cost of approximately **$104,000** per year ($52,000 for the solid waste cells and $52,000 for the ash cells).

PART 4

UNIT COST REFERENCES

2022 - Azland Closure Phases 1 & 2 (13.6 acres)

Bid Item	Unit	Quantity Estimate	Cost Estimate		Total Cost
Slope and Fill (Bedding Layer Between waste and Barrier Layer)					
Slope Fill - Excavation	CY	22,380	$ 4.00	$ [1]	89,520
Slope Fill - Place & Spread	CY	22,380	$ 2.00	$	44,760
Cover Material (Barrier Layer)					
40 mil HDPE - material	SY	67,130	$ 3.51	$ [2]	235,626
40 mil HDPE - Installation	SY	67,130	$ 1.44	$	96,667
Top Soil Cover Material (24" Protective Cover with Upper 6" to Support Vegetative Growth)					
Material - Delivery (Excavation)	CY	22,380	$ 4.00	$ [3]	89,520
Material - Place & Spread	CY	22,380	$ 2.50	$	55,950
Vegetative Layer					
Hydroseeding	Acre	13.8	$ 3,500.00	$	48,300
Fertilizer	Acre	13.8	$ 1,500.00	$	20,700
Passive Gas Control					
Wells - (Shallow passive system)	each	6.0	$ 6,500.00	$	39,000
Site Specific Costs					
Mobilization	each	1.0	$ 75,000.00	$	75,000

NOTES:
1. Materials for Slope/Fill and Top Soil (protective Cover shall be obtained from either adjacent Phase 3 or Phase 4 design area or from adjacent designated 40-acre restrictive reserve borrow area for closure use.
2. Quantities and costs are estimates provided at time of review.

Source: Comanco, Inc. email dated 8/9/2023

1: Closure, Slope and Fill
2: Closure, Cover Material (synthetics)
3: Closure, Top Soil Cover (delivery and spread)

Jason Gorrie

From: John Power
Sent: Tuesday, August 15, 2023 9:32 AM
To: Jason Gorrie
Subject: FW: Materials Costs

Hope this suffices, see below email from Daniels Construction.

From: BJ <bj@mdanielinc.com>
Sent: Monday, August 14, 2023 2:53 PM
To: John Power <john@jmg-eng.com>
Subject: Materials Costs

Good Afternoon,

Per our conversation, the pricing of materials is as follows:

Top Soil Cover - $4.00 CY
Sod (Bahia) - $.42 SF

Thank you!

BJ Phillips
Sec / Tres

M. Daniel Construction, Inc
352.796.6930

Closure, Vegetative layer (sodding)

Long Term Care, Erosion Control and Cover Maintenance (sodding)

Cost Estimate Report

Date: 08/23/2023

Spring Hill, FL

14230 Hays Road

Class III Closure Costs

Year 2023 Quarter 3

Unit Detail Report

Prepared By: Jason Gorrie JMG Engineering, Inc.

LineNumber	Description	Quantity	Unit	Total Incl. O&P	Ext. Total Incl. O&P
Division 31 Earthwork					
313219161510	Geosynthetic soil stabilization, geotextile fabric, woven, heavy duty, 600 lb. tensile strength	101,640.00	S.Y.	$6.42	$652,528.80
Division 31 Earthwork Subtotal					**$652,528.80**
Subtotal					**$652,528.80**
General Contractor's Markup on Subs				**0.00%**	**$0.00**
Subtotal					**$652,528.80**
General Conditions				**0.00%**	**$0.00**
Subtotal					**$652,528.80**
General Contractor's Overhead and Profit				**0.00%**	**$0.00**
Grand Total					**$652,528.80**

Cover Material (Barrier Layer), Synthetics - (Other) Geocomposite

Cost Estimate Report

Date: 08/18/2023

Spring Hill, FL

14230 Hays Road

Class III Closure Costs

Year 2023 Quarter 3

Unit Detail Report

Prepared By: Jason Gorrie JMG Engineering, Inc.

LineNumber	Description	Quantity	Unit	Total Incl. O&P	Ext. Total Incl. O&P
Division 31 Earthwork					$117,902.40
312323237540	Compaction, 4 passes, 24" wide, 6" lifts, walk behind, vibrating roller	33,880.00	B.C.Y.	$3.48	$117,902.40
Division 31 Earthwork Subtotal					$117,902.40
Subtotal				7.00%	$0.00
General Contractor's Markup on Subs					$117,902.40
Subtotal				0.00%	$0.00
General Conditions					$117,902.40
Subtotal				5.00%	$5,895.12
General Contractor's Overhead and Profit					$123,797.52

Grand Total

Closure, Slope and Fill (compaction)

Cost Estimate Report

Date: 08/18/2023

Spring Hill, FL

14230 Hays Road

Class III Closure Costs

Year 2023 Quarter 3

Unit Detail Report

Prepared By: Jason Gorrie JMG Engineering, Inc.

LineNumber	Description	Quantity	Unit	Total Incl. O&P	Ext. Total Incl. O&P
Division 32	**Exterior Improvements**				
329219147000	Seeding athletic fields, apply fertilizer, 800 lb./acre	8.00	Ton	$1,480.87	$11,846.96
329219147025	Seeding athletic fields, apply fertilizer, mechanical spread	21.00	Acre	$237.96	$4,997.16
Division 32	**Exterior Improvements Subtotal**				**$16,844.12**
Subtotal					**$16,844.12**
General Contractor's Markup on Subs				**0.00%**	**$0.00**
Subtotal					**$16,844.12**
General Conditions				**0.00%**	**$0.00**
Subtotal					**$16,844.12**
General Contractor's Overhead and Profit				**0.00%**	**$0.00**
Grand Total					**$16,844.12**

Closure, Vegetative Layer (fertilizer)

Source: Pasco County Task Order 1-23 awarded to SCS Engineers

sampling event will be added to the semi-annual report within 45 days of receipt of final results from the laboratory.

The final deliverables to the County following each of the compliance sampling events will include the following:

- Semi-Annual report for the sampling event
- One electronic correspondence containing the following files:
  - Water level measurement sheets, calibration records, and field sampling logs.
  - Laboratory analytical reports.
  - Parameter Monitoring Reports in ADaPT format.

SCS will submit an electronic file of each report on behalf of the County to the FDEP.

ASSUMPTIONS AND LIMITATIONS

The scope of services does not include any activities not explicitly listed herein. This scope of services and fee are based on the following assumptions:

- This scope is based on previously submitted work by others, specifically well information and purge data. In the event previous data or assumptions are incorrect, SCS will notify the County to resolve any issues.
- SCS will be allowed access to the wells during regular working hours (7:00 am to 5:00 pm).
- This includes one re-sampling event per semi-annual event. If additional re-sampling is needed, it will be discussed with the County and SCS will prepare a change order.
- This assumes some monitoring wells will be dry and samples will be collected and analyzed from 27 monitoring wells. Analysis of additional monitoring well samples will be invoiced at a rate of $500 per sample and the effort for a technician to collect the sample invoiced at a rate of $95 per hour.

COMPENSATION

SCS will perform this scope of services on a lump-sum fee, percent-complete-by-task basis. Table 4 shows the fees for each task.

Table 4. Compensation

Task	Description	Cost
Task 1	Semi-Annual Sampling	$22,270.00
Task 2	Laboratory Analysis and Review	$27,810.00
Task 3	Reporting	$9,380.00
TOTAL		$59,460.00

Long Term Care: Groundwater Monitoring (proration to 13 well semi-annually = $29000

FLORIDA JETCLEAN

HIGH PRESSURE WATER JETTING - PIPELINE VIDEO INSPECTION SERVICES
PIPE LOCATING – NO DIG POINT REPAIRS - VACUUM TRUCK SERVICES

1660 Sea Breeze Drive
Tarpon Springs, FL 34689
www.floridajetclean.com

TEL : 800-226-8013
FAX : 813-926-4616

PROPOSAL

DATE : 8/1/2023
TO : John Power – JMG Engineering
FROM : Ralph Calistri (floridajetclean@yahoo.com)
SUBJECT : Pasco County Landfills - 2023 Leachate Pipe Jetting Proposal

Thank you for your inquiry. We confirm our capability and interest in providing these leachate collection system jetting services for Pasco County Solid Waste at the West Pasco Landfill and the East Pasco Landfill.

FLORIDA JETCLEAN specializes in leachate collection system maintenance and inspection, and has developed a considerable amount of specific expertise in this field over the last 30+ years. Our company has worked at an extensive number of landfills in Florida, Georgia, the Carolinas, Delaware, and westward to Arkansas. We have worked with most engineering companies active in this field, and have also fostered excellent working relationships with the regulatory authorities. We use modified jetting equipment designed to achieve extended pipe distances found in landfill environments and **our explosion proof camera equipment complies with all OSHA and regulatory mandates for methane environments**. Substantial references are available on request.

Based on prior work at the West Pasco and East Pasco Landfills, we quote as follows:

West Pasco Landfill - Cells A1, A2, A3, A4, SW1, SW2, Class 3, Gravity MH's = 38,301 LF

East Pasco Landfill - East and West side Cleanouts = 5,000 LF

Proposed Price for BOTH West and East Pasco Landfill Piping (43,301 LF) = $ 21,717.49

Subject to:

- An adequate no charge on site water supply for jetcleaning. A hose bib does not supply enough pressure and will not suffice.
- 2 wheel drive vehicle access within 10'-15' of each cleanout and manhole.
- Continuity of access allowing work to be carried out on a single mobilization
- Exposed and opened cleanouts at ground level
- All jetting work will begin at the available access locations and continue through the piping as far as possible. Additional access may be required for complete coverage.

Long Term Care, Leachate System Maintenance (cleaning)

- Hardened scale deposits evident in some of these pipes during previous maintenance programs may not be removed with the standard 4,000 PSI jetcleaning process. Such deposits may require pipeline waterblasting at pressures up to 10,000 PSI for removal. Such services are not currently a part of this quoted scope of work since their existence and quantities are not currently known.
- Throughput from jetcleaning will be directed downstream toward sump areas and/or pump stations. Vacuum removal from these areas, if necessary, at additional cost.
- Standby time chargeable at $250.00 per hour should delays not of our making delay progress e.g. access problems, high leachate flow levels etc.
- Payment: net 30 days

Regards,

Ralph Calistri

Ralph Calistri - Florida Jetclean - 800-226-8013

Cost Estimate Report

Date: 08/18/2023

Spring Hill, FL

14230 Hays Road

Class III Closure Costs

Year 2023 Quarter 3

Unit Detail Report

Prepared By: Jason Gorrie JMG Engineering, Inc.

LineNumber	Description	Quantity	Unit	Total Incl. O&P	Ext. Total Incl. O&P
Division 33 Utilities					
331113100100	Public water supply wells, wells domestic water, drilled, 4" to 6" diameter	100.00	L.F.	$23.73	$2,373.00
331113108244	Public water supply wells, wells domestic water, well casing or drop pipe, PVC, 1/2" diameter	100.00	L.F.	$5.59	$559.00
331113108300	Public water supply wells, wells domestic water, well screen assembly, slotted PVC, 1-1/4" diameter	3.00	L.F.	$8.01	$24.03
331113108400	Public water supply wells, wells domestic water, artificial gravel pack, 2" screen, 6" casing	3.00	L.F.	$20.65	$61.95
331113108500	Public water supply wells, wells domestic water, develop well	1.00	Hr.	$740.52	$740.52
Division 33 Utilities Subtotal					$3,758.50

Long Term Care, Groundwater Monitoring Well Replacement

Cost Estimate Report

Date: 08/18/2023

Spring Hill, FL

14230 Hays Road

Class III Closure Costs

Year 2023 Quarter 3

Unit Detail Report

Prepared By: Jason Gorrie JMG Engineering, Inc.

LineNumber	Description	Quantity	Unit	Total Incl. O&P	Ext. Total Incl. O&P
Division 32 Exterior Improvements					
323126201400	Wire fencing & gates, wire fencing general, steel gate fencing, chain link fabric, steel, galvanized, 2-1/4" mesh, 11-1/2 ga, galvanized, 6' high	0.00	C.S.F.	$75.99	$0.00
					$0.00
Division 32 Exterior Improvements Subtotal					**$0.00**
Subtotal					**$0.00**
General Contractor's Markup on Subs				0.00%	
					$0.00
Subtotal					**$0.00**
General Conditions				0.00%	
					$0.00
Subtotal					**$0.00**
General Contractor's Overhead and Profit				0.00%	
Grand Total					**$0.00**

Long Term Care, Security System Maintenance

BID FORM

Business Name: Megascapes Landscape and Maintenance

SOLID WASTE FACILITIES: Pasco County intends to award to one (1) vendor for all areas.

Item No.	Description	Cost Per Acre
1.	East Pasco Sanitary Landfill 12511 Auton Road Dade City, Florida. Approximately 115 Acres.	$18/acre
2.	East Pasco Transfer Station 9626 Handcart Road Dade City, Florida. Approximately 11 Acres	$24/acre
3.	West Pasco Landfill 14230 Hays Road Spring Hill, Florida. Approximately 160 Acres.	$18/acre
4.	Ridge Road Closed Landfill (Southeast Corner of San Miquel Drive and Galen Wilson Boulevard) Port Richey, Florida. Approximately 40 Acres	$22/acre

[ ] Submitted list of current and past contracts of similar size and scope (Section 6.1)

[ ] Submitted list of at least three (3) references (Section 6.2)

[ ] Submitted list of equipment with model number and service date (Section 6.3)

Long Term Care, Landscape Maintenance (mowing)

Cost Estimate Report

Date: 08/23/2023

Spring Hill, FL

14230 Hays Road

Class III Closure Costs

Year 2023 Quarter 3

Unit Detail Report

Prepared By: Jason Gorrie JMG Engineering, Inc.

LineNumber	Description	Quantity	Unit	Total Incl. O&P	Ext. Total Incl. O&P
Division 31 Earthwork					
312316130500	Excavating, trench or continuous footing, common earth, 3/4 C.Y. excavator, 6' to 10' deep, excludes sheeting or dewatering	29,472.00	B.C.Y.	$8.86	$261,121.92
Division 31 Earthwork Subtotal					**$261,121.92**
					$261,121.92
Subtotal				**0.00%**	**$0.00**
General Contractor's Markup on Subs					
					$261,121.92
Subtotal				**0.00%**	**$0.00**
General Conditions					
					$261,121.92
Subtotal				**0.00%**	**$0.00**
General Contractor's Overhead and Profit					

Grand Total **$261,121.92**

Stormwater Control System
Earthwork

Cost Estimate Report

Date: 08/23/2023

Spring Hill, FL

14230 Hays Road

Class III Closure Costs

Year 2023 Quarter 3

Unit Detail Report

Prepared By: Jason Gorrie JMG Engineering, Inc.

LineNumber	Description	Quantity	Unit	Total Incl. O&P	Ext. Total Incl. O&P
Division 02	**Existing Conditions**				
024113700200	Selective demolition, rip-rap & rock lining, slope protection, 3/8 to 1/4 C.Y. pieces	1,500.00	S.Y.	$85.66	$128,490.00
Division 02	**Existing Conditions Subtotal**				**$128,490.00**
Division 33	**Utilities**				
334211501040	Public storm utility drainage piping, drainage and sewage, corrugated HDPE, type S, bell and spigot, with gaskets, 12" diameter, excludes excavation and backfill	3,800.00	L.F.	$11.26	$42,788.00
334213130520	Concrete culvert, headwall concrete, precast, 30 degree skewed wingwall, 12" diameter pipe	10.00	Ea.	$2,850.23	$28,502.30
Division 33	**Utilities Subtotal**				**$71,290.30**

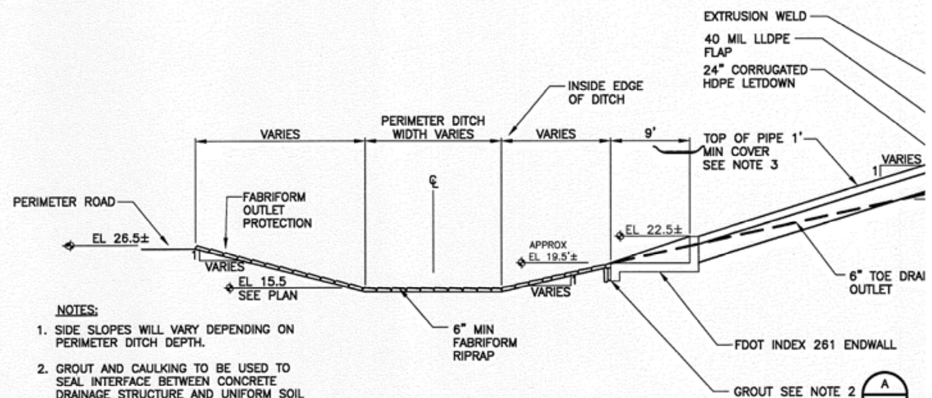
Stormwater Control System,
Piping
Control Structures
Rip-Rap

FISCAL YEAR 21/22	WREC ID	METER #	Oct-22	Nov-22	Dec-22	Jan-23	Feb-23	Mar-23	Apr-23	May-23	Jun-23	Jul-23	Aug-23	Sep-23	Total So Far	Monthly Avg
A-4 Lift Station (Oct. 2013)	1906710	92918093	166.55	98.07	107.17	96.00	87.50	82.09	74.49	73.60	87.76	92.13			965.36	96.54
Class 3 CDO (Dec. 2011)	1906739	38623815	36.57	36.69	36.54	41.67	41.39	41.54	41.48	41.38	41.48	41.21			399.95	40.00
East Pasco Compactor 2 (June 2012)	1906746	88531474	162.54	153.74	155.84	173.92	131.51	142.59	144.98	131.01	124.02	113.54			1,433.69	143.37
East Pasco Compactor (Apr. 2012)	1906747	88531472	259.27	246.08	242.14	277.46	219.04	190.15	204.39	183.42	228.85	242.82			2,293.62	229.36
DC Well - EPTS (July 2013)	1906757	62646924	35.04	35.04	35.04	40.16	40.26	40.16	40.16	40.16	40.16	40.16			386.34	38.63
Landfill Equipment Barn (Oct. 2010)	1906716	57179732	105.06	192.21	189.50	174.13	148.62	168.75	173.12	173.73	288.59	305.55			1,919.26	191.93
Galen Wilson Blvd.	1906289	57179720	92.19	102.74	60.17	48.79	50.82	85.99	59.48	77.64	67.59	65.85			711.26	71.13
Class III Maintenance Bldg.	1906189	62225744	602.10	468.32	493.89	567.62	348.34	438.27	427.83	400.06	513.71	562.11			4,822.25	482.23
W Scale A2 (Hays Rd.) (June 2012)	1906744	52396995	237.28	241.68	242.14	260.21	291.35	223.07	214.87	207.88	235.83	239.33			2,393.64	239.36
Hays W Scale (April 2012)	1906745	88531437	241.68	268.06	293.91	160.97	127.70	131.62	124.02	117.03	138.00	141.50			1,744.49	174.45
Leachate Tanks - Ash Cell	1906276	57179699	71.64	64.28	117.01	67.56	72.99	74.09	67.59	65.94	75.28	87.68			764.06	76.41
Leachate Tanks - SW1	1906275	72576352	603.38	366.83	420.44	167.65	317.09	111.49	98.50	95.70	100.15	109.16			2,390.39	239.04
MRF Building	526														-	#DIV/0!
MRF Trailer	539														-	#DIV/0!
Recycling Station - 14230 Hays Road (Nov 2014)	1697826	49383045		1,115.16	598.74	516.07	432.26	441.93	454.92	488.46					4,047.54	578.22
A-2 Cell	1906354	84437287	37.23	37.78	37.84	43.18	42.44	42.72	54.14	56.06	42.79	42.26			436.44	43.64
Handcart Road - EPTS	1906236	78432353	2,399.44	2,459.58	2,312.63	2,327.57	1,835.68	1,986.58	2,219.11	1,910.66	1,970.66	2,057.48			21,479.39	2147.94
Hays Road - Lift Station - Class III	1906313	54541250	79.66	43.71	50.56	59.48	49.01	45.93	44.53	44.28	50.21	53.71			521.08	52.11
Hays Road - Lift Station - Class III	1906314	59783705	80.54	65.93	62.43	62.28	56.63	56.26	53.97	52.74	54.24	54.14			599.16	59.92
RR- Brush	1906662	40552393	98.79	91.87	69.76	68.86	60.81	69.98	73.00	87.51	76.68	87.77			785.03	78.50
Class III Scalehouse	1906219	13178135	259.16	246.85	209.34	294.51	251.87	209.54	223.43	225.62	259.60	164.20			2,344.12	234.41
RR- Tires	1906661	63266461	50.53	47.13	42.27	48.36	44.45	46.29	51.96	49.77	46.02	70.31			497.09	49.71
Resource Recovery Well House	1906238	59444987	1,754.40	1,509.28	1,974.75	1,892.92	1,446.79	1,527.60	1,337.30	1,460.30	1,682.27	1,576.94			16,162.55	1616.26
Resource Recovery Lift Station	1906164	13178136	35.59	35.59	35.58	40.92	40.54	40.89	40.60	40.60	40.60	40.86			391.77	39.18
Resource Recovery Scale House	1906165	Inactive													-	#DIV/0!
Storage Trailer CL I (Nov. 2010)	1906719	85107488	35.04	35.04	35.04	40.16	40.16	40.16	40.16	40.16	40.16	40.16			386.24	38.62
Class I Scalehouse (completed project)	2183880	68058155	284.34	292.36	335.01	361.82	274.89	290.11	261.34	254.18	283.00	284.33			2,921.38	292.14
Auton Road - Leachate - Cell #5	505		*Apparently no longer active*												-	0.00
Resource Recovery Compactors	550		No longer Active												-	0.00
Stormwater Pump SW2	648		*Apparently no longer active*												-	0.00
Stormwater Pump A3	649		*Apparently no longer active*												-	0.00
Subtotal 15th Billing			7,728.02	8,254.02	8,157.74	7,832.27	6,452.14	6,527.80	6,525.37	6,317.89	6,487.65	6,513.20	-	-	70,796.10	
Auton Road - 4" Well *	1906293	38048488	35.04	35.04	35.04	40.16	40.26	40.16	40.16	40.16	40.16				346.18	0.00
Crabtree Recycling Drop Off (Dec 2015)	1697846	339155245													-	#DIV/0!
EPSL-Office Scalehouse-Singletary *	1906014	33046727	81.41	66.58	51.33	49.33	60.15	88.82	101.66	90.75	84.63				674.66	74.96
FACMETER (Biosolids Facility) added Aug 2022	2063726		35.04	35.04	35.04	40.16	40.16	40.16	40.16	40.16	40.16	40.16				
Subtotal 30th Billing			151.49	136.66	121.41	129.65	140.57	169.14	181.98	171.07	164.95	40.16	-	-	1,020.84	
TOTALS			7,879.51	8,390.68	8,279.15	7,961.92	6,592.71	6,696.94	6,707.35	6,488.96	6,652.60	6,553.36	-	-	71,816.94	-

Long Term Care
Utilities

PART 5

COMPONENT DESIGN REFERENCES

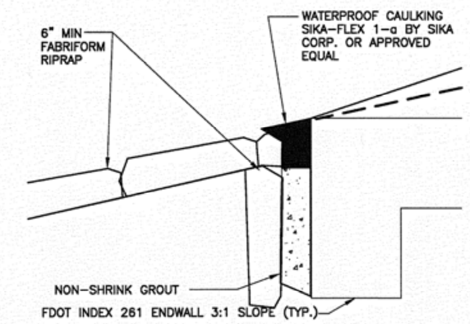


NOTES:

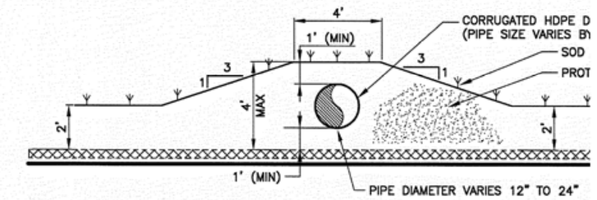
1. SIDE SLOPES WILL VARY DEPENDING ON PERIMETER DITCH DEPTH.
2. GROUT AND CAULKING TO BE USED TO SEAL INTERFACE BETWEEN CONCRETE DRAINAGE STRUCTURE AND UNIFORM SOIL MAT. KEY SOIL MAT INTO GROUT.
3. PROVIDE 1'-0" MINIMUM COVER OVER LETDOWN PIPE IN NON-TERRACED AREA OF SIDE-SLOPE. CONTOUR TO MEET TOP OF CAP AT 3:1 SLOPE.
4. SEE CD-1 FOR WET DITCH AND STORMWATER POND LETDOWN OUTFALL DETAILS.

TYPICAL STORMWATER LETDOWN STRUCTURE

SECTION 1 (C-15B)
1"=10'



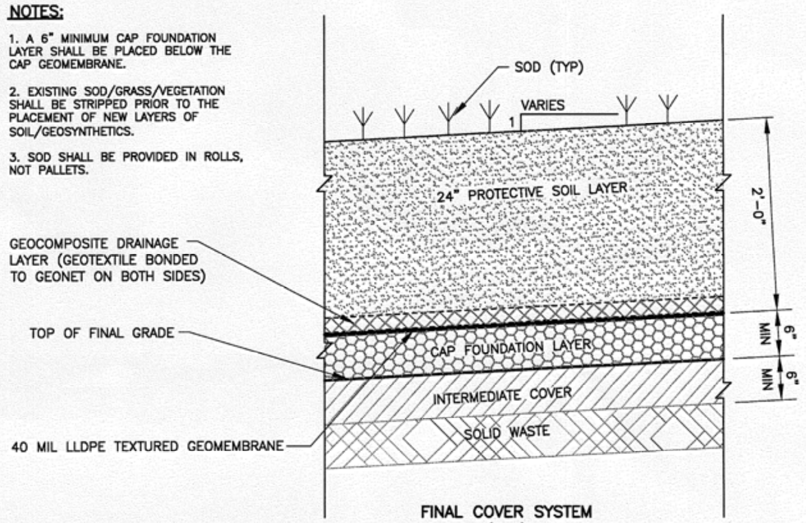
DETAIL A
1" = 1'



SECTION 2
1" = 4'-0"

NOTES:

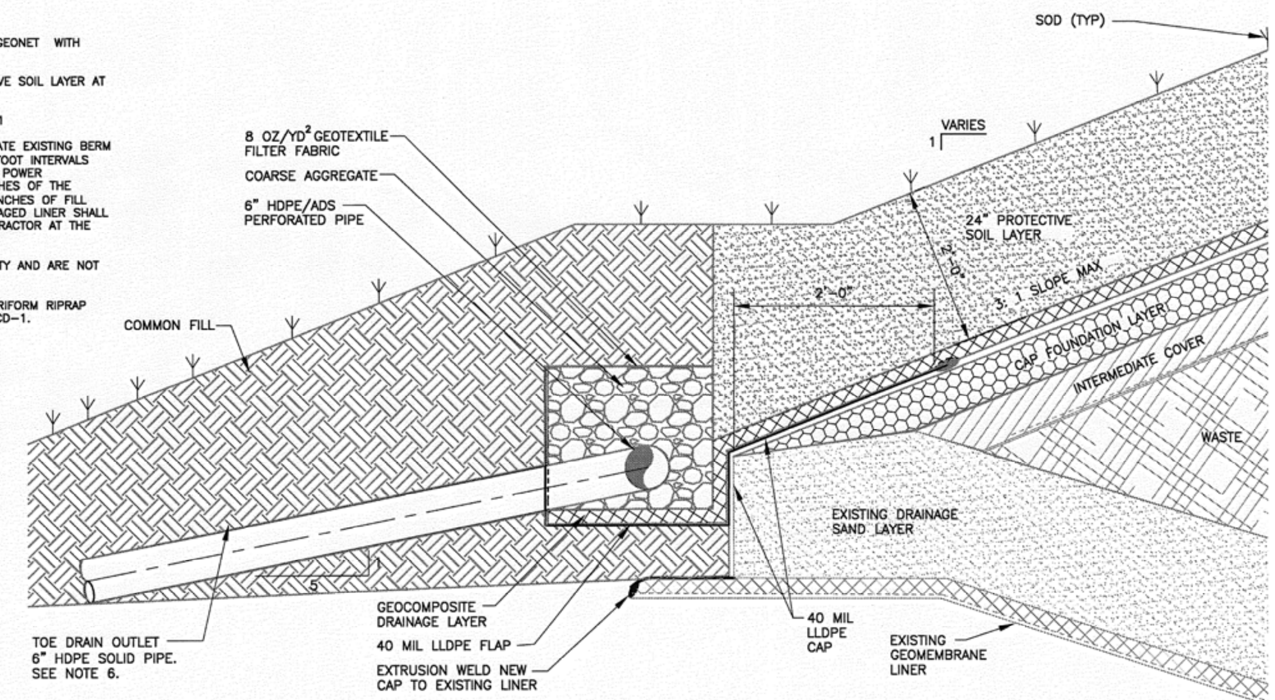
1. A 6" MINIMUM CAP FOUNDATION LAYER SHALL BE PLACED BELOW THE CAP GEOMEMBRANE.
2. EXISTING SOD/GRASS/VEGETATION SHALL BE STRIPPED PRIOR TO THE PLACEMENT OF NEW LAYERS OF SOIL/GEOSYNTHETICS.
3. SOD SHALL BE PROVIDED IN ROLLS, NOT PALLETS.



FINAL COVER SYSTEM (TYP)

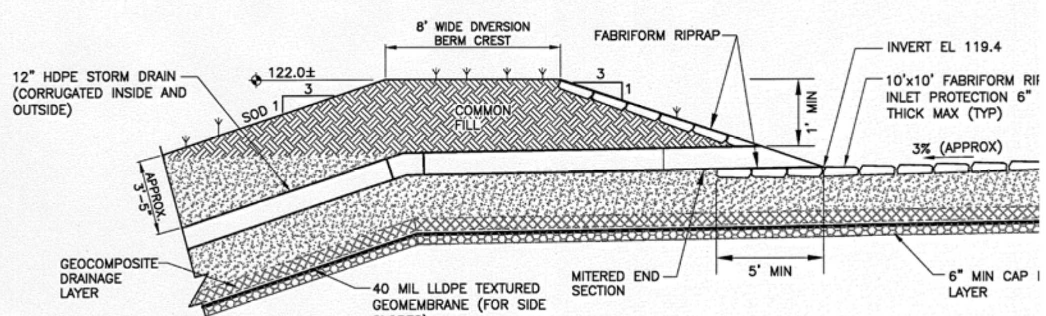
DETAIL B (C-15B)
1" = 1'

BE A GEONET WITH
ROTECTIVE SOIL LAYER AT
HAN 3:1
D LOCATE EXISTING BERM 100 FOOT INTERVALS MENT. POWER 10 INCHES OF THE 3 10 INCHES OF FILL Y DAMAGED LINER SHALL CONTRACTOR AT THE
CLARITY AND ARE NOT
OF FABRIFORM RIPRAP SHEET CD-1.



CONNECTION BETWEEN LINING SYSTEM AND FINAL COVER TERMINATION AT THE LANDFILL PERIMETER (TYP)

SECTION 3 (C-15B)
1" = 1'



DIVERSION BERM ON TOP SLOPES

SECTION 4 (C-15B)
1" = 4'

Xref's: [TTLTEXT,] Images: ☐
Filename: L:\6104\46136\bid\CIVIL\DETAILS\CD05dtl.dwg Last saved by: MOHLEDP Time: 11/4/2008 1:18:02 PM

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:	A. SONOWANE
DRAWN BY:	D. MOHLE
SHEET CHK'D BY:	J. HOFFMAN
CROSS CHK'D BY:	J. LADNER
APPROVED BY:	A. SONOWANE
DATE:	NOVEMBER 2008

CDM
Camp Dresser & McKee, Inc.
1715 North Westshore Blvd Suite 875
Tampa, FL 33607
Tel: (813) 281-2900
FL COA No. EB-0000020
consulting • engineering • construction • op

PASCO COUNTY, UTILITIES SERVICES BRANCH
PASCO COUNTY FLORIDA

WEST PASCO CLASS I LANDFILL
CELL A-4 CONSTRUCTION

CELL A-4 CLOSURE DETAILS