



An employee-owned company

December 10, 2001

Kim Ford, P.E.
Solid Waste Section
Division of Waste Management
Department of Environmental Protection
Southwest District
3804 Coconut Palm Drive
Tampa, FL 33619

RECEIVED
DEC 11 2001

Department of Environmental Protection
BY SOUTHWEST DISTRICT

RE: Lena Road Landfill – Operational Changes
Pending Modification No.: 39884-007
Permit No.: #39884-001-SO, Manatee County

Dear Mr. Ford:

PBS&J is providing four copies of this response to your November 9, 2001 letter requesting additional information in regards to the above referenced permit modification. The following numbered items are from your letter. Our response follows each item.

1. 62-701.320 (7) (b). Parts A and T (attached) completed and returned with three copies.

Response: Per our telephone conversation, the Parts A and T were completed and submitted with the original application.

2. 62-701.430 (1) (a). Description of all impacts from the proposed disposal on the currently designed and constructed storm water and gas control systems.

Response: The storm water collection terraces will be extended as the leachate pond is filled with solid waste. Storm water will flow off the soil cover to the terraces and the perimeter ditch, and from there to the storm water pond. The location of the storm water inlets and storm water pipes shown on the approved drawings for Lena Road Landfill Partial Closure #2 will be revised and submitted to FDEP for approval as part of the closure permit revision.

HDR has checked the landfill gas header and flare and determined there is adequate capacity to include the gas generated by the solid waste placed in the leachate pond. HDR's November 12, 2001 letter is included in Section 1. The existing exposed gas collection header pipe will be covered with two feet of sand prior to placing solid waste in the leachate pond. The location of this pipe is shown on Figure 1 in Section 1. The header pipe will continue to operate during the filling of the leachate pond. After completing the filling of the leachate pond, vertical gas collection wells and a new header will be installed as shown on Figure 2 in Section 1. This work will be done as part of Lena Road Landfill Partial Closure

#2. The revised drawings will be submitted to FDEP for approval with a modification to the closure permit.

3. 62-701.500 (2) (h). Description of changes to the operations of gas, leachate, and storm water controls due to the disposal area expansion.

Response: Gas – There will be no changes to the operation of the gas collection system during the filling of the leachate pond. The existing horizontal gas collection system installed on the landfill slope will be covered with two feet of sand and continue to collect gas from the landfill while solid waste is placed in the leachate pond.

Leachate – Leachate will be pumped directly to the storage tank at the wastewater treatment plant. Any leachate remaining in the leachate pond will be pumped to the wastewater treatment plant prior to placing solid waste in the leachate pond. The revised operations plan is included in Section 2.

Stormwater - The terraces will be extended as the leachate pond is filled with solid waste. Stormwater will flow off the soil cover to the terraces and the perimeter ditch, and from there to the stormwater pond. The location of the storm water inlets and storm water pipes to be installed with the closure will be modified to reflect the fill placed in the leachate pond. The approved drawings for Lena Road Landfill Partial Closure #2 will be revised and submitted to FDEP for approval.

4. 62-701.500 (8) (c). Copy of the written agreement for off-site acceptance, storage and treatment of expected quantities of leachate.

Response: The written agreement for the off-site acceptance, storage and treatment of expected quantities of leachate is included in Section 2.

5. 62-701.500 (8) (f). Description of procedures for recording the quantities of leachate, and a copy of the forms for record keeping and for comparing precipitation with leachate generation.

Response: Leachate pumped and precipitation will be recorded daily and submitted to FDEP monthly using the forms identified as Exhibit A and Exhibit B in Section 2.

6. 62-701.530. Design details for expansion of the gas management system due to the disposal area expansion.

Response: Vertical wells will be installed as shown on Figure 2 in Section 1. The design details are those shown on the construction drawing C-09 – Landfill Gas Details for Lena Road Landfill Partial Closure Number 2, prepared by HDR Engineering, Inc., dated July 24, 2000.

7. 62-701.600. Design details for closure of the expansion area.

Response: The design details for closure of the expansion area are the same as approved by FDEP, and shown on the construction drawings for Lena Road Landfill Partial Closure Number 2, prepared by HDR Engineering, Inc., dated July 24, 2000.

The reference drawings are:

- C-08 Liner Details
- C-09 Landfill Gas Details
- C-10 Landfill Gas Well Schedule
- C-11 Stormwater Details
- C-12 Stormwater Details
- C-13 Partial Closure #2 - Stormwater Details
- C-14 Partial Closure #2 - Stormwater Details
- C-15 Phase I Closure - Stormwater Details

8. 62-701.630. Cost estimates for closure and long-term care to include the new disposal area expansion, and proof of financial assurance.

Response: FDEP form #62-701.900 (28) Financial Assurance Cost Estimate Form has been revised to include the landfill expansion into the leachate pond. The revised form is included in Section 3.

9. Revisions to the Stormwater/Leachate Management Plan are requested. Pages 5, 6, 7, and 8 (provided on October 11th) are from an older version and should not be included. (a) Page 4 (dated November 1998) and page 5 (dated February 17, 2000) should be revised to describe the phasing-out of the leachate storage pond. (b) Pages 6 and 7 (date November 1998) should be revised to delete references to the leachate pond.

Response: The revised pages are included in Section 2.

10. Documents to demonstrate compliance with the conditions of construction permit #39884-005-SC as follows:

- a) Certification of construction completion, signed and sealed by a professional engineer, for the new leachate collection systems: and,
- b) A report assessing the effectiveness of the new leachate collection system, and associated pumps and piping.

Response: The certification of construction completion for the new leachate collection and pumping system will be submitted upon completion of the work. A report assessing the effectiveness of the new leachate collection system and associated pumps and piping will be submitted with the certification.

11. 62-701.410. A response to each of Mr. John Morris's comments and concerns expressed in his November 9, 2001 memorandum, attached. You may call Mr. Morris to discuss items in his memorandum at (813) 744-6100, extension 336.

Mr. Morris' comments are as follows:

It is my intention to take this opportunity to make changes to several specific conditions of the permit to provide clarification and to reflect the changes to the solid waste rule that became effective on May 27, 2001. These changes are summarized below:

Specific Condition No. 28 – Clarification shall be provided in this condition to indicate that dry or damaged monitor wells/piezometers shall require Department notification describing the occurrence, the remedial measures to be taken, and the time needed for repairs.

Response: We agree with this change to Specific Condition No. 28 for the operations permit.

Specific Condition No. 31 – Leachate sampling shall be changed to an annual frequency to reflect the modification in Rule 62-701.510 (6)(c), F.A.C.

Response: We agree with this change to Specific Condition No. 31 for the operations permit.

Specific Condition No. 38 – The time period for the permittee to conduct a resampling event shall be changed to 30 days to reflect the modifications in Rule 62-701.510(7), F.A.C.

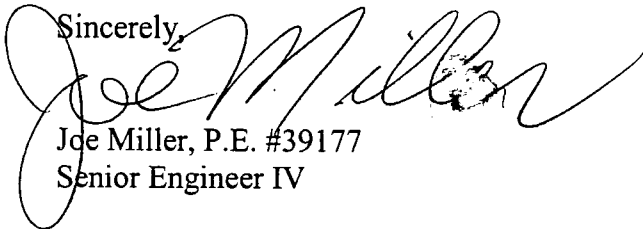
Response: We agree with this change to Specific Condition No. 38 for the operations permit.

Specific Condition No. 39 – The requirement to provide a copy of the water quality and leachate reports to the Solid Waste Section in Tallahassee shall be deleted.

Response: We agree with this change to Specific Condition No. 39 for the operations permit.

If you have any questions, please call me at 407-647-7275, ext. 153.

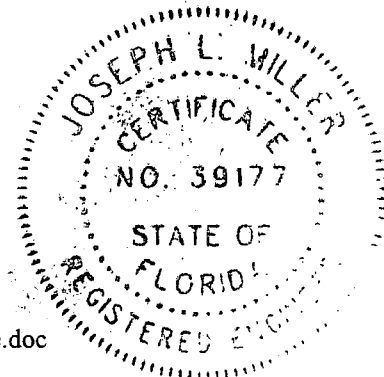
Sincerely,



Joe Miller, P.E. #39177
Senior Engineer IV

cc Gus DiFonzo, Manatee County
Mike Gore, Manatee County
Pete Putman, P.E., PBS&J
File 120498.01

G:\WASTEMAN\Manatee County\SW-1 Operation Plan\FDER Response.doc





November 12, 2001

Mr. Joe Miller
PBS&J
482 South Keller Road
Orlando, FL 32810

SECTION
1

**RE: Lena Road Landfill
Second Partial Closure
HDR Project Number: 07982-029-096**

Dear Mr. Miller:

The enclosed CD contains the drawings pertaining to the Lena Road Landfill partial closure that you requested via telephone call to Bill Embree. In addition, we added two drawings showing revised landfill contours and drainage basins (both adjusted for landfilling in the leachate pond area) that we indicated we would provide when HDR met with Manatee County and PBS&J representatives to review the status of the project some time ago.

The drawings pertaining to the partial closure are in the closure directory. To eliminate confusion, additional drawings are in separate directories. All drawings are in AutoCAD release 14 format. If you have any questions or problems with the file, please do not hesitate to contact me.

At our status review meeting, we also agreed to review the design of the landfill gas system to determine if the header system as designed can accommodate the additional gas anticipated from landfilling in the leachate pond area. Our review indicates:

- The existing gas header should accommodate the additional gas generated from landfilling in the leachate pond area.
- At the present landfilling rate, the flare should handle landfill gas production until year 2012 or 2013. This includes any waste placed in the leachate pond area. This corresponds roughly to the anticipated combined waste capacity of Stage 1 (including the leachate pond area) and Stage 3.

Please let us know if further information is needed.

Sincerely,

HDR ENGINEERING, INC.

Fred W. Sebesta, P.E.
Senior Project Manager

Enclosure

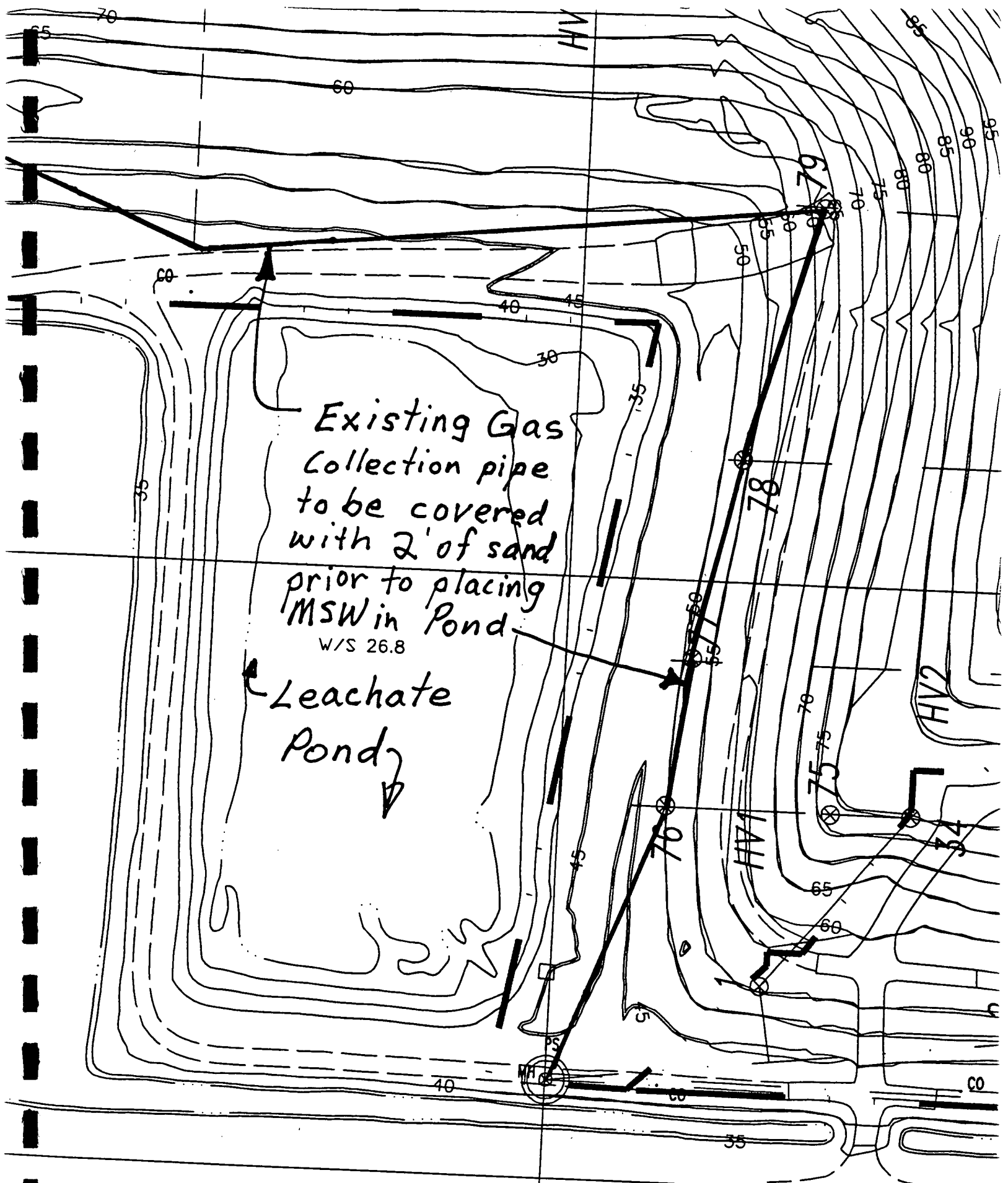
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HDR Engineering, Inc.

Employee Owned

Suite 250
2202 North Westshore Blvd.
Tampa, Florida
33607-5755

Telephone
813 282-2300
Fax
813 282-2430



Existing Gas
Collection pipe
to be covered
with 2' of sand
prior to placing
MSW in Pond
W/S 26.8

Leachate
Pond

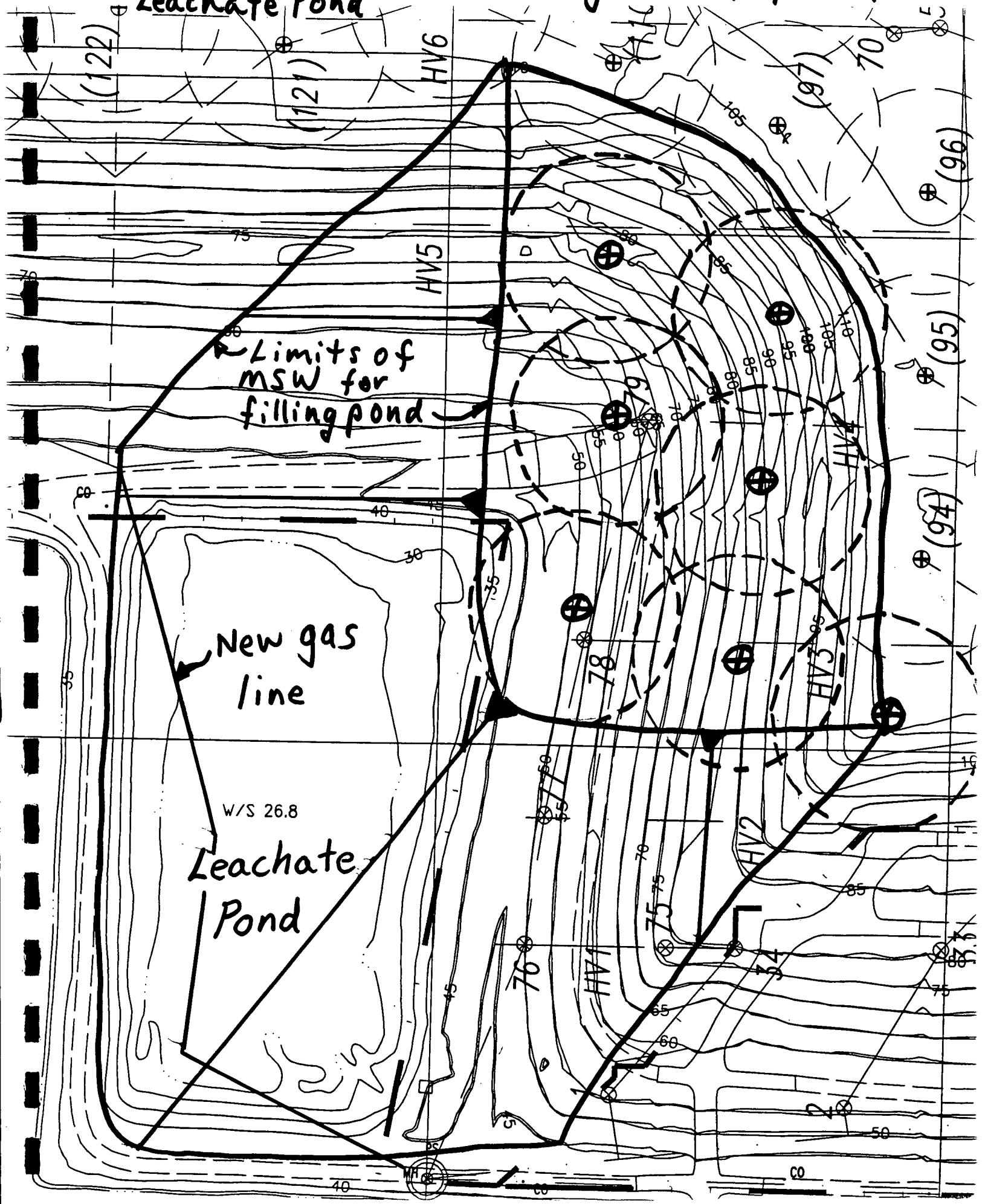
Lena Road
Landfill
Fig. 1
12/10/01

NTS



Gas collection
System for
Leachate Pond

Lena Road Landfill
Fig. 2 12/10/01

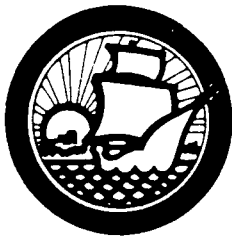


Limits of
MSW for
filling pond

New gas
line

W/S 26.8
Leachate
Pond

40



SECTION
2

MANATEE COUNTY GOVERNMENT

Utility Operations Department

August 22, 2001

Kim Ford, P.E., Division of Waste Management
Florida Department of Environmental Protection
3804 Coconut Palm Drive
Tampa, Florida 33619

Re: Manatee County Lena Road Landfill - Application for
Construction Permit Related to Filling Leachate Storage Pond/
Leachate Management Agreement between Solid Waste Division and
Wastewater Division -- Permits No. 39884-001-SC and 39884-004-SF

Dear Mr. Ford:

Please accept this letter in regard to the operational changes related to the above referenced matter. The Manatee County Wastewater Division, Southeast Wastewater Treatment Plant, agrees to treat all leachate received from the Lena Road Landfill without a leachate storage pond. The Wastewater Treatment Plant expansion includes a 2.8 million gallon equalization tank which offers operational alternatives in the delivery and treatment of leachate from the Landfill. The Wastewater Treatment Plant expansion gives the Facility the available capacity to accept the maximum amount of leachate generated by rainfall during a worst case period of seven (7) days.

In the event of an extended plant shut down, as an alternate plan, leachate will be trucked to either the Southwest Wastewater Treatment Plant or the North Wastewater Treatment Plant until such time as normal operations have resumed at the Southeast Plant. My signature below certifies this Department's commitment to the above Agreement.

Sincerely,

Daniel T. Gray
Director

DTG/gbp

cc: Janet McAfee, Director, Project Management
Tim Hochuli, P.E., Projects and Engineering Division Manager
David Shulmister, Wastewater Manager
Gus DiFonzo, Solid Waste Manager

REPLACEMENT PAGES

For

MANATEE COUNTY LENA ROAD LANDFILL
STORMWATER/LEACHATE MANAGEMENT PLAN

December 5, 2001

REVISED PAGES 4, 5, 6, 7

REVISED EXHIBIT A AND EXHIBIT B

NEW PAGE 4A

NEW FIGURE 3 – METERING STATION DETAIL

Prepared for:
Manatee County Government
Utilities Operations Department
Solid Waste Program
4410 66th Street West
Bradenton, FL. 34210

Prepared by:
PBS&J
482 South Keller Road
Orlando, FL. 32810
407-647-7275



Florida Department of Environmental Protection
Twin Towers Office Bldg. • 2600 Blair Stone Road • Tallahassee, FL 32399-2400

Effective Date 05-27-01
DEP Application No. _____
(Filed by DEP)

FINANCIAL ASSURANCE COST ESTIMATE FORM

SECTION
3

Date: 12/7/2001

Date of DEP Approval: _____

I. GENERAL INFORMATION:

Facility Name: Manatee Co. Solid Waste Mgmt. Facility (Lena Road) WACS or GMSID #: 4041CO2025

Permit / Application No.: 39884-001-SO Expiration Date: 7/15/2004

Facility Address: 3333 Lena Road, Bradenton, FL 34202

Permittee: Manatee County ATTN: Mr. Dan Gray, Director of Utility Operations

Mailing Address: 4410 66th St. West, Bradenton, FL 34210

Latitude: 27° 28' 0"N Longitude: 82° 27' 0"W or UTM: _____

Solid Waste Disposal Units Included in Estimate:

Phase / Cell	Acres	Date Unit Began Accepting Waste	Design Life of Unit From Date of Initial Receipt of Waste
Stage I	131	1972	30
Stage III	75	2003	10
Stage II	110	2013	11

Total Landfill Acreage included in this estimate. 286 Closure 316 Long-Term Care

Type of landfill: 316 Class I 0 Class III 0 C&D Debris

II. TYPE OF FINANCIAL ASSURANCE DOCUMENT (Check Type)

_____ Letter of Credit* _____ Insurance Certificate

_____ Performance Bond* X Escrow Account

_____ Guaranty Bond* _____ Trust Fund Agreement

III. ESTIMATE ADJUSTMENT

40 CFR Part 284 Subpart H as adopted by reference in Rule 62-701.630, Florida Administrative Code 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 adjustment below.

(a) Inflation Factor Adjustment

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 Deflator by the Deflator for the previous year. The inflation factor may also be obtained from the Solid Waste Financial Coordinator at (850)-488-0300.

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

Latest Department Approved Closure Cost Estimate:	X	Current Year Inflation Factor	=	Inflation Adjusted Closure 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:	X	Current Year Inflation Factor	=	Inflation Adjusted Annual Long-Term Care Cost Estimate:
_____		_____		_____
Number of Years of Long Term Care Remaining:			X	_____
Inflation Adjusted Long-Term Care Cost Estimate:			=	_____

(b) Recalculate Estimates (see section V)

IV. CERTIFICATION BY ENGINEER

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

Joseph L. Miller
Signature of Engineer
Joseph L. Miller, P.E.
Name & Title (please type)

Signature of Owner/Operator

Name & Title (please type)

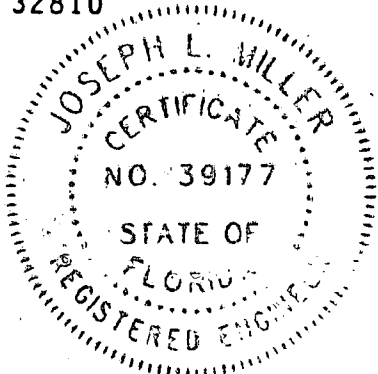
39177
Florida Registration Number (affix seal)

Telephone Number

482 S. Keller Road, Orlando, FL 32810
Mailing Address

407-647-7275
Telephone Number

12/10/01



V. RECALCULATE ESTIMATED CLOSING COST

For the time period in the landfill operation when the extent and manner of its operation makes closing most expensive.

** Third Party Estimate / Quote must be provided for each item

** Costs must be for a third party providing all material and labor

DESCRIPTION	UNIT	QUANTITY	UNIT COST	TOTAL
1. Proposed Monitoring Wells (Do not include wells already in existence.)				
	EA			0
2. Slope and Fill (bedding layer between waste and barrier layer):				
Excavation	CY	100,000	1.50	\$150,000
Placement and Spreading	CY	150,000	2.00	\$300,000
Compaction	CY	150,000	.50	\$75,000
Off-Site Material	CY	150,000	1.50	\$225,000
Delivery	CY	150,000	2.50	\$375,000
			Subtotal Slope & Fill	\$1,125,000
3. Cover Material (Barrier Layer):				
Off-Site Clay	CY	0		
Synthetics - 40 mil	SY	1,384,240	\$3.00	4,152,720
Synthetics - GCL	SY	0		
Synthetics - Geonet	SY	1,384,240	\$3.60	\$4,983,264
Synthetics - Other	SY			
			Subtotal Barrier Layer Cover:	\$9,135,984
4. Top Soil Cover:				
Off-Site Material	CY	923,000	\$1.50	\$1,384,500
Delivery	CY	923,000	\$2.50	\$2,307,500
Spread	CY	923,000	\$2.00	\$1,846,000
			Subtotal Top Soil Cover:	\$5,538,000

DESCRIPTION	UNIT	QUANTITY	UNIT COST	TOTAL
5. Vegetative Layer				
Sodding	SY	<u>1,384,240</u>	<u>\$1.85</u>	<u>\$2,560,844.00</u>
Hydroseeding	AC	<u>0</u>	<u></u>	<u></u>
Fertilizer	AC	<u>0</u>	<u></u>	<u></u>
Mulch	AC	<u>0</u>	<u></u>	<u></u>
Other	SY	<u>0</u>	<u></u>	<u></u>
Subtotal Vegetative Layer:				<u>\$2,560,844.00</u>

6. Stormwater Control System:

Earthwork	CY	<u>6,000</u>	<u>\$1.75</u>	<u>\$10,500.00</u>
Grading	SY	<u>100,000</u>	<u>\$1.00</u>	<u>\$100,000.00</u>
Piping	LF	<u>4,000</u>	<u>\$25.00</u>	<u>\$100,000.00</u>
Ditches	LF	<u>6,000</u>	<u>\$5.00</u>	<u>\$30,000.00</u>
Berms	LF	<u>6,000</u>	<u>\$5.00</u>	<u>\$30,000.00</u>
Control Structures	EA	<u>65</u>	<u>\$4,000.00</u>	<u>\$260,000.00</u>
Other	LS	<u>1</u>	<u>\$150,000.00</u>	<u>\$150,000.00</u>
Subtotal Stormwater Controls:				<u>\$680,500.00</u>

7. Gas Controls: Passive

Wells	EA	<u>0</u>	<u> </u>	<u> </u>
Pipe and Fittings	LF	<u>0</u>	<u> </u>	<u> </u>
Monitoring Probes	EA	<u>0</u>	<u> </u>	<u> </u>
NSPS/Title V requirements	LS	<u>0</u>	<u> </u>	<u> </u>
Subtotal Passive Gas Control:				<u> </u>

DESCRIPTION	UNIT	QUANTITY	UNIT COST	TOTAL
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8. Gas Control: Active Extraction

Traps	EA	<u>2</u>	<u>\$2,300.00</u>	<u>\$4,600.00</u>
Sump	EA	<u> </u>	<u> </u>	<u> </u>
Flare Assembly	EA	<u> </u>	<u> </u>	<u> </u>
Flame Arrestor	EA	<u> </u>	<u> </u>	<u> </u>
Mist Eliminator	EA	<u> </u>	<u> </u>	<u> </u>
Flow Meter	EA	<u> </u>	<u> </u>	<u> </u>
Blowers	EA	<u> </u>	<u> </u>	<u> </u>
Collection System	LF	<u>15,000</u>	<u>\$25.00</u>	<u>\$375,000.00</u>
Other (describe)		<u>4,300</u>	<u>\$80.00</u>	<u>\$344,000.00</u>
Subtotal Active Gas Extraction:				<u>\$723,600.00</u>

9. Security System:

Fencing	LF	<u>0</u>	<u>\$0.00</u>	<u> </u>
Gate(s)	EA	<u>0</u>	<u>\$0.00</u>	<u> </u>
Sign(s)	EA	<u>0</u>	<u>\$0.00</u>	<u> </u>

Subtotal Security System:

10. Engineering:

Closure Plan report	LS	<u>1</u>	<u>\$150,000.00</u>	<u>\$150,000.00</u>
Certified Enginee ring Drawing s (for constructio n)	LS	<u>1</u>	<u>\$20,000.00</u>	<u>\$20,000.00</u>
NSPS/Title V Air Permit	LS	<u>1</u>	<u>\$30,000.00</u>	<u>\$30,000.00</u>
Final Survey	LS	<u>1</u>	<u>\$20,000.00</u>	<u>\$20,000.00</u>
Certification of Closure	LS	<u>1</u>	<u>\$10,000.00</u>	<u>\$10,000.00</u>
Other (detail)		<u> </u>	<u> </u>	<u> </u>

Subtotal Engineering: \$230,000.00

11. Professional Services

	Contract Management		Quality Assurance		Total
	Hours	LS	Hours	LS	
P.E. Supervisor	<u>400</u>	<u>\$150.00</u>	<u>2000</u>	<u>\$130.00</u>	<u>\$320,000</u>
On-Site Engineer	<u>0</u>	<u></u>	<u></u>	<u></u>	<u></u>
Office Engineer	<u>200</u>	<u>\$90.00</u>	<u>200</u>	<u>\$90.00</u>	<u>36,000</u>
On-Site Technician	<u>0</u>	<u></u>	<u>2,600</u>	<u>60</u>	<u>156,000</u>
Directs	<u></u>	<u></u>	<u></u>	<u></u>	<u></u>

DESCRIPTION	UNIT	QUANTITY	UNIT COST	TOTAL
Quality Assurance Testing	LS	<u>1</u>	<u>\$80,000</u>	<u>\$80,000</u>
Subtotal Professional Services:				<u>\$592,000</u>

Subtotal of 1-11 Above: 20,585,928

12. Contingency 10 % of Total 2,058,593

Closing Cost Subtotal: 22,644,521

13. Site Specific Costs (explain)

<u>Mobilization</u>	<u>500,000</u>
<u>Waste Tire Facility</u>	<u>48,000</u>
<u>Materials Recovery Facility</u>	<u>0</u>
<u>Special Wastes</u>	<u>0</u>
<u>Leachate Management System Modification</u>	<u>0</u>
<u>Other</u>	<u>0</u>

Subtotal Site Specific Costs: 548,000

TOTAL CLOSING COSTS 23,192,521

VI. ANNUAL COST FOR LONG-TERM CARE

(Check Term Length)

_____ 5 Years _____ 20 Years X 30 Years _____ Other

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.

**** Third Party Estimate / Quote must be provided for each item**
**** Costs must be for a third party providing all material and labor**

All items must be addressed. Attach a detailed explanation for all items marked not applicable (N/A)

Description	Sampling Frequency (events/vr.)	Number of Wells	\$ / Well / Event	\$ / Year
1. Groundwater Monitoring (62-701.510(6), and (8)(a))				
Monthly	12	_____	_____	<u>\$0.00</u>
Quarterly	4	_____	_____	<u>\$0.00</u>
Semi-Annual	2	<u>27</u>	<u>\$500.00</u>	<u>\$27,000.00</u>
Annual	1	_____	_____	<u>\$0.00</u>
Subtotal Groundwater Monitoring:				<u>\$27,000.00</u>
2. Surface Water Monitoring (62-701.510(4), and (8)(b))				
Monthly	12	_____	_____	<u>\$0.00</u>
Quarterly	4	_____	_____	<u>\$0.00</u>
Semi-Annual	2	<u>2</u>	<u>\$1000.00</u>	<u>\$4,000.00</u>
Annual	1	_____	_____	<u>\$0.00</u>
Subtotal Surface Water Monitoring:				<u>\$4,000.00</u>
3. Gas Monitoring				
Monthly	12	_____	_____	<u>\$0.00</u>
Quarterly	4	<u>20</u>	<u>\$90.00</u>	<u>\$7,200.00</u>
Semi-Annual	2	_____	_____	<u>\$0.00</u>
Annual	1	_____	_____	<u>\$0.00</u>
Subtotal Gas Monitoring:				<u>\$7,200.00</u>

Description	Sampling Frequency (events/yr.)	Number of Locations	\$/Location/Event	\$/Year
4. Leachate Monitoring (62-701.510(5), (6)(b) and 62-701.510(8)(c))				
Monthly	12			\$0.00
Quarterly	4			\$0.00
Semi-Annual	2	1	\$700.00	\$1,400
Annual	1	1	\$1,500	\$1,500
Other				\$0.00
Subtotal Leachate Monitoring:				\$2,900

DESCRIPTION	UNIT	QUANTITY	UNIT COST	ANNUAL COST
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5. Leachate Collection/Treatment Systems Maintenance

Maintenance

Collection Pipes	LF	26,000	\$1.06	\$27,560
Sumps, Traps	EA			\$0.00
Lift Stations	EA	3	\$500	\$1,500
Cleaning	LS			\$0.00
Tanks	EA			\$0.00

Impoundments

Liner Repair	SY			\$0.00
Sludge Removal	CY			\$0.00

Aeration Systems

Floating Aerators	EA			\$0.00
Spray Aerators	EA			\$0.00

Disposal

Off-site (Include Transportation and Disposal)	1000 gallon			\$0.00
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\$29,060

6. Leachate Collection/Treatment Systems Operation

Operation		Hours	\$/Hour	Total
P.E. Supervisor	HR	50	\$120.00	\$6,000.00
On-Site Engineer	HR	50	\$90.00	\$4,500.00
Office Engineer	HR			
OnSite Technician	HR	100	\$50.00	\$5,000.00
Materials	LS	1	\$5,000.00	\$5,000.00
Subtotal Leachate Collection/Treatment System Maintenance & Operation:				\$20,500.00

7. Maintenance of Groundwater Monitoring Wells

Monitoring Wells	LF			
Replacement	EA	1	\$1,000.00	\$1,000.00
Abandonment	EA	1	\$500.00	\$500.00
Subtotal Groundwater Monitoring Well Maintenance:				\$1,500.00

DESCRIPTION	UNIT	QUANTITY	UNIT COST	ANNUAL COST
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8. Gas System Maintenance

Piping, Vents	LF			
Blowers	EA	0		
Flaring Units	EA	0.1	\$150,000.00	\$15,000.00
Meters, Valves	EA	0		
Compressors	EA	0		
Flame Arrestors	EA	0		
Operation	LS	1	\$20,000.00	\$20,000.00
SubTotal Gas System:				\$35,000.00

9. Landscape

Maintenance

Mowing	AC	<u>3,286</u>	<u>\$58.00</u>	<u>\$190,588.00</u>
Fertilizer	AC	<u> </u>	<u> </u>	<u> </u>
Subtotal Landscape Maintenance:				<u>\$190,588.00</u>

DESCRIPTION	UNIT	QUANTITY	UNIT COST	ANNUAL COST
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10. Erosion Control & Cover Maintenance

Sodding	SY	<u>316</u>	<u>\$50.00</u>	<u>\$15,800.00</u>
Regrading	AC	<u>316</u>	<u>\$8.00</u>	<u>\$2,528.00</u>
Liner Repair	SY	<u>25</u>	<u>\$120.00</u>	<u>\$3,000.00</u>
Clay	CY	<u> </u>	<u> </u>	<u> </u>
Subtotal Erosion Control and Cover Maintenance:				<u>\$21,328.00</u>

11. Storm Water Management System Maintenance

ance Maintenance	LS	<u>1</u>	<u>\$25,000.00</u>	<u>\$25,000.00</u>
Subtotal Storm Water System Maintenance:				<u>\$25,000.00</u>

12. Security System Maintenance

Fences	LF	<u>29,900</u>	<u>\$0.20</u>	<u>\$5,980.00</u>
Gate(s)	EA	<u>2</u>	<u>\$20.00</u>	<u>\$40.00</u>
Sign(s)	EA	<u>10</u>	<u>\$20.00</u>	<u>\$200.00</u>
Subtotal Security System:				<u>\$6,220.00</u>

13. Utilities	LS			<u>\$5,000</u>
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14. Administrative

		<u>Hours</u>	<u>\$/Hour</u>	<u>Total</u>
P.E. Supervisor	HR	100	\$120.00	\$12,000
On-Site Engineer	HR	400	\$90.00	\$36,000
Office Engineer	HR			\$0.00
OnSite Technician	HR	1000	\$50.00	\$50,000
Other (explain)				\$0.00
Subtotal Administrative:				\$98,000

15. Contingency	% of Total	<u>%10</u>	<u>47,330</u>	<u>\$47,330</u>
	\$0.00		Subtotal Contingency:	\$47,330

16. Site Specific Costs (explain)

	<u>UNIT COST</u>	
Permit Renewal every 5 years.	LS	\$10,000
Bi-Annual Report.	LS	\$10,000
	LS	

ANNUAL LONG-TERM CARE COST (\$/Year):	<u>\$540,626</u>
NUMBER OF YEARS OF LONG-TERM CARE	<u>30</u>
TOTAL LONG-TERM CARE COST (\$)	<u>\$16,218,780</u>