WASTE MANAGEMENT

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VIA FEDERAL EXPRESS

June 15, 2007

Mr. Scott M. Sheplak, P.E.
Air Permitting South Section
Bureau of Air Regulation
Mail Station #5505
Bob Martinez Center
2600 Blair Stone Road
Tallahassee, FL 32399-2400

RE: Florida Department of Environmental Protection Letter Dated April 2, 2007, DEP File Number 0930104-014-AC, Application No. 1270-2, Okeechobee Landfill Facility, Okeechobee Landfill, Inc.

Dear Mr. Sheplak:

In a letter dated April 2, 2007, your department requested additional information for the Okeechobee Landfill, Inc. (OLI) PSD air construction permit application submitted on February 28, 2007 (DEP File Number 0930104-014-AC). Attached is a letter from Shaw Environmental, Inc. (Shaw) to OLI dated June 8, 2007 that responds to each comment. One of the comments required the Professional Engineer's Certification form to be resubmitted with a seal conforming to the recent changes mandated by the Florida Board of Professional Engineers. A certification with the new seal has been provided in Attachment 9 of Shaw's letter.

If you have any questions or requests for additional information, the contacts are provided in the Application or you may contact OLI's Compliance Representative for this permit, Mr. David Thorley at 713-328-7404 or dthorley@wm.com or Michele Lersch at 813-786-6807 or mlersch@wm.com.

Respectfully submitted,

John Van Gessel
Vice President and Assistant Secretary
Waste Management Inc. of Florida

Cc: Joseph Fasulo, OLI
Mike Stallard, OLI
Michelle Lersch, WM
David Thorley, WM
Kristin Alzheimer, P.E, Shaw
Bruce Maillet, Shaw
Kelly Fagan, Shaw

Shaw® Shaw Environmental, Inc.

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June 8, 2007

Mr. John Van Gessel
Vice President & Assistant Secretary
Waste Management, Inc. of Florida
2859 Paces Ferry Road
Suite 1600
Atlanta, Georgia 30339

RE: Florida Department of Environmental Protection Letter Dated April 2, 2007, DEP File Number 0930104-014-AC, Application No. 1270-2, Okeechobee Landfill Facility, Okeechobee Landfill, Inc.

Dear Mr. Van Gessel:

On April 2, 2007, Okeechobee Landfill Inc. (OLI) received a request for information from the Florida Department of Environmental Protection (FDEP) in response to the permit application (DEP File Number 0930104-014-AC). Below is our response to that request.

A. Air Quality Impact Analyses Items

Comment No. 1: **Please submit all electronic Class I, visibility and deposition modeling files long with tables detailing the results to the Department.**

Response: We are waiting to receive the meteorological data from FLDEP to run the Class I impact analyses with the EPA 2004 Calpuff version. We have submitted the Class I analyses using the previously provided meteorological data using the Calpuff VISTAS version as per FDEP directive. Please see the Class I Impact Analysis report for more detailed information.

Comment No. 2: **Please explain how the terrain of the landfill was modeled. For example, was the existing landfill included in the terrain or was it assumed that the landfill was mostly flat? Provide guidance that was used in determining how to model the landfill terrain.**

Response: Shaw Environmental, Inc. conducted a Good Engineering Practice (GEP) stack height evaluation for the landfill to determine potential for aerodynamic downwash and determined that the landfill did not influence building downwash. Shaw followed the guidance established in USEPA's Guidelines for Determination of Good Engineering Stack Height (USEPA 1995a). **Attachment 1** shows the distance from the capped landfill to the location of the turbine and flare stacks as well as the height of the capped landfill.

Comment No. 3: **Appendix B, Page 2 of 5, shows a summary of the interim operating scenario. The interim operating scenario Significant Impact Analysis should include only the new emission units or emission increases. The existing emission units should be added only if an increment or AAQS analysis is required. Does the Significant Impact Analysis submitted to the Department for this interim scenario reflect only the new units or does it include all units listed on Page 2?**

Response: The Significant Impact Analysis submitted to the Department for the interim scenario only included the new or modified units. The existing units were only added for the refined modeling analyses.

Comment No. 4: **Please verify that the EPA Regulatory Version, Version 5.77a. was used for the Class I analyses.**

Response: The Calpuff version used for the Class I analyses was version 5.756, which is the Visibility Improvements in States and Tribal Areas of Southeast (VISTAS) version. Shaw obtained the VISTAS meteorological data from FLDEP. The VISTAS version was used per FDEP directive. Please see the Class I Impact Analysis report for more detailed information.

Comment No. 5: **The analysis of soil, vegetation and wildlife as part of the Additional Impact Analysis should include all pollutants subject to PSD. Please submit a full analysis to the Department.**

Response: Please see **Attachment 2**.

Comment No. 6: **Section 3.2 in the Ambient Air Quality Analysis states that short-term and long-term emission rates are the same. Are the short-term emission rates indicative of worst-case scenario/proposed short term permit emission limits?**

Response: Yes, the short-term emission rates are indicative of worst-case scenario emission limits.

Comment No. 7: **Appendix B, Page 4 of 5 shows the alternative operating scenario with BACT. This table shows 7 proposed flares. Section 4.0 of the Air Quality Analysis, page 16, states that there will be 8 new flares. Please clarify. In addition, page 1 of 5 in Appendix B shows 2 existing flares with a backup flare. Section 4.1 does not include the backup flare nor do the flows correlate with each other.**

Response: The modeling analysis includes 8 new flares and 2 existing flares for the Non-Routine BACT scenario. There are 2 existing flares that are 3,000 scfm. One of the 8 new flares is an existing flare that is currently used for back-up purposes. Since this flare will eventually be used full-time, it is considered as one of the "new" flares. This back-up flare is a 3,300 scfm flare.

Comment No. 8: **Section 3.6 of the Ambient Air Quality Analysis details the receptor layout. Please indicate the receptor distance used for areas of highest impacts in the refined Increment analyses.**

Response: The area of impact for each of the Significant Impact Analyses is shown in **Attachment 3**. This attachment also lists the distance from the sources to the maximum impact for the AAQS and PSD Increment analyses, which all occur at the property boundary.

Comment No. 9: **Please provide bpip modeling files.**

Response: The bpip modeling files were included in the Air Quality Analysis Report in Appendix D Input/Output Files (CD). The building downwash was run for each of the modeling runs and is designated by the .pip extension.

Comment No. 10: **The proposed project is PSD for NOx and is expected to emit over 100 TPY. NOx is a precursor to ozone. Please provide an ambient air quality analysis for ozone.**

Response: Shaw has conducted an ozone analysis according to the Scheffe Method which can be found in **Attachment 4**.

Comment No. 11: **Please provide the Class I Increment and AAQS inventories used in the modeling analyses.**

Response: The Class I impact from the new/modified sources was less than the Significant Impact Level. Therefore, no Class I Increment or AAQS refined analysis was conducted. Please see the Class I Impact Analysis report for more detailed information.

Comment No. 12: **Please provide receptor information regarding the Class I analysis.**

Response: The receptor information regarding the Class I analysis is included in the Class I Impact Analysis report. Shaw evaluated impacts at the Everglades National Park and Biscayne Bay National Park. Please see the Class I Impact Analysis report for more detailed information.

B. Air Construction/PSD Permit Application Items

Potential to Emit

Comment No. 1: **In the application the capacity of the landfills is mentioned in the Support Documentation Section II., subsection 3.3.1. and in Appendix E, LFG (Landfill Gas) Generation Rates & Construction Schedule. The landfill capacity is important in defining the potential to emit for the facility. While on-site and as mentioned in the application, two solid waste permits apparently exist for the existing site and the proposed new site. The solid waste permits referenced are Permit Number 0040842-010-SC for the Berman Road Landfill site and Permit Number 0247963-001-SC for the Clay Farms Landfill site.**

a. In Appendix E, the memorandum indicates the capacity of each landfill was estimated by Okeechobee Landfill, Inc. to be 23,431,195 tons for the Berman Road Landfill and 119,324,195 tons for the Clay Farms Landfill. One ton of waste was assumed to be equivalent to one cubic yard. Together these two sites occupy approximately 4,300 acres. Please provide a copy of the pertinent page(s) of these solid waste permits and relevant documentation to support the cited "permitted solid waste capacities."

b. Please provide landfill gas generation graphs for the Berman Road and Clay Farms sites, with landfill gas flow (scfm) plotted versus years.

Response:

a. The entire property consists of 4,150 acres (corrected from the 4,300 estimate); however, the permitted solid waste disposal footprint is only 833 acres of the total property acreage. **Attachment 5** includes copies of the permit pages with the stated acreage.

b. A landfill gas generation potential curve is at **Attachment 6** of this letter. Please note the Berman Road and Clay Farm areas are not separate stationary sources. Clay Farms is not a proposed new site, but a permitted capacity increase of the existing stationary source. The nomenclature is used to distinguish the areas.

Hydrogen Sulfide (H_2S) and Sulfur Dioxide (SO_2) Emissions

Comment No. 2: **An H_2S content from the landfill gas at the Berman Road Landfill of 5,786 ppmv was used in the subject permit application.**

a. In Appendix A of the application, it was stated that municipal solid waste that is landfilled contains approximately 29% construction &

demolition (C&D) waste. Does the Berman Road Landfill accept C&D wastes such as wallboard? If so, what has been the approximate % of C&D waste? What is the anticipated % C&D waste for the Clay Farms site?

b. Has the H2S content of the present landfill gas exceed 5,786 ppmv? Is the H2S content anticipated to remain around this value for the Berman Road site and the Clay Farms site?

Response:

a. Appendix A is a generic description of landfill operations provided per the request of FDEP. The Facility accepts C&D waste such as wallboard. The actual percentage of C&D waste accepted does vary. Factors such as hurricane response cleanup, construction levels, and waste industry competition affect the C&D waste stream volume. Over the last two quarters, the Facility has received between 18 and 30 percent of the total waste stream as C&D waste. The Facility does expect the Clay Farm C&D waste stream to be similar to the current waste stream.

b. The H_2S content does vary to some extent; 5800 ppmv has been the highest tested content. It is not expected that the LFG will exceed this value; however, the control equipment, LO-CAT® (or equivalent) will have the capacity to control LFG with a higher sulfur content. Regardless, of the content, the treatment system will remove sulfides to the 400 ppmv level. It is recommended that the permit allow the sulfur treatment equipment to be removed when the untreated landfill gas is less than 400 ppmv.

Comment No. 3: **Does the landfill currently measure the H_2S content of the landfill gas? If so, at what frequency is it measured and how & where is it measured?**

Response: The Facility does not currently measure H_2S content at the landfill.

Comment No. 4: **Prior to landfill gas going to the proposed desulphurization system landfill gas is collected in a collection system then routed to this proposed system for removal. Was a landfill gas collection efficiency assumed in the potential emissions calculations for H_2S and SO_2 emissions? If so, what was the collection efficiency assumed?**

Response: The landfill gas collection efficiencies were considered. Table 1 in Appendix E provides the LFG recovery and generation projections for both sites at the Facility. The maximum landfill gas generation occurs in the closure year 2058, at 30,949 scfm. With a collection efficiency of 90 percent, the amount collected is estimated to be 27,854 scfm. In 2059, the year after closure, assumptions for a higher collection efficiency of 100 percent were made because the intermediate cover would be in place and there is no open working face. In 2059, the LFG generation is estimated to

be 30,146 scfm. These are the predictions for the landfill and may vary. The design basis for the number and type of control devices allows for some excess capacity totaling 32,400 scfm. The potential emission calculations were based on this landfill gas throughput and a conservative sulfur-to-SO_2 conversion factor of 100 percent.

Comment No. 5: **A control efficiency of 93% was used to calculate SO_2 potential emissions. Based on my visit to the LO-CAT® II system at the Pompano Beach Landfill, that unit operated at an 80% reduction efficiency. The Pompano Landfill gas has an H_2S content of approximately 5,000 ppmv reducing it to 1,000 ppmv prior to the combustion turbine inlets.**

a. Does the manufacturer have any specific information for the LO-CAT® II System? The brochure provided in the application appears to be general to "LO-CAT® systems."

b. Please describe how H_2S monitoring is currently conducted with LO-CAT® systems.

c. In Appendix H, the brochure provided from the manufacturer of the LO-CAT® systems claims to provide a guarantee. The brochure advertises systems that can be designed for better than 99.9% H_2S removal. Does the manufacturer guarantee the 93% control efficiency? How does the manufacturer propose to demonstrate compliance with the control efficiency? Please provide a copy of the written guarantee from the manufacturer.

d. In Appendix H, a brochure from the manufacturer of the Mars® 100 combustion turbines, Solar Turbines, Inc., was provided. What is the combustion turbine specification for H_2S inlet to the Mars® 100 unit described in the brochure?

e. In Appendix H, a brochure was provided for the MINI-CAT® system. In the brochure it was mentioned this system is "adaptable to landfill gas treatment applications." Has this type of system been used at landfills anywhere?

Response:

a. According to the manufacturer's representative, Mr. David Graubard, the terms LO-CAT® and LO-CAT II® are used interchangeably for the past 10+ years. LO-CAT II® was introduced in 1992 with a design modification of the Oxidizer. New distributors and baffles were inserted into the oxidizer to create a staged reactor. The benefit was a smaller vessel and 20% reduction in air flow to regenerate the catalyst. LO-CAT® chemicals were also reformulated then. Today, all LO-CAT® units designed include the LO-CAT® II technology.

b. According to LO-CAT® customers prefer to use detector tubes, such as those made by Sensidyne or Draeger, for H_2S monitoring. These tubes are a simple tool which allow the operator to get an accurate reading of H2S concentration in the landfill gas. Other customers choose to place an in-line analyzer in the landfill gas line for constant monitoring. However, after many years of designing these plants, the manufacturer has informed us that they have had many customers report that these analyzers are not very reliable, and they are very expensive (ranging from $25,000 - $90,000).

c. The manufacturer does guarantee 93 percent control efficiency. Demonstration of the control efficiency will be through the testing described in response b. The guarantee related to the control efficiency is part of the procurement negotiations which have been initiated. The Facility will provide this guarantee within 12 months of the permit issuance.

d. Solar Turbines, the Mars 100 manufacturer has informed us that the turbines can tolerate 400 ppmv of H_2S.

e. MINI-CAT® (which is the same process, chemistry, etc. as the LO-CAT®/LO-CAT II® technology) has been successfully installed and operated at two landfills: Warren County Landfill, Warren County, New Jersey, and Delaware Solid Waste Authority, Cherry Island Landfill, Delaware. MINI-CAT is a modular system that is designed for sulfur loads between 0.25 and 2 long tons per day. As the Okeechobee Landfill's sulfur removal capacity (in the long term) could be up to 10 long tons per day, MINI-CAT would not be the system of choice for this facility.

Comment No. 6: **Table 2-5, in Appendix D ranking the best available control technologies for SO_2. In subsection 2.5, the narrative states that costs were "scaled up" from vendor quotes.**

a. Please provide a copy of the cost quote from the vendor to support the $5,000,000 capital cost and the $500,000 annual O&M figures cited in Table 2-4 as applicable to the LO-CAT® system.

b. In Table 2-4 and Table 2-5, a cost of SO_2 removed in $/ton was provided as $267.03 for the LO-CAT® system. Please provide the specific calculation used to calculate this value.

Response:

a. The application relied upon scaling up (using a ratio of the lower LFG flow rate to the newer higher LFG flow rate) the costs from the initial application. In response to this Comment for additional information, Shaw has requested updated cost from the vendor. We did not seek to update the other technology cost because, if the control technology were

technologically feasible at 32,400 scfm, there would not be an economy of scale cost savings. **Attachment 7** is an email from Gas Technology with the most recent cost estimate.

b. The new estimated capital costs based upon 32,400 scfm and 6,000 ppmv sulfur amount to $10,340,000.00. The annual operation and maintenance (O&M) costs include the following:
   - Labor (field, management, materials, vehicle, etc.): $75,000
   - Electricity: $370,150
   - Chemicals: $654,000
   - Make-up water: $2,500

   Annual O&M costs are calculated to be $1,101,650.00; assuming a 3 percent increase in O&M cost per year, the total cost of 10 years is $12,629,183.00. Using the nominal discount rate of 5 percent, the annualized cost over 10 years life used in the application is calculated to be $2,974,509. Based on the current H_2S concentration, the reduction in SO_2 is 7,758 tons per year (Appendix E) resulting in a cost per ton of $383.

   If a 30 year life cycle is used then the calculated annualized cost per year is $4,085,000 and the cost per ton is $527.

Sample Calculation for 10 year life cycle:
Present Cost = $10,340,000 + $12,629,183.00 = $22,969,183
Annualized Cost = Present Cost x (A/P, 5%, 10yrs)
Annualized Cost = $22,969,183 x 0.1295 = $2,974,509 per year
Cost per ton SO_2 removed = $2,974,509 per year / 7,758 = $383/ton

The capital and operation costs are provided as a part of an analysis comparing the available control technologies for sulfide removal. It does not take into account all the planning, operation and financial considerations of the site. During the design and procurement process, the actual unit size and equipment configuration could change, e.g. two units at 20,000 scfm capacity and 15,000 scfm capacity instead of one unit. This one-unit versus two-unit example would result in increased capital and operation costs.

Comment No. 7: **On Page 33 of 122 of the application form, F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION, SO_2 information is provided. Potential emissions of 131 lb/hour and 575 tons/year of SO_2 are shown along with a Total Percent Efficiency Control of 93. An Emission Factor of 400 ppmvd is also shown. The Calculation of Emissions refers to Appendix B. Appendix B contains Sample Calculations. Please provide the specific calculation used for the "131 lb/hour" value.**

Response: The 131 lb per hour and 575 tons per year is based on the maximum potential to emit for eight flares. The specific calculation is provided at **Attachment 8** of this letter.

Comment No. 8: **As an extra measure to reduce odors, would the facility be willing to install extraction wells and tie into the gas collection system sooner than the NSPS requirement, e.g., earlier of within 2 years of capping or within 5 years of waste placement?**

Response: The site is currently implementing early collection of gas for odor control purposes, typically 6 to 12 months from waste deposition. Although these odor control wells are not subject to NSPS regulation until the 5-year/2-year rule takes effect, the site monitors the wells for oxygen and methane content. Operation of the early collection wells and systems does not lend itself to prescribed NSPS operating conditions.

Non-Methane Organic Compound (NMOC) and Volatile Organic Compound (VOC) Emissions

Comment No. 9: **An estimated destruction efficiency of 98% was used in the potential to emit calculations for NMOC and VOC. Assuming no destruction efficiency, NMOC and VOC uncontrolled emissions are estimated to be 1,150 TPY and 448 TPY, respectively. Prior to the landfill gas going to either the flares and/or turbines the landfill gas is collected in a collection system then routed to these units for destruction. Was a landfill gas collection efficiency assumed potential emissions calculations for NMOC and VOC emissions? If so, what was the collection efficiency assumed?**

Response: The same design basis used for the H_2S emissions was used for the NMOC and VOC collection efficiency and maximum potential to emit; please refer to the response to Comment 4. The exception is the destruction efficiency, as you noted, is 98 percent not 100 percent.

Other

Comment No. 10: **The Florida Board of Professional Engineers changed the seal requirements in 2006. The seal used on the March 5, 2007 certification does not meet the new requirements. Please resubmit a P.E. certification using a new seal. For your information, a copy of the new requirement effective January 2006 is attached.**

Response: A copy of this letter has been sent to the facility care of Mr. Fasulo, District Manager with two copies of the engineer's certification statement with the correct seal at **Attachment 9**. One copy has been sent directly to FDEP.

If there are further questions on the application, please contact me at 508-497-6172 or Mr. Bruce Maillet at 508-497-6108.

Sincerely,
Shaw Environmental, Inc.

Kelly A. Fagan
Project Engineer

Kristin A. Alzheimer, P.E.
Senior Project Engineer

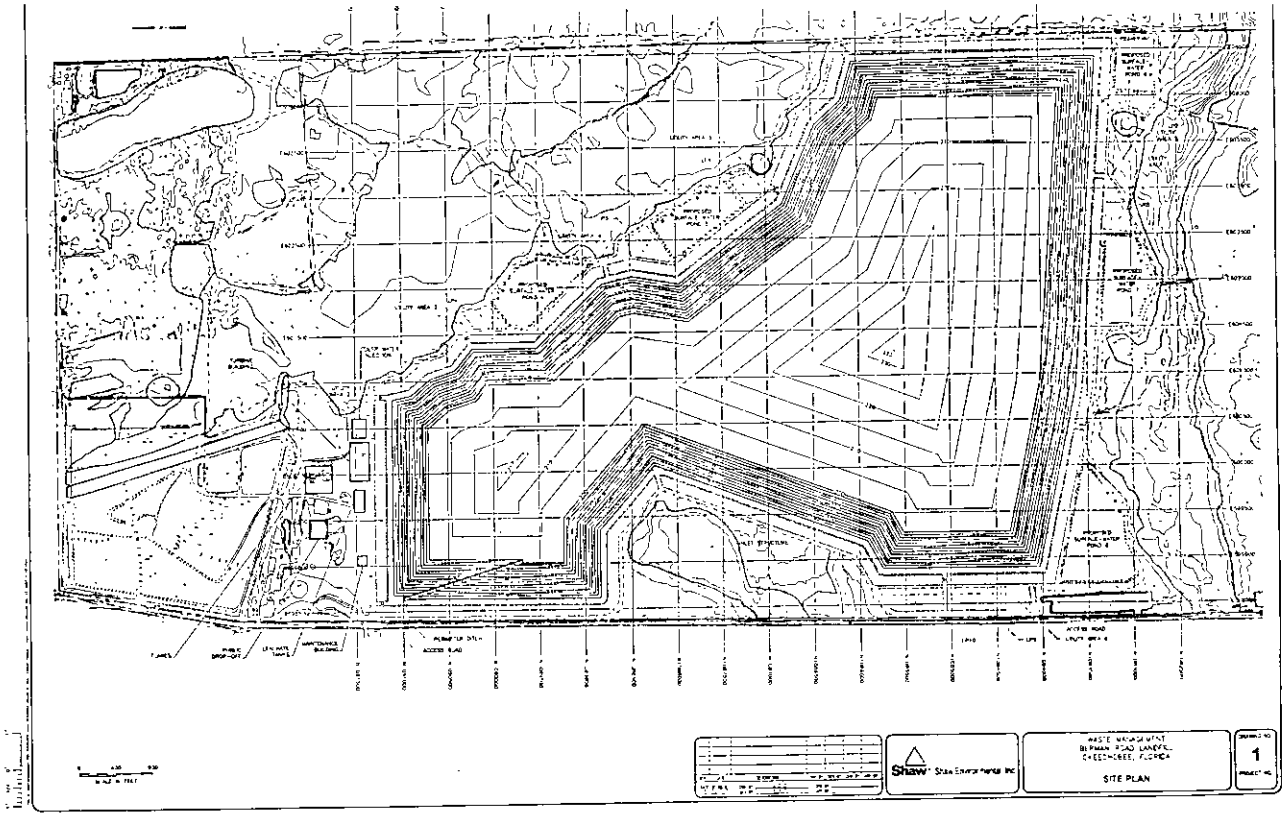
Attachments:

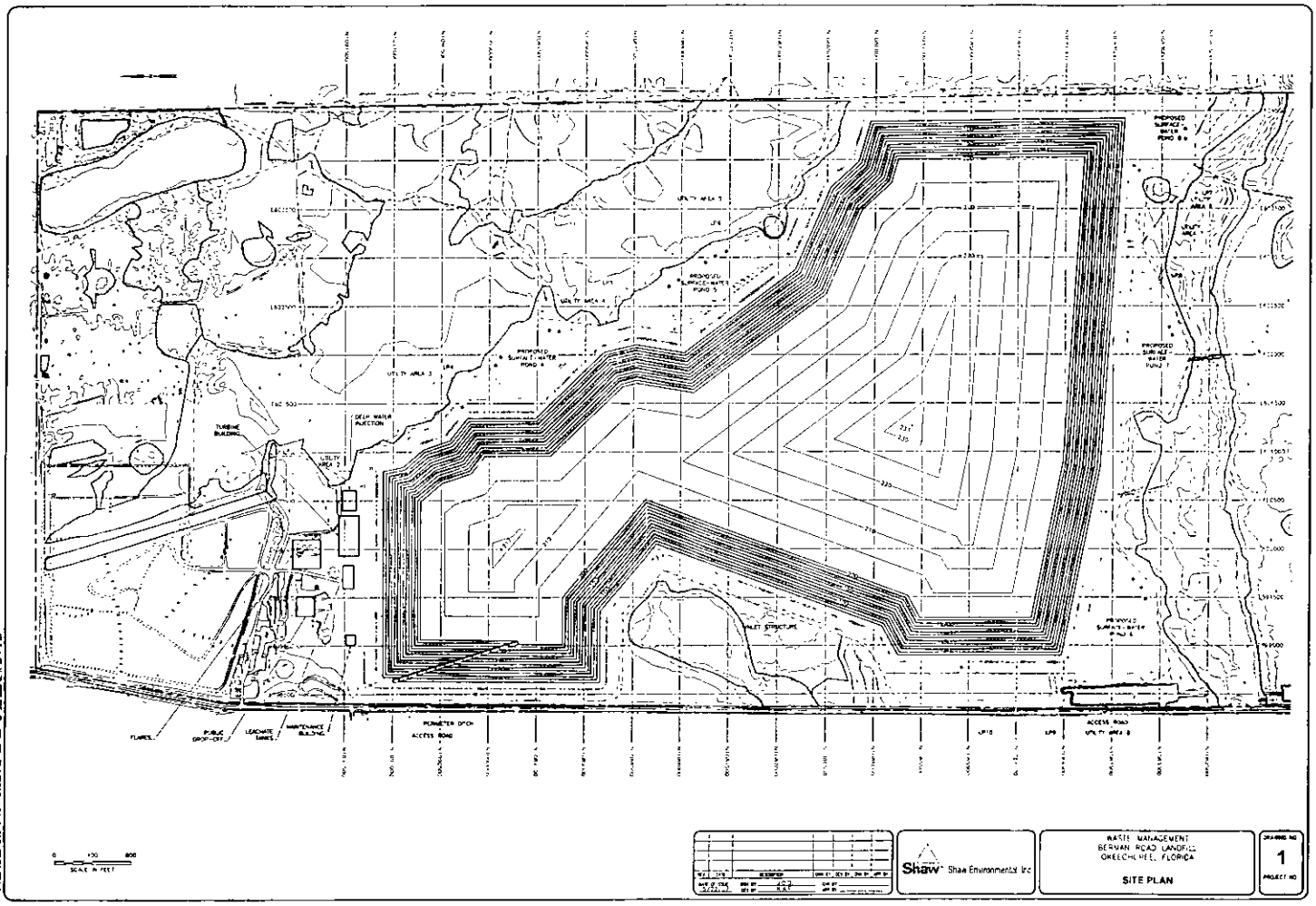
(1) Landfill and Stack Locations
(2) Analysis of Impact on Soil Vegetation and Wildlife
(3) Significant Impact Analyses - Area of Impact
(4) Ozone Analysis
(5) Solid Waste Permit Capacity Pages
(6) Average Annual Gas Potential Curve
(7) LO-CAT® Vendor Quote
(8) Estimated Emissions - SO_2 Calculation
(9) Original Sealed Engineer's Certification Statement

Cc: J. Fasulo, OLI (including two original engineer's certifications)
M. Stallard, OLI (w/o Attachment 9)
M. Delgado, OLI (w/o Attachment 9)
M. Lersch, WM (w/o Attachment 9)
D. Thorley, WM (w/o Attachment 9)
B. Maillet, Shaw (w/o Attachment 9)
K. Fagan, Shaw (w/o Attachment 9)
A. Pakrasi, Shaw (w/o Attachment 9)
L. Blinn, Shaw (w/o Attachment 9)

ATTACHMENT 1

Landfill and Stack Locations


Shaw
SITE PLAN
1



Shaw Shaw Environmental Inc

WASTE MANAGEMENT
BERMAN ROAD LANDFILL
OKEECHOBEE, FLORIDA

SITE PLAN

DRAWING NO 1

PROJECT NO

ATTACHMENT 2

Analysis of Impact on Soil Vegetation and Wildlife

ATTACHMENT 2

Analysis of Impact on Soil Vegetation and Wildlife

According to USDA Soil Survey, three types of soils are found in the vicinity of the Facility: Terra Ceia muck, tidal; and Pennsuco marl, tidal. There are no significant urban developments in this area. The natural vegetations are black and red mangroves. There are no known wildlife or endangered species within the impact area from this proposed modification.

Per USEPA, for most soils, ambient concentration of pollutants below the secondary national ambient air quality standard (NAAQS) will not result in any harmful effect. The impact area from the proposed modification does not have any sensitive vegetation species such as soybeans or alfalfa.

The background air concentration for SO_2, PM, and NO_2 are well below the secondary NAAQS levels. In addition, soils at the site have high buffering capacity and are not expected to be impacted from the increased emissions from the proposed modification.

There are no secondary NAAQS for carbon monoxide; however, even the primary NAAQS have not been exceeded from the proposed modification. Attachment 4 of this letter shows that there will be no significant potential for ozone generation from the emissions from the proposed modification.

Therefore, no significant adverse impact is expected on the soils and vegetation in the impact area from the proposed modification.

ATTACHMENT 3

Significant Impact Analyses - Area of Impact

Attachment 3

AOI Analysis Results

Scenario	Pollutant	Averaging Period	Maximum Predicted Concentration	PSD/NAAQS De Minimis Level	Area of Significant Impact (AOI)
			$\mu g/m^3$	$\mu g/m^3$	km
Interim	NO2	Annual	0.79	1	NA
	CO	1-Hour	71.53	2000	NA
		8-Hour	56.61	500	NA
	PM10	24-Hour	1.74	5	NA
		Annual	0.24	1	NA
	SO2	3-Hour	346.39	25	12.4
		24-Hour	224.18	5	19.6
		Annual	30.60	1	7.2
Routine BACT	NO2	Annual	6.60	1	2.6
	CO	1-Hour	135.89	2000	NA
		8-Hour	108.52	500	NA
	PM10	24-Hour	4.73	5	NA
		Annual	0.62	1	NA
	SO2	3-Hour	56.30	25	1.1
		24-Hour	34.53	5	2.5
		Annual	4.52	1	1.7
Back-up BACT	NO2	Annual	2.09	1	1.1
	CO	1-Hour	188.35	2000	NA
		8-Hour	151.97	500	NA
	PM10	24-Hour	4.70	5	NA
		Annual	0.62	1	NA
	SO2	3-Hour	62.86	25	1.1
		24-Hour	41.95	5	2.5
		Annual	5.58	1	1.7

Attachment 3

NAAQS Analysis Results (with Monitored Concentrations)

Scenario	Pollutant	Averaging Period	Maximum Predicted Concentration from Project and Non-Project Sources	Background Concentration	Maximum Predicted Concentration from Project, Non-Project, and Background Sources	NAAQS	Exceed NAAQS with Monitored Concentrations ?	Distance from Landfill to Maximum Concentration
			$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$	Yes/No	km
Interim	SO2	3-Hour[2]	465.68	8.57	474.25	1300	No	0.5
		24-Hour[2]	285.79	8.57	294.36	260	Yes	0.5
		Annual[1]	41.63	3.43	45.06	60	No	0.5
Routine BACT	NO2	Annual[1]	8.72	20.95	29.66	100	No	0.5
	SO2	3-Hour[2]	52.99	8.57	61.56	1300	No	0.5
		24-Hour[2]	33.53	8.57	42.10	260	No	0.5
		Annual[1]	5.68	3.43	9.11	60	No	0.5
Back-up BACT	NO2	Annual[1]	3.38	20.95	24.32	100	No	0.5
	SO2	3-Hour[2]	65.78	8.57	74.35	1300	No	0.5
		24-Hour[2]	41.01	8.57	49.58	260	No	0.5
		Annual[1]	6.78	3.43	10.21	60	No	0.5

1. H1H annual results
2. H2H hourly results

Attachment 3

PSD Increment Consumption Analysis Results

Scenario	Pollutant	Averaging Period	Maximum Predicted Concentration from Increment Consuming Project and Non-Project Sources	PSD Increment Consumption Limit	Exceed PSD Increment?	Distance from Landfill to Maximum Concentration
			$\mu g/m^3$	$\mu g/m^3$	Yes/No	km
Interim	SO2	3-Hour[2]	465.67	512	No	0.5
		24-Hour[2]	285.79	91	Yes	0.5
		Annual[1]	41.55	20	Yes	0.5
Routine BACT	NO2	Annual[1]	8.46	25	No	0.5
	SO2	3-Hour[2]	52.99	512	No	0.5
		24-Hour[2]	33.53	91	No	0.5
		Annual[1]	5.60	20	No	0.5
Back-up BACT	NO2	Annual[1]	3.12	25	No	0.5
	SO2	3-Hour[2]	65.77	512	No	0.5
		24-Hour[2]	41.00	91	No	0.5
		Annual[1]	6.70	20	No	0.5

1. H1H annual results
2. H2H hourly results

ATTACHMENT 4

Ozone Analysis

Attachment 4 Ozone Analysis

Determination of Requirement for Ozone Modeling
Okeechobee Landfill, Inc.

Reference: Scheffe method

Step 1: Estimate the annual allowable emissions of NOX and VOC

Back-Up BACT NOx

Total allowable NOX emissions from site:

A: Existing sources:	Value	Unit
CD001	23.7	tpy
CD002	23.7	tpy
B: New Sources:		
CD003	29.5	tpy
CD004	29.5	tpy
CD005	29.5	tpy
CD006	29.5	tpy
CD007	29.5	tpy
CD008	29.5	tpy
CD009	29.5	tpy
CD010	29.5	tpy
Total allowable NOX	**283.4**	**tpy**

Routine BACT NOx

Total allowable NOX emissions from site:

A: Existing sources:	Value	Unit
-	-	tpy
B: New Sources:		
CD010	136	tpy
CD011	136	tpy
CD012	136	tpy
CD013	136	tpy
CD014	136	tpy
CD015	136	tpy
CD016	136	tpy
CD017	136	tpy
CD003	29	tpy
CD004	10	tpy
Total allowable NOX	**1127**	**tpy**

Back-Up BACT VOC

Total allowable VOC emissions from site:

A: Existing sources:	Value	Unit
CD001	0.8	tpy
CD002	0.8	tpy
B: New Sources:		
CD003	0.9	tpy
CD004	0.9	tpy
CD005	0.9	tpy
CD006	0.9	tpy
CD007	0.9	tpy
CD008	0.9	tpy
CD009	0.9	tpy
CD010	0.9	tpy
Total allowable NOX	**8.8**	**tpy**

Routine BACT VOC

Total allowable VOC emissions from site:

A: Existing sources:	Value	Unit
-	-	tpy
B: New Sources:		
CD010	1	tpy
CD011	1	tpy
CD012	1	tpy
CD013	1	tpy
CD014	1	tpy
CD015	1	tpy
CD016	1	tpy
CD017	1	tpy
CD003	1	tpy
CD004	0	tpy
Total allowable NOX	**9**	**tpy**

Step 2: Estimate the VOC/NOX ratio

Back-Up BACT Ratio

VOC/NOX Ratio: 0.031

Routine BACT Ratio

VOC/NOX Ratio: 0.008

Step 3: Multiply VOC/NOX ratio by 2.875

Back-Up BACT Ratio

Adjusted VOC/NOX ratio: 0.089

Routine BACT Ratio

Adjusted VOC/NOX ratio: 0.023

Step 4: Determine if source is NOX dominated or VOC dominated

Since the adjusted ratios are less than 2, the sources are NOX dominated and there will be no significant ozone contribution in the local area.

Conclusion: No further ozone modeling is necessary

ATTACHMENT 5

Solid Waste Permit Capacity Pages

Department of
Environmental Protection

Southeast District
400 N. Congress Ave. Suite 200
West Palm Beach, Florida 33401

Jeb Bush
Governor

David B. Struhs
Secretary

APR 15 2003

PERMITTEE:

Okeechobee Landfill, Inc.
ATT: Mr. Charles J. Campagna, V.P.
Waste Management Inc. of Florida
10800 N.E. 128th Avenue
Okeechobee, FL 34972

GMS I.D. NUMBER: 5147C30001
WACS ID. NUMBER: SED/47/00070436
PERMIT/CERTIFICATION NUMBER: 0040842-010-SC
DATE OF ISSUE: April 11, 2003
EXPIRATION DATE: April 10, 2008
COUNTY: Okeechobee
LATITUDE/LONGITUDE: 27°20'29"/80°41'12"
SECTION/TOWNSHIP/RANGE: 13, 24, 25, 36/T36S/R36E

This permit is issued under the provisions of Chapter 403, Florida Statutes (F.S.), and Chapters 62-302, 62-520, 62-522, 62-701 and 62-709, Florida Administrative Code (F.A.C.). The above named permittee is hereby authorized to perform the work or operate the facility shown on the application and approved drawing(s), plans, and other documents attached hereto or on file with the Department and made a part hereof and specifically described as follows:

Berman Road Landfill, owned and operated by Okeechobee Landfill, Inc. totals 194 acres lying within Sections 13, 24, 25 and 36. Berman Road Landfill has 107 available acres remaining for solid waste disposal and a comprehensive stormwater control system. The conceptual Environmental Resources Permit Number EC-472777746 was issued on October 31, 1996 for impacts to wetlands and the surface water management system. A consolidated Environmental Resource Permit Number EI-47-0131315-001 was issued on March 13, 1998.

TO OPERATE: A 10,000 ton/day Class I sanitary landfill consisting of 87 lined acres, identified as Cells 1 through 16. The liner system is comprised of a double composite lining system with a Geosynthetic Clay Liner (GCL) beneath the secondary liner geomembrane. The liner system includes a leachate collection system (LCS) and a leak detection system (LDS). Other systems include an active gas control system with two - 20, 000 gallon per day leachate evaporators and flare systems.

TO CONSTRUCT/OPERATE: A Class I sanitary landfill consisting of 107 lined acres, identified as Cells 17 through 34 (herein referred to as the lateral expansion of the Berman Road Landfill).

Cells 17 through 34 will be constructed with the following components (from top down):

a 2-ft. thick layer of protective cover soil;
a LCS geocomposite;
a primary liner 60-mil thick High Density Polyethylene (HDPE) textured geomembrane liner;
a primary GCL;
a LDS geocomposite;
a secondary liner 60-mil thick HDPE textured geomembrane liner; and
a secondary GCL.

Cells 17 through 34 shall be built in accordance with revised engineering drawings 1 through 31, received on December 2, 2002, prepared by GLOBEX Engineering & Development, engineers project no. 1329, signed and sealed by Ali Khatami, dated December 2002.

Department of Environmental Protection

Jeb Bush
Governor

Southeast District
400 N. Congress Ave. Suite 200
West Palm Beach, Florida 33401

Colleen M. Castille
Secretary

PERMITTEE:

Mr. David McConnell, Area Vice President
Waste Management Inc., of Florida
Okeechobee Landfill Inc.
10800 N.E. 128th Avenue
Okeechobee, FL 34972

WACS ID. NUMBER: 00092994
PERMIT/CERTIFICATION NUMBER: 0247963-001-SC
DATE OF ISSUE: December 2, 2005
EXPIRATION DATE: December 1, 2010
COUNTY: Okeechobee
LATITUDE/LONGITUDE: 27°20'22.7"/80°41'47.6"
SECTION/TOWNSHIP/RANGE: 13, 24, 25, 36/36S/35E

This permit is issued under the provisions of Chapter 403, Florida Statutes (F.S.), and Chapters 62-302, 62-520, 62-522, 62-701 and 62-709, Florida Administrative Code (F.A.C.). The above named permittee is hereby authorized to perform the work or operate the facility shown on the application and approved drawing(s), plans, and other documents attached hereto or on file with the Department and made a part hereof and specifically described as follows:

Clay Farms Landfill, owned and operated by Okeechobee Landfill, Inc. is approximately 2,000 acres of Sections 13, 24, 25 and 36. Clay Farms Landfill has a total of 639 acres for solid waste disposal. Okeechobee Landfill, Inc. has a comprehensive stormwater control system for the Berman Road and Clay Farm Landfills that has been approved by the Department on October 31, 1996, DEP File No. EC-47277746.

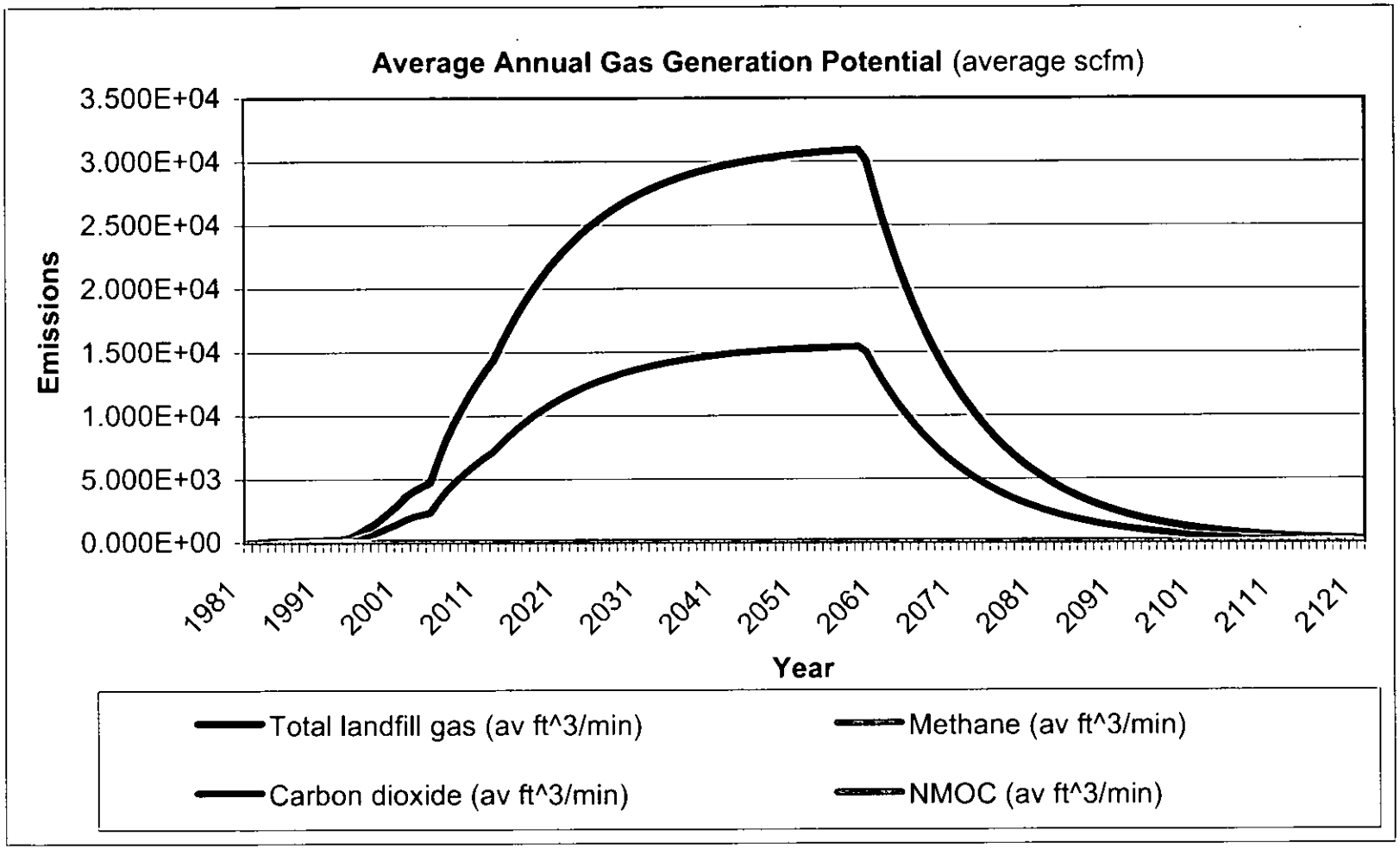
TO CONSTRUCT/OPERATE: A 5,000 to 7,000 ton/day Class I sanitary landfill. The landfill lining systems are comprised from top to bottom of a 2 ft. thick layer of protective cover soil or approved alternative; a Leachate Collection System (LCS) geocomposite (drainage layer), which consists of a 250-mil thick geonet heat-bonded to a 6 oz/yd^2 nonwoven geotextile (filter) on top, and heat-bonded to a 6 oz/yd^2 nonwoven geotextile (friction layer) on bottom; a composite primary liner composed of a 60-mil thick textured HDPE geomembrane placed on top of a geosynthetic clay liner (GCL); a Leachate Detection System geocomposite (drainage layer), which consists of 250-mil thick geonet heatbonded to a 6 oz/yd^2 nonwoven geotextile (filter) on top and heatbonded to a 6 oz/yd^2 nonwoven geotextile (friction layer) on bottom; and a composite secondary liner composed of a 60-mil thick textured HDPE geomembrane placed on top of a GCL. An Alternate Procedure SWAP 01-01 was granted by the Department to utilize the GCL below the secondary liner in lieu of a six-inch thick prepared sub-base. Other systems will include an active gas control system, and a surface water management system. The maximum permitted elevation of the Clay Farms Landfill is 233 feet N.G.V.D.

IN ACCORDANCE WITH: An application for renewal of a permit for construction and operation of a Solid Waste Resource Recovery and Management Facility received March 11, 2005 and additional information submitted May 20, 2005. Previous documents include an application for permit received December 22, 2000, with additional information submitted on February 28, 2001, March 15, 2001 and April 27, 2001. A Notice of Application was published on January 10, 2001 with proof of publication received by the Department on January 11, 2001.

LOCATED AT: 10800 N.E. 128th Avenue, Okeechobee, FL 34972.

SUBJECT TO: General Conditions 1-15 (attached as pages 2 and 3) and Specific Conditions 1-33 (attached as pages 4 through 11).

ATTACHMENT 6
Average Annual Gas Potential Curve



LandGEM: data and parameters provided by Carlson Engineering

ATTACHMENT 7

LO-CAT® Vendor Quote

From: David E. Graubard [mailto:Dgraubard@merichem.com]
Sent: Thursday, May 03, 2007 8:24 AM
To: Fagan, Kelly
Cc: David E. Graubard
Subject: RE: Waste Management - Okeechobee - GTP #231-07

Kelly

Good morning. Great to talk with you yesterday about the WM Okeechobee project.

Per our conversation, I can provide you very rough CAPEX and OPEX estimates for a system to treat 32,400 scfm of LFG with 6,000 ppm H2S (10.54 Long Tons/day of sulfur).

CAPEX:
$7,660,000 +/- 50% - This is just the engineering design package
$2,680,000 – This is the installation cost estimate
$10,340,000 – Total Installed Cost Estimate

OPEX:
Annual Electrical cost (based on 0.07/kWh): $370,150.00/year
(daily cost = $1014/day)

Annual Chemical Cost: $654,000/year
(daily cost = $1792/day)

Daily make-up water rate required: 1 gpm

I hope this provides you the information you need. The CAPEX is very rough as variations in configuration of the LO-CAT system (multiple absorber trains, shared or separate oxidizer) can impact the cost significantly.

Thanks again and let me know if there is anything else you need.

Best Regards

Dave Graubard
Business Development Manager
Gas Technology Products
Merichem Chemical & Refinery Services LLC
846 E. Algonquin Road, Suite A100
Schaumburg, IL 60173 USA
P: 1-847-285-3855
F: 1-847-285-3888
Mobile: 1-773-580-3007
www.gtp-merichem.com

ATTACHMENT 8

Estimated Emissions - SO2 Calculation

Sulfur Emissions - Sample Calculations

Open Flares (8 total)

Operation Period	8,760 hr	LFG inlet flow, standard	3,300 scfm
Standard Temperature	520 °R	Pressure	1 atm

SO_2 Emission Rate with BACT

LFG Compound	CAS	MW (lb/lb-mol)	Conc (ppmv)[a]	Control Efficiency[a, b]	Individual Compound Contribution to SO_2		
					No. of S Atoms	S Conc (ppmv)	SO_2 Emiss (lb/hr)
Carbon Disulfide	75-15-0	76.13	0.58	0.0%	2	1.17	0.04
Carbonyl Sulfide	463-58-1	60.07	0.49	0.0%	1	0.49	0.02
Dimethyl Sulfide (methyl sulfide)	75-18-3	62.13	7.82	0.0%	1	7.82	0.26
Ethyl Mercaptan (ethanethiol)	75-08-1	62.13	2.28	0.0%	1	2.28	0.08
Hydrogen Sulfide	7783-06-4	34.08	**385.80**	0.0%	1	385.80	12.89
Methyl Mercaptan	74-93-1	48.11	2.49	0.0%	1	2.49	0.08
Total Contribution to SO_2 :						**400.05**	**13.4**

Enclosed Flares (2 total)

Operation Period	8,760 hr	LFG inlet flow, standard	3,000 scfm
Standard Temperature	520 °R	Pressure	1 atm

SO_2 Emission Rate with BACT

LFG Compound	CAS	MW (lb/lb-mol)	Conc (ppmv)[a]	Control Eff[a, b]	Individual Compound Contribution to SO_2		
					No. of S Atoms	S Conc (ppmv)	SO_2 Emiss (lb/hr)
Carbon Disulfide	75-15-0	76.13	0.58	0.0%	2	1.17	0.04
Carbonyl Sulfide	463-58-1	60.07	0.49	0.0%	1	0.49	0.01
Dimethyl Sulfide (methyl sulfide)	75-18-3	62.13	7.82	0.0%	1	7.82	0.24
Ethyl Mercaptan (ethanethiol)	75-08-1	62.13	2.28	0.0%	1	2.28	0.07
Hydrogen Sulfide	7783-06-4	34.08	**385.80**	0.0%	1	385.80	11.72
Methyl Mercaptan	74-93-1	48.11	2.49	0.0%	1	2.49	0.08
Total Contribution to SO_2 :						**400.05**	**12.1**

Total Sulfur Emissions (8 enclosed flares and 2 open)

= (8 x 13.4 lb/hr) + (2 x 12.1 lb/hr) = 131.2 lb/hr

Sulfur Emissions Sample Calculations (typical for all LFG Compounds)

Sulfur Emissions in lbs/hour (expressed as SO_2) = {(scfm)*(60 min/hr)*(total sulfur concentration [ppmv])*(1-control efficiency)*(MW SO_2)*P}/{(R)*(T)}

Where:

P = Pressure, 1atm

R = Universal gas constant, 0.7302 atm-ft^3/lb-mol°R

T = Temperature, 60°F (520 °R)

Example for Enclosed Flare (Carbon Disulfide)

Sulfur Emissions from Carbon Disulfide = (3000 ft^3 / min) * (60 min / hour) * (1.17 / 1,000,000 carbon disulfide sulfur concentration [ppmv]) * (1 - 0 % control efficiency) * (64.066 lb SO_2 / lb mol) * (1 atm) * (1 lb-mol°R / 0.7302 atm-ft^3) * (1 / 520 °R) = 0.04 lbs / hour

Example for Open Flare (Hydrogen Sulfide)

Sulfur Emissions from Hydrogen Sulfide = (3300 ft^3 / min) * (60 min / hour) * (385.8 / 1,000,000 hydrogen sulfide sulfur concentration [ppmv]) * (1 - 0 % control efficiency) * (64.066 lb SO_2 / lb mol) * (1 atm) * (1 lb-mol°R / 0.7302 atm-ft^3) * (1 / 520 °R) = 12.89 lbs / hour

Notes:

[a]EPA 1998. "Compilation of Air Pollutant Emission Factors, Volume I. Stationary Point and Area Sources" (AP-42), 5th Ed., November

[b]AP-42 gives ranges for control efficiencies - 0% control efficiency assumed for conservative emission estimates

ATTACHMENT 9

Engineer's Certification Statement

Electronic Permit Submittal and Processing System (EPSAP)
Professional Engineer Signature Document

"This document is signed and sealed to secure the data in this permit application and any attached files that were submitted electronically as described in Florida Department of Business and Professional Regulation, Board of Professional Engineers, Procedures for Signing and Sealing Electronically Transmitted Plan, Specifications, Reports or other Documents, Rule 61G15-23.003., F.A.C.."

EPSAP Application Number: 1270-2
Facility Identification Number: 0930104
Facility Owner/Company Name: OKEECHOBEE LANDFILL, INC.

Purpose of Application:
Air construction permit.

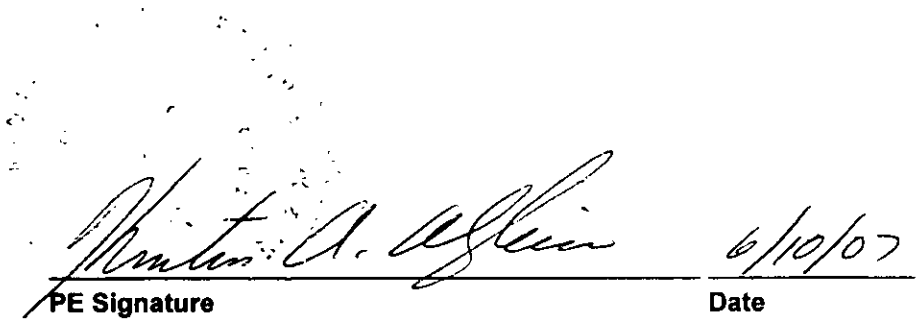
Signature File Created: 2/28/2007 1:45:43 AM

File Description	Authentication Code
Submitted Application Data	E3B5F5ACEBCFC08FF63A407B7A9B0325BA16CDFF
Uploaded Facility Documents:	
Figure 1 - Facility Area Map.pdf	6B24E657B261D10A4F657FB437C60E20F7F69138
Descritpion of proposed.doc	D162E5FA9783E749E25AFC1B88069A07B476E345
Air Qual Analysis.doc	D1B9456D2257D449FA7FAC35505B7BAAD723A3AE
Figure 3 - Facility Plot Plan.pdf	F5899954549E263EBCB88C99E5A003C7D073F2F3
Figure 2 - Process Flow Diagram.pdf	A64D9E31B5CC17AC844B3DE4A013D29CA66C87F5
Precautions to Prevent.doc	2B7414FD4B4AD47DB1366598D1475B883775B3B2
Rule Applicability Analysis.doc	D3334D06184B4D8B5B0E405961319FC0C2B23B95
Additional Impact Analysis.doc	D35D10801E17CADF2CA62E0EF8000101EA7A9231
Air Qual 1977.doc	580261A94BCE0B192A58AAA0A2C51A7561C31C55
Air Construction PSD 02272007A.pdf	E4338015B8FC3D55F976D2E65CC153ABE7644267
Final AC-PSD Report 2007-02-27.pdf	A72F9CAB8CBFD4AF4580DFAF7F4A464C7430D287
TOC whole application + covers.pdf	562E94134545C23D179C21C2F0C434C6B1CC8B82
Air Quality Impact Analysis_OKI draft 02-26-2007ver01 resized.pdf	C7776D3809AFCFF8E8AEE1114B64D25B0F3BED76
Uploaded Emissions Unit Documents:	
Figure 2 - Process Flow Diagram.pdf	A64D9E31B5CC17AC844B3DE4A013D29CA66C87F5
Section II Appendix C - Fuel Analysis.pdf	033D513CFDC5F30F2D3FD96DA390AC9ED88BB92F
Section II Appendix H - Control Equipment (part 1).pdf	1EB37B77F3EDBE893FF52220CA05DAFA0F897C09
Section II Appendix G - Stack Parameters and Sampling Facilities.pdf	A29F0E6A0DE35DF907D7F3CAF759A2D20A8CE533
Section II Appendix F - Procedures for startup and shut down.pdf	24206E32DD4C79F6B5EB1D51757A3EB7609A628E
O _ M Plan.doc	F8598BC2D377800746D144AAAA2195AED92C3BCD
Section II Appendix D - BACT Analysis.pdf	896686F499401206CC88E7FFDF91B4945ECA6C13
Good Engineering.doc	E005837E656D0F232575D9B3B9BB26CF9C32E1B3
Section II Appendix B - Support Calculations.pdf	3CC34CCA3B9492946546A0284C3E23FBCA6D18FF
Pages from Section II Appendix H - Control Equipme	F8333825711D7E65345E6F884DF9DB751F28FFCF

nt (part 2).pdf	
Section II Appendix A - General LF Operations.pdf	AD3D89B9535BD917E6BC9962A6772205C30E1DD4
Section II Appendix E - LFG Generation n Construct Sched.pdf	046F0C2A39156E75120904639B93162B9D7F0B52
Figure 4 - aerial landfill.pdf	E8F40CC0DFF0B8BE967F9E69C1F96B26FE51F6B5
Flare Testing Report 09252006.pdf	BAC2B1272EA2A1AD35C796D8CF28DE569AB42726
Final Signature File	771CAAF582315B4D8239B61A1A00B3B88EBF91DA

Professional Engineer (PE): KRISTIN ALZHEIMER **License No:** 43456

(sign and affix PE seal below)



PE Signature **Date** 6/10/07