CDM
1715 North Westshore Boulevard, Suite 875
Tampa, Florida 33607
tel: 813 281-2900
fax: 813 288-8787

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BUREAU OF AIR REGULATION

March 30, 2009

Mr. Jeffery F. Koerner, Administrator
Florida Department of Environmental Protection
New Source Review Section
Bob Martinez Center
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Subject: Response to Request for Additional Information
Hillsborough Resource Recovery Facility
Minor Modification – Wet Dust Collection System
Project No. 0570261-010-AC (PSD-FL-369B)

Dear Mr. Koerner:

On behalf of Hillsborough County Solid Waste Department, CDM is submitting written responses to the Florida Department of Environmental Protection (FDEP) correspondence, dated March 2, 2009. CDM requests that FDEP process the minor permit modification based on the response shown below.

FDEP Comment 1

In 2007, two permits were issued: Permit 0570261-009-AC modifying the NO_x control equipment; and Permit 0570261-008-AC implementing an hourly averaging method to calculate carbon mass feed rate levels. On October 3, 2006, the Department issued a Final Permit 0570261-007-AC (PSD-FL-369) to construct a nominal 600 tons per day municipal waste combustor designated as Unit 4. The permit included an expansion to the existing ash building to provide sufficient residue and ferrous storage for all units. However, during construction it was determined that additional ventilation measures are required to meet the 2004 Florida Building Codes. Therefore, a minor modification to Emissions Unit 100 (Ash Handling) to include a new air pollution control system is proposed. The application indicates that the additional ventilation will exhaust through a new wet dust collection system that is designed to meet a 0.015 grain/acf emission limit at a nominal now rate of 7,000 acfm. Based on the particulate matter (PM) emission rate and full operation at 8,760 hours per year, the potential emission estimate will increase 0.9 lb/hour and 3.9 tons per year (TPY) in addition to the existing baghouse required for the expansion. Is this an accurate characterization? Please comment.

Response 1

CDM has recalculated the potential to emit (PTE) based on more accurate emissions data as explained further in response to comment 2 below. The recalculated PTE for the new emission point is 0.06 lbs/hr and 0.3 tons/yr.

FDEP Comment 2

This project is part of the overall Unit 4 project (0570261-007-AC). The original application submitted for this project stated that the estimated annual emission rates for PM/ PM_{10}/MWC Metals is 25.1 TPY and would trigger preconstruction review of the Prevention of Significant Deterioration (PSD) of air quality. The PSD significant emission threshold for total PM is 25 TPY, PM_{10} is 15 TPY, and MWC-Metals is 15 TPY. The Technical Evaluation and Preliminary Determination for this project depicted a reduction in the potential annual emission rates to less than 24 TPY for total PM and 14.6 TPY for both PM_{10} and MWC-Metals, which did not trigger PSD review. However, the proposed modification would put the estimated emission rates to 27.9 TPY for total PM, 18.5 TPY for both PM_{10} and MWC-Metals, which would trigger PSD applicability. If subject to PSD preconstruction review for PM/PM_{10}/MWC Metals please provide your proposed BACT emissions and a revised air quality analysis. If the final design of the installed equipment indicates emissions will be lower, please identify the new emission rates and a revised PSD applicability analysis for PM/PM_{10}/MWC Metals.

Response 2

Because the equipment supplier was unable to provide an emissions guarantee, CDM initially made the conservative assumption that emissions from the Whirl-wet device would not initially exceed 0.015 gr/acf. As stated in your response, this concentration translates into an emission rate of 3.9 tons/yr. Since the preparation of the application, CDM has further researched existing data and determined that a more accurate emissions estimate from the Whirl-wet device is on the order of 0.001 gr/dscf. This is based in part on actual PM stack test data obtained from a similar WTE facility.

The data shows the average emissions from the ash building stack to be approximately 0.0006 gr/acf. This stack is controlled by a fabric filter baghouse similar to the existing baghouse serving the ash building at the Hillsborough County Resource Recovery Facility. Typical control efficiencies for fabric filter baghouses are assumed to be 99% or greater, whereas control efficiencies for wet scrubbers are assumed to be 90% or greater. However, at these lower concentrations, the outlet emissions for the scrubber are expected to be approximately

twice that of a baghouse. Therefore, it is safe to assume that the Whirl-wet device can achieve an emission rate of at least 0.001 gr/acf based on this data.

The revised emissions rates were recalculated based on the information shown in **Table 1** and as shown below. The revised emissions were calculated to be 0.06 lb/hr and 0.3 tons/yr based on the outlet concentration of 0.001 gr/acf. The particles emitted are assumed to be less than 10 µm and directly proportional to the PM/PM_{10}/MWC Metals. Therefore, the emission rates will increase to 24.3 tons/yr for total PM and 14.9 tons/yr for both PM_{10} and MWC-Metals, which does not trigger PSD applicability. Therefore, a BACT emissions and revised air quality analyses are not required.

Table 1 – Estimated Emissions for the Proposed Hillsborough Facility

Description	Parameter
Volumetric Flow	7,000 acfm
Estimated Concentration	0.001 gr/acf
Calculated Emission Rate	0.06 lb/hr
Measured Emission Rate	0.3 ton/yr
Particle Size	< 10 µm

Emission Calculations:

$$Emissions = Conversion\ Factor \times Flow \times Concentration$$

$$Emissions = 0.0375 \times 7{,}000\ acf/min \times 0.001\ gr/acf \approx 0.3\ tons/yr$$

$$Emissions = 0.00857 \times 7{,}000\ acf/min \times 0.001\ gr/acf \approx 0.06\ lb/hr$$

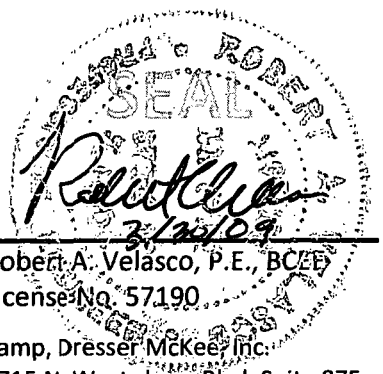
Please process the minor permit application based on the above responses. If you have any questions, please contact Robert Velasco at (813) 281-2900, if you have any questions.

Sincerely,

Wm. R. Crellin, Jr., PE

William R. Crellin, P.E.
Project Manager
Camp Dresser & McKee Inc.

cc: FDEP (4 copies)
Barry Boldissar - Hillsborough County
Tom Smith - Hillsborough County
Glenn Hoag - Covanta Hillsborough
Kristen Chardo – Covanta Hillsborough
CDM File



Robert A. Velasco, P.E., BCEE
License No. 57190

Camp, Dresser McKee, Inc.
1715 N. West shore Blvd, Suite 875
Tampa, FL 33607
Tel: (813) 281-2900
Cert. of Auth. #EB 0000020

The seal certifies that the engineering calculations shown herein provide reasonable assurances of achieving the applicable requirements of the Air Construction Permit/Title V permit renewal application.

RESULTS

Table 2-33
Ash Building Stack - Particulate and Visible Emissions

Run No.		1	2	3	Average
Date (1994)		October 26	October 26	October 26	
Start Time (approx.)		10:20	12:00	14:15	
Stop Time (approx.)		11:28	13:31	15:17	
Gas Conditions					
T_s	Temperature (°F)	86	88	88	88
B_{wo}	Moisture (volume %)	2.35	2.54	2.90	2.59
O_2	Oxygen (dry volume %)	20.8	20.8	20.8	20.8
CO_2	Carbon dioxide (dry volume %)	0.0	0.2	0.2	0.1
Volumetric Flow Rate					
Q_s	Actual conditions (acfm)	26,180	26,520	26,180	26,290
Q_{std}	Standard conditions (dscfm)	24,750	24,900	24,500	24,720
Particulate					
C	Concentration (gr/acf)	0.0006	0.0009	0.0005	0.0006
C	Concentration (gr/dscf)	0.0008	0.0009	0.0005	0.0007
C	Corrected to 7% O_2 (gr/dscf)	0.0838	0.1301	0.0744	0.0961
C	Corrected to 12% CO_2 (gr/dscf)[1]	N/A	0.0561	0.0321	0.0441
E	Emission rate (lb/hr)	0.128	0.200	0.112	0.147
E	Emission rate (ton/yr)	0.560	0.875	0.492	0.642
Visible Emissions					
Start Time (approx.)		10:20	12:00	14:15	
Stop Time (approx.)		11:20	13:00	15:15	
	Average opacity	0	0	0	0
	Maximum reading	0	0	0	0

[1] The CO_2 content for Run 1 was 0.0%, therefore the 12% CO_2 correction is undefined. Runs 2 and 3 are averaged.

*Note: Approved for operation in the ash building @ the City of Tampa McKay Bay WTE facility.