

RENOTICE OF TECHNICAL EVALUATION
and
PRELIMINARY DETERMINATION

MCKAY BAY REFUSE-TO-ENERGY PROJECT

PERMIT NUMBER:

AC 29-47277

FLORIDA DEPARTMENT OF ENVIRONMENTAL REGULATION
BUREAU OF AIR QUALITY MANAGEMENT
CENTRAL AIR PERMITTING

Proposed Department Action

The Department intends to issue the requested permit to the City of Tampa for the rehabilitation of the old municipal incinerator to a resource recovery facility which will produce steam to generate electricity at the existing site in Hillsborough County. This action is renoticed due to significant changes made by the applicant to the original application.

Any person wanting to comment on this action may do so by submitting such comments in writing to:

Mr. Clair Fancy
Department of Environmental Regulation
Bureau of Air Quality Management
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32301

Any comments received within thirty days after publication of this notice will be considered and noted in the Department's final determination.

Any person whose substantial interest would be affected by the issuance or denial of this permit may request an administrative hearing by filing a petition for hearing as set forth in Section 28-5.15 FAC (copy attached). Such petition must be filed within 14 days of the date of this notice with:

Ms. Martha Hall
Department of Environmental Regulation
Office of General Counsel
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32301

I. PROJECT DESCRIPTION

A. Applicant

City of Tampa
306 Jackson Street
Tampa, Florida 33602

B. Project and Location

The applicant's proposed project consists of rehabilitating the municipal incinerator into a 1000 ton per day solid waste resource recovery facility capable of generating electricity for sale to Tampa Electric Company. The second phase of the project, consisting of constructing a second 1000 ton per day solid waste resource recovery unit has been delayed and will be reviewed as a contemporaneous increase when reactivated. The facility is to be located on a fourteen acre site adjacent to McKay Bay, south of Florida Route 60 in Tampa, Hillsborough County, Florida. The UTM coordinates are 360.0 km East and 3091.9 km North.

C. Process Description and Controls

The existing incinerator system consists of three mass burn combustion trains, without energy recovery, based upon the Volund technology. Each unit is rated at 250 tons per day. A fourth unit is to be added, thus increasing the design capacity of the facility to 1000 tons per day. The incinerator will be rehabilitated into a resource recovery facility by the addition of waste heat boilers, electrostatic precipitators and turbine generators. Ash produced by the combustion process will be handled by a wet system. The wet ash will be dewatered and loaded into trucks for subsequent disposal in the City's designated residue disposal site.

II. RULE APPLICABILITY

The proposed project is located in the particulate and ozone nonattainment areas in Hillsborough County. For the remaining criteria pollutants, Hillsborough County is listed as unclassifiable for sulfur dioxide and attainment for carbon monoxide and nitrogen oxides. The project is also in the area of influence for the Pinellas County sulfur dioxide nonattainment area.

The uncontrolled emissions and the controlled emissions for the facility are:

Contaminant	Uncontrolled Tons Per Year	Controlled Tons Per Year
Particulate	19,970	122.2
Sulfur Dioxide	745	745
Nitrogen Oxides	1,314	1,314
Carbon Monoxide	75	75
VOC	39	39
Lead	14	14
Fluoride	18	18
Hydrogen Chloride	823	823
Mercury (vaporous)	1.8	1.8
Mercury (particulate)	0.07	0.07
Beryllium	0.00116	0.00116

The proposed project is a major emitting facility for the criteria pollutant sulfur dioxide, nitrogen oxides, and particulate. Since the project will increase sulfur dioxide concentrations over the baseline, it is subject to the requirements of 17-2.04, FAC, prevention of significant deterioration (PSD). PSD review consists of a determination of best available control technology (BACT) and an air quality impact analysis to demonstrate that the project would not cause or contribute to a violation of Florida ambient air quality standards (FAAQS) or PSD increments. Since the project is a major emitting facility for nitrogen oxide, a BACT determination is required by 17-2.03, FAC, for that pollutant.

In addition, since construction is in the particulate (PM) and ozone nonattainment areas in Hillsborough County, the project is subject to the new source review (NSR) requirements of 17-2.17, FAC, for PM and VOC emissions. The nonattainment review consists of a determination of Lowest Achievable Emission Rate (LAER) for PM emissions, emission offsets for PM, and state-wide compliance requirement for multiple facility ownership. In accordance with 17-2.17(3)1.C. FAC, lack of sufficient particulate emission offsets prior to issuance of a construction permit will not preclude issuance of that permit since all available offsets have been secured and other sources of offsets are being explored. VOC emissions are required to meet BACT according to 17-2.17(4), FAC, since they meet the limited new source review exemption contained in 17-2.17(3)(a)1.a.(ii), FAC.

In addition, the project is subject to emission limiting standards for PM under the adopted federal new source performance standards (NSPS) for incinerators (17-2.21(2)(a), FAC). The LAER determination must be at least as stringent as the applicable NSPS. (The project is not subject to the requirements of 17-2.22,

FAC, Emission Standards for Hazardous Air Pollutants as they will not be burning sewage sludge, asbestos, or beryllium wastes.)

Although the project is in the area of influence of the Pinellas County sulfur dioxide nonattainment area, emission modeling for SO₂ demonstrates that the SO₂ nonattainment area will not be significantly impacted by the project. Therefore, the project is exempt from the NSR requirements (17-2.17, FAC) for the SO₂ nonattainment area.

III. SUMMARY OF EMISSIONS AND AIR QUALITY ANALYSIS

A. Emission Limitations

The emission limitations determined to be Lowest Achievable Emission Rate (LAER) are presented in Attachment A. The emission limitations determined to represent Best Available Control Technology (BACT) are presented in Attachment B. The projected emissions from the facility are given below.

Pollutant	Emission Limitation	Maximum Hourly Rate (lb/hr)	Maximum Annual Rate (TPY)
Particulate	0.025 gr/dscf @ 12% CO ₂	27.9	122.2
Sulfur Dioxide	BACT	170.0	744.6
Nitrogen Oxides	BACT	300.0	1314.0
Carbon Monoxide		17.0	74.5
VOC	BACT	9.0	39.4
Lead		3.1	13.6
Mercury (vaporous)		0.4	1.8
Mercury (particulate)		0.015	0.067
Beryllium		0.00026	0.00116
Fluoride		4.2	18.4
Hydrogen Chloride		188.1	823.0

The emission information was based on data from Waste Management, Inc., the current Volund technology license.

B. AIR QUALITY IMPACT ANALYSIS

The PSD review process requires an air quality impact analysis for all applicable pollutants. This analysis includes the use of FDER and EPA approved air quality dispersion models in conjunction with ambient air monitoring data. Estimates of maximum ground-level concentrations are determined for comparison with State standards. The analysis requires:

- o An analysis of existing air quality;
- o A PSD increment analysis (for PM and SO₂ only); and
- o A Florida Ambient Air Quality Standards (FAAQS) Analysis

In addition, preconstruction monitoring may be necessary to establish existing air quality conditions if valid monitoring data do not presently exist.

The proposed project is considered a major emitting facility with significant emissions of PM, SO₂, and NO₂. Because the project is located in an area that is nonattainment for PM it is exempt from PSD review and is reviewed under the more stringent nonattainment process.

Based on these required air quality impact analyses, FDER has reasonable assurance that the subject facility, as described in this permit and subject to the conditions of approval proposed herein, will not cause or contribute to a violation of any PSD increment or ambient air quality standard. A discussion of the required analyses follows.

1. Modeling Methodology

The FDER and EPA-approved Single-Source CRSTER dispersion model was used in the air quality impact analyses.

This model was used to determine the maximum predicted annual and short-term ground-level ambient concentrations of the subject

pollutants. Receptors were located in 36 azimuthal directions surrounding the facility in concentric rings ranging from 0.5 to 9.0 kilometers. All emission stacks (2) were collocated. The stack parameters used in the modeling are given in Table B-1.

The surface and upper air meteorological data used in the model were National Weather Service data collected at Tampa, Florida during the period 1970-1974.

Table B-1

Stack Parameters for McKay Bay Refuse-to-Energy Project

Emissions Unit	Stack Height (m)	Stack Diameter (m)	Exit Velocity (m/s)	Exit Temperature (K)
1	45.72	1.75	23.43	500
2	45.72	1.75	23.43	500

2. Analysis of Existing Air Quality

In order to evaluate existing air quality in the area of a proposed project, FDER may require a period of continuous preconstruction monitoring for any pollutant subject to PSD review. If current monitoring data of sufficient quantity and quality already exist within the area of the proposed project, preconstruction monitoring is not necessary.

Since the proposed facility is located near the Tampa urban area, existing monitoring data for SO₂ and NO₂ were available for use by the applicant. Table B-2 lists the highest recorded monitored values for these pollutants in the previous year (1980).

Table B-2
Monitoring Results, SO₂ and NO₂ (ug/m³)

<u>Station</u>	<u>Pollutant</u>	<u>3-hour*</u>	<u>24-hour*</u>	<u>Annual</u>
Davis Island	SO ₂	496/465	89/87	21
Hookers Pt.	SO ₂	476/469	132/106	20

* Values represent the highest and the second highest for the year.

3. PSD Increment Analysis

The PSD increment analysis pertains to PM and SO₂, for which maximum allowable increases (increments) are defined. The proposed project is located in an area designated as nonattainment for PM and therefore not subject to PSD review for that pollutant. The area is classified as Class II for SO₂. The nearest Class I area is the Chassahowitzka National Wilderness Area approximately 77 kilometers to the north-northwest.

All SO₂ emissions from the proposed project will consume increment. In addition, all other increment consuming sources that might impact the project area were included in the analysis. Table B-3 lists the maximum increment consumption expected in the project area.

Table B-3
Maximum Increment Consumption (SO₂)

<u>Averaging Time</u>	<u>Class II Increment Consumed (ug/m³)</u>	<u>Allowable Class II Increment (ug/m³)</u>
3-hour	193	512
24-hour	44	91
Annual	2	20

The SO₂ significant impact area of the proposed project is the area encompassing all predicted concentrations greater than 1 ug/m³ on an annual average. The greatest distance to the edge of this area is less than 10 kilometers. No significant impact on the nearest Class I area, 77 kilometers away, is expected as a result of this project.

4. Ambient Air Quality Standards Analysis

The PSD regulations require the permit applicant to demonstrate that, given existing air quality in an area, a proposed emissions increase subject to PSD review will not cause or contribute to any violation of ambient air quality standards. For the proposed project,

an ambient air quality standards analysis is required for SO₂ and NO₂.

A conservative estimate of the maximum concentration to be expected, for comparison with the Florida Ambient Air Quality Standards (FAAQS), is obtained by adding the maximum (highest, second-high) predicted ground-level concentration as modeled for the proposed project to the maximum monitored value in the vicinity for each respective pollutant.

Table B-4 lists the maximum predicted concentrations expected to occur in the project area for comparison with the NAAQS.

Table B-4
Maximum Predicted Concentrations

<u>Pollutant</u>	<u>Predicted Impact (ug/m³)</u>	<u>FAAQS (ug/m³)</u>
SO ₂		
Annual	22	80
24-hour	141	365
3-hour	524	1300
NO ₂		
Annual	35	100

IV. CONCLUSIONS

The emission limitations stated previously are based upon the applicant's estimated combustion rates. The emission limitations proposed will not violate any ambient air quality standard, PSD increment, NSPS emission limitation or NESHAP limitation. All new source review requirements for nonattainment areas and all PSD requirements have been met in the application.

The General and Specific Conditions listed in the proposed permits will assure compliance with all applicable requirements of Chapter 17-2, FAC.

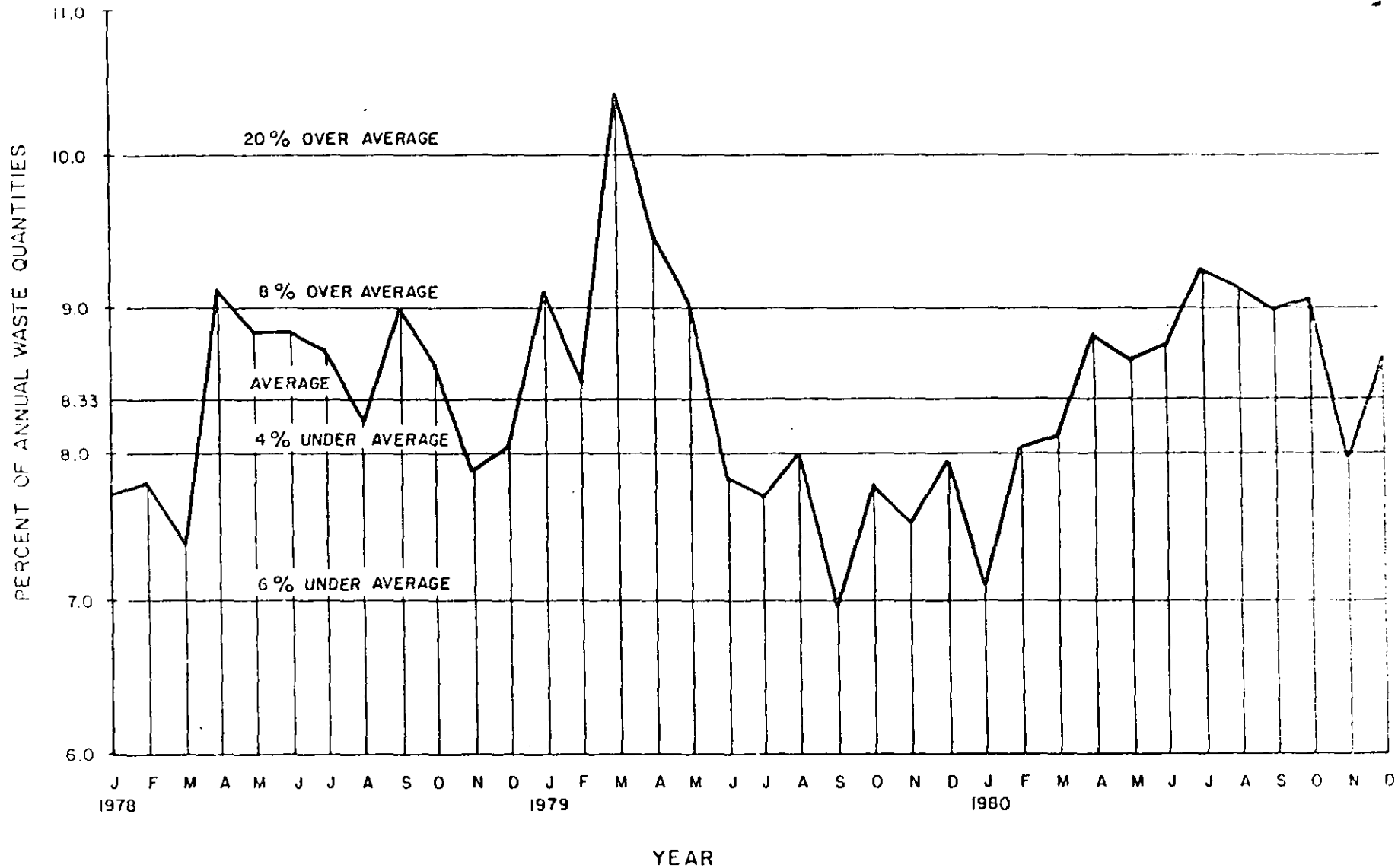


FIGURE A-1

SEASONAL VARIATIONS IN SOLID WASTE QUANTITIES
1978-1980

Table A-5 summarizes the seasonal variation in the waste stream composition. The percentage of combustibles was the highest at 89.8% in August 1980, and the lowest at 80.3% in February 1980.

TABLE A-5 - STUDY AREA MSW COMPOSITION COMPARISON

Category	Waste Stream Composition, Percent				
	November 1979(1)	February 1980(2)	May 1980(3)	August 1980(4)	Average (5)
Combustibles					
Paper					
Miscellaneous paper	33.4	33.1	27.2	24.4	29.5
Newspaper	11.2	7.6	9.6	9.4	9.4
Food and organics	9.5	16.2	7.9	4.8	9.6
Wood and garden	18.7	13.8	17.9	42.1	25.6
Rubber, leather, and textile	2.8	3.8	4.5	4.5	3.9
Plastics	6.2	5.8	6.1	4.6	5.7
Subtotal combustibles	81.8	80.3	83.1	89.8	83.7
Noncombustibles					
Ferrous					
Heavy	1.2	2.4	1.1	0.1	1.2
Light	4.0	4.7	2.9	2.3	3.5
Aluminum	1.1	1.0	.7	0.8	0.9
Other nonferrous metals	0.0	0.0	.5	0.0	0.1
Glass	7.9	8.3	9.2	6.0	7.9
Rocks, dirt, ash and miscellaneous	4.0	3.3	2.4	1.0	2.7
Subtotal noncombustibles	18.2	19.7	16.9	10.2	16.3

- (1) Average wet weight from a 6-day sampling survey from November 12 to November 17, 1979.
- (2) Average wet weight from a 6-day sampling survey from February 4 to February 9, 1980.
- (3) Average wet weight from a 6-day sampling survey from May 5 to May 10, 1980.
- (4) Average wet weight from a 6-day sampling survey from August 4 to August 9, 1980.
- (5) Based on the November, February, May and August results.

Source: Hillsborough County Resource Recovery Planning Study, Chapter 2.

Table A-6 illustrates the seasonal variation of the higher heating value and moisture content of the solid waste. The heating value was lowest in May 1980, the highest values occurred in the months of November 1979 and August 1980. This local data correlates reasonably with HDR and other's sampling programs listed in Table A-7 and its use should provide a reasonable basis for the procurement activities.

TABLE A-6 - STUDY AREA HIGH HEAT VALUE, PROXIMATE ANALYSES

Category	High Heat Value, Btu per Pound				
	November 1979(1)	February 1980(2)	May 1980(3)	August 1980(4)	Average
Combustible fraction, as received	5750	5290	4910	5290	5310
Combustible fraction, moisture free	8100	7560	7220	7780	7660
MSW, as received	4710	4250	4080	4750	4450
MSW, moisture free	6630	6070	6000	6980	6420
Average Moisture %	29	30	32	32	-

(1) Based on a 6-day sampling survey from November 12 to November 17, 1979.

(2) Based on a 6-day sampling survey from February 4 to February 9, 1980.

(3) Based on a 6-day sampling survey from May 5 to May 10, 1980.

(4) Based on a 6-day sampling survey from August 4 to August 9, 1980.

Source: Hillsborough County Resource Recovery Planning Study, Chapter 2.

Special wastes can comprise a significant amount of the waste that is landfilled. Included in these wastes are large amounts of shrimp, tires, dead animals, lumber, and construction wastes. These non-processable wastes will go directly to the landfills and bypass any waste processing facilities. By selecting the 4.3 unit waste generation rate, we are of the opinion the special wastes have been adequately included in the total waste quantities listed in Table 4.

From Chapter 3 of original application
submitted July 1981

AIR QUALITY ANALYSIS

The purpose of air quality analysis is to determine the effects this Project will have on the surrounding area and the attainment status of that area. This is done first determining a good estimate of the emissions from the Project, then modeling the emissions from this facility and finally adding the modeled emissions to the existing background concentration. The area of air quality analysis is less than a precise science and assumptions must be made. These assumptions include the use of air quality models. A fundamental assumption used in the analysis is that the facility is operating at full-load, all day, everyday. This will lead to a more conservative analysis than will actually exist.

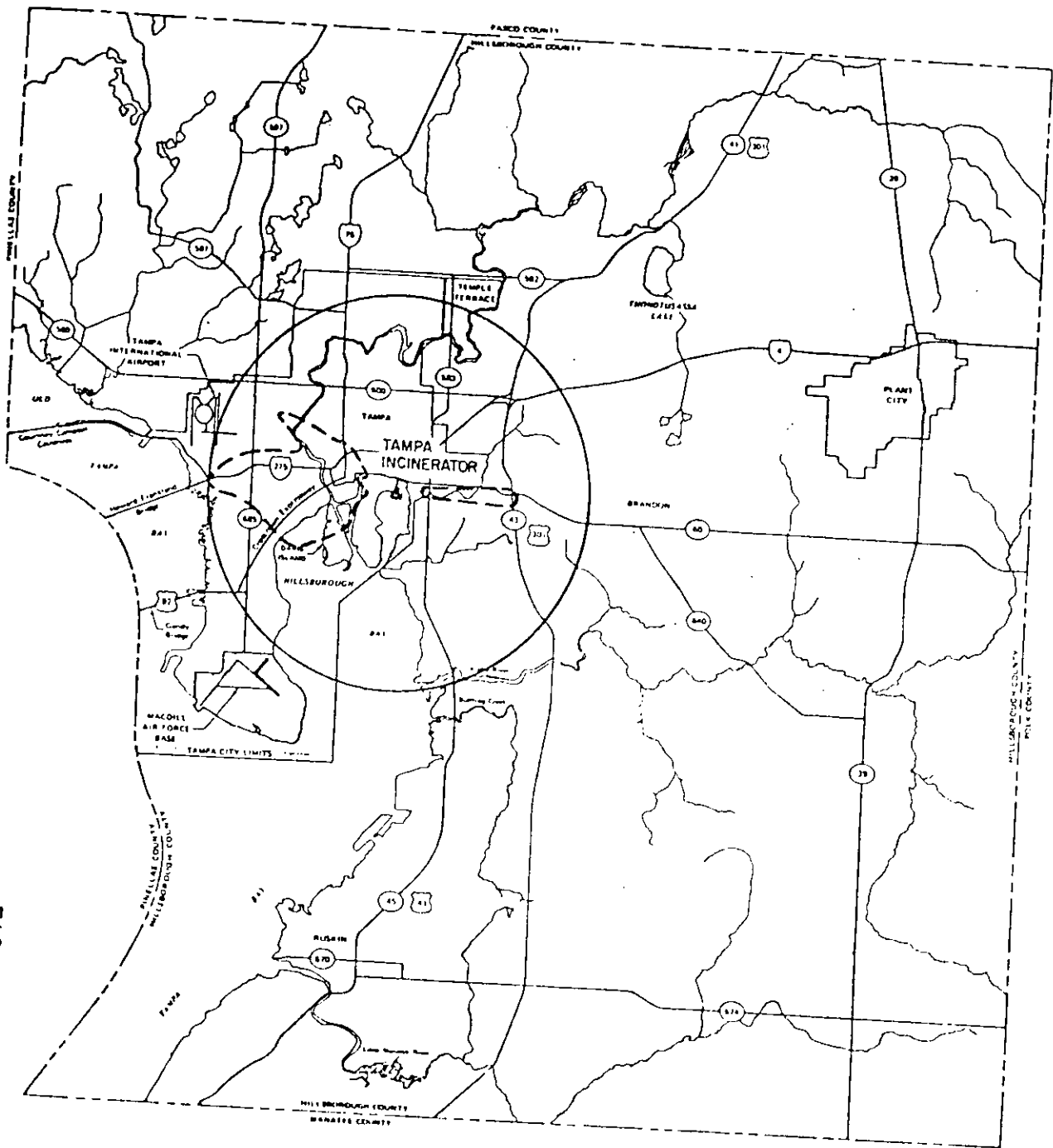
Facility Emissions and Monitoring

The emissions information for Facility 1 was obtained from Waste Management, Inc. (WMI), the current Volund technology licensee. The data represents the highest value obtained from stack tests done worldwide (see Appendix I). The expected emissions are shown in Table 3-1. The Project's emissions are compared to the PSD significance levels in Table 3-2.

Table 3-1
Emissions Expected from Project

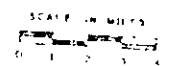
	Facility 1		Facility 2		TOTAL
	gm/s	TPY	gm/s	TPY	TPY
Particulate (uncontrolled)	575	19970	400	13890	27350
Particulate (controlled)	4.6	160	3.2	109	269
Sulfur Dioxide	20.8	722	12.1	420	1142
Nitrogen Oxides	26.0	903	9.5	330	1233
Carbon Monoxide	1.68	58	5.8	200	258
Hydrocarbons	0.92	32	0.92	32	64
Lead	0.47	16.3	0.47	16.3	32.6
Mercury (vaporous)	0.05	1.8	0.05	1.8	3.6
Mercury (particulate)	2.3×10^{-3}	0.08	2.3×10^{-3}	0.08	0.16
Beryllium	4.0×10^{-5}	1.4×10^{-3}	4.0×10^{-5}	1.4×10^{-3}	2.8×10^{-3}
Flouride	0.53	18.4	.53	18.4	32.6
Hydrogen Chloride	23.7	823	23.7	823	1646

please note our actual stack test data shows lesser emissions at 1200TPD than originally estimated for facility 1, the total for both facilities was used



LEGEND

- ACTUAL IMPACT AREA 1.75 PPM
- PCE IMPACT AREA

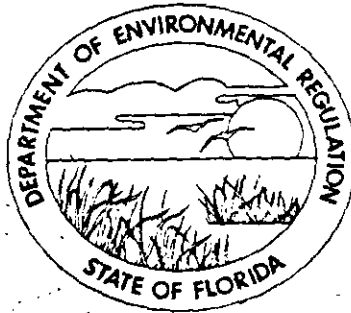


**SULFUR DIOXIDE
SIGNIFICANT IMPACT AREA**

MCKAY BAY REFUSE-TO-ENERGY PROJECT

3-6

FIGURE 3-2



STATE OF FLORIDA
DEPARTMENT OF
ENVIRONMENTAL REGULATION

CONSTRUCTION
PERMIT

NO. AC 29- 47277

CITY OF TAMPA
MCKAY BAY REFUSE-TO-ENERGY
FACILITY NO. 1

DATE OF ISSUANCE

April 23, 1982

DATE OF EXPIRATION

DECEMBER 31, 1984

Victoria Tschinkel

VICTORIA TSCHINKEL
SECRETARY

Final Determination

McKay Bay Refuse-to-Energy Project
Hillsborough County

Permit Number:

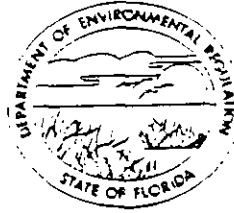
AC 29-47277

Florida Department of Environmental Regulation
Bureau of Air Quality Management
Central Air Permitting

April 21, 1982

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32301



BOB GRAH
GOVERNOR
VICTORIA J. TSCHINK
SECRETARY

APPLICANT: City of Tampa
306 East Jackson Street
Tampa, Florida 33602

PERMIT/CERTIFICATION
NO. AC 29-47277

COUNTY Hillsborough

PROJECT: McKay Bay
Refuse-to-Energy
Facility No. 1

This permit is issued under the provisions of Chapter 403, Florida Statutes, and Chapter 17-4, Florida Administrative Code. The above named applicant, hereinafter called Permittee, is hereby authorized to perform the work or operate the facility shown on the approved drawing(s), plans, documents, and specifications attached hereto and made a part hereof and specifically described as follows:

Rehabilitation of the three combustion chambers at the Tampa Municipal Incinerator and the construction of a fourth 250 TPD combustion chamber and the modification of the facility to a resource recovery facility.

Attachments:

1. McKay Bay Refuse-to-Energy Project, Application to Construct an Air Pollution Source, July, 1981.
2. McKay Bay Refuse-to-Energy Project, Application to Construct an Air Pollution Source, October, 1981.
3. Letter of Richard Garrity to Steve Smallwood, December 10, 1981, concerning effort to obtain emission offsets.
4. Letter of Richard Garrity to Clair Fancy, February 18, 1982, requesting hourly emission rate changes.

PERMIT NO.: AC 29-47277
APPLICANT: City of Tampa

GENERAL CONDITIONS:

1. The terms, conditions, requirements, limitations, and restrictions set forth herein are "Permit Conditions", and as such are binding upon the permittee and enforceable pursuant to the authority of Section 403.161(1), Florida Statutes. Permittee is hereby placed on notice that the department will review this permit periodically and may initiate court action for any violation of the "Permit Conditions" by the permittee, its agents, employees, servants or representatives.
2. This permit is valid only for the specific processes and operations indicated in the attached drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit shall constitute grounds for revocation and enforcement action by the department.
3. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately notify and provide the department with the following information: (a) a description of and cause of non-compliance; and (b) the period of non-compliance, including exact dates and times; or, if not corrected, the anticipated time the non-compliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the non-compliance. The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the department for penalties or revocation of this permit.
4. As provided in subsection 403.087(6), Florida Statutes, the issuance of this permit does not convey any vested rights or any exclusive privileges. Nor does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations.
5. This permit is required to be posted in a conspicuous location at the work site or source during the entire period of construction or operation.
6. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source, which are submitted to the department, may be used by the department as evidence in any enforcement case arising under the Florida Statutes or department rules, except where such use is proscribed by Section 403.111, F.S.
7. In the case of an operation permit, permittee agrees to comply with changes in department rules and Florida Statutes after a reasonable time for compliance, provided, however, the permittee does not waive any other rights granted by Florida Statutes or department rules.
8. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, plant, or aquatic life or property and penalties therefore caused by the construction or operation of this permitted source, nor does it allow the permittee to cause pollution in contravention of Florida Statutes and department rules, except where specifically authorized by an order from the department granting a variance or exception from department rules or state statutes.
9. This permit is not transferable. Upon sale or legal transfer of the property or facility covered by this permit, the permittee shall notify the department within thirty (30) days. The new owner must apply for a permit transfer within thirty (30) days. The permittee shall be liable for any non-compliance of the permitted source until the transferee applies for and receives a transfer of permit.
10. The permittee, by acceptance of this permit, specifically agrees to allow access to permitted source at reasonable times by department personnel presenting credentials for the purposes of inspection and testing to determine compliance with this permit and department rules.
11. This permit does not indicate a waiver of or approval of any other department permit that may be required for other aspects of the total project.
12. This permit conveys no title to land or water, nor constitutes state recognition or acknowledgement of title, and does not constitute authority for the reclamation of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the state. Only the Trustees of the Internal Improvement Trust Fund may express state opinion as to title.
13. This permit also constitutes:
 - Determination of Best Available Control Technology (BACT)
 - Determination of Prevention of Significant Deterioration (PSD)
 - Certification of Compliance with State Water Quality Standards (Section 401, PL 92-500)

PERMIT NO.: AC 29-47277
APPLICANT: City of Tampa

SPECIFIC CONDITIONS:

1. The maximum allowable emissions from the resource recovery facility No. 1 shall be:

Pollutant	Emission Limitation	
Particulate	0.025 gr/dscf @12% CO ₂	27.9 lb/hr
Sulfur Dioxide		170.0 lb/hr
Nitrogen Oxides		300.0 lb/hr
VOC		9.0 lb/hr

2. Municipal waste only shall be burned in the facility. Wastewater treatment plant sludges or hazardous wastes shall not be incinerated.
3. Hours of operation for the facility shall be 24 hours per day, 7 days per week, 52 weeks per year.
4. An operation and maintenance plan as contained in 17-2.13(7), FAC, shall be submitted with the operating permit applications and be made part of the operating permit.
5. Compliance testing for all criteria shall be conducted in accordance with the methods contained in 40 CFR 60 and 61. A source testing plan shall be submitted to the Department for approval 90 days prior to testing. The Department shall be notified of compliance testing at least 30 days prior to the testing.
6. During the particulate compliance testing, a visible emission standard shall be established by 40 CFR 60, Appendix A, Method 9, as a surrogate compliance method as contained in 17-2.23(3), FAC, and be made a condition of the operating permit.
7. Prior to ninety days before the expiration of this permit, a complete application for an operating permit shall be submitted to the DER Southwest District Office or its designee.

Best Available Control Technology (BACT) Determination

Amendment

Hillsborough County

The City of Tampa proposes to construct a facility to incinerate municipal solid waste and use the resulting heat energy to produce electricity as a saleable by-product. The facility is to be located at the site of a previous incinerator installation which has been inoperative since December 1979. This venture, known as the McKay Bay Refuse-to-Energy project, is tentatively a two phase plan.

Phase one is the renovation and conversion of the three existing mass burn combustion furnaces into a state-of-the-art resource recovery system. A fourth combustion furnace will be installed plus waste heat boilers, electrostatic precipitators and a condensing steam turbine electric generator. When phase one is completed the facility will have the capability to burn approximately 300,000 tons per year of solid waste and generate 21 megawatts of electricity. This BACT determination applies to phase one of this project.

Phase two will be the installation of two new mass burn combustion furnaces, with heat recovery systems, and will be located adjacent to the renovated system. The new system will be capable of processing 1,000 tons per day of municipal solid waste and, in addition, to producing electricity will allow the recovery of recyclable materials, such as ferrous metals and aluminum. A BACT determination, if applicable, will be made when the plans for phase two of the project are finalized.

The McKay Bay Refuse-to-Energy project, when completed, will be capable of processing 2,000 tons per day of solid waste. The facility is scheduled to operate continuously with a 20 percent downtime allowance for maintenance.

Applicant's estimated net increase in air emissions (tons/year):

Pollutant	Phase I
Particulates	133
SO ₂	745
NO _x	1314
CO	75
HC	39

The Refuse-to-Energy complex is located on a 14 acre site adjacent to McKay Bay, south of Route U.S. 60, which is in that portion of Hillsborough County classified nonattainment for the pollutants: particulate matter (17-2.13(1)(a) FAC) and ozone (17-2.16(1)(d) FAC). This area is unclassified for the pollutant sulfur dioxide and classified attainment for the pollutant NO_x. Therefore the emission limiting standard for the pollutant particulate matter will be subject to a Lowest Achievable Emission Rate (LAER) determination (17-2.17(6) FAC), and a Best Available Control Technology (BACT) determination for the pollutants SO₂, NO_x and VOC (17-2.04(6)(c) FAC and 17-2.17(3)(a)1.a.(ii) FAC).

BACT Determination Requested by the Applicant:

Pollutant	Emission Limit
SO ₂	Low sulfur content waste
NO _x	Boiler design and operating procedures
VOC	9 pounds per hour

Date of Receipt of a BACT Application:

August 24, 1981

Date of Publication in the Florida Administrative Weekly:

September 4, 1981

Review Group Members:

John Svec, BAQM New Source Review Section
Tom Rogers, BAQM Air Modeling Section
Anthony Jones, Hillsborough County Environmental Prot. Commission
Dan Williams, DER Southwest District

Recommendations from the review group and other respondents were the basis for the final determination.

BACT Determination by DER:

Pollutant	Emission Limit
SO ₂	170 pounds per hour
NO _x	300 pounds per hour
VOC	9.0 pounds per hour

Justification of DER Determination:

The BACT review group members in making the final determination

had to consider the following:

- 1) Resource recovery facilities have a high potential for severely and adversely affecting air quality. Pollutants of concern are SO_2 , NO_x , particulates, HC, HCL and HF acid gases.
- 2) The thermal destruction of municipal waste is a recognized method of disposal, and A. reduces landfill area requirements; B. eliminates a breeding ground for rodents; C. reduces possibility of ground water contamination; D. allows for the recovery of various metals for recycle.
- 3) Air pollution control technology is currently commercially available and capable of achieving the levels of control necessary to reduce most emissions from resource recovery facilities.
- 4) Calculation of sulfur dioxide emission factors for solid waste based upon the amount of SO_2 generated per million Btu of solid waste burned show the high value of the solid waste SO_2 emission to be slightly higher than the SO_2 emission factor for residual fuel oil containing 0.5 percent sulfur.
- 5) The technology for controlling NO_x emissions from resource recovery facilities is still in the experimental stage.
- 6) The land area needed for a landfill (dump) will be reduced approximately 90 percent. The residue (ash) to be disposed of in a landfill will be 15 percent of the mass but only 5 percent of the volume of waste collected and burned.

The applicant stated the SO_2 emissions would be 170 pounds per hour. This is analogous to burning oil with a sulfur content of 0.43 percent, which, in most cases, would be BACT for a boiler of this size not using a flue gas desulfurization system. Atmospheric dispersion modeling predicts no violation of the SO_2 increment at this rate of SO_2 emissions. The SO_2 emission limit of 170 pounds per hour, is therefore, determined to be BACT.

The emission of NO_x is the result of two chemical processes that occur during combustion. In one case the heat of combustion causes the oxidation of nitrogen in the air, called thermal NO_x . The second case is when the nitrogen in the fuel becomes oxidized, called fuel NO_x . Some of the factors influencing the amount of

NO_x produced are flame temperature, nitrogen content of the fuel and the amount of excess air used.

Several methods are being investigated to control NO_x emissions during the burning of the fuel or treatment of the flue gas. These methods are in the research and development stage and will require additional testing before being considered as BACT for the control of NO_x emissions from a resource recovery facility.

Resource recovery facilities have the potential to emit large amounts of HC, VOC's and carbon monoxide. Some of the main contributing factors are; the heterogeneous nature of municipal waste, a fuel feed system that does not maintain a constant firing rate and the use of unregulated combustion temperatures and air.

The applicant has proposed a NO_x emission limit of 300 pounds per hour and a VOC emission limit of 9 pounds per hour based on test results from a similar facility. These emission limits are determined to be BACT, with the requirement that the applicant set up an Operation and Maintenance (O&M) plan for the combustion controls so as to minimize these emissions.

The facility is to be located in an area classified nonattainment for the pollutant particulate matter. The emission limit for particulates will be subject to a Lowest Achievable Emission Rate (LAER) determination.

Details of the Analysis May be Obtained by Contacting:

Edward Palagyi, BACT Coordinator
Department of Environmental Regulation
Bureau of Air Quality Management
2600 Blair Stone Road
Tallahassee, FL 32301

Recommended By:

J. H. George
for Steve Smallwood, Chief BAQM
Date: March 17, 1982

Approved:

Terry Cole
Victoria Tschinkel, Secretary
Date: 3/18/82

Lowest Achievable Emission Rate (LAER) Determination
Amendment

City of Tampa

Hillsborough County

The City of Tampa proposes to construct a facility to incinerate municipal solid waste and use the resulting heat energy to produce electricity as a saleable by-product. The facility is to be located at the site of a previous incinerator installation which has been inoperative since December 1979. This venture, known as the McKay Bay Refuse-to-Energy project, is a two phase plan.

Phase one is the renovation and conversion of the three existing mass burn combustion furnaces into a state-of-the-art resource recovery system. A fourth combustion furnace will be installed plus waste heat boilers, electrostatic precipitators and a condensing steam turbine electric generator. When phase one is completed the facility will have the capability to burn approximately 300,000 tons per year of solid waste and generate 21 megawatts of electricity. This LAER determination applies to phase one of this project.

Phase two will be the installation of two new mass burn combustion furnaces, with heat recovery systems, and will be located adjacent to the renovated system. The new system will be capable of processing 1,000 tons per day of municipal solid waste and, in addition, to producing electricity will allow the recovery of recyclable materials, such as ferrous metals and aluminum. A LAER determination, if applicable, will be made when phase two plans are finalized.

The McKay Bay Refuse-to-Energy project, when completed, will be capable of processing 2,000 tons per day of solid waste. The land area needed for a landfill (dump) will be reduced approximately 90 percent. The residue (ash) to be disposed of in a landfill will be 15 percent of the mass but only 5 percent of the volume of waste collected and incinerated. The facility is scheduled to operate continuously with a 20 percent downtime allowable for maintenance.

Applicant's Estimated net increase in air emissions (tons/year):

Pollutant	Phase I
Particulates	133
SO ₂	745
NO ₂	1314
CO ^x	75
HC (VOC)	39

The Refuse-to-Energy complex is located on a 14 acre site adjacent to McKay Bay, south of Route U.S. 60, which is in that portion of Hillsborough County classified nonattainment for the pollutants; particulate matter (17-2.13(1)(a)FAC) and ozone (17-2.16(1)FAC). Therefore the emission limiting standards for the pollutant particulate matter will be subject to a Lowest Achievable Emission Rate (LAER) determination (17-2.17(6)FAC and 17-2.17(3)(a)1.a.(ii)FAC).

LAER Determination Requested by the Applicant:

Pollutant	Emission Limit
Particulates	0.03 grains/DSCF at 50% excess air

Date of Receipt of a LAER Application:

August 24, 1981

Review Group Members:

John Svec, BAQM New Source Review Section
Tom Rogers, BAQM Air Modeling Section
Anthony Jones, Hillsborough County Environmental Protection
Commission
Dan Williams, DER Southwest District

Recommendations from the review group and other respondents were the basis for the final determination.

LAER Determination by DER:

Pollutant	Emission Limit
Particulates	0.025 grains/DSCF, corrected to 12% CO ₂

Justification of DER Determination:

The LAER review group members in making the final determination had to cope with the following:

1. Resource recovery facilities have a high potential for severely and adversely affecting air quality. Pollutants of concern are SO₂, NO_x, particulates, HC (VOC), HCl and HF acid gases.
2. The thermal destruction of municipal waste is a recognized method of disposal, and A. reduces landfill

area requirements; B. eliminates a breeding ground for rodents; C. reduces possibility of ground water contamination; D. allows for the recovery of various metals for recycle.

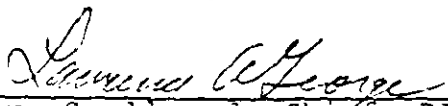
3. Air pollution control technology is currently commercially available and capable of achieving the levels of control necessary to reduce most emissions from resource recovery facilities.
4. The construction of a new source, or modification, in a nonattainment area shall apply to the Department for a determination of the Lowest Achievable Emission Rate (LAER) that is applicable to the affected pollutant, which, in this case, is particulate matter (17-2.17(6)(a)FAC).

The Department has determined LAER for particulate matter to be 0.025 grains/DSCF, corrected to 12% CO₂. The emission limit is deemed to be achievable based on test data from a similar operating facility located in Nashville, Tennessee.

Details of the Analysis May be Obtained by Contacting:

Edward Palagyi, LAER Coordinator
Department of Environmental Regulation
Bureau of Air Quality Management
2600 Blair Stone Road
Tallahassee, FL 32301


Recommended By:

for 
Steve Smallwood, Chief, BAQM

Date:

March 19, 1982

Approved:


Victoria Tschinkel, Secretary

Date:

March 23, 1982

COUNTY



OF HILLSBOROUGH

POST OFFICE BOX 1110 TAMPA, FLORIDA 33601

WILLIAM C. TATUM, COUNTY ADMINISTRATOR

May 12, 1981

Mr. Lawrence A. George
Environmental Administrator
Department of Environmental Regulation
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32301

Dear Mr. George:

Thank you for your April 8, 1981, response to our questions. In reviewing your statement concerning the use of offsets from the City of Tampa Municipal Incinerator, we have formulated additional considerations.

The basic reason you have presented for prohibiting the use of emissions from the municipal incinerator as offsets for the resource recovery incinerator conversion is the inclusion of the municipal incinerator shut-down in the non-attainment State Implementation Plan (SIP) revision of April 24, 1979. Subsequent to the filing of the SIP with EPA, revisions to the plan have been proposed by the local environmental program, the Hillsborough County Environmental Protection Commission (EPC). The most recent revision is currently being prepared by the EPC and refers to the eventual resumption of incineration by the municipal incinerator (pg. 7 of revised SIP, 1981). In addition, a modeling analysis of the impact of emissions from the proposed resource recovery incinerator conversion on monitoring stations referred to in the SIP shows that progress toward attainment would not be significantly impaired.

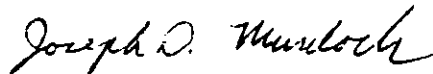
Statutorily, Section 17-2.12(3)(b)3a of the Florida Administrative Code would appear to support our request for offsets from the Tampa Municipal Incinerator. The section states that:

"Any source, whose permit to operate at a specific location or within specified areas, has expired without timely renewal or transfer, or whose operating permit has been revoked, as provided for in chapter 17-4, is permanently shut down, for purposes of section 17-2.17. At the time that such source is so permanently shut down an amount of emission allowance equal to the Base Emission Limit (BEL) for that source, shall be added to the new source allowance for that non-attainment area."

Your office has informed us that no new facilities have submitted requests for use of the New Source Allowance for Total Suspended Particulates since the incinerator closing in December, 1979. We therefore feel the Base Emission Limit from the closed municipal incinerator should be available for use for the resource recovery incinerator conversion. We hope this additional information will permit you to amend your determination on the use of offsets from the closed municipal incinerator.

We feel that obtaining offsets for the incinerator emissions may have a significant impact on the permitting of our project and we would appreciate a timely comment from your office. Thank you for your further consideration in this matter.

Sincerely,



Joseph D. Murdoch
Resource Recovery Management
Analyst
Division of Public Utilities
and Safety

JDM:cmb

Proposed Department Action

The Department intends to issue the requested permits to the City of Tampa for the rehabilitation of the old municipal incinerator to a resource recovery facility which will produce steam to generate electricity and for the construction of another 1000 ton per day solid waste resource recovery facility at the existing site in Hillsborough County.

Any person wanting to comment on this action may do so by submitting such comments in writing to:

Mr. Clair Fancy
Department of Environmental Regulation
Bureau of Air Quality Management
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32301

Any comments received within thirty days after publication of this notice will be considered and noted in the Department's final determination.

Any person whose substantial interest would be affected by the issuance or denial of this permit may request an administrative hearing by filing a petition for hearing as set forth in Section 28-5.15 FAC (copy attached). Such petition must be filed within 14 days of the date of this notice with:

Ms. Martha Hall
Department of Environmental Regulation
Office of General Counsel
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32301