Department of Environmental Protection

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Jeb Bush
Governor

David B. Struhs
Secretary

April 4, 2003

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Lindsey J. Sampson, Director
Lee County Solid Waste Division
10500 Buckingham Road
Fort Myers, Florida 33905

Re: Addition of a new Municipal Waste Combustor (MWC)
File No. PSD-FL-151C

Dear Mr. Sampson:

Enclosed is one copy of the Draft PSD Permit relative to Lee County's request to be permitted to construct an additional MWC at the existing Lee County Resource Recovery Facility. The Department's Intent to Issue a Permit, the Public Notice of Intent to Issue PSD Permit, and the Technical Evaluation and Preliminary BACT Determination are also included.

The Public Notice must be published one time only, as soon as possible, in the legal advertisement section of a newspaper of general circulation in the area affected, pursuant to the requirements Chapter 50, Florida Statutes. Proof of publication, i.e., newspaper affidavit, must be provided to the Department's Bureau of Air Regulation office within seven days of publication. Failure to publish the notice and provide proof of publication may result in the denial of the permit.

Please submit any written comments you wish to have considered concerning the Department's proposed action to Mr. A. A. Linero, P.E., Administrator, New Source Review Section at the above letterhead address. If you have any other questions, please contact Mr. Michael P. Halpin at 850/921-9519.

Sincerely,

Trina L Vielhauer

Trina Vielhauer, Chief,
Bureau of Air Regulation

TV/mph

Enclosures

In the Matter of an
Application for Permit by:

Lee County
10500 Buckingham Road
Fort Myers, Florida 33905

_____/

DRAFT Permit No. PSD-FL-151C
Energy Recovery Facility
Municipal Waste Combustor Unit No. 3
Lee County

INTENT TO ISSUE PSD PERMIT

The Department of Environmental Protection (Department) gives notice of its intent to issue a PSD Permit (copy of DRAFT Permit attached) for the proposed project, detailed in the application specified above, for the reasons stated below.

The applicant, Lee County, applied on November 12, 2002 (Complete February 28, 2003) to the Department for the installation of an additional Municipal Waste Combustor (MWC) at its existing Lee County Energy Recovery Facility. The MWC is required to comply with the requirements of 40 CFR 60 Subpart Eb, Standards of Performance for Large Municipal Waste Combustors for Which Construction is Commenced After September 20, 1994 or for Which Modification or Reconstruction is Commenced After June 19, 1996. The MWC is also subject to a Review for Prevention of Significant Deterioration (PSD) and a Best Available Control Technology (BACT) Determination.

The Department has permitting jurisdiction under the provisions of Chapter 403, Florida Statutes (F.S.), and Florida Administrative Code (F.A.C.) Chapters 62-4, 62-210, and 62-212. The above actions are not exempt from permitting procedures. The Department has determined that a PSD Permit is required for the proposed project.

The Department intends to issue this permit based on the belief that reasonable assurances have been provided to indicate that operation of these emission units will not adversely impact air quality, and the emission units will comply with all appropriate provisions of Chapters 62-4, 62-204, 62-210, 62-212, 62-296, and 62-297, F.A.C.

Pursuant to Section 403.815, F.S., and Rule 62-103.150, F.A.C., you (the applicant) are required to publish at your own expense the enclosed "Public Notice of Intent to Issue Permit". The notice shall be published one time only within 30 (thirty) days in the legal advertisement section of a newspaper of general circulation in the area affected. For the purpose of these rules, "publication in a newspaper of general circulation in the area affected" means publication in a newspaper meeting the requirements of Sections 50.011 and 50.031, F.S., in the county where the activity is to take place. Where there is more than one newspaper of general circulation in the county, the newspaper used must be one with significant circulation in the area that may be affected by the permit. If you are uncertain that a newspaper meets these requirements, please contact the Department at the address or telephone number listed below. The applicant shall provide proof of publication to the Department's Bureau of Air Regulation, at 2600 Blair Stone Road, Mail Station #5505, Tallahassee, Florida 32399-2400 (Telephone: 850/488-1344; Fax 850/ 922-6979) within 7 (seven) days of publication. Failure to publish the notice and provide proof of publication within the allotted time may result in the denial of the permit pursuant to Rule 62-103.150 (6), F.A.C.

The Department will issue the FINAL Permit, in accordance with the conditions of the enclosed DRAFT Permit unless a response received in accordance with the following procedures results in a different decision or significant change of terms or conditions.

The Department will accept written comments or requests for a public hearing (meeting) concerning the proposed DRAFT Permit issuance action for a period of 30 (thirty) days from the date of publication of "PUBLIC NOTICE OF INTENT TO ISSUE PERMIT". Written comments should be provided to the Department's Bureau of Air Regulation, 2600 Blair Stone Road, Mail Station #5505, Tallahassee, Florida 32399-2400. Any written comments filed shall be made available for public inspection. If comments received result in a significant change in this DRAFT Permit, the Department shall issue a Revised DRAFT Permit and require, if applicable, another Public Notice.

The Department will issue the permit with the attached conditions unless a timely petition for an administrative hearing is filed pursuant to Sections 120.569 and 120.57 F.S. Mediation is not available for this action.

This PSD permitting action is being coordinated with a certification under the Power Plant Siting Act (Sections 403.501 – 519, F.S.). If a petition for an administrative hearing on the Department's Intent to Issue is filed by a

substantially affected person, that hearing shall be consolidated with the certification hearing, as provided under Section 403.507(3), F.S.

A person whose substantial interests are affected by the Department's proposed permitting decision may petition for an administrative hearing in accordance with Sections 120.569 and 120.57 F.S. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department, 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000, telephone: 850/245-2242, fax: 850/245-2303. Petitions must be filed within fourteen days of publication of the public notice or within fourteen days of receipt of this notice of intent, whichever occurs first. A petitioner must mail a copy of the petition to the applicant at the address indicated above, at the time of filing. The failure of any person to file a petition within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under Sections 120.569 and 120.57 F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention will be only at the approval of the presiding officer upon the filing of a motion in compliance with Rule 28-5.207 of the Florida Administrative Code.

A petition must contain the following information: (a) The name, address, and telephone number of each petitioner, the applicant's name and address, the Permit File Number and the county in which the project is proposed; (b) A statement of how and when each petitioner received notice of the Department's action or proposed action; (c) A statement of how each petitioner's substantial interests are affected by the Department's action or proposed action; (d) A statement of the material facts disputed by petitioner, if any; (e) A statement of the facts that the petitioner contends warrant reversal or modification of the Department's action or proposed action; (f) A statement identifying the rules or statutes that the petitioner contends require reversal or modification of the Department's action or proposed action; and (g) A statement of the relief sought by the petitioner, stating precisely the action that the petitioner wants the Department to take with respect to the action or proposed action addressed in this notice of intent.

Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the Department's final action may be different from the position taken by it in this notice of intent. Persons whose substantial interests will be affected by any such final decision of the Department on the application have the right to petition to become a party to the proceeding, in accordance with the requirements set forth above.

In addition to the above, a person subject to regulation has a right to apply for a variance from or waiver of the requirements of particular rules, on certain conditions, under Section 120.542 F.S. The relief provided by this state statute applies only to state rules, not statutes, and not to any federal regulatory requirements. Applying for a variance or waiver does not substitute or extend the time for filing a petition for an administrative hearing or exercising any other right that a person may have in relation to the action proposed in this notice of intent.

The application for a variance or waiver is made by filing a petition with the Office of General Counsel of the Department, 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000. The petition must specify the following information: (a) The name, address, and telephone number of the petitioner; (b) The name, address, and telephone number of the attorney or qualified representative of the petitioner, if any; (c) Each rule or portion of a rule from which a variance or waiver is requested; (d) The citation to the statute underlying (implemented by) the rule identified in (c) above; (e) The type of action requested; (f) The specific facts that would justify a variance or waiver for the petitioner; (g) The reason why the variance or waiver would serve the purposes of the underlying statute (implemented by the rule); and (h) A statement whether the variance or waiver is permanent or temporary and, if temporary, a statement of the dates showing the duration of the variance or waiver requested.

The Department will grant a variance or waiver when the petition demonstrates both that the application of the rule would create a substantial hardship or violate principles of fairness, as each of those terms is defined in Section 120.542(2) F.S., and that the purpose of the underlying statute will be or has been achieved by other means by the petitioner.

Persons subject to regulation pursuant to any federally delegated or approved air program should be aware that Florida is specifically not authorized to issue variances or waivers from any requirements of any such federally delegated or approved program. The requirements of the program remain fully enforceable by the Administrator of the EPA and by any person under the Clean Air Act unless and until the Administrator separately approves any variance or waiver in accordance with the procedures of the federal program.

Executed in Tallahassee, Florida.

Trina Vielhauer

Trina Vielhauer, Chief
Bureau of Air Regulation

CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this INTENT TO ISSUE PERMIT (including the PUBLIC NOTICE, Technical Evaluation, and the DRAFT permit) was sent by certified mail (*) and copies were mailed by U.S. Mail before the close of business on 4/4/03 to the person(s) listed:

Lindsey Sampson, Lee County*
Chair, Lee County BCC*
Mayor, City of Fort Myers*
Samuel M. Rosania, Malcolm Pirnie, Inc.
Amit Chattopadhay, P.E., Malcolm Pirnie, Inc.
Gregg Worley, EPA
John Bunyak, NPS
Ron Blackburn, DEP-SD
Hamilton Oven, DEP- Siting
Donald Elias, RTP
David S. Dee, Landers & Parsons

Clerk Stamp

FILING AND ACKNOWLEDGMENT FILED, on this date, pursuant to §120.52, Florida Statutes, with the designated Department Clerk, receipt of which is hereby acknowledged.

Victoria Gibson / April 4, 2003
(Clerk) (Date)

PUBLIC NOTICE OF INTENT TO ISSUE PSD PERMIT

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

DRAFT Permit No. PSD-FL-151C
Lee County Energy Recovery Facility
Lee County

The Department of Environmental Protection (Department) gives notice of its intent to issue a PSD Permit to Lee County for the construction of an additional Municipal Waste Combustor (MWC) at its existing Lee County Resource Recovery Facility located at 10500 Buckingham Road, Fort Myers, Lee County, Florida. A review for the Prevention of Significant Deterioration (PSD) and Best Available Control Technology determination were required pursuant to Rule 62-212.400., F.A.C. The applicant's name and address are: Lee County Board of County Commissioners, Solid Waste Division, 10500 Buckingham Road, Fort Myers, Florida 33905.

The existing facility consists of a municipal waste combustion facility with two mass burn municipal waste combustion units. The facility currently has an existing capacity of 660 tons/day per unit for a total of 1,320 tons per day of solid waste fuel with a nominal HHV of 5,000 Btu/lb. This is equal to a maximum heat input of 275 MMBtu/hour per unit, for a total heat input not to exceed 550 MMBtu/hr. The facility converts solid waste into saleable energy. It produces up to 40 MW of electricity daily. The facility is self-sufficient and operates on a small portion of the power it generates. The new (third) MWC will be of the same size and input ratings as the existing two MWC's. The new MWC will be subject to 40 CFR 60, Subpart Eb - Standards of Performance for Large Municipal Waste Combustors for Which Construction is Commenced After September 20, 1994 or for Which Modification or Reconstruction is Commenced After June 19, 1996, Rule 62-296.401(4) and Rule 62-296.416, F.A.C., Waste-to-Energy Facilities. The proposed unit will incorporate a lime spray dryer absorber and fabric filter. It will additionally include acid gas control for sulfur dioxide and hydrogen chloride and an activated carbon injection system for mercury control. Nitrogen oxides will be controlled by selective non-catalytic reduction. Combustion controls and auxiliary natural gas burners will be incorporated to minimize formation of dioxins and furans, volatile organic compounds, and carbon monoxide. The PSD permit contains limits and testing requirements for sulfur dioxide, nitrogen oxides, lead, fluoride, mercury, particulate matter, opacity, hydrogen chloride, carbon monoxide, cadmium and dioxins/furans. Continuous emission monitors will be installed for opacity, sulfur dioxide, nitrogen oxides, and carbon monoxide. Proposed emission limits for the new MWC as well as annual emissions are as follows:

Pollutant Name	Standard(s)	Lbs/hour	TPY	PSD Review?
Particulate Matter (PM_{10})	20.6 mg/dscm, corrected to 7% O_2	5.12	22.3	**YES**
MWC Metals (PM)	20.6 mg/dscm, corrected to 7% O_2	5.12	22.3	**YES**
Sulfur Dioxide (SO_2)	26 ppm, or 80% reduction, at 7% O_2	56.9	249.4	**YES**
Sulfuric Acid Mist	15 ppmvd @ 7% O_2	15.1	66.1	**YES**
Nitrogen Oxides (NO_X)	110 ppm@ 7% O_2 – 30-day rolling average 150 ppm @ 7% O_2 – 24 hour average	51.9 70.8	227.4	**YES**
Carbon Monoxide (CO)	80 ppm @ 7% O_2 – 30-day rolling average 100 ppm @ 7% O_2 – 4 hr average	23.0 28.73	100.6	**YES**
Mercury (Hg)	0.028 mg/dscm @ 7% O_2 or 85% reduction	0.0168	0.0736	**YES**
Visible Emissions (VE)	10 %, 6 minute average			**YES**
Lead (Pb)	0.2 mg/dscm, corrected to 7% O_2	0.05	0.0216	NO
MWC Acid Gas (HCl)	25 ppm or 95% reduction @ 7% O_2	46.76	204.8	**YES**
Hydrogen Fluoride (HFl)	3.5 ppmvd @ 7% O_2	0.718	3.145	**YES**
Dioxin/Furan (PCDD/F)	13 ng/dscm, corrected to 7% O_2	3.2×10^{-6}	1.4 x 10-5	**YES**
Ammonia	15 ppm			NO

The general area is in attainment with respect to all State and National Ambient Air Quality Standards. There have been very substantial reductions in air pollutants due to the recently constructed FPL Fort Myers Repowering Project. An air quality analysis was performed for the proposed project for both Class I (Everglades) and Class II areas. All predicted impacts are less than significant. The proposed project will not cause or contribute to any violations of ambient air quality standards or allowable increments.

The Department will issue the FINAL PSD Permit, in accordance with the conditions of the DRAFT Permit unless a response received in accordance with the following procedures results in a different decision or significant change of terms or conditions.

The Department will accept written comments and request for a public hearing (meeting) concerning the proposed DRAFT Permit issuance action for a period of 30 (thirty) days from the date of publication of this Notice. Written comments should be provided to the Department's Bureau of Air Regulation, 2600 Blair Stone Road, Mail Station #5505, Tallahassee, Florida 32399-2400. Any written comments filed shall be made available for public inspection. If comments received result in a significant change in this DRAFT Permit, the Department shall issue a Revised DRAFT Permit and require, if applicable, another Public Notice.

The Department will issue FINAL Permit with the conditions of the DRAFT Permit unless a timely petition for an administrative hearing is filed pursuant to Sections 120.569 and 120.57 F.S. The procedures for petitioning for a hearing are set forth below. Mediation is not available for this action.

This PSD permitting action is being coordinated with a certification under the Power Plant Siting Act (Sections 403.501 – 519, F.S.). If a petition for an administrative hearing on the Department's Intent to Issue is filed by a substantially affected person, that hearing shall be consolidated with the certification hearing, as provided under Section 403.507(3), F.S.

A person whose substantial interests are affected by the Department's proposed permitting decision may petition for an administrative hearing in accordance with Sections 120.569 and 120.57 F.S. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department, 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000, telephone: 850/245-2242, fax: 850/245-2303. Petitions must be filed within fourteen days of publication of the public notice or within fourteen days of receipt of this notice of intent, whichever occurs first. A petitioner must mail a copy of the petition to the applicant at the address indicated above, at the time of filing. The failure of any person to file a petition within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under Sections 120.569 and 120.57 F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention will be only at the approval of the presiding officer upon the filing of a motion in compliance with Rule 28-5.207 of the Florida Administrative Code.

A petition must contain the following information: (a) The name, address, and telephone number of each petitioner, the applicant's name and address, the Permit File Number and the county in which the project is proposed; (b) A statement of how and when each petitioner received notice of the Department's action or proposed action; (c) A statement of how each petitioner's substantial interests are affected by the Department's action or proposed action; (d) A statement of the material facts disputed by petitioner, if any; (e) A statement of the facts that the petitioner contends warrant reversal or modification of the Department's action or proposed action; (f) A statement identifying the rules or statutes that the petitioner contends require reversal or modification of the Department's action or proposed action; and (g) A statement of the relief sought by the petitioner, stating precisely the action that the petitioner wants the Department to take with respect to the Department's action or proposed action addressed in this notice of intent.

Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the Department's final action may be different from the position taken by it in this notice of intent. Persons whose substantial interests will be affected by any such final decision of the Department on the application have the right to petition to become a party to the proceeding, in accordance with the requirements set forth above.

A complete project file is available for public inspection during normal business hours, 8:00 a.m. to 5:00 p.m., Monday through Friday, except legal holidays, at:

Department of Environmental Protection
Bureau of Air Regulation
111 S. Magnolia Drive, Suite 4
Tallahassee, Florida, 32301
Telephone: 850/488-0114
Fax: 850/922-6979

Department of Environmental Protection
South District
2295 Victoria Avenue, Suite 364
Fort Myers, Florida 33901-3381
Telephone: 239/332-6975
Fax: 239/332-6969

The complete project file includes the Draft Permit, the application, and the information submitted by the responsible official, exclusive of confidential records under Section 403.111, F.S. Interested persons may contact the Administrator, New Resource Review Section at 111 South Magnolia Drive, Suite 4, Tallahassee, Florida 32301, or call 850/488-0114 for additional information. The key documents may be accessed at www.dep.state.fl.us/air/permitting/construct.htm

TECHNICAL EVALUATION

AND

PRELIMINARY BACT DETERMINATION

Lee County Energy Recovery Facility

Lee County Solid Waste Division
Fort Myers, Florida
Lee County

DEP FILE: 0710119-002-AC (PSD-FL-151C)

Department of Environmental Protection
Division of Air Resources Management
Bureau of Air Regulation
New Source Review Section

April 4 2003

1.0 APPLICATION INFORMATION

1.1 Applicant Name and Address

Lee County Board of County Commissioners
Lee County Energy Recovery Facility
10500 Buckingham Road
Fort Myers, Florida 33905

Authorized Representative
Mr. Lindsey Sampson, Director, Solid Waste Division

1.2 Reviewing and Process Schedule

11-12-02:	Date of Receipt of Application
12-11-02:	Request for additional information submitted to Lee County
02-28-03:	Application complete
04-04-03:	Distributed Intent to Issue PSD Permit

2. FACILITY INFORMATION

2.1 Facility Location

The facility is located at 10500 Buckingham Rd., Fort Myers, Lee County, 33905. The UTM coordinates are Zone 17; 424.21 km E; 2945.70 km N. The facility is approximately 90 km from the Everglades National Park, a Class I Area. The location of the facility is shown in Figures 1, 2 and 3 below. Figures 4 and 5 depict photographs of the facility.

FIGURE 1

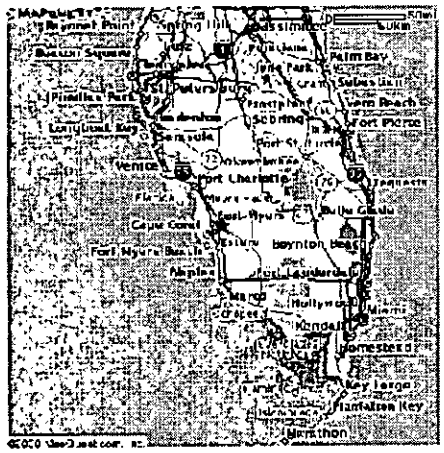


FIGURE 2

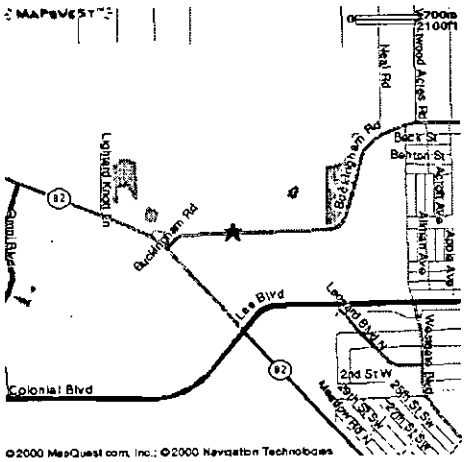
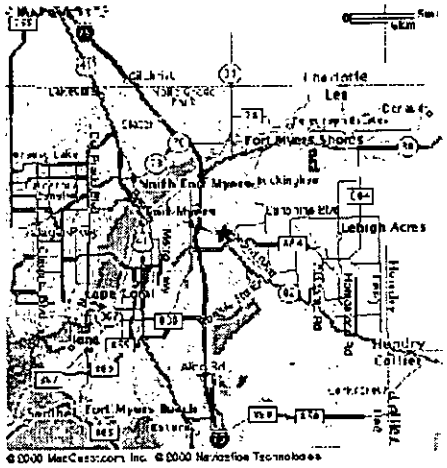


FIGURE 3



2.2 Standard Industrial Classification Code (SIC)

Major Group No.	49	Electric, Gas, and Sanitary Services
Group No.	495	Sanitary Services
Industry No.	4953	Refuse Systems

2.3 *Facility Category*

The existing facility consists of a municipal waste combustion facility with two mass burn municipal waste combustion units. The facility currently has a capacity of 660 tons/day per unit for a total of 1,320 tons per day of solid waste fuel with a nominal HHV of 5,000 Btu/lb. This is equal to a maximum heat input of 275 MMBtu/hour per unit, for a total heat input not to exceed 550 MMBtu/hr. The facility converts solid waste into saleable energy. It produces up to 40 MW of electricity daily. The facility is self-sufficient and operates on a small portion of the power it generates. The remaining electricity is sold to an electric utility market. The facility is owned by Lee County, and was designed built, and is currently operated by Ogden-Martin Systems of Lee, Inc. (although the corporate name changed to Covanta Energy Corporation, effective March 14, 2001). The Lee County Resource Recovery Facility began operation in August 1994.

The facility's existing mass burn combustion system incorporates the technology of German-based Martin GmbH. The waterwall furnaces are equipped with Martin® reverse-reciprocating grates and ash handling systems. Waste is combusted at furnace temperatures exceeding 1,800 degrees Fahrenheit, and reduced to an inert ash residue. Each existing unit is equipped with a slaked lime scrubber followed by a baghouse, an SNCR system for reduction of NO_X emissions, and a carbon injection system for control of mercury emissions.

This facility is classified as a Major or Title V Source of air pollution because emissions of at least one regulated air pollutant, such as particulate matter (PM/PM_{10}), sulfur dioxide (SO_2), nitrogen oxides (NOx), carbon monoxide (CO), or volatile organic compounds (VOC) exceeds 100 tons per year (TPY).

This facility is within an industry included in the list of the 28 Major Facility Categories per Table 62-212.400-1, F.A.C. Because emissions are greater than 100 TPY for at least one criteria pollutant, the facility is also a Major Facility with respect to Rule 62-212.400, Prevention of Significant Deterioration (PSD).

Based on the initial Title V permit application received June 17, 1996, this facility is a major source of hazardous air pollutants (HAPs).

FIGURE 4

FIGURE 5

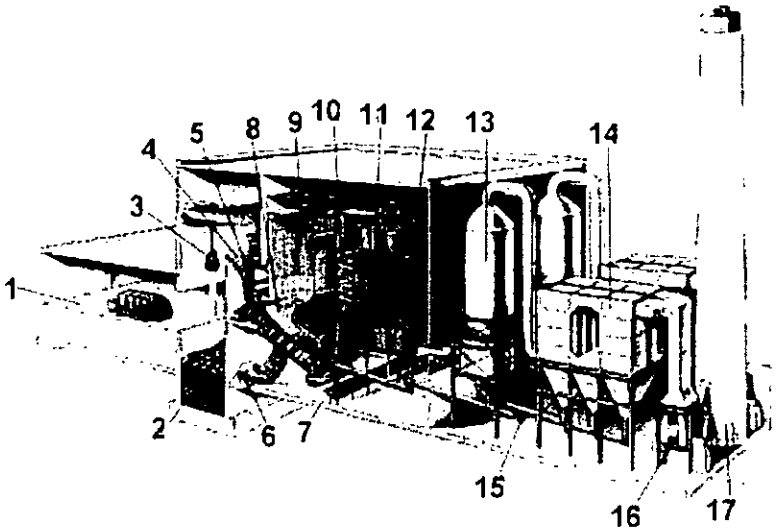
3. PROJECT DESCRIPTION

3.1 This permit addresses the following new emissions units:

EMISSION UNIT NO.	SYSTEM	EMISSION UNIT DESCRIPTION
-006	MSW Unit 3	660 Tons per Day (maximum) MSW Incinerator
-007	Lime Silo	Lime Silo Loading Operations

This unit is proposed as being identical to the existing MSW Incinerators, EU-001 and EU-002. What follows is a brief discussion of the proposed unit and process.

FIGURE 6
A Typical COVANTA Waste to Energy Facility



1. Tipping Floor
2. Refuse Holding Pit
3. Grapple Feed Chute
4. Feed Chute
5. Stoker Grate
6. Combustion Air Fan
7. Ash Discharger
8. Combustion Chamber
9. Radiant Zone (furnace)
10. Convection Zone
11. Superheater
12. Economizer
13. Dry Gas Scrubber
14. Baghouse
15. Fly Ash Handling System
16. Induced Draft Air Fan
17. Stack

After refuse collection trucks are weighed at the scalehouse, they enter the tipping building and dump their waste into the storage pit. An overhead crane mixes the waste in the pit and lifts it up into a feed chute leading to the furnace. From the feed chute, waste is pushed by hydraulic ram feeders onto a stoker grate. The Reverse-Reciprocating Stoker Grate is sloped downward and is composed of alternate rows of fixed and moving grate bars. The grate bars push upward against the natural downward movement of the waste. This ensures that the burning waste is continually agitated and pushed back, to serve as underfire for freshly fed waste. A forced-draft fan supplies primary combustion air underneath the grate, and overfire air is injected through the front and rear walls of the furnace.

Heat from the combustion process converts water inside the tubes that form the furnace walls and boilers, to steam. The superheater further heats the steam before it is sent to a turbine generator to produce electricity. After passing through the boiler sections, the hot combustion gases are used to preheat boiler feedwater in the economizer.

While the combustion gases move through the boiler, bottom ash slowly makes its way to the end of the grate where it falls into the water quench trough of the ash discharger. From the boiler, the cooled gases enter the advanced air pollution control system. Using lime slurry, the dry scrubber neutralizes acid-forming gases, such as sulfur oxides and HCl.

Particulates are captured by a baghouse. As the gas stream travels through these filters, more than 99 percent particulate matter removal is expected. Captured fly ash particles fall into hoppers and are transported by an enclosed conveyor system to the Ash Discharger where they are wetted to prevent dust, and mixed with the bottom ash from the grate. The ash residue is then conveyed to an enclosed building where it is loaded into covered, leak-proof trucks and taken to a landfill designed to protect against groundwater contamination. Ash residue from the furnace can be processed for removal of recyclable scrap iron.

The MARTIN® Reverse Acting Stoker is a key element of the MARTIN® System for thermal waste treatment. The Reverse Acting Stoker is sloped downward from the feeder end towards the residue discharge end and is comprised of fixed and moving grate steps. The air-cooled moving grate steps perform slow stirring strokes against the grate slope. This ensures that the burning refuse layer is continually rotated and mingled to form an even depth of bed, and red-hot mass is pushed back to the feeder end of the grate. Thus intense fire builds up at the front end of the grate, with all combustion phases (such as drying, ignition and combustion itself) taking place simultaneously and passing into one another.

In longitudinal direction, the Reverse Acting Stoker grate is subdivided into several zones, which are individually supplied with primary combustion air. The airflow to these zones is adjusted to the needs of the combustion process by computer control.

The grate bars are made from wear-resistant and heatproof cast steel with high chromium content. The primary air flows through the grate bars and via narrow air gaps between heads of adjacent grate bars into the burning refuse layer. This system forms a high air resistance thus ensuring uniform distribution of the combustion air over the surface of each grate zone.

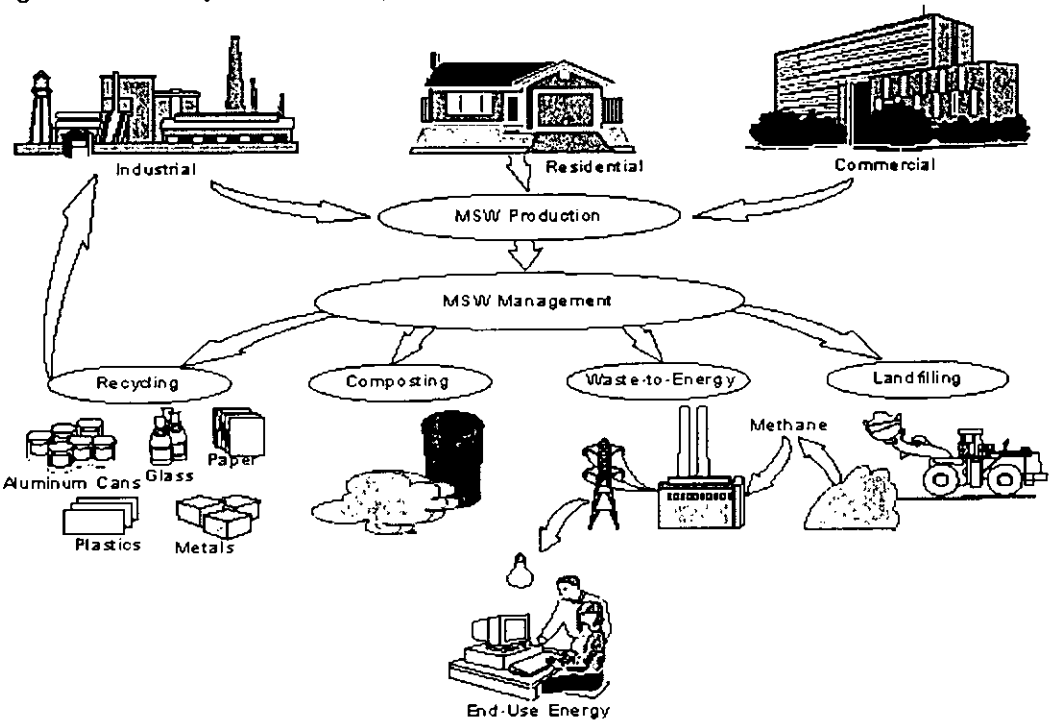
Secondary combustion air injected at high pressure at the front and rear walls of the combustion chamber provide mixing, turbulence and burnout of the hot combustion gases above the burning refuse layer.

Burned-out combustion residues are transferred by a slowly rotating roller at the grate discharge end into the MARTIN® Residue Discharger where they are quenched and discharged.

3.2 Municipal Solid Waste Industry Profile

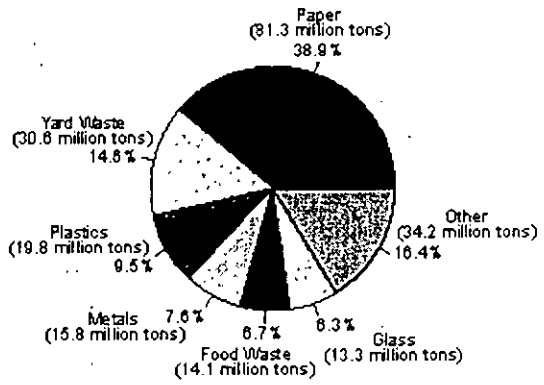
Much of what follows was obtained from a 1997 DOE report. The municipal solid waste (MSW) industry has four components: recycling, composting, landfilling, and combustion (Figure 7). The U.S. Environmental Protection Agency defines MSW to include durable goods, containers and packaging, food wastes, yard wastes, and miscellaneous inorganic wastes from residential, commercial, institutional, and industrial sources. It excludes industrial waste, agricultural waste, sewage sludge, and all categories of hazardous wastes, including batteries and medical wastes.

Figure 7. Chief Components of Municipal Solid Waste Management



Source: Energy Information Administration, Office of Coal, Nuclear, Electric and Alternate Fuels (1996).

Figure 8. Total U.S. Waste Generation Before Recycling, 1994



Source: U.S. Environmental Protection Agency, *Municipal Solid Waste Factbook*, database version 3.0 (Washington, DC, March 1998).

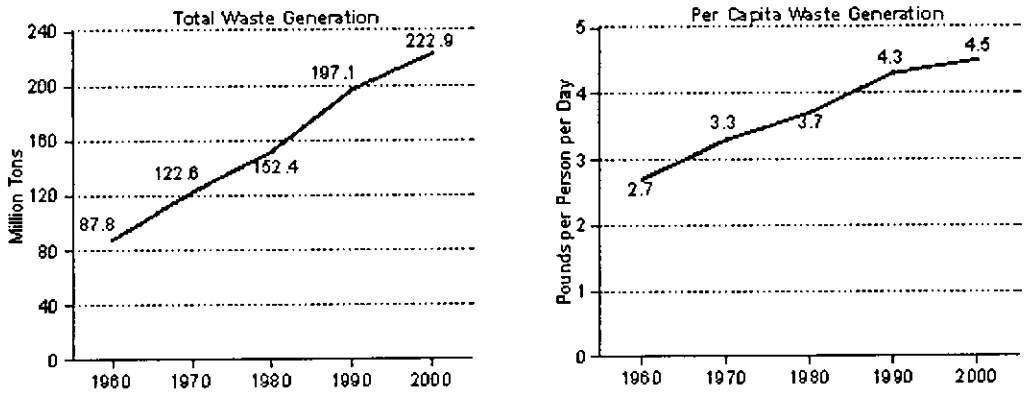
More than 209 million tons of MSW was generated in 1994. Paper and paperboard accounted for 81.3 million tons (38.9 percent) of the total waste stream, yard wastes 30.6 million tons (14.6 percent), plastics 19.8 million tons (9.5 percent), metals 15.8 million tons (7.6 percent), food 14.1 million tons (6.7 percent), glass 13.3 million tons (6.3 percent), and "other" 34.2 million tons (16.4 percent).

See Figure 8 to left.

3.2.1 Trends in Municipal Solid Waste Generation

The generation of MSW has increased from 88 million tons in 1960 to 209.1 million tons in 1994. During that time, per capita generation of MSW increased from 2.7 pounds per person per day to 4.4 pounds per person per day (Figure 9). Per capita generation was expected to remain constant through 2000, when total MSW generation was expected to reach 223 million tons.

Figure 9. U.S. Waste Generation, 1960-2000



Source: U.S. Environmental Protection Agency, *Municipal Solid Waste Factbook*, database version 3.0 (Washington, DC, March 1996).

In 1960, approximately 30 percent (27 million tons) of MSW generated was incinerated, most without energy recovery or air pollution controls (Table 1). During the next two decades, combustion declined steadily, to 13.7 millions tons by 1980, as old incinerators were closed. Less than 10 percent of the total MSW generated in 1980 was combusted. With the enactment of the Public Utility Regulatory Policies Act of 1978 (PURPA) and the emergence of a guaranteed energy market, combustion of MSW increased to 31.9 million tons or 16 percent of generation by 1990. All of the major new waste-to-energy (WTE) facilities are designed with air pollution controls and have energy recovery. During the 1990s, the absolute amount of MSW combusted and converted into energy remained fairly constant, although the share declined slightly. By the year 2000, the amount of MSW combusted was expected to reach 34 million tons.

Table 1. Historical and Estimated U.S. Production of MSW, Years 1960-2000 (Million Tons)

Disposition	1960	1970	1980	1990	1991	1992	1993	1994	2000
Combustion[a]	27.0	25.1	13.7	31.9	33.3	32.7	32.9	32.5	34.0
Recovery for Recycling and Composting	R5.6	8.6	R14.4	32.9	37.3	41.5	45.0	49.3	66.9
Discards to Landfill	R55.3	R89.5	R124.3	R132.3	126.2	128.8	129.0	127.3	122.0
Total Production	87.8	R121.6	R152.4	R197.1	196.8	203.0	206.9	209.1	222.9

[a]Includes combustion of MSW in mass burn or refuse-derived form, incineration without energy recovery, and combustion with energy recovery of source-separated materials in MSW.
R = Revised data. Note: Totals may not equal sum of components due to independent rounding.
Sources: **1960, 1970, 1980, 1990, 1994, and 2000:** U.S. Environmental Protection Agency, *Municipal Solid Waste Factbook*, database version 3.0 (Washington, DC, March 1996). This source has revised some of the historical data. **1991, 1992, and 1993:** U.S. Environmental Protection Agency, *Characterization of Municipal Solid Waste in the United States: 1995 Update*, EPA/530-S-96-001 (Washington, DC, March 1996).

3.2.2 Waste-to-Energy (WTE) Facilities

As of the fall of 1996, there were 102 WTE facilities marketing energy in the United States. The number of facilities had declined by more than 10 percent during the prior years. Most of the WTE facilities in the United States are located in the East, where landfill space is the scarcest. WTE

capacity had declined by approximately 2 percent during the prior year or so, from almost 101,000 tons per day to approximately 99,000 tons per day.

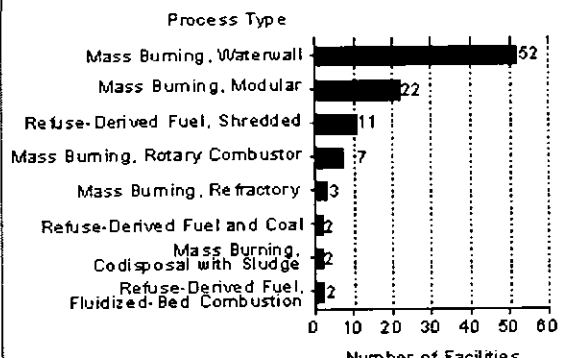
3.2.3 Type of Process and Capacity

Generally, WTE facilities can be divided into two process types: mass burn and refuse-derived fuel (RDF). Mass burn facilities process raw waste; it is not shredded, sized, or separated before combustion. Very large items such as refrigerators or stoves and batteries/hazardous waste materials are removed before combustion. Noncombustible materials such as metals can be removed before or after combustion, but they are usually separated from the ash with magnetic separators. The waste is usually deposited in a large pit and moved to furnaces with overhead cranes. Combusting waste usually reduces its volume by approximately 90 percent. The remaining ash is buried in landfills. The ash is divided into two categories: bottom ash and fly ash. Bottom ash is deposited at the bottom of the grate or furnace. Fly ash is composed of small particles that rise during combustion and are removed from the flue gases with fabric filters and scrubbers. Fly ash is usually considered to be the more significant environmental problem.

Waste is preprocessed at RDF facilities. Noncombustible materials are removed, increasing the energy value of the fuel. The extent to which noncombustible materials are removed varies. Most systems remove metals with magnetic separators; glass, grit, and sand may be removed through screening. Some systems utilize air classifiers, trammel screens, or rotary drums to further refine the waste. Mass burn waterwall facilities are usually custom-designed and constructed at the site. Waterwall furnaces contain closely spaced steel tubes that circulate water through the sides of the combustion chamber. The energy from the burning waste heats the water and produces steam. Some waterwall facilities also use rotary combustors to rotate the waste, resulting in more complete combustion.

The overall majority of WTE facilities employ mass burn processes (Figure 10 to right). Of the 101 facilities reporting the type of process employed in 1996, 86 were mass burn facilities and 15 were RDF facilities. Two of the mass burn facilities co-disposed their waste with sludge. Although only 22 percent of the facilities were of the smaller modular type, 6 of the 13 facilities located in the North Central region were modular (Table 2). Over half of the facilities were of the mass burn, waterwall type. More than 40 percent of the facilities are located in the Northeast and another one-third in the South. Only 22 percent are located in the West and North Central regions, where landfill space is relatively less scarce.

Figure 10. Number of Facilities Performing Waste-to-Energy Operations by Process Type, 1996



Note: One reporting facility did not list type of process.
Source: Derived from Governmental Advisory Associates, Inc., *Municipal Waste Combustion in the United States: 1996-97 Yearbook, Directory, and Guide* (Westport, CT, 1997).

Table 2. Waste-to-Energy Facilities by Type of Process and Region, 1996

Type of Process	Number of Facilities				
	Northeast	South	North Central	West	Total
Mass Burning, Modular	5	10	6	1	**22**
Mass Burning, Waterwall	27	16	4	5	**52**
Mass Burning, Refractory	1	1	0	1	**3**
Mass Burning, Rotary Combustor	5	2	0	0	**7**
All RDF Processes	5	5	3	2	**15**
Total	**43**	**34**	**13**	**9**	**99**

RDF = refuse-derived fuel. Note: One facility did not list a process type. Two facilities that listed process as mass burning co-disposal with sludge were not included in the totals. Information shown in this table includes only facilities that market energy.
Source: Derived from Governmental Advisory Associates, Inc., *Municipal Waste Combustion in the United States: 1996-97 Yearbook, Directory, and Guide* (Westport, CT, 1997).

The average capacity of U.S. WTE facilities is almost 1,000 tons per day (Table 3). RDF facilities, on average, have more than twice the capacity of mass burn facilities (almost 1,900 tons per day versus 850 tons per day). The facilities in the Northeast and South regions have an average capacity greater than 1,000 tons per day. The average capacity of the facilities in the North Central and West regions is between 700 and 800 tons per day (Table 4). Modular facilities are by far the smallest, ranging from an average of 89 tons per day in the North Central region to 256 tons per day in the Northeast (see Table 5).

Table 3. Design Capacities of Waste-to-Energy Facilities by Process Type, 1996 (Tons per Day)

Type of Process	Mean	Minimum	Maximum	Number of Facilities
Mass Burning	849.8	24	3,150	86
All RDF Processes	1,873.8	294	4,000	13
All Facilities	**965.4**	**24**	**4,000**	**99**

RDF = refuse-derived fuel. Note: Two facilities did not list design capacities, and one facility did not list a process type. Source: Derived from Governmental Advisory Associates, Inc., *Municipal Waste Combustion in the United States: 1996-97 Yearbook, Directory, and Guide* (Westport, CT, 1997).

Table 4. Design Capacities of Waste-to-Energy Facilities by Region, 1996 (Tons per Day)

Region	Mean	Minimum	Maximum	Number of Facilities
Northeast	1,021.2	50	2,688	42
South	1,012.1	40	3,150	34
North Central	780.4	72	4,000	14
West	734.4	24	2,160	10
All Facilities	**955.7**	**24**	**4,000**	**100**

Note: Two facilities did not list design capacities. Derived from Governmental Advisory Associates, Inc., *Municipal Waste Combustion in the US: 1996-97 Yearbook, Directory, and Guide* (Westport, CT, 1997).

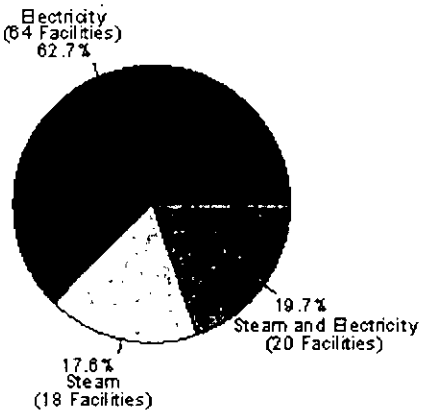
Table 5. Average Design Capacities of Waste-to-Energy Facilities by Type of Process and Region, 1996 (Tons per Day)

Process	Average Design Capacity				
	Northeast	South	North Central	West	All Facilities
Mass Burning, Modular	255.6	149.7	88.7	100.0	**154.9**
Mass Burning, Waterwall	1,185.1	1,450.9	559.3	778.0	**1,179.6**
Mass Burning, Refractory	240.0	1,000.0	—	420.0	**553.3**
Mass Burning, Rotary Combustor	1,051.2	355.0	—	—	**852.3**
All RDF Processes	**1,030.0**	**1,825.0**	**1,931.3**	**1,455.0**	**1,873.8**

RDF = refuse-derived fuel.
Note: One facility did not list a process type. Two facilities that listed process as mass burning co-disposal with sludge were not included in the totals. Three facilities did not list design capacity.
Source: Derived from Governmental Advisory Associates, Inc., *Municipal Waste Combustion in the United States: 1996-97 Yearbook, Directory, and Guide* (Westport, CT, 1997).

Over 80 percent of the 102 facilities produce electricity. Twenty of the 84 facilities that produce electricity co-generate steam and electricity (see Figure 11 to right). Only 18 of the facilities produce just steam; 12 of those facilities are modular. None of the RDF facilities produce steam only, compared with more than half of the modular facilities, most of which are older facilities. In recent years most of the installations have generated electric power. The guaranteed market for electricity under PURPA minimizes the financial risk for facilities generating electricity. This condition could change if electricity prices drop as a result of restructuring in the electric utility market.

Figure 11. Energy Production from Waste-to-Energy Facilities by Type of Energy, 1996



Source: Derived from Governmental Advisory Associates, Inc., *Municipal Waste Combustion in the United States: 1996-97 Yearbook, Directory, and Guide* (Westport, CT, 1997).

3.2.4 Typical Air Pollution Control Equipment

Various types and designs of air pollution control equipment are used by most WTE facilities (Table 6). Dry scrubbers and baghouse filters used in combination are more efficient than most scrubbers plus electrostatic precipitators in removing acid gases and particulates from stack gases. Nitrogen oxide and mercury emissions must also be controlled. Modular facilities that have exclusively used after-burn or two-chamber combustion systems can no longer rely on those systems for adequate pollution prevention in many parts of the United States. As a result, some have been retrofitted. Others have permanently closed down.

A major element in both the size and cost of WTE technology has been the steadily increasing requirements for air pollution control equipment. The earliest plants built were required to have electrostatic precipitators (ESP) for particulate control. By the late 1980's, dry scrubbers for acid gas controls were required as well as filter fabric baghouses (FF) for particulates. The latest plant built, in 1994, was required to have dry scrubbers and FF, as well as nitrogen oxide (NO_X) controls and continuous emission monitoring (CEM). Now, the Lee, Lake and Pasco plants have also installed an activated carbon injection system (CI) for mercury and dioxin control. Pursuant to the Clean Air Act Amendments of 1990, all WTE facilities in Florida without dry scrubbers or FF have been required to retrofit.

Table 6. Air Pollution Control Equipment at Waste-to-Energy Facilities by Type of Process, 1996 (%)

Type of Equipment	Process Type		
	Mass Burning	Modular Units	All RDF Processes
Dry Scrubbers	68.7	22.7	80.0
Baghouse/Fabric Filters	53.1	22.7	60.0
Electrostatic Precipitators	39.1	63.6	46.7
Wet Scrubbers	1.6	13.6	6.7
Ammonia De-NOx System	21.9	4.5	20.0
Dry Sorbent Injection	25.0	0.0	6.7
After-Burn System	0.0	22.7	0.0
Other Technologies	3.1	13.6	20.0

RDF = refuse-derived fuel.
Note: One facility did not list process type.
Source: Derived from Governmental Advisory Associates, Inc., *Municipal Waste Combustion in the United States: 1996-97 Yearbook, Directory, and Guide* (Westport, CT, 1997).

3.2.5 Solid Waste Management in the State of Florida

Florida has grown from having one small Waste-to-Energy (WTE) plant in 1980 to 13 operating waste-to-energy facilities in 2001, which have a capacity to burn a total of over 18,000 tons/day. As of 1998, Florida had established the largest capacity to burn MSW/RDF of any state in the US, with actual combustion in calendar year 2001 at nearly 5.5 million tons, or approximately 15,000 tons per day. The operating WTEs in Florida have the capacity to generate nearly 600 megawatts of electricity and have become an essential component of Florida's municipal solid waste management strategy.

A primary factor favoring the development of WTE in Florida is the adverse environmental and land use consequences of landfilling and the failure of competing disposal technologies other than landfilling. By the early 1980s, increasing ground water contamination from unlined landfills began to become apparent, and many landfills ended up on the National Priority List as Superfund sites (see discussion later). Even when lined, because of Florida's generally high ground water conditions, landfills begin at ground level and go up, in a "high rise" configuration. While protective of ground water, these landfills can rise to as high as two hundred feet above ground level and are prominent features of the landscape in many Florida counties. In fact, the landfill is commonly the highest elevation in Florida coastal counties. In addition, as population density increases--particularly in the coastal counties--finding a suitable site for a landfill

(where typically 1,000-4,000 acres of land are needed) at a reasonable cost is becoming nearly impossible. A related issue is the lack of success of competing technologies other than landfilling. Mixed waste composting was touted in the early 1980s as a cost effective rival of WTE, but several mixed waste composting projects have failed in Florida (as in other states). At this time, only one small mixed waste facility is in operation in Central Florida.

A second factor spurring WTE development was the energy crisis of the mid-1970s, which led to increased interest in alternative energy technologies. Indeed, alternative energy resource development planning of that era included WTE as a central element, although in retrospect it appears that the amount of energy available from this source may have been overestimated.

Thirdly, WTE was given a major boost in Florida in the late 1970s with the passage of several key pieces of State Legislation that created favorable legal and tax conditions for the construction of WTE facilities. The Florida Resource Recovery Act created the Resource Recovery Council to evaluate and promote resource recovery (which includes WTE). The Act further directed the 19 most populous Florida counties to draft resource recovery and management plans, to determine if WTE was a feasible option. As a consequence, through the remainder of the 1970s, comprehensive evaluations of WTE were conducted in all of Florida's most populous areas.

Moreover, in response to concerns from the financial community about the fiscal viability of resource recovery facilities without a guaranteed waste stream, the State Legislature enacted a flow control statute. This provision authorized counties, which were undertaking resource recovery to direct the flow of municipal solid waste generated in the county to a designated solid waste disposal facility. WTE and other resource recovery facilities were given a further advantage when the legislature exempted resource recovery equipment owned by, or operated on behalf of, local governments from the state sales tax.

In the comprehensive Solid Waste Management Act of 1988, WTE received an additional financial incentive. The Act directed that, when the utility industry purchased electricity from WTE facilities, the WTE facilities were to be assumed to have a 100% capacity factor (other co-generation facilities selling to utilities are given a lower capacity factor, e.g. 80%). This increased the revenues to the plants from energy production. However, at the time of the 1993 revisions to the Solid Waste Management Act, much of the early enthusiasm for WTE had cooled because of perceived conflicts with recycling and concerns about emissions.

Regarding recycling, concerns began to be raised that WTE was in conflict with the State's recycling program. It was feared that if there were excess WTE capacity, materials that would have otherwise been recycled would be burned. To ensure that no excess capacity developed, the 1993 Amendments subjected WTE facilities to a series of new siting and need criteria affecting the siting of new facilities and expansion of existing facilities. Key among these criteria are the requirement that WTE facilities cannot be built unless the county in which the facility was to be located had met the State's required thirty percent waste reduction goal, and the county can show that the facility is an integral component of the county's solid waste management program.

Another issue affecting development of WTE facilities is the fact that such facilities were identified as significant sources of mercury. The primary sources of mercury in MSW include: batteries; mercury containing devices such as thermostats; thermometers and switches; and lighting. In a study conducted for the then Department of Environmental Regulation (now the Department of Environmental Protection) in 1992, WTE plants were determined to be one of the major sources of anthropogenic mercury emissions. Other major sources include biomedical waste incinerators and fossil fuel power plants. In the 1993 Amendments, measures were enacted to reduce mercury in the waste stream. These included provisions to control the amounts of mercury in packaging and batteries and required the recycling of

mercury containing batteries, devices and bulbs. The 1993 legislation further called for a demonstration project to collect and recycle fluorescent tubes. In October 1993, Florida's Environmental Regulation Commission (ERC) adopted the strictest mercury emission limit in the nation for WTE facilities. Additionally, all new and existing WTE units with capacity to incinerate 250 tons per day or more are required to meet EPA's Maximum Achievable Control Technology (MACT) standards.

As noted earlier, Florida has 13 WTE facilities, with a combined capacity to burn nearly 19,000 tons/day of municipal solid waste, or fuels derived from municipal solid waste. In counties with WTE facilities, the average percentage of waste burned has been recorded at 38 percent. The percentage of waste burned in Florida has been indicated to be substantially higher (as has Florida's recycling rate) than the national average.

3.3.1 Fuel Slate Proposed By Applicant

The following fuels are proposed for combustion in the MWC unit: solid wastes, natural gas and propane as auxiliary fuels. The primary fuel for the unit is municipal solid waste (MSW), including the items and materials that fit within the definition of MSW contained in either 40 CFR 60.51b or Section 403.706(5), Florida Statutes (1995).

Authorized fuels for the facility are also requested to include other solid wastes that are not MSW, which are described in further detail below. However, the facility shall not burn:

(a) those materials that are prohibited by state or federal law;
(b) those materials that are prohibited by this permit;
(c) lead acid batteries;
(d) hazardous waste;
(e) nuclear waste;
(f) radioactive waste;
(g) sewage sludge;
(h) explosives;
(i) beryllium-containing waste, as defined in 40 CFR 61, Subpart C.

The following other solid waste may be used as fuel at the facility:

(a) Confidential, proprietary or special documents (including but not limited to business records, lottery tickets, event tickets, coupons and microfilm);
(b) Contraband which is being destroyed at the request of appropriately authorized local, state or federal governmental agencies, provided that such material is not an explosive, a propellant, a hazardous waste, or otherwise prohibited at the facility. For the purposes of this determination, contraband includes but is not limited to drugs, narcotics, fruits, vegetables, plants, counterfeit money, and counterfeit consumer goods;
(c) Wood pallets, clean wood, and land clearing debris;
(d) Packaging materials and containers;
(e) Clothing, natural and synthetic fibers, fabric remnants, and similar debris, including but not limited to aprons and gloves; or
(f) Rugs, carpets, and floor coverings, but not asbestos-containing materials or polyethylene or polyurethane vinyl floor coverings.
(g) The predominantly combustible fraction of sorted construction and demolition debris. Sorting of mixed construction and demolition debris at the facility shall occur on the tipping floor or at another location approved by the Department.

Waste tires are additionally requested for use as fuel in the unit. The total quantity of waste tires received as segregated loads and burned in the unit shall not exceed 3%, by weight, of the unit's total fuel, except as provided in the following sentence. Subsequent to an initial test burn scheduled to allow Department representatives to observe, while firing 5% (by weight) tires at the combustion unit while operating the unit at capacity that demonstrates via the CEMS that the unit can comply with the emission limits for pollutants monitored by the CEMS while firing 5% (by weight) tires, this quantity limitation shall rise from 3% to 5%. Compliance with this limitation shall be determined on a calendar monthly basis.

Subject to the conditions and limitations contained in the permit, the following other solid waste materials may be used as fuel for the unit (i.e. the following are proposed fuels that are non-MSW material). The total quantity of the following non-MSW material received as segregated loads and burned in the unit shall not exceed 5%, by weight, of the unit's total fuel. Compliance with this limitation is proposed to be determined on a calendar monthly basis.

(a) Unsorted mixtures of construction and demolition debris, or that fraction of sorted construction and demolition debris that is predominantly non-combustible. Non-combustible construction and demolition debris shall include concrete, metals, gypsum products, plaster, rock, brick, and masonry.
(b) Oil spill debris from aquatic, coastal, estuarine or river environments. Such items or materials include but are not limited to rags, wipes, and absorbents.
(c) Items suitable for human, plant or domesticated animal use, consumption or application where the item's shelf life has expired or the generator wishes to remove the items from the market. Such items or materials include but are not limited to off-specification or expired consumer products, pharmaceuticals, medications, health and personal care products, cosmetics, foodstuffs, nutritional supplements, returned goods, and controlled substances.
(d) Consumer-packaged products intended for human or domesticated animal use or application but not consumption. Such items or materials include but are not limited to carpet cleaners, household or bathroom cleaners, polishes, waxes and detergents.
(e) Waste materials that:
    (i) are generated in the manufacture of items in categories (c) or (d), above and are functionally or commercially useless (expired, rejected or spent); or
    (ii) are not yet formed or packaged for commercial distribution. Such items or materials must be substantially similar to other items or materials routinely found in MSW.
(f) Waste materials that contain oil from:
    (i) the routine cleanup of industrial or commercial establishments and machinery; or
    (ii) spills of virgin or used petroleum products. Such items or materials include but are not limited to rags, wipes, and absorbents.
(g) Used oil and used oil filters. Used oil containing a PCB concentration equal or greater than 50 ppm shall not be burned, pursuant to the limitations of 40 CFR 761.20(e).
(h) Waste materials generated by manufacturing, industrial or agricultural activities, provided that these items or materials are substantially similar to items or materials that are found routinely in MSW, subject to prior approval of the Department.

The authorized fuels shall be well mixed with MSW or alternately charged with MSW. The facility owner will not be permitted to process prohibited fuels, such as lead-acid batteries, and sewage sludge.

4. CONTROL TECHNOLOGY DISCUSSION

4.1 Control Technology Proposed By Applicant Including Department Discussion

The following table summarizes the applicant's emission proposal for the incinerator:

TABLE 7

		Allowable Emissions		PSD Applicability	
Pollutant Name	**Standard(s)**	**Lbs/hour**	**TPY**	**SER -TPY**	**Significant**
PM10	20.6 mg/dscm, corrected to 7% O_2	5.08	22.28	15	Yes
Sulfur Dioxide	30 ppmvd or 80% reduction, at 7% O_2	65.72	287.8	40	Yes
Nitrogen Oxides	150 ppmvd, corrected to 7% O_2	70.8	310.1	40	Yes
VOC	30 ppmvd, corrected to 7% O_2	4.94	21.62	40	No
Carbon Monoxide	100 ppmvd, corrected to 7% O_2	28.73	125.8	100	Yes
Mercury	0.070 mg/dscm or 85% red to 7% O_2	0.042	0.187	0.1	Yes
Beryllium	0.16 ug/dscm, corrected to 7% O_2	3.95×10^{-5}	1.73×10^{-4}	N/A	No
Cadmium	0.02 mg/dscm, corrected to 7% O_2	0.05	0.0216	N/A	No
Lead	0.2 mg/dscm, corrected to 7% O_2	0.05	0.0216	0.6	No
MWC Acid Gas (HCl)	HCl - 25 ppmvd or 95% red to 7% O_2	46.76	204.8	40	Yes
MWC Organics	13 ng/dscm, corrected to 7% O_2	3.2×10^{-6}	1.4×10^{-5}	3.5×10^{-6}	Yes
MWC Metals (PM)	20.6 mg/dscm, corrected to 7% O_2	5.08	22.28	15	Yes
Fluoride	3.5 ppmvd, corrected to 7% O_2	0.718	3.145	3	Yes
Sulfuric Acid Mist	9.8 ppmvd, corrected to 7% O_2	9.85	39.3	7	Yes
Arsenic	10.8 ug/dscm, corrected to 7% O_2	2.65×10^{-3}	0.0116	N/A	No
Ammonia	50 ppmvd, corrected to 7% O_2	8.72	38.19	N/A	No
HAPS (total)	Sum of As, Be, Cd, DIOX, Fl, HCl, Pb and Hg	47.58	208.4	N/A	No
Visible Emissions	10% opacity, 6 minute average			N/A	No

The new combustor will have a maximum charging rate of 660 tons per day based on solid waste fuel with a nominal HHV of 5,000 Btu/lb. Accordingly, as a large MWC, this unit is subject to the requirements of 40 CFR 60, Subpart Eb. Dry flue gas scrubbers, baghouse, SNCR, and carbon injection are proposed to control emissions from the combustor. The existing facility also contains existing lime silo and ash handling systems, which will be impacted via increased throughput of the new unit. An additional lime silo will be constructed, which stores pebble lime, which is used to make lime slurry. Particulate matter emissions occur when lime is loaded from trucks to the silo. Emissions from the existing lime silo are currently controlled by a filter baghouse with a 5% opacity limit. The ash handling system at the facility consists of conveyors, scalpers, and a ferrous and non-ferrous removal system and meets emission limits of 0.010 gr/dscm and 5% opacity. Ventilation of the ash handling building is controlled by a baghouse. The new unit will produce up to 20 MW of electricity daily. The existing facility is self-

sufficient and uses a small amount of this energy. The rest of the energy is sold to an electric utility market, as will be the case with the proposed unit. The combustor's maximum capacity of 660 tons/day of MSW is equivalent to a maximum heat input of 275 MMBtu/hr.

4.2. Selective Non Catalytic Reduction (SNCR) System

To comply with the NO_X emission limits specified in 40 CFR 60 Subpart Eb, the applicant is proposing to install a selective non-catalytic reduction (SNCR) system as well as a continuous emission monitor for NO_X. The applicant proposes to utilize the NSPS as BACT, with an emission limit of 180 ppmvd during the first year, followed by 150 ppmvd (at 7% oxygen) thereafter. The following describes a typical system:

The SNCR system will store, convey, and inject aqueous urea into the furnace of each boiler immediately above the over fire air zone. The SNCR system may use urea, instead of ammonia, to provide the reducing reaction with NO_X forming nitrogen and water. That reaction occurs across a wider temperature range than ammonia and reduces the potential health and safety risks associated with the release of ammonia during handling or storage.

The SNCR unit will be designed to allow the concentrated reagent to be delivered to the facility in a heated, self-unloading tanker truck and transferred to a heated fiberglass reinforced plastic tank for on site storage. The tank will provide approximately one to two weeks of storage capacity under normal operating conditions.

A common circulation module transfers the chemical from the storage tank to the individual boiler metering modules. A recirculation pump and a supplemental electric heater, both located on the circulation module, provide agitation and heating capability. Flow and pressure control of the urea and dilution water fluids used in the SNCR process is performed with the metering modules. Metering of the concentrated reagent, dilution of the reagent with water and mixing of the resulting solution is also accomplished at these modules. The diluted reagent is pumped to the distribution modules where the individual distribution panels are located. The panel regulates the compressed air and diluted reagent flows to the individual fluid injection nozzles.

The applicant indicates that the installation of the SNCR system to reduce NO_X emissions will allow compliance with the 40 CFR 60 Subpart Eb NO_X standard, and proposes 50 ppmvd ammonia slip at 7% O2.

4.3 Department Review of Selective Catalytic Reduction (SCR) System

Much of this section was taken from a Princeton University publication, entitled Facing America's Trash: What Next for Municipal Solid Waste? Selective catalytic reduction (SCR) is a technology capable of removing more than 70 percent of the NO_X normally emitted from MSW incinerators. It involves injecting ammonia (NH_3) into the flue gas just before the gas enters a special catalyst. The NH_3 reacts with nitrogen oxide gases (NO and $N0_2$) to form nitrogen and water instead of NO. The catalyst enables these reactions to occur at lower temperatures.

The first West German SCR installation associated with a refuse combustor was constructed on Martin's Munich-South plant. As of 1994, 47.2% of all MSW Incineration plants in the Netherlands utilized SCR (AOO, 1995). However, currently there are 11 MSW incinerator plants of which 9 utilize SCR and the others use SNCR. There are two AVR plants, one in Rotterdam, with a capacity about 330,000 tons/year and one in Rozenburg with a capacity of about 1,000,000 tons/year. For reference, the proposed Lee County incinerator will be capable

of approximately 240,000 tons/year, with 3 like units at the site. The Netherlands emission standard is 70 mg/nm^3 (approximately 37 ppm) on a 24-hour average. According to P.J. Meijer (LAE) this standard is achieved more than 95% of the time. He additionally reports that during 1999, NO_X emissions for all SCR installations averaged 300 grams/ton NO_X. This equates to 60 mg/nm^3 or about 32 ppm of NO_X. SCR is also indicated to be the most frequently used process for NO_x reduction on MSW incineration facilities in Germany (Dalager, 1998). Of the existing plants for the thermal treatment of municipal waste in Germany, 17 plants use the selective non-catalytic reduction (SNCR) process and 42 plants use the selective catalytic reduction (SCR) process for NO_x reduction. In the case of the 42 plants equipped with SCR, the catalyst is used additionally as SCR oxidation catalyst (11 plants), i.e. for dioxin abatement. In the sequence of waste gas purification processes applied in waste incineration, the SCR catalyst is installed either behind the first particulates control system and before scrubbing, or at the end, upstream of the entrained-bed process/hearth oven coke filter/activated carbon filter; however, it can also be installed at the very end of the waste gas purification sequence, before the stack.

In Austria there are three incineration plants for municipal solid waste: two in Vienna (Spittelau with a capacity of about 260,000 tpy and Floetzersteig with about 200,000 tpy) and a small plant in Wels (province of Upper Austria) with about 60,000 tpy. In Vienna there is also a hazardous waste burning plant known as EbS with a capacity of 75,000 tpy. The pollution control equipment is similar in all three Austrian plants: electrostatic precipitator for dust reduction, 2-stage flue gas scrubber (for reduction of SO_2, HCl, HF), fine dust separators and SCR utilizing ammonia. The plant in Wels has an additional activated carbon filter installed. The two larger plants report NO_X emissions at 16-21 mg/m^3 at 11% O_2, approximately 11 ppm or less (Schuster, 1999). The 712 TPD Spittelau plant reports annual NO_X emissions at less than 35 TPY. According to a study by Frost & Sullivan, an international market consultancy, a number of European countries have embraced waste-to-energy, with approximately 340 plants processing annual volumes of around 50 million tons of municipal waste during 2002.

In addition to many European facilities, SCR is used at (at least) two Japanese facilities. The Iwatsuki facility opened in 1987, while the Tokyo Hikarigaoka facility opened in 1983 and was retrofitted with SCR in 1987. The Iwatsuki facility is small, with a capacity of 130 tons per day, and is equipped with a dry scrubber, fabric filter, and SCR system. The SCR system was installed in anticipation of future lower national NO_X standards and to meet local public demands. Fly and bottom ash (about 15 percent by weight of the original MSW) are mixed with sludge from the facility's wastewater plant, then mixed with cement and sent to a lined monofill.

4.3.1 Emissions Control and Catalyst Efficiency at Iwatsuki

SCR removed 80 percent of NO_X during initial testing at Iwatsuki. According to Mitsubishi Heavy Industries (MHI), the SCR manufacturer and plant designer, the system has an average removal efficiency of 77 percent, but operates with NO_X concentrations of 30 to 60 ppm, because the municipality only requires that level. These emissions are much lower than typical NO_X emissions from U. S. facilities employing SNCR.

A potential problem with catalysts in general is that they become less efficient over time, due to "poisoning' with alkaline metals or "blinding" with particulate matter. MHI calculated that catalyst activity at Iwatsuki had decreased by only 1 to 2 percent after one year of operation, and it expects the catalyst to function efficiently until activity has been reduced by 20 to 30 percent.

Another potential disadvantage is the presence of white plumes caused by ammonia "slip." Slip occurs when excess NH_3 and HCl are released from the stack as gases and react in the atmosphere to form NH_4Cl, which is visible at concentrations greater than 10 ppm. At Iwatsuki, this is avoided by carefully controlling the rate of NH_3 injection. According to MHI, 80 percent NOx removal without ammonia slip can be achieved by injecting 2 kg per hour.

4.3.2 Applying SCR at U. S. Facilities

The most successful application of SCR to MSW units seems to be the "tail-end" SCR. This type of installation allows the SCR to be placed downstream of all other pollution controls, thus seeing relatively "clean" flue gas, and minimizing any chance of severe catalyst degradation or fouling. However, this application of SCR hinges on: 1) the need to reheat the flue gases, and the costs of doing so 2) capital and operating costs of SCR itself and 3) long-term performance.

Reheating Flue Gases - Most Japanese incinerators are small and they use the heat they produce for local steam heating (e. g., for greenhouses and community swimming pools) rather than electricity generation. Flue gases typically exit the boiler at 600 to 700°F, are cooled, and pass through a fabric filter. At Iwatsuki, the gases then pass through the SCR at a temperature above 430°F, the temperature required to operate the catalyst efficiently. In contrast, most large U.S. facilities produce electricity. In these facilities, the flue gases would be too cool to operate efficiently when they reached an SCR system and would require reheating. This is because the gases leave the boiler, pass through economizers or other heat exchangers to convert heat into electricity, and then exit the economizer well below 430°F. Additional cooling to around 300°F prior to entering the scrubber and filter is required by some states (e.g. New York), primarily because the controls operate more efficiently at those temperatures. MHI's configuration for a proposed California facility required that the SCR be placed after a scrubber and filter, in part to reduce blinding and poisoning by metals. MHI would guarantee the proposed SCR system only if flue gas temperatures entering the catalyst were 428°F or higher at all times. Because the flue gases would be cooler than 430°F before they reached the SCR, they would have to be reheated with an auxiliary burner. After passing through the SCR, the gases then would have to be re-cooled to less than 300°F prior to emission (but not less than 270°F) to avoid formation of CaC_{12}). This reheating and re-cooling adds to total costs. Of course, an alternative is to place the SCR right after the boiler, which would eliminate the need for reheating, but this might cause problems with blinding of the catalyst. MHI used a similar arrangement at its Tokyo plant, where the SCR was placed after an ESP but before a wet scrubber. In this situation, reheating was not necessary.

Capital and Operating Costs - The SCR system at Iwatsuki cost approximately about $570,000 or $4,400 per ton of capacity. For comparison, the fabric filter system had capital costs of about $3.4 million, or $26,000 per ton of capacity. Operating costs for that SCR mainly consist of the cost of ammonia, which is about $32,000 annually (about $240 per ton of capacity). According to MHI, initial costs for new plants and retrofitting costs for old plants are similar, assuming space is available. Capital costs for a system with the SCR placed after a scrubber and filter are greater than if the SCR is placed nearer the boiler because of the extra equipment needed to reheat and re-cool the flue gases. The cost of a complete SCR system at the proposed California facility was estimated (in 1987) to be about $13 million. The SCR catalyst was to cost $7.6 million; auxiliary equipment (burners, etc.) $0.5 million; ductwork and support steel $1.65 million; and construction $3.3 million. This would have increased the capital cost of the entire facility by about 8 percent. The additional operating costs for the SCR system were estimated to

be roughly $150,000 per year. More recently, the Austrian plants (referred to above) with state of the art pollution controls (as of 1999) and capacities of 550 to 700 TPD, are estimated to have annual "all up" costs of approximately 25M$ annually. This equates to approximately $100 per ton, compared to Lee County with a (subsidized) tipping fee at approximately $50 per ton.

Long-Term Catalyst Performance – Long-term data on catalyst performance at MSW incinerators is somewhat limited. In pilot tests from Tokyo and Iwatsuki, the catalysts were sampled periodically at different temperatures and NH_3 /NO_X ratios. About 80 percent NO_X reduction was achieved for 2,000 hours of operation (the length of the test). As noted above, the SCR system at Iwatsuki exhibited a decrease in activity of only 1 to 2 percent after one year of operation, and MHI expects it to function efficiently until activity has been reduced by 20 to 30 percent. In addition to normal gradual decreases in activity, catalysts can be degraded suddenly by thermal shocks (e.g., from startups and shutdowns). MHI, however, does not consider this to be important.

4.4 SCR or SNCR?

Under typical operating conditions, SNCR can reduce NO_X by around 40 percent. However, at the Commerce, California, facility, tests revealed an average removal rate of 44.5 percent, with removal rates of 60 percent when NH_3 was injected at a greater rate. In all tests, ammonia slip was reduced by particulate controls (spray dryer and baghouse) to less than 3 ppm. Thus conventional SNCR appears to remove less NO_X than SCR. It also constrains reactions to a smaller temperature range (1,700 to 1,800°F), and so requires greater control over operating conditions. This is problematic given the wide temperature variability (several hundred degrees F) between full load and low load. However, the capital and operating costs of SNCR are considerably lower. The capital costs of the system at Commerce were approximately $250,000 (about $660 per ton of design capacity). Operating costs also are relatively low; a compressor costs about $100,000 annually and ammonia injection costs are only about $2 to $3 per day.

Despite the lower costs of conventional SNCR, SCR still may be appropriate. One compelling reason supporting the application of SCR is that within the process of catalytic removal of NO_X, dioxins and furans are destroyed by the SCR catalyst. German data for SCR process efficiency on PCDDs/Fs removal gives a range of 87-98% (Jensen, 1997) while other data state the efficiency to be 93-97% (Maier-Schwinning et al., 1993).

4.5 Dioxins and Furans (PCDDs/Fs)

Based upon a 1999 report prepared for The United Nations by UNEP Chemicals of Geneva Switzerland, the US is likely the second highest of nations which emit dioxins and furans to the air, following Japan. The report entitled "Dioxin and Furan Inventories, National and Regional Emissions of PCDD/PCDF" draws the conclusion that as much as 40% of the US emissions are likely from waste incineration. Accordingly, FDEP provides the following summary review of the formation of PCDDs/Fs from waste incineration. Much of this section is taken from an April 2000 report entitled "Technical Data for Waste Incineration" Erichsen and Hauschild, Technical University of Denmark.

There are three possible sources of the dioxins and furans present in the flue gas (Dam-Johansen and Jensen, 1996):

- incomplete destruction of PCDDs/Fs present in the incoming waste
- formation of PCDDs/Fs in the combustion zone

- catalytic formation of PCDDs/Fs during cooling of the flue gas

4.5.1 Dioxins and Furans in the incoming waste

The level of dioxins and furans present in the incoming waste is very low (Dam-Johansen and Jensen, 1996). Therefore, the incomplete destruction of PCDDs/Fs in the waste cannot account for more than a small fraction of the PCDDs/Fs typically present in the flue gas (Dam-Johansen and Jensen, 1996).

4.5.2 Formation in the combustion zone

Dioxins and furans can be formed at high temperatures in the combustion zone, but with good mixing of air and fuel the formation is unrealistic according to numerical calculations (Dam-Johansen and Jensen, 1996). Experiments indicate that formation of PCDDs/Fs in the combustion zone is due to the presence of large, not completely burned particles (Dam-Johansen and Jensen, 1996). At high temperatures PCDDs/Fs are both formed and destroyed (Dam-Johansen and Jensen, 1996).

4.5.3 Catalytic formation during cooling of the flue gas

During cooling of the flue gas after the combustion zone, a catalytic formation of dioxins and furans can take place on fly ash particles from which the dioxin may later evaporate. The catalytic formation can follow two different mechanisms: de novo synthesis and synthesis from precursors (Dam-Johansen and Jensen, 1996).

By de novo synthesis PCDDs/Fs are formed from carbonaceous particulate matter and inorganic halides in the flyash by gas-solid and solid-solid reactions with oxygen and moisture, catalysed by metal ions, primarily copper ions (Stieglitz et al., 1991, Dickson et al., 1992). On the surface of the particulate carbon, the metal ions catalyse oxidation of carbon to CO_2 and chlorinating of aromatic structures producing compounds, such as chlorobenzenes, biphenyls and naphthalenes (Stieglitz et al., 1991). No elemental chlorine is involved in the reaction (Stieglitz et al., 1991). The de novo synthesis is fastest at temperatures between 250°C and 350°C (Dam-Johansen and Jensen, 1996).

Dioxins and furans are formed on the fly ash by surface-catalysed reactions of precursors (Dickson et al., 1992). The precursors come from the fuel, or they are formed in the higher temperature post-combustion zone by multi-step reactions, including aromatisation of aliphatic compounds (Dickson et al., 1992).

4.5.4 Dioxins and Furans - Conclusion

Based on the information above it is concluded that the formation of dioxin requires the presence of carbon, inorganic chlorine and metal ions of copper. It is likely that all of these elements will be present in the normal waste stream. This being the case, the occurrence and magnitude of dioxin and furan emissions will depend primarily on the conditions of the incineration plant and the mass of the waste consumed. Accordingly, appropriate conditions of the plant will be specified within the permit.

4.6 PM and Mercury Control

The unit is to be equipped with a spray dryer adsorber and a fabric filter baghouse system. The applicant additionally proposes to control mercury emissions by implementation of a mercury waste separation program as well as through the use of activated carbon injection.

4.7 Furnace Temperature Requirements

The unit will be fitted to ensure that the furnace temperature is monitored and maintained above 1,800°F with a combustion residence time of at least one second. Additionally, the applicant will comply with the good combustion practices (GCP) outlined in the 40 CFR 60, Subpart Eb.

4.8 German Emission Limits

What follows is a summary of the established emission limits for German incineration plants, promulgated in 1990 with revisions through 1999:

Pollutants	Limits of the 17th BImSchV (mg/m^3)	Equivalent limits as ppm
Carbon Monoxide	50	43
Nitrogen Oxides	200	106
Sulfur Dioxide	50	19
Inorganic Fl Compounds	1	1.3
Inorganic Cl Compounds	10	6.9
Total Carbon	10	20
Cadmium/Thallium	0.05	
Mercury	0.05	
Dioxins/furans	0.1 ng/m^3	

Note: Table assumes that the limits shown in mg/m^3 and ppm are at the same O_2 level.

5. RULE APPLICABILITY

This facility is located in Lee County, an area designated as attainment for all criteria pollutants in accordance with Rule 62-204.360, F.A.C.

The main rules applicable to this project would be 40 CFR 60, Subpart Eb - Standards of Performance for Large Municipal Waste Combustors for Which Construction is Commenced After September 20, 1994 or for Which Modification or Reconstruction is Commenced After June 19, 1996, Rule 62-296.401(4) and Rule 62-296.416, F.A.C., Waste-to-Energy Facilities.

The Emission Guideline under 40 CFR 60 Subpart Eb, with which the facility will comply, was developed pursuant to Section 129 (Solid Waste Combustion) of the Clean Air Act as amended in 1990. It requires and achieves the same objectives as MACT for existing facilities.

This facility shall comply with all applicable provisions of the following guidelines and regulations:

- 40 CFR 60 Subpart Eb Standards of Performance for Large Municipal Waste Combustors for Which Construction is Commenced After September 20, 1994 or for Which Modification or Reconstruction is Commenced After June 19, 1996.
- 40 CFR 51 Subpart P Protection of Visibility.
- 40 CFR 60, Subpart Db Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units.
- 40 CFR 60, Subpart E Standards of Performance for Incinerators.
- 40 CFR 60, Subpart A General Provisions
- 40 CFR 64 Compliance Assurance Monitoring Rule
- 40 CFR 50 National Primary and Secondary Ambient Air Quality Standards

This facility is also subject to the applicable requirements related to used fuels and wastes given in 40 CFR 240, 40 CFR 279, 40 CFR 273 and 40 CFR 261, which are adopted by reference in Chapters 62-710, 62-737 and 62-730, F.A.C.

The emission unit affected by this revision shall comply with all applicable provisions of the Florida Administrative Code (including applicable portions of the Code of Federal Regulations incorporated therein) and, specifically, the following Chapters and Rules:

Chapter 62-4	Permits
Rule 62-204.220	Ambient Air Quality Protection
Rule 62-204.240	Ambient Air Quality Standards
Rule 62-204.260	Prevention of Significant Deterioration Increments
Rule 62-204.360	Designation of Prevention of Significant Deterioration Areas
Rule 62-204.800	Federal Regulations Adopted by Reference
Rule 62-210.300	Permits Required
Rule 62-210.350	Public Notice and Comments
Rule 62-210.370	Reports
Rule 62-210.550	Stack Height Policy
Rule 62-210.650	Circumvention
Rule 62-210.700	Excess Emissions
Rule 62-210.900	Forms and Instructions
Rule 62-212.300	General Preconstruction Review Requirements
Rule 62-212.400	Prevention of Significant Deterioration
Chapter 62-213	Operation Permits for Major Sources of Air Pollution
Chapter 62-214	Requirements For Sources Subject To The Federal Acid Rain Program
Rule 62-296.320	General Pollutant Emission Limiting Standards
Rule 62-296.401	Incinerators
Rule 62-297.310	General Test Requirements
Rule 62-297.401	Compliance Test Methods
Rule 62-296.410(3)	Specific Emission Limiting and Performance Standards Requirements for Incinerators
Rule 62-296.416	Waste to Energy Facilities
Chapter 62-256	Open Burning and Frost Protection Fires
Rule 62-297.570	Test Reports
Rule 62-297.520	EPA Continuous Monitor Performance Specifications
Chapter 62-701	Solid Waste Management Facilities
Chapter 62-702	Solid Waste Combustor Ash Management
Chapter 62-710	Used Oil Management
Chapter 62-711	Waste Tire Rule
Chapter 62-730	Hazardous Waste
Chapter 62-737	The Management of Spent Mercury-Containing Lamps and Devices Destined for Recycling

Congress added Section 129 to the Clean Air Act (CAA) in 1990 specifically to address emissions from solid waste combustion. Sections 111 and 129 require EPA to establish new source performance standards (NSPS) for *new* units, while sections 111(d) and 129 require the Agency to establish Emission Guidelines for *existing* units. NSPS and MACT standards for large MWC's were promulgated on December 19, 1995 (60 FR 65382) and later codified in 40 CFR Part 60, Subpart Eb. Both the NSPS and the Emission Guidelines under section 129 use a MACT type approach as used under section 112. Since the emission standards of the new Subpart Eb represent the MACT floor, the Department need only execute one Determination, which shall represent MACT and BACT.

6. HISTORICAL EMISSIONS

The annual emissions from the existing units at the facility (EU-001 and -002) are as follows, based upon the prior 2 years of history:

TABLE 8

				Highest of Years 1999 or 2000	
Pollutant	**Actual 2001 Unit 1 Stack Test**	**Actual 2001 Unit 2 Stack Test**	**TPY Limit**	**Actual Unit 1 TPY Emissions**	**Actual Unit 2 TPY Emissions**
PM*	0.000267 gr/dscf	0.00082 gr/dscf	21.3	4.71	3.46
SO_2	0 ppm	0 ppm	163.3	63.04	59.03
NO_X	159 ppm	159 ppm	320	299.96	298.89
VOC			23	1.239	1.87
CO	20.7 ppm	18.2 ppm	108	29.12	27.48
Hg (H114)	0.023 mg/dscm	0.028 mg/dscm	0.166	0.031	0.025
Be (H021)			0.000147	0	0
VE	0%	0%			
Cd	0.00131 mg/dscm	0.00124 mg/dscm			
Pb	0.0131 mg/dscm	0.016 mg/dscm	0.66	0.017	0.0347
HCl	16 ppm	13 ppm			
Dioxin/Furan	6.5 ng/dscm	7.6 ng/dscm	0.000028	0	0
Fl			3.8	0.1439	0.1415
SAM			39.3	16.28	12.89
As (H015)			0.01	0.0005	0.0004
Ammonia					

* Note – The PM limit of 0.01 gr/dscf for Units 1 and 2 is approximately equal to 22.88 mg/dscm.

7. DEPARTMENT BACT REVIEW

In evaluating BACT, Department Rules (62-212, F.A.C.) require that the Department must give consideration to:

a) Any Environmental Protection Agency determination of Best Available Control Technology pursuant to Section 169 of the Clean Air Act, and any emission limitation contained in 40 CFR Part 60 (Standards of Performance for New Stationary Sources) or 40 CFR Part 61 (National Emission Standards for Hazardous Air Pollutants).
b) All scientific, engineering, and technical material and other information available to the Department.
c) The emission limiting standards or BACT determinations of any other state.
d) The social and economic impact of the application of such technology.

During the pre-application process, Lee County (through its consultant, RTP Environmental Associates, Inc.) provided a statistical analysis of emission data from the existing Lee County MSW units. This data was intended to indicate appropriate limits for establishing BACT, suggesting the setting of BACT emission limits at a Six Sigma Upper Prediction Limit (UPL) or other statistical basis, unless the NSPS is lower. According to the submittal, the Six Sigma UPL should correspond to a predicted failure (exceedance) rate of once every 125 years. The Department takes no issue with the mathematical accuracy of the analysis, but finds it to be an unacceptable means of establishing BACT emission limits, for multiple reasons. The legislative history is clear, that Congress intended BACT to perform a technology-forcing function. With this in mind, the Department will attempt to utilize the relevant portions of the analysis in the establishment of BACT emission limits.

Additionally, Eastern Research Group conducted a study entitled Compliance Test Data Analysis For Lee County Solid Waste Resource Recovery Facility in September of 2002 for the EPA. EPA Region IV provided this study to the Department for use as appropriate. As indicated above, the Department will utilize relevant portions of this study, as it sees fit in the establishment of BACT.

7.1 NO_X Summary

The applicant supplied cost analyses for SCR to the Department, concluding that the cost of that NO_X control technology may be greater than $13,000 per ton of NO_X removed. These analyses were reviewed by the Department and rejected for multiple reasons, although many questions remain as to an accurate cost effectiveness calculation. Cost effectiveness values exceeding $10,000 per ton are not considered within the range of cost effectiveness by EPA or FDEP.

The Department has reached no definitive conclusion as to the appropriate cost effectiveness of SCR and will continue to investigate it prior to evaluating the application of additional MWC's in Florida. However, FDEP does not accept the applicant's proposal of a conventional SNCR (meeting the NSPS) as BACT. However, the Department notes that:

a) No large-scale refuse burning WTE facilities have been permitted in Florida for over a decade. During this time, a number of landfills have been permitted in the US and Florida.
b) Consideration is given to the social impacts of landfilling versus combusting waste. In the EU waste disposal hierarchy, WTE is regarded as a form of recycling of energy and is considered preferable to landfill disposal, though less preferable than primary recycling of waste products. As a growing state, it is important for the State of Florida to ensure that a

balance is achieved between the alternatives of landfilling and burning of waste. During the past 10 years, that balance has not been achieved.

Given the above factors, this facility's past excellent environmental performance (with respect to air pollution) along with the apparent capabilities of advanced SNCR systems, justification *is* warranted to authorize the use of such an advanced SNCR for NO_X control. The advanced SNCR will use furnace pyrometry and additional process enhancements, such that high NO_X reductions can be achieved without excessive amounts of ammonia slip or other unwanted byproduct gases. According to EPA's document EPA/600/SR-94/208, such a system requires less reagent than that required for conventional SNCR and should achieve 60% NO_X reductions (an approximate Lee County emission equivalent of 104 ppmvd @ 7% O_2).

An additional factor considered by the Department is that on September 9, 1999 the State of Illinois issued a permit to West Suburban Recycling and Energy Center, L.P. for the construction of two 900 TPD MWC's, with NO_X emission limits of 100 ppmvd on a 24 hour average. Lastly, based upon the touted guarantees of the Martin GmbH SNCR (http://www.martingmbh.de/englisch/technologie/e_sncr.htm) NO_X emissions are achievable at levels approaching 60 ppm, and three European facilities (Brescia, London SELCHP and Limmattal) have guarantees averaging 106 ppm. Similar to Martin, Von Roll (a Swiss company) is a major builder of plants in Europe, with Wheelabrator as the domestic licensee. In discussions with Von Roll, NO_X emissions at or below 100 ppmvd are also guaranteeable.

In consideration of all of the above items, a BACT emission limit of 110 ppmvd @ 7% O_2 shall be established on a 30-day rolling average. As an additional means of achieving this limit, the Department encourages the applicant to consider the application of flue gas recirculation (http://www.martingmbh.de/englisch/technologie/e_abgasrezirk.htm) as well as water-cooled grates (http://www.martingmbh.de/englisch/technologie/e_gek_rost.htm), both of which have been developed by Martin GmbH. The application of water-cooled grates allows for a higher percentage of overfire air, in turn enabling lower combustion temperatures and therefore better control of NO_X. Lastly, the Department notes that the latest advances to the Martin GmbH combustion control system (e.g. SYNCOM - http://www.martingmbh.de/englisch/technologie/e_syncom.htm) may be designed to incorporate many of the features identified herein, such as FGR and the use of furnace temperature optimize oxygen distribution in the combustion zone. Although not yet fully commercialized, such a system is likely applicable for this installation.

7.2 CO Summary

State-of-the-art mass burn waterwall MWC's have inherently stable combustion characteristics and low CO levels. A 100-ppm CO emission limit with a 4-hour averaging time has been established as the NSPS for these types of units. In an EPA sponsored test at a mass burn combustor in Marion County, Oregon in 1987, the combustor was subjected to a number of different operating conditions including changes to the under-to-overfire air ratio and the overfire air distribution. CO concentrations at the inlet to the unit's spray dryer never exceeded 37 ppm and emissions under normal operating conditions were typically less than 20 ppm. While the unit was not attempting to control CO, the computerized distributed combustion control system maintained high combustion efficiency and low concentrations of CO. Evaluation of long term emission data from other state-of-the-art mass burn waterwall facilities indicate that these types of facilities can achieve a 100 ppm CO emission limit on a 4-hour basis. In most cases these mass burn combustors will operate at long term averages of less than 50 ppm to comply with the 100 ppm (4 hour) emission limit. Experience indicates that operation at CO concentrations between

50 and 100 ppm may be required due to problems associated with the burning of wet waste. The Department will establish two CO limits as BACT, the NSPS as well as a 30-day rolling average of 80 ppmvd @ 7% O_2.

7.3 SO_2, SAM and PM Summary

The NSPS limit for SO_2 is 30 ppmvd at 7% O_2 on a 24-hour average, or an 80% reduction in SO_2 on a 24-hour average. Since the 24-hour CEMS data as well as the 3-run stack test averages for SO_2 at the existing Lee County units was 25 ppm or less, the Department will set the SO_2 emission limit at 26 ppmvd @ 7% O_2 on a 24-hour average, or an 80% reduction. The SAM limit will be reduced from the applicant's proposal by an amount equivalent to the SO_2 reduction which the Department has established (a ratio of 26/30) for an equivalent limit of 15 ppmvd @ 7% O_2.

The NSPS for PM is 24 mg/dscm. The Department agrees with the applicant's proposed BACT for PM of 20.6 mg/dscm, which is 90% of the equivalent PM limit (22.88 mg/dscm) on the existing emission units.

7.4 Mercury Summary

The applicant proposed the NSPS of 70 mg/dscm at 7% O_2 as the appropriate BACT limit. However, the Department is aware that many states in the northeast U.S. have established 28 mg/dscm at 7% O_2 as the standard for large MWC's. In fact, the Department review revealed that at least 15 N.E. facilities with large MWC's (of varying vintage, size and design) are required to meet such a limit, and six of these facilities are Covanta-operated. Three of these facilities (Bristol/Connecticut, Union/New Jersey and Haverhill/Massachusetts) are of the Martin design and use a combination of a mercury separation plan plus carbon injection to meet the subject limit. The Department will establish 28 mg/dscm as BACT and allow a 12-month period during which quarterly testing and carbon injection optimization shall be completed while meeting only the NSPS. Permit conditions will describe a means of allowing for occasional sample spikes.

7.5 Dioxins and Furans Summary

A review of past data suggests that 13 ng/dscm at 7% O_2 for dioxins and furans (MWC organics) represents an appropriate level of BACT for this unit. These are the emission limits proposed by the applicant and are lower than those of any other existing waste incinerator within Florida.

7.6 HCl, Pb, Cd and HFl

The Department accepts the applicant's analysis for these 4 pollutant emissions. Specifically, emission limits of 25 ppmvd (or 95% removal), 0.2 mg/dscm, 0.02 mg/dscm and 3.5 ppmvd for HCl, Pb, Cd and HFl (respectively), all corrected to 7% O_2. However, the limit for Cadmium is not established via this BACT review.

7.7 The following table represents a summary of the BACT Determination for this project:

TABLE 9

Pollutant Name	Standard(s)	Lbs/hour	TPY
Particulate Matter (PM_{10})	20.6 mg/dscm, corrected to 7% O_2	5.12	22.3
MWC Metals (PM)	20.6 mg/dscm, corrected to 7% O_2	5.12	22.3
Sulfur Dioxide (SO_2)	26 ppm, or 80% reduction, at 7% O_2	56.9	249.4
Sulfuric Acid Mist	15 ppmvd @ 7% O_2	15.1	66.1
Nitrogen Oxides (NO_X)	110 ppm@ 7% O_2 – 30-day rolling average 150 ppm @ 7% O_2 – 24 hour average	51.9 70.8	227.4
Carbon Monoxide (CO)	80 ppm @ 7% O_2 – 30-day rolling average 100 ppm @ 7% O_2 – 4 hr average	23.0 28.73	100.6
Mercury (Hg)	0.028 mg/dscm @ 7% O_2 or 85% reduction	0.0168	0.0736
Visible Emissions (VE)	10 %, 6 minute average		
Lead (Pb)	0.2 mg/dscm, corrected to 7% O_2	0.05	0.0216
MWC Acid Gas (HCl)	25 ppm or 95% reduction @ 7% O_2	46.76	204.8
Hydrogen Fluoride (HFl)	3.5 ppmvd @ 7% O_2	0.718	3.145
Dioxin/Furan (PCDD/F)	13 ng/dscm, corrected to 7% O_2	3.2×10^{-6}	1.4 x 10-5
Ammonia	15 ppm		

8. AIR QUALITY ANALYSIS

8.1.1 Description of Vicinity

The Lee County Energy Recovery Facility (LCERF) is located on Buckingham Road in Fort Myers, Lee County. Refer to Figures 1, 2 and 3. The site is east of I-75. The immediate area is sparsely populated.

Cape Coral lies 20 km to the south of the LCERF. Fort Myers Beach is 24 km from the LCERF. The Caloosahatchee River runs through Lee County. The Fort Myers Water Treatment Plant is 56 km away in Collier County. Sarasota and Hillsborough Counties are located approximately 109 km and 141 km away respectively from the LCERF.

8.1.2 Climate

The average annual temperature for Lee County is 76 degrees F. Winds are predominately out of the East. Refer to Figure 12 below.

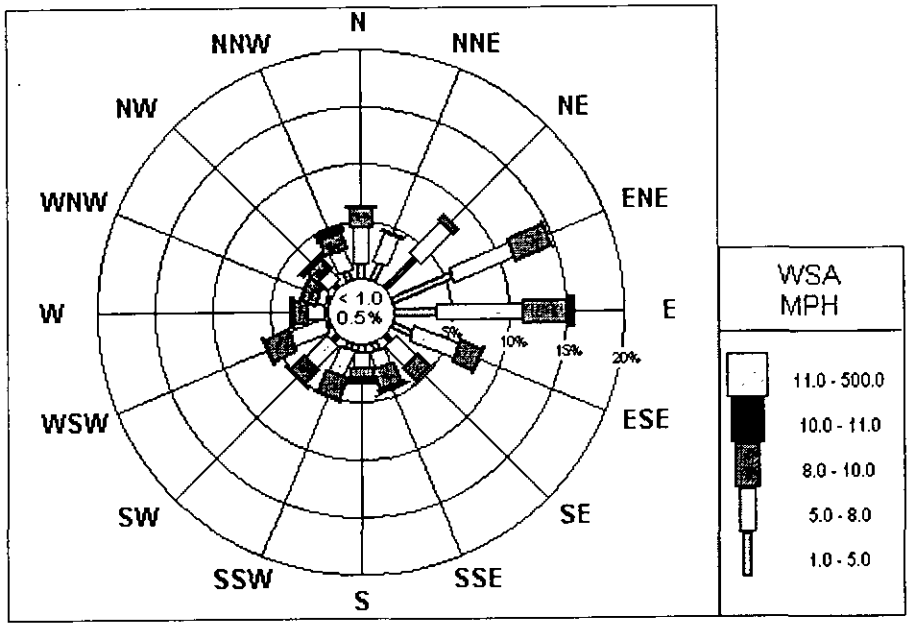


Figure 12 – Lee County Wind Rose – January 2002 to December 2002

8.1.3 *Major Stationary Sources in Lee County*

The current largest sources of air pollutants (stack emissions) in Lee County are listed below:

MAJOR SOURCES OF SO_2 IN LEE COUNTY (2001)

Owner/Company	Site Name	Tons per year
Florida Power and Light	Fort Myers Power Plant	17,154**
Lee County*	**LCERF Proposed Unit 3**	**288***
Lee County	Existing LCERF	47
APAC Florida Inc. FL Division	Fort Myers Plant 1	16
APAC Florida Inc. FL Division	Fort Myers ASTEC Turbo Plant	14

* Potential emissions

**Emissions from FPL will be drastically lower beginning in 2002 due to repowering

MAJOR SOURCES OF NO_X IN LEE COUNTY (2001)

Owner/Company	Site Name	Tons per year
Florida Power and Light	Fort Myers Power Plant	3462**
Lee County	Existing LCERF	545
Lee County*	**LCERF Proposed Unit 3**	**310***
APAC Florida Inc. FL Division	Fort Myers Plant 1	18
APAC Florida Inc. FL Division	Fort Myers ASTEC Turbo Plant	15

* Potential emissions

**Emissions from FPL will be drastically lower beginning in 2002 due to repowering

MAJOR SOURCES OF VOC IN LEE COUNTY (2001)

OWNER/COMPANY	Site Name	Tons per year
Calumet Florida, Inc.	Lehigh Felda Park Tank Battery	512
Munters Corp.	Munters Corp.	98
Florida Power and Light (PFM)	Fort Myers Power Plant	77
Lee County*	**LCERF Proposed Unit 3**	**22***
Action Craft, Inc.	Action Craft, Inc.	17

* Potential emissions

MAJOR SOURCES OF PM IN LEE COUNTY (2001)

Owner/Company	Site Name	Tons per year
Florida Power and Light	Fort Myers Power Plant	1375
Lee County*	**LCERF Proposed Unit 3**	**22***
Construction Burning, Inc.	Construction Burning, Inc.	4
Lee County	Existing LCERF	3

* Potential emissions

MAJOR SOURCES OF CO IN LEE COUNTY (2001)

Owner/Company	Site Name	Tons per year
Florida Power and Light (PFM)	Fort Myers Power Plant	1290
Lee County*	**LCERF Proposed Unit 3**	**125***
Lee County	Existing LCERF	76
Waste Management, INC. of Florida	Gulf Coast Sanitary Landfill	38

* Potential emissions

8.1.4 Air Quality Monitoring in Lee County

Lee County has 4 monitors at 3 sites measuring PM and ozone. The 2001 Lee County monitoring network is shown in Figure 4.

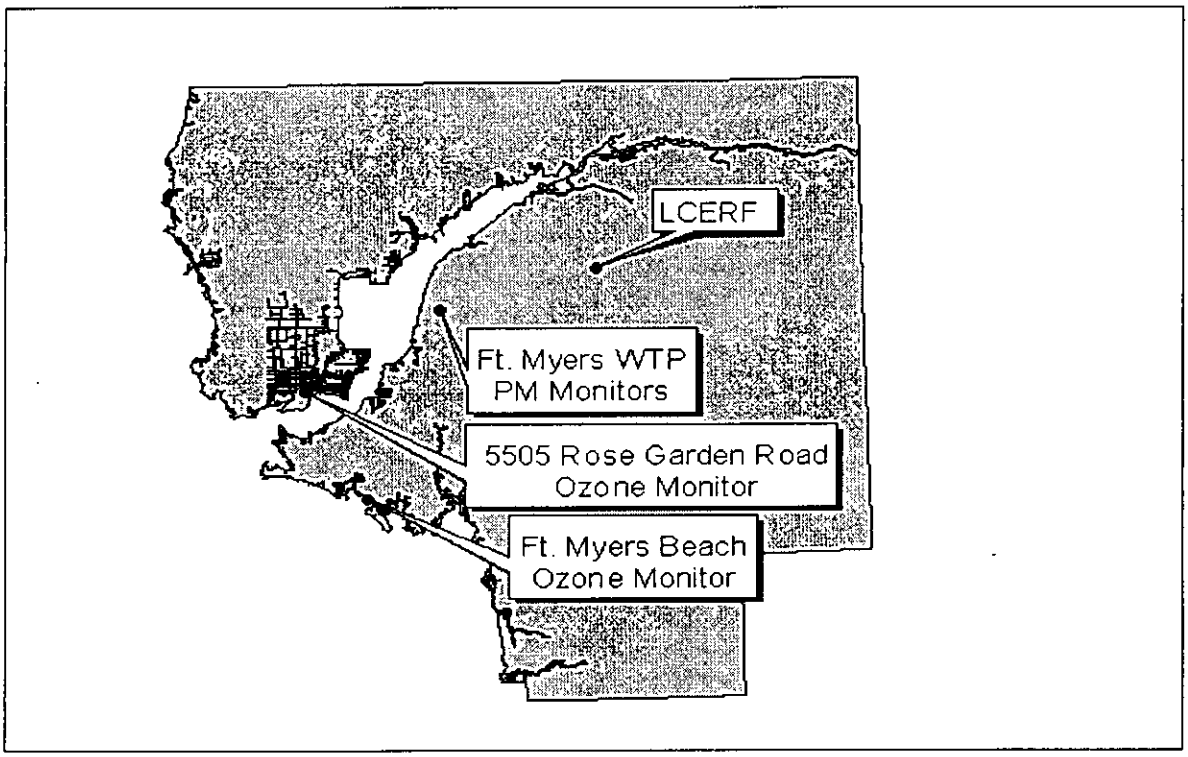


Figure 13 – Lee County Monitoring Network

8.1.5 Ambient Air Quality in the area of the Proposed Facility Modification

Measured ambient air quality is given in the following table. The highest measured values are all less than the respective National Ambient Air Quality Standards. The average measurements are all less than the respective standards.

2001 AMBIENT AIR QUALITY NEAREST TO THE PROJECT SITE

POLLUTANT	Site Location			Averaging Period	Ambient Concentration				
	City	Site no.	UTM		1st High	2nd High	Mean	Standard	Units
PM_{10}	Ft. Myers Beach (WTP)	071-0005	17-3056.200N-348.100E	24-hour	46	42		150[c]	ug/m^3
				Annual			20	50[b]	ug/m^3
SO_2	Sarasota	115-1006	17-3025.910N-353.620E	3-hour	41	37		500[a]	ppb
				24-hour	15	12		100[a]	ppb
				Annual			2	20[b]	ppb
NO_2	Tampa	057-0081	17-3069.100N-355.544E	Annual			7	53[b]	ppb
CO	Venice, Sarasota	115-0014	17-2995.250N-358.780E	1-hour	4	3		35[a]	ppm
				8-hour	2	2		9[a]	ppm
Ozone	Cape Coral	071-2002	17-2945.800N-404.400E	1-hour	0.081	0.072		0.12[c]	ppm
Ozone	Ft. Myers	071-3002	17-2925.550N-406.330E	1-hour	0.085	0.079		0.12[c]	ppm

a - Not to be exceeded more than once per year.

b - Arithmetic mean.

c - Not to be exceeded on more than an average of one day per year over a three-year period.

8.2.1 *Air Quality Impact Analysis - Introduction*

The proposed project will increase emissions of ten pollutants and/or groups of pollutants at levels in excess of PSD significant amounts: PM/PM_{10}, CO, NO_X, SO_2, Mercury, Acid Gases (HCl and SO_2), Total Dioxins and Furans, Fluorides and SAM. PM_{10}, SO_2 and NO_X are criteria pollutants and have national and state ambient air quality standards (AAQS), PSD increments, and significant impact levels defined for them. CO is a criteria pollutant and has only AAQS and significant impact levels defined for it. There are no applicable PSD increments, AAQS or de minimus monitoring levels for SAM, HCL and Total Dioxins and Furans; the BACT determination will set the emission limits for these pollutants. Mercury and Fluorides have de minimus monitoring levels defined for it.

The applicant's initial PM/PM_{10}, CO, NO_X, and SO_2 air quality impact analyses for this project predicted no significant impacts in the vicinity of the project. Therefore, no further applicable AAQS and PSD increment impact analyses for CO, NO_X, PM_{10} and SO_2 were required in the Class II area. The nearest PSD Class I area is the Everglades National Park (ENP) located about 90 km to the south-southeast. The applicant's PSD Class I air quality analysis showed no significant impacts. Therefore, a cumulative PSD Class I increment analysis was not required. Also, the maximum predicted impacts for all pollutants were below their respective *de minimus* ambient impact levels. Therefore, pre-construction monitoring at the proposed site was not required for this project. Based on the preceding discussion, the air quality analyses required by the PSD regulations for this project were the following:

- A significant impact analysis for PM_{10}, CO, SO_2, and NO_2 in the surrounding Class II Area;
- A significant impact analysis for PM_{10}, SO_2, and NO_2 in the ENP;
- An analysis of impacts on soils, vegetation, visibility, and of growth-related air quality modeling impacts.

Based on these required analyses, the Department has reasonable assurance that the proposed project, as described in this report and subject to the conditions of approval proposed herein, will not cause or significantly contribute to a violation of any AAQS or PSD increment. However, the following EPA-directed stack height language is included: "In approving this permit, the Department has determined that the application complies with the applicable provisions of the stack height regulations as revised by EPA on July 8, 1985 (50 FR 27892). Portions of the regulations have been remanded by a panel of the U.S. Court of Appeals for the D.C. Circuit in NRDC v. Thomas, 838 F. 2d 1224 (D.C. Cir. 1988). Consequently, this permit may be subject to modification if and when EPA revises the regulation in response to the court decision. This may result in revised emission limitations or may affect other actions taken by the source owners or operators." A more detailed discussion of the required analyses follows.

8.2.2 Ambient Monitoring Requirements

Preconstruction ambient air quality monitoring is required for all pollutants subject to PSD review unless otherwise exempted or satisfied. The monitoring requirement may be satisfied by using existing representative monitoring data, if available. Substantial Lee County monitoring data exist for ozone, which is a pollutant caused by its precursors, namely NO_X and VOC. Sufficient data also exist for PM in Lee County.

An exemption to the monitoring requirement may be obtained if the maximum air quality impact resulting from the projected emissions increase, as determined by air quality modeling, is less than a pollutant-specific de minimus concentration. The table below shows that predicted impacts from the LCERF modification is substantially less than the respective de minimus levels; therefore, preconstruction ambient air quality monitoring is not required for any pollutant. Installation of additional monitors near the proposed site will probably not show any increases from the plant because of the very low impact levels. Basically, the highest contribution from the plant would be on the order of 7 percent or less of the highest measured concentrations.

MAXIMUM PROJECT AIR QUALITY IMPACTS FOR COMPARISON TO THE DE MINIMIS AMBIENT IMPACT LEVELS

Pollutant	Averaging Time	Max Predicted Impact (ug/m^3)	De Minimus Level (ug/m^3)	Impact Greater Than De Minimus?
PM_{10}	24-hour	.4	10	NO
NO_2	Annual	0.2	14	NO
SO_2	24-hour	3	13	NO
CO	8-hour	3	575	NO

8.2.3 *Models and Meteorological Data Used in the Air Quality Analysis*

PSD Class II Area

The EPA-approved Industrial Source Complex Short-Term (ISCST3) dispersion model was used to evaluate the pollutant emissions from the proposed project in the surrounding Class II Area. This model determines ground-level concentrations of inert gases or small particles emitted into the atmosphere by point, area, and volume sources. It incorporates elements for plume rise, transport by the mean wind, Gaussian dispersion, and pollutant removal mechanisms such as deposition. The ISCST3 model allows for the separation of sources, building wake downwash, and various other input and output features. A series of specific model features, recommended by the EPA, are referred to as the regulatory options. The applicant used the EPA recommended regulatory options. Direction-specific downwash parameters were used for all sources for which downwash was considered. The stacks associated with this project all satisfied the good engineering practice (GEP) stack height criteria.

Meteorological data used in the ISCST3 model consisted of a concurrent 5-year period of twice-daily upper air soundings from the Tampa International Airport station at Tampa, Florida and hourly surface data from the National Weather Service surface station at the Fort Myers Airport. The 5-year period of meteorological data was from 1990 through 1994. The Fort Myers Airport station was selected for use in the study because it is the closest primary weather station to the study area and is most representative of the project site. The surface observations included wind direction, wind speed, temperature, pressure, relative humidity and precipitation.

PSD Class I Area

The California Puff (CALPUFF) dispersion model was used to evaluate the pollutant emissions from the proposed project in the Class I ENP. The 5-year period of meteorological data was from 1986 through 1990, which was enhanced for CALPUFF. Meteorological surface and upper air data used were from National Weather Service in Tampa, Florida.

CALPUFF is a non-steady state, Lagrangian, long-range transport model that incorporates Gaussian puff dispersion algorithms. This model determines ground-level concentrations of inert gases or small particles emitted into the atmosphere by point, line, area, and volume sources. The CALPUFF model has the capability to treat time-varying sources. It is also suitable for modeling domains from tens of meters to hundreds of kilometers, and has mechanisms to handle rough or complex terrain situations. Finally, the CALPUFF model is applicable for inert pollutants as well as pollutants that are subject to linear removal and chemical conversion mechanism.

8.2.4 *Significant Impact Analysis*

In order to conduct a significant impact analysis, the applicant uses the proposed project's emissions at worst load conditions as inputs to the models. The highest predicted short-term concentrations and highest predicted annual averages predicted by this modeling are compared to the appropriate significant impact levels for the Class I and Class II Areas. If this modeling at worst load conditions shows significant impacts, additional modeling which includes the emissions from surrounding facilities is required to determine the project's impacts on the existing air quality and any applicable AAQS or PSD increments. If no significant impacts are shown, the applicant is exempted from doing any further modeling.

For the Class II analysis a combination of fence line, near-field and far-field receptors were chosen for predicting maximum concentrations in the vicinity of the project. The fence line receptors consisted of discrete Cartesian receptors spaced at 100-meter intervals around the

facility fence line. From 2 to 10 kilometers, receptors with a spacing of 500 meters were used. Also, according to the application, additional receptors with a spacing of 100 meters were placed to cover all areas within 90% of the overall maximum and second-highest impacts for all applicable averaging times.

For the Class I significant impact analysis, three receptor rings of 360 receptors, spaced 1 degree apart, were positioned to represent the nearest ENP boundary, the middle of the ENP and the furthest boundary of the ENP. The tables below show the applicant's results of the significant impact modeling for the Class II and Class I areas:

MAXIMUM PROJECT AIR QUALITY IMPACTS FROM THE LCERF MODIFICATION PROJECT ALONG WITH IMPACTS FROM THE TOTAL LCERF FACILITY FOR COMPARISON TO THE PSD CLASS II SIGNIFICANT IMPACT LEVELS

Pollutant	Averaging Time	Max Predicted Impact For Proposed Unit (ug/m^3)	Max Predicted Impact for Total Facility (ug/m^3)	Significant Impact Level (ug/m^3)	Significant Impact?
SO_2	Annual	0.2	0.3	1	**NO**
	24-Hour	3	4	5	**NO**
	3-Hour	11	15	25	**NO**
PM_{10}	Annual	0.05	0.2	1	**NO**
	24-Hour	0.4	1.2	5	**NO**
CO	8-Hour	3	6	500	**NO**
	1-Hour	12	21	2000	**NO**
NO_2	Annual	0.2	0.4	1	**NO**

The results of the applicant's significant impact modeling show that there are no predicted significant impacts due to the PM_{10}, CO, SO_2, and NO_2 emissions from this project in the vicinity of the facility; therefore, no further modeling was required in the Class II area.

MAXIMUM PROJECT AIR QUALITY IMPACTS FROM THE LCERF MODIFICATION PROJECT COMPARED WITH PSD CLASS I SIGNIFICANT IMPACT LEVELS (EVERGLADES NATIONAL PARK)

Pollutant	Averaging Time	Max. Predicted Impact at Class I Area (ug/m^3)	Class I Significant Impact Level (ug/m^3)	Significant Impact?
PM_{10}	Annual	0.001	0.2	**NO**
	24-hour	0.01	0.3	**NO**
NO_2	Annual	0.012	0.1	**NO**
SO_2	Annual	0.013	0.1	**NO**
	24-hour	0.149	0.2	**NO**
	3-hour	0.49	1	**NO**

The results of the applicant's significant impact modeling for the ENP show that there are no significant impacts predicted due to SO_2, NO_2, and PM_{10} emissions from this project; therefore, no further modeling was required in the Class I area for these pollutants.

8.2.5 Additional Impacts Analysis

Impact on Soils and Vegetation

Very low emissions are expected from the proposed modification at the LCERF. Emissions of acid rain and ozone precursors will be very low. The maximum ground-level concentrations predicted to occur for PM_{10}, CO, NO_X, and SO_2 as a result of the proposed project, including background concentrations, will be considerably less than the respective AAQS. The project impacts are less than the significant impact levels for all pollutants. These values in-turn are less than the respective applicable allowable increments.

According to the applicant, the majority of adverse impacts on vegetation have been historically caused by high levels of SO_2 concentrations. The proposed project is expected to have 3-hour SO_2 impacts of 15 (ug/m^3), which is well below the documented levels in which plant damage has occurred. The recent implementation of natural gas repowering at the nearby FPL Fort Myers Plant will drastically reduce emissions of NO_X and SO_2. The ameliorative effects of these reductions will mask any minimal effect from the proposed Lee County modification.

Similar analyses apply to the other pollutants and their impacts on soil and vegetation. The Department's conclusion is that the effects of the project on soil and vegetation will be minimal or insignificant.

Impacts on Visibility and Regional Haze

Natural gas is a clean fuel and produces little ash. This will minimize smoke formation. The low NO_X and SO_2 emissions will also minimize plume visibility (typically zero percent opacity). The contribution to smog in the area will be minimal. The applicant submitted a regional haze analysis for the ENP. According to the applicant, the regional haze impacts will be below the federal land manager's significant impact levels. As mentioned above, the ameliorative effects of the repowering FPL project will mask any minimal effect that the Lee County proposed unit may have on visibility and regional haze.

Growth-Related Air Quality Impacts

There will be short-term increases in the labor force to construct the project. These temporary increases will not result in significant commercial and residential growth in the vicinity of the project. When operational, the project will generate approximately 9 jobs at the site. Air quality impacts due to industrial/commercial growth will be minimal according to the application.

8.2.6 Discussion of Commercial, Residential, and Industrial Growth Since 1977

The applicant submitted a report satisfying the requirements of Rule 62-212.400(3)(h)5., F.A.C., which states that a PSD application must include information relating to the air quality impacts of, and the nature and extent of, all general, residential, commercial, industrial, and other growth which has occurred since August 7, 1977, in the area the facility or modification would affect. The general conclusion of the growth report is that air quality has been meeting and will continue to meet the ambient standards even considering the impact of not only this project but also the growth that has occurred in Lee County since 1977.

Lee County population has increased from 175,251 in 1977 to 440,888 in 2000. There has been an increase of 125% in manufacturing employment. However, based on a percentage of the

population, the percentage of manufacturing jobs has declined by 0.25%. With a 150% rise in population since 1977, mobile sources have increased as well. However, the emissions from mobile sources have declined, therefore off-setting the increase in the number of vehicles.

Industrial Growth

The major sources of stationary pollution in Lee County are the Fort Myers Power Plant, the existing LCERF facility and Lehigh Felda Park Tank Battery. These sources and their emissions are listed above. According to the applicant, total facility impacts for both existing and proposed facilities in Lee County are less than 3.5% of the PSD Class II increments.

Air Quality

Emissions of air pollutants from mobile sources have seen significant decreases since 1977. CO levels have been below the standard for the entire state of Florida since 1988. Ozone concentrations have been monitored in Lee County since 1995. Ozone has been below both the 1-hour and the 8-hour ambient standards since it has been monitored. SO_2 and PM_{10} have been below the NAAQS as well. In summary:

1) Growth since 1977 has not adversely impacted the attainment of the NAAQS for SO_2, PM_{10}, or ozone.
2) The increase in vehicle miles traveled in the county has been offset by decreases in pollution per vehicle, yielding a significant net decrease in emissions from mobile sources.
3) Manufacturing and commercial growth has increased along with population growth.
4) The FPL Fort Myers repowering project will reduce emissions of several pollutants in Lee County by greater amounts than the increases due to new industry in the area.

9. CONCLUSION

Based on the foregoing technical evaluation of the application and additional information submitted by the applicant, the Department has made a preliminary determination that the proposed project will comply with all applicable state and federal air pollution regulations.

Permit Engineer: Michael P. Halpin, P.E.
Meteorologist: Deborah Nelson
NSR Administrator: A.A. Linero, P.E.

DRAFT

PERMITTEE:

Lee County
Lee County Resource Recovery Facility
P.O. Box 398
Fort Myers, Florida 33902

ID No.	0710119
Permit No.	0710119-002-AC
PSD No.	PSD-FL-151C
SIC No.	4953
Expires:	December 31, 2006

Authorized Representative:
Mr. Lindsey Sampson
Deputy Director, Solid Waste

PROJECT AND LOCATION:

This permit allows the applicant to construct a third municipal waste combustor (MWC), along with a lime storage silo and associated appurtenances. The new MWC will be constructed at the existing municipal waste combustion facility. The municipal waste combustion unit will not exceed a short-term tonnage capacity of 660 TPD and nominal heat input of 275 million Btu per hour (MMBtu/hr).

The facility is located at 10500 Buckingham Rd., Fort Myers, Lee County. The UTM coordinates of this facility are Zone 17; 424.21 km E; 2945.7 km N.

STATEMENT OF BASIS:

This construction permit is issued under the provisions of Chapter 403 of the Florida Statutes (F.S.), and the Florida Administrative Code (F.A.C.) Chapters 62-4, 62-204, 62-210, 62-212, 62-296, and 62-297 and Subpart Eb of the NSPS of 40CFR60. The above named permittee is authorized to modify the facility in accordance with the conditions of this permit and as described in the application, approved drawings, plans, and other documents on file with the Department of Environmental Protection (Department).

Attached appendix is part of this permit:

Appendix GC Construction Permit General Conditions
Appendix BD BACT Determination

Howard L. Rhodes, Director
Division of Air Resources
Management

SECTION I. FACILITY INFORMATION

SUBSECTION A. FACILITY DESCRIPTION

The existing facility consists of a municipal waste combustion facility with two mass burn municipal waste combustion (MWC) units. The facility currently has a capacity of 660 tons/day per unit for a total of 1,320 tons per day of solid waste fuel with a nominal HHV of 5,000 Btu/lb. This is equal to a maximum heat input of 275 MMBtu/hour per unit, for a total heat input not to exceed 550 MMBtu/hr. The facility converts solid waste into saleable energy. It produces up to 40 MW of electricity. The facility is self-sufficient and operates on a small portion of the power it generates. The remaining electricity is sold to an electric utility market. The facility is owned by Lee County, and was designed, built and is currently operated by Ogden-Martin Systems of Lee, Inc. (although the corporate name changed to Covanta Energy Corporation, effective March 14, 2001). The Lee County Resource Recovery Facility began operation in August 1994.

The facility's existing mass burn combustion system incorporates the technology of German-based Martin GmbH. The waterwall furnaces are equipped with Martin® reverse-reciprocating grates and ash handling systems. Waste is combusted and reduced to an inert ash residue. Each existing unit is equipped with a slaked lime scrubber followed by a baghouse, an SNCR system for reduction of NO_X emissions, and a carbon injection system for control of mercury emissions.

This permit allows the applicant to construct a third MWC unit, which is substantially similar to the existing two units, albeit with additional controls as required in order to comply with the more stringent NSPS and BACT limits. The new combustor will have a maximum charging rate of 660 tons per day based on solid waste fuel with a nominal HHV of 5,000 Btu/lb. Accordingly, as a large MWC, this unit is subject to the requirements of 40 CFR 60, Subpart Eb. Dry flue gas scrubbers, baghouse, SNCR, and carbon injection will be utilized to control emissions from the combustor. The existing facility also contains existing lime silo and ash handling systems, which will be impacted via increased throughput of the new unit. An additional lime silo will be constructed, which stores pebble lime, used to make lime slurry.

SUBSECTION B. REGULATORY CLASSIFICATION

This facility is classified as a Major or Title V Source of air pollution because emissions of at least one regulated air pollutant, such as particulate matter (PM/PM_{10}), sulfur dioxide (SO_2), nitrogen oxides (NO_X), carbon monoxide (CO), or volatile organic compounds (VOC) exceeds 100 tons per year (TPY).

This facility is within an industry included in the list of the 28 Major Facility Categories per Table 62-212.400-1, F.A.C. Because emissions are greater than 100 TPY for at least one criteria pollutant, the facility is also a Major Facility with respect to Rule 62-212.400, Prevention of Significant Deterioration (PSD).

SECTION I. FACILITY INFORMATION

Based on the initial Title V permit application received June 17, 1996, this facility is a major source of hazardous air pollutants (HAPs).

SUBSECTION C. PERMIT SCHEDULE:

- August XX, 2003 notice of intent published in ??
- April 4, 2003 issued notice of intent to issue permit
- February 28, 2003 application deemed complete

SUBSECTION D. RELEVANT DOCUMENTS:

The documents listed below are the basis of the permit. They are specifically related to this permitting action. These documents are on file with the Department.

- Application received (Bureau of Air Regulation) on November 12, 2002
- Department's Request For Additional Information dated December 11, 2002
- Applicant's response to Department's Request and related information submitted by Lee County and its consultants (various dates)

SECTION II. EMISSION UNIT(S) GENERAL REQUIREMENTS

SUBSECTION A. ADMINISTRATIVE

A.1 Regulating Agencies: All documents related to applications for permits to construct, operate or modify an emissions unit should be submitted to the Bureau of Air Regulation (BAR), Florida Department of Environmental Protection (FDEP) at 2600 Blair Stone Road, Tallahassee, Florida 32399-2400 and phone number 850/488-1344. All documents related to reports, tests, and notifications should be submitted to the Department's South District Office (DEPSD), 2295 Victoria Avenue, Suite 364, Fort Myers, Florida 33902 and phone number 239/332-6975.

A.2 General Conditions: The owner and operator are subject to and shall operate under the attached General Permit Conditions G.1 through G.15 listed in Appendix GC of this permit. General Permit Conditions are binding and enforceable pursuant to Chapter 403 of the Florida Statutes. **[Rule 62-4.160, F.A.C.]**

A.3 Terminology: The terms used in this permit have specific meanings as defined in the corresponding chapters of the Florida Administrative Code.

A.4 Forms and Application Procedures: The permittee shall use the applicable forms listed in Rule 62-210.900, F.A.C. and follow the application procedures in Chapter 62-4, F.A.C. **[Rule 62-210.900, F.A.C.]**

A.5 Application for Title V Permit: An application for a modification of the Title V operating permit, pursuant to Chapter 62-213, F.A.C., must be submitted to the DEP's Bureau of Air Regulation and a copy to DEPSD.
[Chapter 62-213, F.A.C.]

A.6 New or Additional Conditions: Pursuant to Rule 62-4.080, F.A.C., for good cause shown and after notice and an administrative hearing, if requested, the Department may require the permittee to conform to new or additional conditions. The Department shall allow the permittee a reasonable time to conform to the new or additional conditions, and on application of the permittee, the Department may grant additional time.

SECTION II. EMISSION UNIT(S) GENERAL REQUIREMENTS

SUBSECTION B. CONSTRUCTION REQUIREMENTS

B.1 Unless otherwise indicated in this permit, the construction and operation of the subject emissions unit (s) shall be in accordance with the capacities and specifications stated in the application. The unit is subject to all applicable provisions of Chapter 403, F.S. and Florida Administrative Code Chapters 62-4, 62-103, 62-204, 62-212, 62-213, 62-296, 62-297 and the Code of Federal Regulations Section 40, Part 60, adopted by reference in the Florida Administrative Code (F.A.C.) regulations [Rule 62-204.800, F.A.C.]. Issuance of this permit does not relieve the facility owner or operator from compliance with any applicable federal, state, or local permitting or regulations **[Rule 62-210.300, F.A.C.]**

SUBSECTION C. OPERATIONAL REQUIREMENTS

C.1 Changes/Modifications: The owner or operator shall submit to the Department's Bureau of Air Regulation, for review any changes in, or modifications to: the method of operation; process or pollution control equipment; increase in hours of operation; equipment capacities; or any change which would result in an increase in potential/actual short term or long term emissions. Depending on the size and scope of the modification, it may be necessary to submit an application for, and obtain, an air construction permit prior to making the desired change. **[Rule 62-4.030, 62-210.300 and 62-4.070(3), F.A.C.]**

C.2 Plant Operation - Problems: If temporarily unable to comply with any of the conditions of the permit due to breakdown of equipment or destruction by fire, wind or other cause, the owner or operator shall notify the DEPSD as soon as possible, but at least within one working day, excluding weekends and holidays. The notification shall include: pertinent information as to the cause of the problem; the steps being taken to correct the problem and prevent future recurrence; and where applicable, the owner's intent toward reconstruction of destroyed facilities. Such notification does not release the permittee from any liability for failure to comply with the conditions of this permit and the regulations. **[Rule 62-4.130, F.A.C.]**

C.3 Operating Procedures shall include good combustion practices and proper training and certification of all operators. The good combustion practices shall meet the guidelines established in 40 CFR 60, Subpart Eb and procedures as established by recognized industry standards. All operators (including supervisors) of air pollution control device shall be properly trained and certified in plant specific equipment. A list of all such certified personnel shall be submitted to the DEPSD. Department's staff shall be given notice of any formal training sessions related to operation and maintenance of air pollution control devices. **[Rule 62-204.800(8), F.A.C. and 62-4.070 (3), F.A.C.]**

SECTION II. EMISSION UNIT(S) GENERAL REQUIREMENTS

C.4 Exceptions and Approval of Alternate Procedures and Requirements: An Alternate Sampling Procedure (ASP) may be requested from the Bureau of Air Monitoring and Mobile Sources of the Florida Department of Environmental Protection in accordance with the procedures specified in **Rule 62-297.620, F.A.C.**

SUBSECTION D. MONITORING OF OPERATIONS

Determination of Process Variables

D.1 The permittee shall operate and maintain equipment and/or instruments necessary to determine process variables, such as heat input, when such data is needed in conjunction with emissions data to determine the compliance of the emissions unit with applicable emission limiting standards.

D.2 Equipment and/or instruments used to directly or indirectly determine such process variables, including devices such as belt scales, weigh hoppers, flow meters, and tank scales, shall be calibrated and adjusted to indicate the true value of the parameter being measured with sufficient accuracy to allow the applicable process variable to be determined within 10% of its true value. **[Rule 62-297.310(5), F.A.C.]**

SUBSECTION E. OTHER REQUIREMENTS

E.1 Waste Disposal: The owner or operator shall treat, store, and dispose of all liquid, solid, and hazardous wastes in accordance with all applicable Federal, State, and Local regulations. This air pollution permit does not relieve the permittee from securing any other types of required permits, licenses, or certifications.

SECTION III. EMISSION UNIT(S) SPECIFIC CONDITIONS

SUBSECTION A. 40 CFR 60, NSPS, GENERAL PROVISIONS

The following emission limitations shall apply to the affected emissions unit after compliance testing is completed. This section addresses the following emissions unit:

EMISSIONS UNIT NO.	EMISSIONS UNITS DESCRIPTION	SYSTEM
-006	660 Tons per Day (maximum) MSW Incinerator	MSW Unit 3

The affected emissions units shall comply with all applicable requirements of 40 CFR 60, General Provisions, Subpart A.

A.1 [40 CFR 60.7, Notification and record keeping]
A.2 [40 CFR 60.8, Performance tests]
A.3 [40 CFR 60.11, Compliance with standards and maintenance requirements]
A.4 [40 CFR 60.12, Circumvention]
A.5 [40 CFR 60.13, Monitoring requirements]
A.6 [40 CFR 60.19, General notification and reporting requirements]

The affected emissions units shall comply with all applicable provisions of the 40 CFR 60, Subpart Eb-Standards of Performance for Large Municipal Waste Combustors for Which Construction is Commenced After September 20, 1994 or for Which Modification or Reconstruction is Commenced After June 19, 1996. In addition the emissions unit shall also comply with all the conditions listed in Section II (Emissions Unit General Requirements) of this permit.
[Rule 62-4.070(3), 62-204.800(8) and 62-296-416, F.A.C.]

SECTION III. EMISSION UNIT(S) SPECIFIC CONDITIONS

SUBSECTION B. SPECIFIC CONDITIONS:

The following specific conditions apply to the following emissions unit.

EMISSIONS UNIT NO.	EMISSIONS UNITS DESCRIPTION
-006	660 Tons per Day (maximum) MSW Incinerator

OPERATIONAL REQUIREMENTS

B.1 The combustor (boiler) shall have a metal name plate affixed in a conspicuous place on the shell showing manufacturer, model number, type waste, and rated capacity. **[Rule 62-4.070(3), F.A.C.]**

B.2 Process Operating Rates: The municipal waste combustor unit (MWC) shall have a maximum rated capacity of 660 tons of waste per day. **[Rules 62-4.030(3) and 62-204.800(8), F.A.C., 40 CFR 60.31b, 60.38b, 60.51b, and 60.58b(j)]**

B.3 Load Level : *Unit load* means the steam load of the municipal waste combustor (MWC) measured as specified in 40 CFR 60.58b(i)(6). Compliance with load level requirements shall be determined by a steam meter using ASME Power Test Code for Steam Generating Units, Power Test Code 4.1, section 4 (see 40 CFR 60.58b(i)(6)(ii) & (iii)). The MWC unit shall not operate at a load level greater than 110 percent of the unit's *maximum demonstrated unit load* based on 4-hour block averaged measurements of steam flow. The maximum demonstrated unit load is the highest arithmetic averaged measurement of steam flow recorded for four consecutive hours during the most recent dioxin/furan performance stack test in which compliance with the dioxin/furan emission limit was achieved. Higher loads are allowed for testing purposes as specified at 40 CFR 60.53b(b) and condition D.7 of this permit. **[Rule 62-204.800(8), F.A.C., 40 CFR 60.31b; 60.38b; 60.51b; 60.53b(b); and 60.58b(i) (6)&(8)]**

B.4 Emission Control Equipment

Particulate Matter
The unit shall be equipped with a particulate control baghouse designed, constructed and operated so as not to exceed a maximum emission rate of 20.6 mg/dscm corrected to 7 percent O_2. The baghouse shall be equipped with pressure drop monitoring equipment.

Spray Dryer Scrubber

The unit shall be equipped with a spray dryer scrubber designed, constructed and operated so as to remove SO_2 at an efficiency of 80 percent, or not to exceed a maximum emission rate of 26 ppmvd corrected to 7 percent O_2 base upon a 24-hour block geometric mean, whichever is less stringent.

Carbon Injection
The unit shall be equipped with a carbon injection system. The carbon injection rate must be measured continuously and maintained in compliance with the requirements set forth in this permit as well as 40 CFR 60.58b(m).

Selective Non Catalytic Reduction System
The unit shall be equipped with a selective non catalytic reduction system designed, constructed and operated so as not to exceed a maximum NO_X emission rate of 150 ppmvd corrected to 7 percent O_2 on a 24-hour block arithmetic mean (midnight to midnight) as well as 110 ppmvd corrected to 7 percent O_2 on a 30-day rolling average.

Within 30 days after it becomes available, but before commencement of construction of the air pollution control equipment, the Permittee shall submit to the DEPSD copies of technical data pertaining to the selected emission control systems. This data should include, but not be limited to the manufacturer's guarantees, design inlet and outlet emission rates, and major design parameters. **[Rule 62-4.070(3), F.A.C.]**

B.5 Stack Height: The height of the boiler exhaust stack shall not be less than 276 feet above grade (271 feet for structural stack plus 5 feet for flue).

B.6 Fuels

The primary fuel for the unit is municipal solid waste (MSW), including the items and materials that fit within the definition of MSW contained in either 40 CFR 60.51b or Section 403.706(5), Florida Statutes (1995). **[Rule 62-4.070(3), F.A.C., and request of applicant]**

B.6.1 Subject to the limitations contained in this permit, the authorized fuels for the unit also include the other solid wastes that are not MSW which are described below. However, the unit shall not burn:

(a) those materials that are prohibited by state or federal law;
(b) those materials that are prohibited by this permit;
(c) lead acid batteries;
(d) hazardous waste;
(e) nuclear waste;

(f) radioactive waste;
(g) sewage sludge;
(h) explosives;
(i) beryllium-containing waste, as defined in 40 CFR 61, Subpart C.

Further, the facility shall not knowingly burn:

(j) nickel-cadmium batteries pursuant to Section 403.7192 (3);
(k) mercury containing devices and lamps pursuant to Sections 403.7186(2) & (3);
(l) untreated biomedical waste from biomedical waste generators regulated pursuant to Chapter 64E-16, F.A.C., and from similar generators (or sources); and
(m) segregated loads of biological waste.

B.6.2 The fuel may be received either as a mixture or as a single-item stream (segregated load) of discarded materials. If the unit intends to use an authorized fuel that is segregated non-MSW material, the fuel shall be either:

(a) well mixed with MSW in the refuse pit; or
(b) alternately charged with MSW in the hopper.

B.6.3 The unit operator shall prepare and maintain records concerning the description and quantities of all segregated loads of non-MSW material which are received and used as fuel at the unit, and subject to a percentage weight limitation, below (B.6.6. and B.6.7). For the purposes of this permit, a segregated load is defined to mean a container or truck that is almost completely or exclusively filled with a single item or homogeneous composition of waste material, as determined by visual observation.

B.6.4 To ensure that the unit's fuel does not adversely affect the unit's combustion process or emissions, the unit operator shall:

(a) comply with good combustion operating practices in accordance with 40 CFR 60.53b;
(b) install, operate and maintain continuous emissions monitors (CEMS) for oxygen, carbon monoxide, sulfur dioxide, oxides of nitrogen and temperature in accordance with 40 CFR 60.58b; and
(c) record and maintain the CEMS data in accordance with 40 CFR 60.59b.

These steps shall be used to ensure and verify continuous compliance with the emissions limitations in this permit.

Natural gas or propane may be used as fuel during warm-up, startup, shutdown, and malfunction periods, and at other times when necessary and consistent with good combustion practices.

B.6.5 Subject to the conditions and limitations contained in this permit, the following other solid waste may be used as fuel at the unit:

(a) Confidential, proprietary or special documents (including but not limited to business records, lottery tickets, event tickets, coupons and microfilm);
(b) Contraband which is being destroyed at the request of appropriately authorized local, state or federal governmental agencies, provided that such material is not an explosive, a propellant, a hazardous waste, or otherwise prohibited at the unit. For the purposes of this section, contraband includes but is not limited to drugs, narcotics, fruits, vegetables, plants, counterfeit money, and counterfeit consumer goods;
(c) Wood pallets, clean wood, and land clearing debris;
(d) Packaging materials and containers;
(e) Clothing, natural and synthetic fibers, fabric remnants, and similar debris, including but not limited to aprons and gloves; or
(f) Rugs, carpets, and floor coverings, but not asbestos-containing materials or polyethylene or polyurethane vinyl floor coverings;
(g) The predominantly combustible fraction of sorted construction and demolition debris. Sorting of mixed construction and demolition debris at the unit shall occur on the tipping floor or at another location approved by the Department.

B.6.6 Subject to the conditions and limitations contained in this permit, waste tires may be used as fuel at the unit. The total quantity of waste tires received as segregated loads and burned at the unit shall not exceed 3%, by weight, of the unit's total fuel. Compliance with this limitation shall be determined by using a rolling 30-day average in accordance with specific condition B.24 below.

B.6.7 Subject to the conditions and limitations contained in this permit, the following other solid waste materials may be used as fuel at the unit (i.e. the following are authorized fuels that are non-MSW material). The total quantity of the following non-MSW material received as segregated loads and burned at the unit shall not exceed 5% by weight of the unit's total fuel. Compliance with this limitation shall be determined by using a rolling 30-day average in accordance with specific condition B.24 below.

(a) Unsorted mixtures of construction and demolition debris, or that fraction of sorted construction and demolition debris that is predominantly combustible. Non-combustible

construction and demolition debris shall include concrete, metals, gypsum products, plaster, rock, brick, and masonry.

(b) Oil spill debris from aquatic, coastal, estuarine or river environments. Such items or materials include but are not limited to rags, wipes, and absorbents.

(c) Items suitable for human, plant or domesticated animal use, consumption or application where the item's shelf-life has expired or the generator wishes to remove the items from the market. Such items or materials include but are not limited to off-specification or expired consumer products, pharmaceuticals, medications, health and personal care products, cosmetics, foodstuffs, nutritional supplements, returned goods, and controlled substances.

(d) Consumer-packaged products intended for human or domesticated animal use or application but not consumption. Such items or materials include but are not limited to carpet cleaners, household or bathroom cleaners, polishes, waxes and detergents.

(e) Waste materials that:
  (i) are generated in the manufacture of items in categories (c) or (d), above and are functionally or commercially useless (expired, rejected or spent); or
  (ii) are not yet formed or packaged for commercial distribution. Such items or materials must be substantially similar to other items or materials routinely found in MSW.

(f) Waste materials that contain oil from:
  (i) the routine cleanup of industrial or commercial establishments and machinery; or
  (ii) spills of virgin or used petroleum products. Such items or materials include but are not limited to rags, wipes, and absorbents.

(g) Used oil and used oil filters. Used oil containing a PCB concentration equal or greater than 50 ppm shall not be burned, pursuant to the limitations of 40 CFR 761.20(e).

(h) Waste materials generated by manufacturing, industrial or agricultural activities, provided that these items or materials are substantially similar to items or materials that are found routinely in MSW, subject to prior approval of the Department.

B.7 Startup/Shutdown/Malfunctions

(a) Excess emissions resulting from startup, shutdown or malfunction of any emissions unit shall be permitted providing (1) best operational practices to minimize emissions are adhered to and (2) the duration of excess emissions shall be minimized but in no case exceed two hours in any 24 hour period unless specifically authorized by the Department for longer duration. As referenced below, and provided for by the NSPS, the Department specifically authorizes longer durations.

(b) The emission limitations for this unit shall apply at all times, except during periods of warm-up, startup, shutdown, or malfunctions (SSM), provided that the duration of startup, shutdown, or malfunction periods do not exceed 3 hours per occurrence. The

duration of warm-up periods is not limited. The startup period commences when the affected unit begins the continuous burning of waste and does not include any warm-up period when the affected unit is combusting only natural gas and waste is not being introduced to the combustor. The use of waste solely to provide thermal protection to the grate during the warm-up periods when waste is not being fed to the combustor is not considered to be continuous burning. During all startups, shutdowns, and malfunctions, the owner/operator shall use best operational practices to minimize air pollutant emissions.

(c) A malfunction means any unavoidable failure of air pollution control equipment or process equipment to operate in a normal or usual manner. Excess emissions that are caused entirely or in part by poor maintenance, careless operation, any other preventable upset condition, or preventable equipment breakdown shall not be considered malfunctions. Excess emissions resulting from startup, shutdown or malfunction of any source shall be permitted providing: (1) best operational practices to minimize emissions are adhered to, and (2) the duration of excess emissions shall be minimized but in no case exceed 3 hours per occurrence.

(d) Due to safety and equipment concerns, the SSM exemption period is allowed to be extended to a maximum of 15 hours in certain circumstances. The extended exemption applies only to CO emission limits in §60.53b(a) i.e., combustor operating practices during the following two situations:

- A loss of boiler water control (e.g., boiler waterwall tube failure); or
- A loss of combustion air control (loss of a combustion air fan, loss of an induced draft fan, or combustion grate bar failure).

Normal operating practices for controlling CO emissions involves the use of auxiliary fuel burners. However, use of these burners when operators cannot control boiler water or combustion air could result in the possibility of an explosion or severe damage to the MWC.

[Rule 62-210.700, and 62-204.800(8), F.A.C., and 40 CFR 60.58b(a)(1)]

SECTION III. EMISSION UNIT(S) SPECIFIC CONDITIONS

EMISSION LIMITATIONS & STANDARDS

B.8 Emissions from the MWC unit shall not exceed the limits listed in the following table. **[BACT]**

Pollutant Name	Standard(s)	Lbs/hour	TPY
Particulate Matter (PM_{10})	20.6 mg/dscm, corrected to 7% O_2	5.12	22.3
MWC Metals (PM)	20.6 mg/dscm, corrected to 7% O_2	5.12	22.3
Sulfur Dioxide (SO_2)	26 ppm, or 80% reduction, at 7% O_2	56.9	249.4
Sulfuric Acid Mist (SAM)	15 ppmvd @ 7 % O_2	15.1	66.1
Nitrogen Oxides (NO_X)	110 ppm@ 7% O_2 – 30-day rolling average 150 ppm @ 7% O_2 – 24 hour average	51.9 70.8	227.4
Carbon Monoxide (CO)	80 ppm @ 7% O_2 – 30-day rolling average 100 ppm @ 7% O_2 – 4 hr average	23.0 28.73	100.6
Mercury (Hg)	0.028 mg/dscm @ 7% O_2 or 85% reduction	0.0168	0.0736
Visible Emissions (VE)	10 %, 6 minute average		
Lead (Pb)	0.2 mg/dscm, corrected to 7% O_2	0.05	0.0216
MWC Acid Gas (HCl)	25 ppm or 95% reduction @ 7% O_2	46.76	204.8
Hydrogen Fluoride (HFl)	3.5 ppmvd @ 7% O_2	0.718	3.145
Dioxin/Furan (PCDD/F)	13 ng/dscm, corrected to 7% O_2	3.2×10^{-6}	1.4 x 10-5
Ammonia	15 ppm		

Notes to table:

Abbreviations
ug/dscm: Micrograms per dry standard cubic meter
mg/dscm: Milligrams per dry standard cubic meter
ng/dscm: Nanograms per dry standard cubic meter
ppm: Part per million dry volume
Dioxins/ furans: Total tetra through octa-chlorinated dibenzo-p-dioxins and dibenzofurans

[40 CFR 60.44b, Rules 62-210.200, 62-210.400 (BACT), 62-204.800(8) and 62-4.070(3), F.A.C., and request of applicant]

B.9 Auxiliary Burners: Auxiliary burners shall be fired only with natural gas. The annual capacity factor for natural gas shall be limited to 10% or less. The annual capacity factor for natural gas is the ratio between the heat input to the unit from natural gas during a calendar year and the potential heat input to the unit had it been operated for 8,760 hours during a calendar year at the maximum steady state design heat input capacity. Monthly records shall be maintained of the amount of natural gas used by the auxiliary burners and the equivalent heat input from natural gas. On an annual basis (no later than 30 days after the end of the calendar year), a demonstration must be performed based on the monthly records showing that the capacity factor for natural gas was 10% or less.
[Rule 62-4.070(3), F.A.C., 40 CFR 60.41b and 40 CFR 60.44b(d)]

{Note: This condition effectively limits the annual average heat input from natural gas to approximately 27.5 MMBtu/hr.}

COMPLIANCE AND PERFORMANCE TESTING

B.10 Stack Testing

Compliance with the emission limits for visible emissions (opacity), carbon monoxide (CO), nitrogen oxides (NO_X), and sulfur dioxide (SO_2) in specific condition B.8 of this permit shall be demonstrated by continuous emission monitoring systems (CEMS) as required by specific condition B.13.

Compliance tests for the other pollutants listed in specific condition B.8 shall be performed annually by using the following reference methods as described in 40 CFR 60, Appendix A and/or 40 CFR 61 Appendix B adopted by reference in Chapter 62-204, F.A.C. or any other method as approved by FDEP, in accordance with Chapter 62-297, F.A.C. Stack tests may also require Method 1, 2, 3/3A/3B and 4 tests as appropriate. Testing shall be conducted in accordance with the requirements of 40 CFR 60.58b Compliance and Performance Testing. With the exception of mercury testing, emission determinations based on stack tests shall be the average of three valid test runs pursuant to Rule 62-297.310(1), F.A.C. A test protocol shall be submitted for approval to the DEPSD at least 45 days prior to the initial testing. **[Rule 62-204.800(8), F.A.C. and Chapter 62-297, F.A.C.]**

Method 5 (1)	Determination of Particulate Matter Emissions from Stationary Sources.
Method 9	Visual Determination of the Opacity of Emissions from Stationary Sources.
Method 13A (4) **or 13B**	Determination of Total Fluoride Emission from Stationary Sources.
Method 23 (2)	Determination of Dioxin/furan Conc. from Stationary Sources.
Method 26 (3) **or 26A**	Determination of HCl emissions.
Method 29 (3) (4)	Determination of Metals Emissions from Stationary Sources.

(1) Pursuant to 40 CFR 60.58b(c)(3) EPA Reference Method 5 shall be used for determining compliance with the particulate matter emission limit. The minimum sample volume shall be 1.7 cubic meters. The probe and filter holder heating systems in the sample train shall be set to provide a gas temperature no greater than 160 ± 14 °C. An oxygen or carbon dioxide measurement shall be obtained simultaneously with each

Method 5 run. Since the limit for MWC Metals (as PM) is identical to the limit for PM_{10}, one annual test may suffice in determining compliance with both limits.

(2) Dioxin/Furan emission limit expressed as the total mass of tetra- through octa-chlorinated dibenzo-p-dioxins and dibenzofurans. The unit may perform less frequent testing for dioxin/furan emissions, as allowed by 40 CFR 60.38b(b) with prior notice to the Department, if the unit's dioxin/furan emissions do not exceed 7 ng/dscm corrected to 7% O_2 or less for all MWC units.

(3) SO_2, Mercury and HCl stack tests upstream and downstream of the control device(s) shall be conducted to calculate percent control. Demonstration of the SO_2 emission limit shall be used as a surrogate for determining compliance with the SAM emission limit.

(4) Testing for mercury emissions shall be made quarterly (four times) for the initial 12 months of operation. During this optimization period, emissions shall be limited to no more than 0.070 mg/dscm at 7% O_2, or an 85% reduction based upon the average of three valid test runs pursuant to Rule 62-297.310(1), F.A.C. The mercury separation program and carbon injection system shall be optimized during this period. Following this 12 month period, the mercury emission rate shall be limited to no more than 0.028 mg/dscm @ 7% O_2 or an 85% reduction based upon three valid test runs (annually) pursuant to Rule 62-297.310(1), F.A.C. However, the applicant may eliminate one test run per year (submit 2 valid test runs) in the event that the single run yields an inlet Hg concentration above 0.560 mg/dscm @ 7% O_2, and the carbon injection system can be shown (to the Department's satisfaction) to have been operating properly.

Initial compliance tests for the combustion unit shall be conducted within 60 days after achieving maximum operating capacity, but no later than 180 days after startup. Annual tests shall be conducted within one year after the initial tests, unless otherwise allowed by the Department.

Unit load levels (steam flow) and particulate control device inlet temperatures may be varied for purposes of testing in accordance with 40 CFR 60.53b(b)&(c). See also specific conditions B.3, B.14, B.16 and D.7 of this permit.

B.11. Test Procedures: Compliance tests shall meet all applicable requirements (i.e., testing frequency, minimum compliance duration, etc.) of Chapter 62-297, F.A.C. The Method 9 test shall be conducted during one run of the particulate matter test. The particulate matter test shall be conducted under conditions representative of normal operations and shall be scheduled to coincide with as much of the normal cleaning (sootblowing) cycle as

practicable. Initial performance tests for SO_2 and NO_X shall be conducted using CEMS in accordance with the methods and requirements of 40 CFR 60.58b(e)(4), (h)(3) and (i)(3) respectively. Test reports shall include the information required by 40 CFR 60.59b(f). **[Rules 62-4.070(3), 62-297.310 and 62-204.800(8), F.A.C.; 40 CFR 60.38b, 40 CFR 60.58b and 40 CFR 60.59b]**

B.12 Stack Testing Facilities: The owner or operator shall install stack testing facilities in accordance with Rule 62-297.310(6), F.A.C. The owner or operator shall provide ports in the air pollution control equipment outlet duct or stack and shall provide access to the sampling ports. **[Rule 62-297.310(6)(c), F.A.C.]**

MONITORING OF OPERATIONS

B.13 Continuous Monitoring: Compliance with the emission limits for carbon monoxide (CO), nitrogen oxides (NO_X), and sulfur dioxide (SO_2) in specific condition B.8 of this permit shall be demonstrated by continuous emission monitoring systems (CEMS) operated in accordance with the requirements of 40 CFR 60.58b. Oxygen (O_2), and opacity shall be monitored by continuous monitoring systems. Monitors for sulfur dioxide and oxygen shall be located both upstream of the dry scrubber and downstream of the baghouse in order to calculate percentage removal efficiency. Continuous monitoring systems shall be installed, calibrated, maintained and operated as required by 40 CFR 60.13 and shall conform to all applicable Performance Specifications in 40 CFR 60, Appendix B. Quality assurance procedures shall conform to all applicable sections of 40 CFR 60, Appendix F. Initial performance evaluations shall be completed within 180 days after initial startup of the unit. Data on continuous monitor equipment specifications, manufacturer, type, calibration and maintenance needs, and proposed locations shall be provided to the DEPSD for review at least 90 days prior to installation. **[Rules 62-4.070(3) and 62-204.800(8), F.A.C.; 40 CFR 60.38 and 40 CFR 60.58b]**

B.14 Continuous Load Monitoring: The owner or operator shall install, calibrate, maintain, and operate a steam flow meter, measure steam flow in kilograms (or pounds) per hour on a continuous basis, and record the output of the monitor (in accordance with the ASME method described in 40 CFR 60.58b(i)(6)). Steam flow shall be calculated in 4-hour block arithmetic averages. Higher loads are allowed for testing purposes pursuant to 40 CFR 60.53b(b). **[Rule 62-204.800(8), F.A.C., 40 CFR 60.31b; 60.38b; 60.51b; 60.53b(b); and 60.58b(i)(6)]**

B.15 Charging Rate Monitoring: The average daily solid waste charging rate shall be determined on a monthly basis and recorded for the MWC unit. The daily charging rate shall be determined each month on an average daily basis for the MWC unit using the facility's truck scale weight data, refuse pit inventory data and MWC operating data for the preceding calendar month. Monthly truck scale weight records of the weight of solid waste received and processed at the unit, and refuse pit inventory data, shall be used to determine

the amount of solid waste charged during the preceding calendar month on an average daily basis. The MWC load level measurements or other operating data shall be used to determine the number of operating hours for each day during the preceding calendar month. **[Rules 62-204.800(8) and 62-4.070(3), F.A.C., and 40 CFR 60.53(a)]**

B.16 Compliance with the PM Control Device Temperature: The MWC unit is required to continuously monitor and record the flue gas temperature at the inlet to the PM control device in accordance with the requirements at 40 CFR 60 60.58b(i)(7). The PM control device temperature shall be calculated in 4-hour block arithmetic averages. The MWC unit shall be allowed to operate up to 17°C (30° F) above the unit's maximum demonstrated PM control device temperature. The maximum demonstrated PM control device temperature is the highest 4-hour arithmetic measurement of temperature at the inlet to the PM control device recorded for 4 consecutive hours during the most recent dioxin/furan performance test which complied with the limits given above. The PM control device inlet temperature and the steam flow for the unit during the stack test shall be continuously monitored and recorded in accordance with 40 CFR 60, Subpart Eb. Higher temperatures are allowed for testing purposes, as specified at 40 CFR 60.53b(c). **[Rule 62-204.800(8), F.A.C. and 40 CFR 60.38b, 40 CFR 60.53b(c) and 60.58b(i)(7) and (9)]**

B.17 Carbon Injection Rate: The optimal carbon injection rate in kilograms (or pounds) per hour shall be determined during the initial twelve months of operation, as indicated in Specific Condition B.10 (4). Optimization should be based upon the maximum expected mercury inlet concentrations as well as necessary operating parameters such as the screw feeder speed, hopper volume, hopper refill frequency, or other parameters appropriate to the feed system being employed. During operation of the MWC unit, the carbon injection system shall be provided with a continuous indication of the injection rate and the carbon mass feed rate must equal or exceed the level which was determined as optimal, during the twelve month optimization period. The owner or operator shall estimate the total carbon usage for the unit for each calendar quarter by utilizing the measured carbon mass feed rate (kg/hr or lb/hr) for each hour of operation of the MWC unit based on the continuous indicator for carbon mass feed rate, and the total number of operating hours of operation during the calendar quarter. **[Rule 62-204.800(8), F.A.C. and 40 CFR 60.58b(m)]**

B.18 Continuous Monitors: Continuous monitors with recorders shall be installed, calibrated, maintained and operated for the unit subject to review by the DEPSD for the following operational parameters:

Total steam production (mass/hr, pressure and temperature)
Carbon injection system feed rate (kg/hr or lb/hr)
Particulate matter control device inlet temperature

Power generation (MW, total power production from the single turbine generator) **[Rule 62-204.800(8), F.A.C. and 40 CFR 60.58b]**

RECORD KEEPING AND REPORTING REQUIREMENTS

B.19 Reports and Records:

All measurements, records and other data (test reports, etc.) required to be maintained by this facility shall be retained for at least five (5) years following the date on which such measurements, records and other data are recorded. Such records shall be maintained at the facility and shall include but not be limited to the items listed below. These records shall be made available upon request to the DEPSD for inspection at the facility. **[Rules 62-4.070(3) and 62-4.160(14)(b), F.A.C., 40 CFR 60.59b and 40 CFR 60.44b(d)]**

(a) Data collected from monitoring instruments, including continuous monitoring systems, steam flow measurements and PM control device temperatures;
(b) Continuous steam flow records on a 4-hour block average basis;
(c) Records of daily solid waste charging rates and hours of operation derived from monthly truck scale data, refuse pit inventory, and operational records;
(d) Amount of natural gas burned during each month; the equivalent heat input from natural gas for each month, calculated using the heat value for natural gas provided by the natural gas supplier; and the annual records of the natural gas capacity factor for the unit;
(e) Results of all source tests or performance tests; and records of the maximum demonstrated unit load specified by condition B.3 of this permit.
(f) Amounts of activated carbon used for emissions control;
(g) Calibration logs for all instruments subject to this permit;
(h) Maintenance/repair logs for any work performed which is subject to this permit;
(i) Records showing the names of facility personnel who have been provisionally or fully certified, and who have completed the MWC operator training course, and who have completed reviews of the operating manual, including the dates and documentation of certification/review.
(j) Records demonstrating compliance with the percentage limitations on segregated solid wastes required by specific condition B.24 of this permit.

B.20 Excess Emission Reports:

B.20.1 Quarterly Reports:

The owner or operator shall submit excess emission reports for any calendar quarter during which there are excess emissions from the unit pursuant to 40 CFR 60.7(c). If there are no excess emissions during the calendar quarter, the owner or operator shall submit a report quarterly stating that no excess emissions occurred during the quarterly reporting period. The report shall include the following:

(a) The magnitude of excess emissions computed in accordance with 40 CFR 60.13(h), any conversion factors used, and the date and time of commencement and completion of each period of excess emissions. **[40 CFR 60.7(c)(1)]**

(b) Specific identification of each period of excess emissions that occurs during startups, shutdowns, and malfunctions of the furnace boiler system. The nature and cause of any malfunction (if known) and the corrective action taken or preventive measures adopted. **[40 CFR 60.7(c)(2)]**

(c) The date and time identifying each period during which the continuous monitoring system (CEM/COM) was inoperative except for zero and span checks, and the nature of the system repairs or adjustments. **[40 CFR 60.7(d)(2) as applicable]**

(d) When no excess emissions have occurred or the continuous monitoring system (CEM/COM) has not been inoperative, repaired, or adjusted, such information shall be stated in the report. **[40 CFR 60.7(c)(4)]**

B.20.2 Other Excess Emission Reports:

In case of excess emissions resulting from malfunctions*, the owner or operator shall notify the DEPSD in accordance with Section 62-4.130, F.A.C. The DEPSD shall be notified within one working day of: the nature, extent, and duration of the excess emissions; the cause of the excess emissions; and the actions taken to correct the problem. In addition, the DEPSD may request a written summary report of the incident. A full written report on the malfunctions shall be submitted in a quarterly report, if requested by the DEPSD.

* Malfunction is defined at Rule 62-210.200, F.A.C. to mean any unavoidable mechanical and/or electrical failure of air pollution control equipment or process equipment or of a process resulting in operation in an abnormal or unusual manner.
[Rules 62-4.130 and 62-210.700(6), F.A.C.]

B.21 Continuous Emission Monitoring System Reports: For CEM and other monitoring systems required by this permit, data on monitoring equipment specifications, manufacturer, type,

calibration and maintenance needs, and proposed sampling location shall be provided to the DEPSD for review at least 90 days prior to installation.
[Rule 62-4.070(3), F.A.C.]

B.22 Operating Reports: Before March 1st of each year, the owner or operator shall submit to the DEPSD the Annual Operating Report [DEP Form No. 62-210.900(5)], which summarizes operations for the previous calendar year.

No later than February 1st of each year, the owner or operator shall submit an annual report for the previous calendar year including the information required by 40 CFR 60.59b(g)(1) through (4), as applicable.

In addition, if applicable, the owner or operator shall submit to the DEPSD the information required in 40 CFR 60.59b(h) on a semiannual basis.
[Rule 62-210.370(3), F.A.C. and 40 CFR 60.59b(g) and, if applicable, 40 CFR 60.59b(h)]

B.23 Sampling Reports: Drawings of testing facilities including sampling port locations as required by Section 62-297.310(8)(c) shall be submitted to the DEPSD for review at least 60 days prior to construction of the sampling ports.

B.24 Segregated Solid Waste Record Keeping: The following records shall be made and kept to demonstrate compliance with the segregated non-MSW percentage limitations of specific condition B.6.6 and B.6.7:

Each segregated load of non-MSW materials, that is subject to the percentage weight limitations of specific condition B.6.6 and B.6.7, which is received for processing shall be documented as to waste description and weight. The weight of all waste materials received for processing shall be measured using the facility truck scale and recorded.

Each day the total weight of segregated tires received shall be computed, and the daily total shall be added to the sum of the daily totals from the previous 29 days. The resultant 30 day total weight of tires shall be divided by the total weight of all waste materials received in the same 30 day period, and the resultant number shall be multiplied by 100 to express the ratio in percentage terms. The percentage computed shall be compared to the 3% limitation.

Each day the total weight of segregated non-MSW materials received that are subject to the 5% restriction shall be computed, and the daily total shall be added to the sum of the daily totals from the previous 29 days. The resultant 30 day total weight of segregated non-MSW materials shall be divided by the total weight of all waste materials received in the

same 30 day period, and the resultant number shall be multiplied by 100 to express the ratio in percentage terms. The percentage computed shall be compared to the 5% limit.

Subsequent to an initial test burn scheduled to allow Department representatives to observe, while firing 5% (by weight) tires at the combustion unit while operating the unit at capacity that demonstrates via the CEMS that the unit can comply with the emission limits for pollutants monitored by the CEMS while firing 5% (by weight) tires, this quantity limitation shall rise from 3% to 5%. Compliance with this limitation shall be determined on a calendar monthly basis.

B.25 Heat Input Reporting Requirements. The owner or operator shall submit to the DEPSD notification of the date of initial startup as provided by 40 CFR 60.7. Such notification shall include the design heat input capacity of the affected unit, and the annual capacity factor at which the owner or operator anticipates operating the unit based on the fuels fired. **[40 CFR 60.49b(a)(1) & (3) and 40 CFR 60.59b(b)]**

B.26 Report of Vendor and Equipment Selection. Within 60 days of selection of a primary vendor for this project, a report detailing the design features of the MWC equipment to be installed shall be submitted to the DEPSD. Such report shall include the nominal and maximum design capacities of the furnace, grates and boiler, and shall detail operating rates such as heat input, steam production, mass throughput and turndown capability. **[Rule 62-4.070(3), F.A.C.]**

OPERATOR TRAINING AND CERTIFICATION

B.27 Requirements

(a) One of the following persons must be on duty at the facility at any time during which the MWC unit is operating: a fully certified chief facility operator or shift supervisor; or a provisionally certified chief facility operator or shift supervisor who is scheduled to take the full certification exam. If this person must leave the facility during his or her operating shift, a provisionally certified control room operator who is on site may fulfill this requirement. **[40 CFR 60.39b(c)(4) (ii) and 40 CFR 60.54b(c)]**

(b) Each chief facility operator and shift supervisor must obtain and maintain a current provisional operator certification and be scheduled for a full certification exam, or receive full certification, with either the ASME or an equivalent state-approved certification program before the date that person assumes responsibility for operation of the facility. **[40 CFR 60.39b(c)(4)(ii) and 40 CFR 60.54b(a) and (b)]**

(c) Each chief facility operator, shift supervisor, and control room operator must complete the EPA or state approved MWC operator training course before the date that person assumes responsibility for operation of the facility. The operator training course requirements of 40 CFR 60.54b(d) do not apply to chief facility operators, shift supervisors and control room operators who have obtained full ASME certification on or before the date of State plan approval (November 13, 1997). [40 CFR 60.39b(c)(4)(iii)(A).] The owner or operator may request that the Department waive the operator training course requirements specified in 40 CFR 60.54b(d) for chief facility operators, shift supervisors and control room operators who have obtained provisional ASME certification on or before the date of State plan approval (November 13, 1997) [40 CFR 60.39b(c)(4)(iii)(B)]. **[40 CFR 60.39b(c)(4) and 40 CFR 60.54b(d)]**

(d) A site-specific operating manual must be developed and updated on an annual basis [40 CFR 60.54b(e)]. A training program must be established to review the operating manual with each person who has responsibilities affecting the operation of the MWC including chief facility operators, shift supervisors, control room operators, ash handlers, maintenance personnel, and crane/load handlers. Each person must undergo initial training before the day that person assumes responsibilities affecting operation of the facility and annually thereafter pursuant to 40 CFR 60.54b(f). The operating manual must be kept in a readily accessible location for all persons required to undergo training. **[40 CFR 60.35b and 40 CFR 60.54b(e) & (f)]**

SECTION III. EMISSION UNIT(S) SPECIFIC CONDITIONS

SUBSECTION C. SPECIFIC CONDITIONS:

The following specific conditions apply to the indicated emissions unit.

EMISSIONS UNIT NO.	EMISSIONS UNITS DESCRIPTION
-007	Lime Silo
(existing)	Ash and Carbon Handling

EMISSION LIMITATIONS

C.1 Lime & Carbon Silos and Ash Handling System:

Particulate emissions from these emissions units shall be limited as follows:

(a) In no case shall PM emissions from the lime storage silo exhaust exceed 0.015 gr/dscf during filling operations of the lime storage silo. PM emissions shall be controlled by a baghouse. Visible emissions shall not exceed 5% opacity in accordance with specific condition C.3.

(b) In no case shall particulate matter emissions from the activated carbon storage silo exhaust exceed 0.015 gr/dscf during filling operations of the activated carbon storage silo. Visible emissions shall not exceed 5% opacity in accordance with specific condition C.3.

(c) Visible emissions from the ash conveyor systems, transfer points, buildings, or enclosures of ash conveying systems shall not occur more than 5 percent of the time during the observation period, except during times of maintenance or repair of these systems.

(d) The potential for dust generation by ash handling activities will be mitigated by quenching the ash prior to loading in ash transport trucks. The ash handling facilities shall be enclosed. Residue from the grates, grate siftings, and ash from the combustor/boiler and fabric filter hoppers during normal operations shall be discharged into the ash quenching system, or otherwise handled in a manner to minimize visible dust. The ash/residue in the ash handling building shall remain sufficiently moist to prevent dust during storage and handling operations.

[Rule 62-4.070(3), F.A.C., 40 CFR 60.36b and 40 CFR 60.55b]

SECTION III. EMISSION UNIT(S) SPECIFIC CONDITIONS

COMPLIANCE AND PERFORMANCE TESTING

C.2 Fugitive Emissions Compliance: The compliance method for the ash handling facilities shall be EPA Method 22, Visual Determination of Fugitives Emissions From Material Sources.

(a) The minimum observation time will be three hours, and will include periods when ash is being transferred from the MWC unit to the storage area, and when ash is being loaded for disposal.

(b) Compliance testing shall be conducted within 180 days of completion of construction and initial operation and annually thereafter.
[Rule 62-4.070(3), F.A.C., 40 CFR 60.36b and 40 CFR 60.55b]

C.3. Carbon and Lime Storage Silos PM Compliance Requirements: The PM compliance test requirements are waived for the lime and carbon storage silos and an alternate standard of 5 percent opacity shall apply. Compliance testing for the lime and carbon silos shall be conducted within 180 days of completion of construction and initial operation and annually thereafter. The visible emission tests shall be performed for each silo during filling operations using EPA Method 9. A visible emission reading greater than 5 percent opacity does not create a presumption that the emission limit (in gr/dscf) is being violated, but may require the owner or operator to perform a particulate stack test. Permanent stack testing facilities are not required for the lime and carbon silos. The owner or operator may install temporary stack sampling facilities to conduct such a test, if required.
[Rule 62-297.620(4), F.A.C.]

SECTION III. EMISSION UNIT(S) SPECIFIC CONDITIONS

SUBSECTION D. COMMON CONDITIONS:

The following specific conditions apply to the following emissions units.

EMISSIONS UNIT NO.	EMISSIONS UNITS DESCRIPTION
-006	660 Tons per Day (maximum) MSW Incinerator
-007	Lime Silo
(existing)	Ash and Carbon Handling

OPERATIONAL REQUIREMENTS

D.1 These emissions units are allowed to operate continuously (8760 hours/year). **[Rule 62-210.200, F.A.C. Definitions-Potential to emit (PTE)]**

D.2. Odor Control: No objectionable odors are allowed from this facility. The truck access doors to the unit shall remain closed except during normal working shifts when MSW is being received at the storage pit area. To minimize odors at the unit, a negative pressure shall be maintained on the tipping floor and air from within the building will be used as combustion air. **[Rule 62-296.320(2), F.A.C.]**

D.3 Startup/Shutdown/Malfunctions

(a) In order to minimize excess emissions during startup/shutdown/malfunction these emissions units shall adhere to best operational practices to minimize emissions.

The duration of excess emissions from the lime silo or the carbon silo shall be minimized but in no case exceed 2 hours per occurrence **[Rule 62-210.700, F.A.C.]**

(b) Excess emissions which are caused entirely or in part by poor maintenance, poor operation, or any other equipment or process failure which may reasonably be prevented during startup, shutdown, or malfunction shall be prohibited. **[Rule 62-210.700(4), F.A.C.]**

(c) Within 90 days prior to completion of construction of the unit, the owner or operator shall submit to the DEPSD an operational procedures manual that identifies and describes best operational practices that will be used during startup, shutdown, and malfunctions.

SECTION III. EMISSION UNIT(S) SPECIFIC CONDITIONS

EMISSION LIMITATIONS

D.4 Facility Fugitive (Unconfined) Emissions: Fugitive emissions at this facility shall be adequately controlled at all times. All roads shall be adequately paved, and vacuum swept if appropriate, to minimize accumulations of ash and dust. Speed limit signs shall be posted. Unprocessed refuse storage areas which must be open for operational purposes (e.g., tipping floor or the refuse bunker while trucks are entering and leaving) shall be under negative air pressure. **[Rule 62-296.320(4)(c), F.A.C.]**

COMPLIANCE AND PERFORMANCE TESTING

D.5 Test Notification: The owner or operator shall notify the DEPSD in writing at least *30 days* (for the initial test) and *15 days* (for the annual tests) prior to each scheduled compliance test to allow witnessing. The notification shall include the compliance test date, place of such test, the expected test time, the facility contact person for the test, and the person or company conducting the test. The 30 or 15 day notification requirement may be waived at the discretion of the DEPSD. Likewise, if circumstances prevent testing during the test window specified for the emissions unit, the owner or operator may request an alternate test date before the expiration of this window. **[Rule 62-297.310 and 40 CFR 60.8, F.A.C.]**

D.6 Special Compliance Tests: When the Department, after investigation, has good reason (such as substantiated complaints, increased visible emissions or questionable maintenance of control equipment) to believe that any applicable emission standard contained in Rule 62-204, 62-210, 62 -212, 62-296 and 62-297, F.A.C. or in a permit issued pursuant to those rules is being violated, it may require the owner or operator of the facility to conduct compliance tests which identify the nature and quantity of pollutant emissions from the emissions units and to provide a report on the results of said tests to the DEPSD. **[Rule 62-297.310(7)(b), F.A.C.]**

D.7 Operating Rate During Testing: Testing of emissions shall be conducted with the emissions unit in operation at permitted capacity. Permitted capacity is defined as 90 to 100 percent of the maximum operation rate allowed by the permit. If it is impracticable to test at permitted capacity, an emissions unit may be tested at less than the minimum permitted capacity; in this case, subsequent emissions unit operation is limited to 110 percent of the test load until a new test is conducted. Once the unit is so limited, operation at higher capacities is allowed for no more than 15 consecutive days for the purpose of additional compliance testing to regain the authority to operate at the permitted capacity. See also specific conditions B.2 and B.3 of this permit for limitations related to unit load for the MWC unit. Higher loads are allowed for testing purposes as specified at 40 CFR 60.53b(b) and condition B.3 of this permit. **[Rule 62-297.310(2) and (2)(b), F.A.C., and 40 CFR 53b(b)]**

RECORD KEEPING AND REPORTING REQUIREMENTS

D.8 Emission Compliance Stack Test Reports:
[Rule 62-297.310(8), F.A.C., and 40 CFR 60.59(b)(f)]

(a) A *test report* indicating the results of the required compliance tests shall be filed with the DEPSD as soon as practical, but no later than 45 days after the last sampling run is completed.

(b) The *test report* shall provide sufficient detail on the tested emissions unit and the procedures used to allow the Department to determine if the test was properly conducted and if the test results were properly computed. At a minimum, the test report shall provide the applicable information listed in Rule 62-297.310(8), F.A.C.

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Mr. Lindsey J. Sampson
Director
Lee County Solid Waste Division
10500 Buckingham Road
Fort Myers, FL 33905

COMPLETE THIS SECTION ON DELIVERY

A. Received by *(Please Print Clearly)* | B. Date of Delivery 4/2/03

C. Signature
X [signature] ☐ Agent ☐ Addressee

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
☒ Certified Mail ☐ Express Mail
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? *(Extra Fee)* ☐ Yes

7001 0320 0001 3692 6600

PS Form 3811, July 1999 Domestic Return Receipt 102595-00-M-0952

U.S. Postal Service
CERTIFIED MAIL RECEIPT
(Domestic Mail Only; No Insurance Coverage Provided)

OFFICIAL USE

Postage	$
Certified Fee	
Return Receipt Fee (Endorsement Required)	
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	$

Postmark Here

Sent To: Lindsey J. Sampson
Street, Apt. No.; or PO Box No. 10500 Buckingham Rd.
City, State, ZIP+4: Ft. Myers, FL 33905

7001 0320 0001 3692 6600

PS Form 3800, January 2001 See Reverse for Instructions

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
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1. Article Addressed to:

The Honorable James Humphrey
Mayor, City of Fort Myers
City Hall
Post Office Box 2217
Fort Myers, FL 33902-2217

COMPLETE THIS SECTION ON DELIVERY

A. Received by (Please Print Clearly) Cheryl Lyons B. Date of Delivery 4/11/03

C. Signature
X Cheryl Lyons ☐ Agent ☐ Addressee

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
☒ Certified Mail ☐ Express Mail
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? (Extra Fee) ☐ Yes

7001 0320 0001 3692 6563

PS Form 3811, July 1999 Domestic Return Receipt 102595-00-M-0952

U.S. Postal Service
CERTIFIED MAIL RECEIPT
(Domestic Mail Only; No Insurance Coverage Provided)

SPECIAL USE

Postage	$
Certified Fee	
Return Receipt Fee (Endorsement Required)	
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	$

Postmark Here

Sent To: James Humphrey
Street, Apt. No.; or PO Box No.: PO Box 2217
City, State, ZIP+4: Ft. Myers, FL 33902-2217

PS Form 3800, January 2001 See Reverse for Instructions

7001 0320 0001 3692 6563

U.S. Postal Service
CERTIFIED MAIL RECEIPT
(Domestic Mail Only; No Insurance Coverage Provided)

OFFICIAL USE

Postage	$
Certified Fee	
Return Receipt Fee (Endorsement Required)	
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	$

Postmark Here

Sent To: Ray Judah
Street, Apt. No.; or PO Box No.: PO Box 398
City, State, ZIP+4: Ft. Myers, FL 33902-0398

PS Form 3800, January 2001 See Reverse for Instructions

7001 0320 0001 3692 6570

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- Print your name and address on the reverse so that we can return the card to you.
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1. Article Addressed to:

Ray Judah, Chair
Lee County Board of County Commissioners
Post Office Box 398
Ft. Myers, FL 33902-0398

COMPLETE THIS SECTION ON DELIVERY

A. Received by (Please Print Clearly) BRENDA TAN B. Date of Delivery

C. Signature
X ☒ Agent ☐ Addressee

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

DOWNTOWN STATION APR 07 2003 USPS - FT. MYERS, FL

3. Service Type
☒ Certified Mail ☐ Express Mail
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? (Extra Fee) ☐ Yes

7001 0320 0001 3692 6570

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