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BUREAU OF AIR REGULATION

March 5, 2009

Ms. Trina Vielhauer
Chief, Bureau of Air Regulation
Florida Department of Environmental Protection
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Re: North County Resource Recovery Facility
FDEP Title V Air Operations Permit (No. 0990234-010 AV) and FL-PSD 108
Air Construction Permit Application with Supporting Documentation

Dear Ms. Vielhauer:

The Solid Waste Authority of Palm Beach County ("Authority") is the owner of the North County Resource Recovery Facility ("Facility"), a large Municipal Waste Combustor that was constructed in compliance with an Air Construction Permit (No. FL-PSD 108) and is operated pursuant to an FDEP Title V Air Operations Permit (No. 0990234-010 AV). As discussed during our pre-application meeting on December 4, 2008, the Authority wishes to undertake a refurbishment project ("Project") in 2010. Specifically, the Authority wishes to install new air pollution control equipment and maintain, replace, and repair other components of the Facility. The attached air construction permit application package addresses the Authority's Project. The Project will require an air construction permit pursuant to Rule 62-210.300(1)(a), F.A.C., authorizing the installation of the new air pollution control equipment at the Facility.

The Facility receives municipal solid waste (MSW) which is processed into refuse derived fuel (RDF). The RDF is combusted in the Facility's two municipal waste combustor (MWC) units to create steam and generate electricity. The Facility began commercial operations in the 1990's at which time state-of-the-art air pollution control (APC) systems were installed.

The Facility is an existing major Prevention of Significant Deterioration (PSD) source and is subject to 40 CFR 60, New Source Performance Standards (NSPS) Subpart Cb – Emission Guidelines and Compliance Schedules for large MWC's. An applicability review of 40 CFR 60, NSPS Subpart Eb, for new or modified municipal waste combustor, and Rule 62-212.400, PSD, was completed for the Project. The results of this analysis are included in the application package (Section A).

The analysis demonstrates that the Project does not constitute a "modification" or "refurbishment" under the NSPS and does not constitute a "major modification" under PSD. Thus the Project does not trigger Subpart Eb or PSD requirements.

The permit application package includes the following documents:

- Application Package:
  - Section A: NSPS and PSD Applicability Review
  - Section B: Completed Air Construction Permit Application Forms
  - Section C: Schematic Drawings: Facility Plot Plan and Process Flow Diagram
  - Section D: Control Equipment Descriptions
  - Section E: Emissions Calculations
  - Section F: Summary of Requested Permit Revisions
  - Section G: Supporting Documentation for Existing Permit Conditions Modification
  - Section H: Rule Applicability Analysis
  - Section I: Precautions to Prevent Emissions of Unconfined Particulate Matter
  - Section J: Insignificant Emissions
- Application fee in the amount of $5,000.
- A compilation of PSD files related to the Facility in a CD format as requested during the pre-application meeting. A listing of the PSD files included on the CD is also provided for your reference.

As discussed during our pre-application meeting, the following revisions to the existing permit conditions are being requested:

1. Authorization to install the new air pollution control equipment and conduct the other work proposed as part of the Project.

2. Eliminate the one–hour CO permit limit (PSD-FL-108A Specific Condition 3c (part) and Title V Operating Permit (No. 0990234-010 AV), Condition A.6 (part) and A.19 (part)). This change is consistent with 40 CFR 60, Subpart Cb, which includes a 24-hour CO concentration limit, but not a one-hour limit for CO. (See Section G for the requested available documentation regarding origination of this one-hour CO permit condition for the Facility.)

3. Remove the temperature limit of 300°F that applies to the Facility's exhaust gas (PSD-FL-108A, Specific Condition 6 and Title V Operating Permit Condition R18). The existing Title V Permit includes the temperature limit in 40 CFR 60, Subpart Cb, (Title V Operating Permit Condition O.2.). (See Section G for the requested available documentation regarding origination of this permit condition for the Facility.)

4. Change the Facility's permit to indicate that the limit on steam flow generation is the short-term operating limit, rather than MSW throughput or other parameters that cannot be measured. The current Title V Air Operations Permit and PSD Permit list the existing MWC unit's heat input rating at 412.5 MMBtu per hour (per MWC unit). An adjustment to this heat input rating is needed to accurately reflect the permitted steaming rate of 324,000 pounds per hour which is based on a maximum heat input rate of 450.8 MMBtu per hour. Steam flow effectively limits heat input and RDF processing rates, and it is directly measured by the Facility. The currently permitted steam production limitation is 324,000 pounds per hour (four-hour block average) for each boiler and the refurbishment project will not increase this limit (Title V Operating Permit Condition A.1.0 (part) and R.19).

The requested permit revisions, itemized above, are discussed further in Section F of the permit application package.

Furthermore, during the pre-application meeting, information on the expected actual emissions from the Facility following the completion of this Project was requested to be provided for informational purposes only. An estimate of expected actual emissions is included in Section G for your information.

We look forward to working with the FDEP on this Project. Please contact me for any questions on this application at 561-640-4000.

Sincerely,

SOLID WASTE AUTHORITY OF PALM BEACH COUNTY

Mark D. Hammond
Executive Director

Cc: M. Halpin (FDEP Siting Office)
B. Worobel (SWA)
D. Dee (Young van Assenderp)
M. Bruner (SWA)
M. Morrison (SWA)
D. Elias ((RTP Environmental)
R. Schauer (SWA)
L. Richter (MP)

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North County Resource Recovery Facility
Application for Air Construction Permit

Section A

NSPS and PSD Applicability Review Report

MALCOLM PIRNIE

Solid Waste Authority of Palm Beach County
7501 North Jog Road • West Palm Beach, FL 33412

NSPS and PSD Applicability Review for the Refurbishment of the North County Resource Recovery Facility (NCRRF)

March 2009

Report Prepared By:

Malcolm Pirnie, Inc.

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954-761-3460

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1. Introduction

Malcolm Pirnie, Inc. (Malcolm Pirnie) is assisting the Solid Waste Authority of Palm Beach County (Authority) in obtaining environmental permits and approvals for the refurbishment of the Authority's North County Resource Recovery Facility (Facility). The refurbishment project (Project) will involve the installation of several new air pollution control systems at the Facility, as well as the maintenance, repair, and replacement of other components of the Facility.

Malcolm Pirnie has made the following conclusions regarding the Project:

(a) The Authority will need to obtain an air construction permit pursuant to Rule 62-210.300(1)(a), F.A.C., or a modification of the Authority's existing air construction permit, authorizing the installation of the new air pollution control equipment at the Facility.

(b) The Authority will need to amend the site certification application that was approved for the Facility pursuant to the Florida Electrical Power Plant Siting Act (PPSA).

(c) The Project is not a "modification" or "reconstruction," as defined by the Standards of Performance for New Stationary Sources (NSPS) in 40 CFR 60, Subpart Eb, and thus the Project will not cause the Facility to become subject to the requirements in the NSPS.

(d) The Project is not a "major modification" as defined in the state program for the prevention of significant deterioration (PSD) of air quality, and thus the Project is not subject to the PSD pre-construction review process.

(e) The Authority's air construction permit will be modified to require the Authority to monitor the Facility's emissions of PSD pollutants for at least five years after the completion of the Project.

Malcolm Pirnie's analysis of these NSPS and PSD issues is set forth in the following sections of this report.

2. Facility Background Information

The Facility is owned by the Authority and operated by Palm Beach Resource Recovery Corporation (PBRRC). PBRRC is a subsidiary of Babcock & Wilcox (B&W) Company, which manufactured the boilers and other major components of the Facility. B&W will also furnish the major boiler components for the Project.

The construction and operation of the Facility was authorized by the Governor and Cabinet, sitting as the Siting Board, pursuant to the PPSA (PA 84-20). An air construction permit (No. FL-PSD 108) was issued for the Facility in accordance with the state and federal PSD programs. The operation of the Facility is governed by a Title V Air Operations Permit (No. 0990234-010 AV). Among other things, the Title V permit requires the Facility to comply with the Emission Guidelines (EG) that have been codified by the U.S. Environmental Protection Agency (EPA) in 40 CFR 60, Subpart Cb, and adopted by the Florida Department of Environmental Protection (FDEP) in Rule 62-204.800(9)(b), F.A.C.

The Facility receives municipal solid waste (MSW), which is processed to create refuse-derived fuel (RDF). The RDF is combusted in the Facility's two municipal waste combustor (MWC) units to create steam and generate electricity. The Facility is designed to process 2,000 tons per day (tpd) of MSW. The MWC units provide steam to a Westinghouse steam turbine, which is coupled to a Brush generator. The electrical generating capacity of the Facility is 62 megawatts (MW).

Each MWC unit has its own air pollution control (APC) system. Electrostatic precipitators (ESP) are used to control the Facility's emissions of particulate matter (PM), heavy metals, dioxins, and furans. Spray dryer absorbers (SDA) are used to control the Facility's emissions of acid gases.

3. The Refurbishment Project

The Authority is committed to ensuring that its operations are conducted in compliance with all of the applicable environmental regulations. Consistent with this approach to regulatory compliance, the Authority designed the Facility with RDF technology and air pollution control systems that were the state-of-the-art when the design was prepared. The Authority's design concepts have enabled the Facility to operate successfully since it commenced commercial operations in 1990. With the passage of time, however, the Authority has recognized that the Facility's air pollution controls could be enhanced. The Authority now wishes to upgrade the Facility's air pollution control systems and refurbish other components of the Facility to ensure that the Facility continues to operate successfully in the future. Accordingly, the Authority is seeking the necessary approvals for the Project and is planning to commence construction by April 2010.

Although the Facility currently complies with all of the applicable environmental standards, the Authority intends to install state-of-the-art APC systems that will significantly improve the Authority's ability to reduce the Facility's airborne emissions. First, the existing ESPs will be removed and replaced with fabric filter baghouses. The new baghouses will improve the Authority's ability to collect and remove PM, as well as any heavy metals, dioxins, furans, and mercury that are attached to the PM. Second, the Authority will install a selective non-catalytic reduction (SNCR) system, which will enhance the Authority's ability to reduce emissions of nitrogen oxides (NO_x). Third, the Authority will install an activated carbon injection (ACI) system, which will improve the Authority's ability to reduce mercury emissions. Fourth, the Authority will install a new combustion control system and an improved overfire air system, which will improve the Authority's ability to reduce carbon monoxide (CO) emissions and may further reduce the Facility's unabated NO_x emissions. These new and improved APC systems will greatly enhance the Authority's ability to continuously comply with applicable EPA and FDEP regulations.

The Authority's Project will also include the maintenance, repair, or replacement of various components of the Facility. For example, the Authority intends to refurbish the MWC units by replacing the boiler waterwalls, tubes, economizers, and tubular air heaters. All of the refurbishments to the MWC units will consist of functionally equivalent or "like-kind" parts and equipment (except to the extent that the new parts may have improved metallurgical characteristics). Most of the replacement parts for the MWC units (e.g., the major boiler components) will be provided by the same company (Babcock & Wilcox) that manufactured the existing MWC units.

The Project will not change the basic design parameters of the Authority's MWC units. Specifically, the Project will not increase the Facility's: (a) MSW processing capacity of 2,000 tpd; (b) maximum steaming rate of 324,000 pounds per hour (lbs/hr) per MWC; and (c) the electrical generating capacity of 62 MW.

The Authority's fundamental goals for the Project are summarized below:

- Removal of existing ESPs and replacement with fabric filter baghouse systems for improved control of PM emissions.
- Addition of a SNCR system for improved control of NOx emissions.
- Addition of an ACI system for improved control of mercury emissions.
- Replacement of the distributed control system (DCS) for improved control of combustion.
- Replacement of the overfire air ductwork and injection nozzles for improved control of CO and potential reduction of NO_x.
- Replacement of waterwall panels, roof tubes, generating tubes, economizers, and tubular air heaters with in-kind components.
- Replacement of boiler feed water pipes.
- Replacement of boiler flue gas ductwork.
- Replacement of fuel feed systems from the fuel distribution augers to the boilers.
- Repair of tipping floor.
- Replacement of fire alarm system and improvements to fire protection systems.

A more detailed description of the Project is contained in Attachment A to this report.

4. NSPS Considerations

4.1. NSPS Definitions

As previously noted, the Facility's two MWC units currently are governed by the EG that are set forth in 40 CFR 60, Subpart Cb, and adopted by reference in FDEP Rule 62-204.800(9)(b), F.A.C. However, the Facility will be required to comply with the NSPS requirements in 40 CFR 60, Subpart Eb, if the Project is deemed to be a modification or reconstruction of the MWC units. These requirements have been adopted by FDEP in Rule 62-204.800(8)(b)(7), F.A.C.

A "modification" or "modified municipal waste combustor unit" is defined in 40 CFR 60.51b to mean:

> *"a waste combustor unit to which changes have been made after June 19, 1996 if the cumulative cost of the changes, over the life of the unit, exceed 50 percent of the original cost of construction and installation of the unit (not including the cost of any land purchased in connection with such construction or installation) updated to current costs; or any physical change in the municipal waste combustor unit or change in the method of operation of the municipal waste combustor unit increases the amount of any air pollutant emitted by the unit for which standards have been established under section 129 or section 111."*

"Reconstruction" is defined in 40 CFR 60.51b to mean:

> *"rebuilding a municipal waste combustor unit for which the reconstruction commenced after June 19, 1996, and the cumulative costs of the construction over the life of the unit exceed 50 percent of the original cost of the construction and installation of the unit (not including any cost of land purchased in connection with such construction or installation) updated to current costs (current dollars)."*

The physical boundary of the MWC unit, as defined in 40 CFR 60.51b, starts at the *"pit or hopper"* and includes *"the municipal solid waste fuel feed system, grate system, flue gas system, bottom ash system, and the combustor water system."* The MWC unit *"does not include air pollution control equipment, the stack, water treatment equipment, or the turbine-generator set."* Therefore, the Facility's RDF MWC unit begins at the feed hopper on the tipping floor and ends at the economizer outlet duct, and it also includes the other items specified in 40 CFR 60.51b(2)(ii) and (iii).

4.2. NSPS Applicability Determination Concerning Potential Reconstruction

Malcolm Pirnie has evaluated the Authority's plans to determine whether the Authority's Project will constitute a reconstruction of the Facility. Using the definitions in 40 CFR 60.51b, Malcolm Pirnie identified the physical boundaries of the MWC units and then determined: (1) the original cost of the MWC units; (2) the updated cost of the MWC units (2008 dollars); (3) the cost of the proposed refurbishments to the MWC units; (4) the cost of any other changes to the MWC units that were made after June 19, 1996 (updated to 2008 dollars); and (5) the cumulative costs of the past changes and proposed refurbishments to the MWC units. These analyses are summarized below.

The most accurate construction and installation cost data available for the Facility are contained in the drawdown schedule that was included in the Authority's original design-build contract. To estimate the original costs of the MWC units, Malcolm Pirnie (1) identified the drawdown line items that were attributable to the MWC units and then (2) established a percentage cost basis for each applicable line item using a calculation of relative site areas occupied by the MWC components and sound engineering judgment. With this method, the original cost of the MWC units was calculated to be $106.5 million (1986 dollars). Malcolm Pirnie updated this value by using a combination of the ENR Construction Cost Index (CCI) and the IHS-CERA Power Capital Cost Index (PCCI).[1] The CCI is a composite index that reflects construction costs for all types of construction. The PCCI, which began in 2000, is more specific to construction costs for power generating facilities. The PCCI reflects the recent increase in prices that have affected the cost of constructing electrical power plants, such as the Facility. Using the CCI from 1986 through 1999 and the PCCI from 2000 to 2008, the updated cost of the MWC units was calculated to be $273.3 million (2008 dollars). A detailed comparison of the original and updated costs is contained in Attachment B to this report.

The estimated cost of the proposed refurbishments to the MWC units is $98.8 million (2008 dollars). A detailed description of these costs is contained in Attachment C to this report. There were no capital maintenance costs incurred after June 19, 1996 for the MWC units. Therefore, the cumulative cost of the refurbishment work and the prior capital maintenance costs for the MWC units is $98.8 million, which represents only 36.2% of the updated cost of the MWC units. Since these cumulative costs do not exceed 50 percent of the updated cost of the MWC units, the Project does not constitute a

[1] *In a letter dated August 20, 1996, the EPA responded to various questions from the City of Tampa concerning the proper method of determining whether the retrofit of the City's resource recovery facility constituted a reconstruction under the NSPS. Among other things, the EPA approved the City's request to use the ENR Construction Price Index to update the cost of the City's MWC units. The EPA concluded that "the method for performing a cost update to current dollars can be selected by the source [i.e., the City]."*

reconstruction, as defined in 40 CFR 60.51b, and the Facility will not be subject to the requirements contained in the NSPS (40 CFR 60, Subpart Eb).

4.3. NSPS Applicability Determination Concerning Potential Modification

Malcolm Pirnie also evaluated the Project to determine if it constitutes a modification, as defined in the NSPS. As noted above, the cost of the Project will not exceed the 50 percent threshold for a reconstruction or a modification. In addition, there will be no physical change in the MWC unit or the method of operation of the MWC unit that will cause an increase in the Facility's emission rate for any pollutant for which standards have been established under Section 129 or Section 111 of the Clean Air Act.

As noted previously, the Project involves the replacement of various components of the Facility with "like-kind" components made by the same manufacturer (Babcock & Wilcox Company). The Project will not increase the physical capacity of the Authority's MWC units, so no increases in the Facility's actual emissions rates are expected. The installation of new combustion control systems and overfire air systems are expected to improve the Facility's combustion efficiency, which should result in lower emissions of CO and possibly NO_x.

The definition of "modification" in 40 CFR 60.51b states that *"increases in the amount of any air pollutant emitted by the municipal waste combustor unit are determined at 100 percent physical load capability and downstream of all air pollution control devices."* Measuring the Facility's emissions downstream of the new APC systems will help ensure that the Facility's emissions will not increase after the completion of the Project. The installation of new fabric filter baghouses, plus new SNCR and ACI systems, will enable the Authority to better control all of the MWC pollutants regulated under Sections 129 and 111 of the Clean Air Act. The maximum actual short-term emissions rates of these regulated pollutants will not increase.

For these reasons, the Project is not a modification, as defined in the NSPS (40 CFR 60.51b).

4.4. Conclusions Concerning NSPS

This report demonstrates that the Authority's Project does not constitute a modification or reconstruction, as defined by the NSPS in 40 CFR 60, Subpart Eb. Therefore, the NSPS in 40 CFR 60, Subpart Eb, will not be applicable to the Authority's Facility as a result of the Project. Instead, the Facility will continue to be governed by the EG in 40 CFR 60, Subpart Cb.

5. PSD Considerations

5.1. PSD Applicability to Major Modifications

Under Florida's PSD program, the Facility is classified as a "*major stationary source*" because the Facility is a "*municipal incinerator capable of charging more than 250 tons of refuse per day*" and it has the potential to emit 100 tons per year or more of a PSD pollutant [See Rule 62-210.200(195), F.A.C]. A PSD permit must be obtained pursuant to Rule 62-212.400(1), F.A.C., prior to the commencement of construction of any "*major modification*" of an existing major stationary source. A major modification is defined in Rule 62-210.200(192), F.A.C., as "*any physical change in or change in the method of operation of a major stationary source that would result in a significant emissions increase of a PSD pollutant and a significant net emissions increase of that pollutant from the major stationary source.*"

Since the Project will involve the installation of new air pollution control equipment and other physical changes to the Facility, Malcolm Pirnie evaluated the Project to determine whether it will cause a significant net emissions increase of a PSD pollutant and thus constitute a major modification. Malcolm Pirnie's evaluation was conducted in compliance with Rule 62-212.400(2)(a)1, F.A.C., which establishes a "*Baseline Actual-to-Projected Actual Applicability Test for Modifications at Existing Emissions Units.*" Under this rule, "*a significant emissions increase of a PSD pollutant will occur if the difference between the projected actual emissions and the baseline actual emissions equals or exceeds the significant emissions rate for that pollutant.*" Accordingly, Malcolm Pirnie: (1) determined the Facility's baseline actual emissions; (2) determined the Facility's projected actual emissions; (3) subtracted the baseline actual emissions from the projected actual emissions; and (4) compared the difference to the significant emissions rate. This analysis was performed for each PSD pollutant emitted by the Facility.

5.2. Baseline Actual Emissions and Projected Actual Emissions

Rule 62-210.200(36)(b), F.A.C., defines "*baseline actual emissions*" for an existing emissions unit, such as the Facility, to mean "*the average rate, in tons per year, at which the emissions unit actually emitted the pollutant during any consecutive 24-month period selected by the owner or operator within the [preceding] 10-year period.*" In this case, the Facility's actual emissions data from the most recent five years (calendar years 2003 to 2007) were evaluated and the average of each two calendar year period (24 consecutive months) was calculated for each PSD pollutant. As allowed in Rule 62-

210.200(36)(b)4, F.A.C., a different consecutive 24-month period can be used for each PSD pollutant.

For the purposes of this PSD applicability analysis, the baseline actual emissions were determined to be the average of the annual emissions during the twenty-four consecutive months of: (a) the 2003 - 2004 calendar years for particulate, MWC Metals, VOC, hydrogen fluoride, mercury, NO_x, and MWC Organics; (b) the 2005 - 2006 calendar years for lead; and (c) the 2006 - 2007 calendar years for CO, SO_2, and MWC Acid Gases. Operations during calendar years 2003-2007 are representative of normal operations at the Facility.

The annual actual emissions were determined by using stack test results, data from the Facility's continuous emissions monitors, and/or throughput data The annual emissions data for 2003-2007 are provided in Attachment D to this analysis .

5.3. Net Emissions Increase

The Facility's projected actual emissions, the Facility's baseline actual emissions, the significant emissions rates in Rule 62-210.200(280), F.A.C., and the net emissions increase for each PSD pollutant, are presented in Table 5-1, below. As shown in Table 5-1, the Project will not cause a net emissions increase for any pollutant in an amount that is equal to or greater than the significant emissions rate for that pollutant.

After the Project is completed, the Facility's actual annual emissions of all PSD pollutants are expected to be less than the baseline actual emissions because the Facility will be equipped with new air pollution control systems and improved combustion control systems. Nonetheless, to ensure that this analysis is conservative (i.e., overestimates the Facility's future emissions), the Facility's projected actual emissions were estimated for each PSD pollutant by adding (1) the baseline actual emissions and (2) a value slightly less than the significant emission rate, as defined in Rule 62-210.200(280), F.A.C.

5.4. PSD Applicability Determination for Major Modification

The prior analysis demonstrates that the net emissions increases associated with the Authority's proposed Project do not exceed the significant emissions rates in Rule 62-210.200(280), F.A.C., for any PSD pollutant emitted by the Facility. Therefore, the Project is not a major modification and the Project is not subject to the preconstruction review requirements in Rule 62-212.400, F.A.C. Nonetheless, the FDEP will amend or modify the Authority's existing air construction permit (No. FL-PSD 108) pursuant to Rule 62-212.300, F.A.C., and thereby require the Authority to monitor and report the Facility's emissions of PSD pollutants for at least five years after the completion of the

Project. In this manner, the FDEP will confirm that the Project will not cause a significant net emissions increase and is not a major modification.

Table 5-1.
North County Resource Recovery Facility Project Net Emissions PSD Applicability Determination (Unit 1 and 2 Combined)

	Tons per Year (TPY)				Subject to PSD?
	Baseline Actual Emissions [1]	Projected Actual Emissions	Net Emissions Increase	PSD Significant Emissions Rate	
Particulate, PM	38.4	62.4	24	25	No
PM10/MWC Metals [2]	38.4	52.4	14	15	No
Nitrogen Oxides, NO_x	1282	1321	39	40	No
Carbon Monoxide, CO	335	434	99	100	No
Lead, Pb	0.8	1.3	0.5	0.6	No
Mercury, Hg	0.03	0.12	0.09	0.1	No
Hydrogen Fluoride, HF	1.86	4.36	2.5	3	No
Volatile Organic Compounds, VOC	27.3	66.3	39	40	No
Sulfur Dioxide, SO_2	262	301	39	40	No
MWC Organics, D/F	75.5E-06	78.9E-06	3.4E-06	3.5E-06	No
MWC Acid Gases (as SO_2+HCl) [3]	350	389	39	40	No

Notes:

1. Baseline Actual Emissions were developed from a review of 5 years of actual annual emissions (calendar years 2003 through 2007). The consecutive 24-month average of calendar years 2003 and 2004 was selected as the baseline for particulates, VOC, mercury, hydrogen fluoride, NO_x, MWC Metals and MWC Organics, the average of calendar years 2005 and 2006 was selected for lead, and the average of calendar years 2006 and 2007 was selected for CO, SO_2 and MWC Acid Gases (SO_2 and HCl).
2. The Facility does not have historical data for PM10 emissions. For this analysis, it has been assumed that PM10 emissions are equal to PM emissions.
3. A significant emissions rate (SER) has not been established in Rule 62-210.200(280) for HCl. However, the SER for MWC acid gases is based on the total of HCl and SO_2 emissions.

5.5. Other Conclusions

As noted in the Introduction to this report, the Authority will need to receive the FDEP's authorization pursuant to Rule 62-212.400(1), F.A.C., before the Authority installs the new air pollution control systems at the Facility. Specifically, the Authority will need to request an amendment or modification to the Authority's air construction permit (No. FL-PSD 108). If the FDEP approves the Authority's request, the FDEP also should automatically amend the PPSA Conditions of Certification for the Facility pursuant to Rule 62-17.211(4), F.A.C. In this manner, the FDEP should ensure that the air pollution control provisions in the Authority's PPSA Conditions of Certification are consistent with the corresponding provisions of the Authority's PSD permit. In addition to these actions by the FDEP, the Authority will need to amend its PPSA application for site certification to identify those aspects (if any) of the Project that are not otherwise addressed by the air construction permit. Pursuant to Rule 62-213.420 (1) (a) 3, an application to modify the Title V operating permit will be filed at least 90 days prior to the expiration of the air construction permit, but no later than 180 days after the start of operation of the Project equipment.

ATTACHMENT A
NCRRF Refurbishment Project Summary

A.NCRRF Refurbishment Project Summary

The following summarizes the work that will be conducted as part of the Authority's Project:

A. Air Pollution Control System Upgrade

The components, equipment, and materials for the Refurbishment Project related to the air pollution control system (APC) upgrade consist of:

- Two (2) fabric filter baghouses (FFB)
- Induced draft (ID) fans
- Fabric filter baghouse and spray dryer absorber (SDA) ash conveying system, per line, connecting to the existing fly ash conveying system
- Double flap valves & installation for all FFB hoppers
- Plumbing – roof drains & installation
- HVAC – ventilation equipment and installation
- Plant air system (including air dryers, receivers, enclosure, and installation)
- Fire protection system
- New 4.16kV Switchgear and conductors for new ID Fan motors (Approx. 1,000 HP motors)
- Two (2) 480V Motor Control Centers (MCC), one for each APC train
- 480V Electrical Distribution System with separate feeds for MCC's
- 5 kV Electrical Distribution System
- FFB, Selective Non-Catalytic Reduction (SNCR) system, and Activated Carbon Injection (ACI) systems electrical work
- One (1) SNCR system for each boiler, including common urea feed tank
- One (1) ACI system for each boiler, with a redundant feeder and blower, fed from a common carbon silo
- Two (2) refurbishments of the upper and lower SDA internals, including upper cones, turning vanes, diffusers, internal stiffeners for the supports and 3-ft (conical and cylindrical) bands at the hopper to cylinder weld

B. MWC Components

The municipal waste combustor (MWC) work will consist of the following activities:

- Replace 12 fuel chutes
- Replace 12 air swept spouts with air supplies

- Replace two (2) ash diverters
- Replace two (2) Inconel 625-clad furnaces (with front, rear and side walls with upper and lower headers and drains/vents, stoker seals, supply tubes, buckstays, access doors, and new furnace roofs)
- Replace four (4) auger feed conveyors
- Install two (2) new transport air fans, supports, ducts, expansion joints and dampers
- Install 28 over-fire air ports complete with duct, dampers, expansion joints
- Refurbish two (2) of the existing forced draft fans
- Refurbish two (2) of the existing overfire air fans
- Replace two (2) bottom ash conveyors (horizontal portions only)
- Refurbish eight (8) natural gas auxiliary burners with isolation dampers, hoses and igniters, and relocated valve racks
- Replace two (2) superheaters (310HSS and SA210) with headers, hangers, cross over piping, saturated connections, rapper hammers, outlet piping, and drains/vents
- Replace two (2) attemperators
- Replace two (2) sets of steam drum internals, including 16 steam-water separators and related drum baffles and internals
- Replace two (2) generating banks (loose tubes and side wall tubes)
- Replace two (2) sets of boiler trim
- Replace two (2) sets of feed water piping from flow control valves to steam drums
- Replace two (2) modular economizers
- Replace two (2) modular tubular air heaters
- Install air heater bypass ducts and dampers
- Replace two (2) Corten flue systems including expansion joints, supports, and hoppers from the boiler to stack
- Replace two (2) sets of Corten boiler casing
- Replace two (2) penthouse casings and install 2 new penthouse trolley beams
- Upgrade two (2) sets of boiler instrumentation, excluding drum instrumentation
- Replace two (2) closed circuit televisions for furnace grates
- Install two (2) sets of boiler platforms (interior to the building)

C. Balance of Plant/Facility Materials or Equipment

The components, equipment, and materials for the Refurbishment Project related to the balance of the plant/facility consist of the following:

- Replace two (2) 15kV interrupter switches
- Replace two (2)13.8kV/480V transformers
- Refurbish existing ID fan 4.16kV motor starters and provide to the Operator as spares

- Cleaning and reinsulation of non-segregated metal bus duct
- Reinsulation of 13.8kV switchgear
- Refurbish existing precipitator MCC to be provided to the Operator as spares
- Install one (1) uninterruptible power supply and AC instrument transformer
- Install one (1) DCS system and associated wiring for the boiler islands, RDF buildings, and water treatment building
- Install one (1) fire protection monitoring system
- Install one (1) fire protection system data logger
- Install one (1) fire protection system (FM200) for turbine generator cable room, DCS, and EWS rooms to replace existing Halon systems
- Install one (1) set of protective relays for main generator (i.e. Harlow panel)
- Install one (1) set of boiler laboratory instrumentation
- Install one (1) Sensidyne combustion gas detection system
- Refurbish four (4) drum magnets (overhaul only)
- Replace one (1) bulk acid storage tank
- Replace two (2) bucket elevators
- Install Manufacturing Building tipping floor cap, but no floor capping in storage building
- Refurbish boiler building elevator
- Install one (1) air compressor system for RDF buildings, including foundation/skid, utilities, MCC, local piping, air compressors with coolers, air dryers, receivers, tie-in to existing air system
- Install one (1) emergency egress from the boiler house control room. The new egress door will be equipped with a window and exiting to a new stairway leading to ground level

ATTACHMENT B
MWC Cost Comparison

B. MWC Cost Comparison

1989 Drawdown Schedule Line Item	Line Item Cost (1986 Dollars)	% of Total Construction Cost	Part of MWC Construction and Installation Cost (40 CFR 60.51(b))	% of Line Item Cost Attributable to MWC	Original MWC Cost (1986 Dollars)	Adjusted MWC Cost	Proposed Cost of MWC Work (2008 Dollars)
Notice to Proceed	$4,907,000	2.9%	YES	37%	$1,815,590		
Mobilization	$4,107,000	2.4%	YES	37%	$1,519,590		
Turbine Generator	$10,443,000	6.1%					
Geological Study Complete	$816,000	0.5%	YES	57%	$465,120		
Earthwork	$3,427,000	2.0%	YES	37%	$1,267,990		
Rebar	$816,000	0.5%	YES	57%	$465,120		
RDF Equipment	$6,836,000	4.0%	YES	100%	$6,836,000		$3,131,466
Boiler	$66,242,000	38.7%	YES	100%	$66,242,000		$94,363,973
BFW Pumps	$654,000	0.4%	YES	100%	$654,000		
Circ Water Pipe	$163,000	0.1%					
Structural Steel	$10,283,000	6.0%	YES	59%	$6,066,970		
Concrete	$9,466,000	5.5%	YES	57%	$5,395,620		
ESP	$3,883,000	2.3%					
Scrubber	$9,000,000	5.3%					
Transformer	$1,634,000	1.0%					
Condenser	$1,469,000	0.9%					
Deaerator	$816,000	0.5%					
Circ Water Pump	$327,000	0.2%					
Condensate Pump	$652,000	0.4%					
mineralizer	$816,000	0.5%					
oling Tower	$2,613,000	1.5%					
Switchgear	$1,796,000	1.0%	YES	15%	$269,400		
Diesel Generator	$816,000	0.5%					
Piping	$12,893,000	7.5%	YES	65%	$8,380,450		$144,975
Generator Buss	$816,000	0.5%					
Electrical	$11,103,000	6.5%	YES	57%	$6,328,710		$1,189,203
Stack	$1,615,000	0.9%					
Fire Water Pump	$652,000	0.4%					
Paving	$290,000	0.2%					
Retention	$2,000,000	1.2%	YES	37%	$740,000		
Total Original Cost		100.0%			**$106,446,560**		
					(1986 Dollars)		
Index Calculations							
ENR CCI Dec 1986		4295				**$150,165,240**	
ENR CCI Dec 1999		6059				**(1999 Dollars)**	
IHS-CERA PCCI Jan 2000		100				**$273,300,737**	
IHS-CERA PCCI Mar 2008		182				**(2008 Dollars)**	
Total Refurbishment Cost (See Attachment C)							**$98,829,618**
					Proposed Cost as % of Original		**36.2%**

ATTACHMENT C
Proposed MWC Refurbishment Cost Estimate

C. Proposed MWC Refurbishment Cost Estimate

MWC Refurbishment Cost Estimate	
Material Costs	
B&W Furnished Boiler & Combustion Components	
Boiler Superheater, generating bank, waterwalls, boiler inconel	32,185,000
Steam Drum Modifications	
Supply and Riser Tubes	
Furnace Roof	
Trolley Beam	
Enlarged Penthouse	
Superheater In/out Headers	
Buckstays	
Access Doors & View ports	
Lower Ring Header	
Gas Burners	
Overfire Air Fan	
Combustion Air Duct	
Subtotal B&W Materials	**32,185,000**
Design/ Builder Furnished Materials	
Corten Boiler Casing	194,812
Generating Bank	2,830,000
Economizer	1,480,000
Tubular Air Heater	1,570,000
Field Applied Inconel	802,165
Forced Draft Fan Refurb (dampers, bearings, motor dip, coupling, bal.)	380,000
Flue Gas Ductwork, Supports, Insulation/Lagging and Expansion Joints	1,113,160
Bottom Ash Diverter/Chutes	198,170
Switchgears, Transformers, and Motor Starters	940,000
DCS System	1,989,656
Auger Feed Conveyors (4)	2,062,710
Bottom Ash Conveyors (2)	1,650,168
Drum Rectifiers (4)	343,765
Process Piping	114,595
RDF Feeders/Chutes	412,542
Misc. Building Structural	229,190
Spare Parts	229,190
Design/Builder Furnished Materials Subtotal	**16,540,123**
Engineering	992,407
Profit and Overhead	1,490,265
Total Design/Builder Furnished Materials Cost	**19,022,795**
Erection Costs	
Boiler Erection, Direct Labor	11,630,247
Boiler Erection, Indirect	6,471,409
Boiler Erection Subs	5,958,940
Boiler Erection, Consumables	290,756
Equipment Rental (Demo Equip, Cranes, Forklifts, Manlifts, etc.)	6,794,338
Scrap Metal Revenues Credit	-91,676
Piping Insulation	85,946
Equip Touch Up and Painting	85,946
Piping Paint	51,568
Structural Steel Paint	217,731
BOP Supervision (Early Mobilization)	263,569
Manufacturers Consultants/O&M Vendor Manuals	114,595
Contractor Permitting	57,298
Disposal of Non-Processible & C & D debris (Labor and Equip)	57,298
Erection Costs Subtotal	**31,987,965**
Engineering	1,919,278
Profit and Overhead	2,882,116
Total Erection Costs	**36,789,359**
Boiler Total (Material & Labor)	**87,997,154**
Commercial Costs Not Included Above	
Project Management (3% of CC)	2,639,915
Acceptance Testing	268,750
Sales Tax (7% of 40% of CC)	2,463,920
Insurance (3.5% of CC)	3,079,900
Payment and Performance Bonds (0.75% of CC)	659,979
Design and Construction Oversight	1,720,000
Subtotal Commercial Cost	**10,832,464**
Total MWC Refurbishment Cost	**98,829,618**

ATTACHMENT D
Emissions Data for NCRRF Units, 2003-2007 and Summary Tables

2003 NCRRF Annual Emission Calculations, Unit 1

Emissions calculated from the 2003 annual stack test

	lb/MMBtu		ton/MMBtu	
Lead	1.25E-04		6.25E-08	
VOC	9.00E-03		4.50E-06	
Beryllium*	8.17E-08		4.09E-11	
Fluoride*	5.50E-04		2.75E-07	
Mercury	8.52E-06		4.26E-09	
	gr/dscf			lb/dscf
Particulates	3.50E-03			5.00E-07
	ng/dscm	g/dscm	g/dscf	
Dioxin/Furans	19.08	1.91E-08	5.39E-10	1.19E-12
	mg/dscm			
Cadmium	3.15E-03	3.15E-06	8.91E-08	1.96E-10
	ppmvd			
HCl	6.66	1.086E-02	3.07E-04	6.76E-07

Certified CEM calculated emissions

	ppmvd			
SO_2	24.4	6.49E-02	1.84E-03	4.04E-06
	lb/MMBtu	ton/MMBtu		
NOx	0.349	1.75E-04		
	ppmvd	g/dscm	g/dscf	lb/dscf
CO	99.4	7.01E-02	1.98E-03	4.36E-06

Pollutant Emissions lb/hr	Pollutant Emissions TPY	Pollutant Emissions lb/day
4.62E-02	0.20	1.11
3.33E+00	14.58	79.86
3.02E-05	1.32E-04	7.25E-04
2.03E-01	0.89	4.88
3.15E-03	0.01	0.08
3.44	14.15	77.52
8.15E-06	3.36E-05	1.84E-04
1.35E-03	5.55E-03	3.04E-02
4.64	19.12	104.79
27.76	114.34	626.49
129.04	565.19	3096.94
29.97	123.43	676.30

Variables

MMBtu/yr	hrs. of operation
3,238,922.63	8,237

Avg. gas flow rate (dscf/min): 114,501

* Tested every 5 years -2001 Stack test data (PSD FL-108C)

2003 NCRRF Annual Emission Calculations, Unit 2

Emissions calculated from the 2003 annual stack test

	lb/MMBtu		ton/MMBtu	
Lead	3.49E-04		1.75E-07	
VOC	9.50E-03		4.75E-06	
Beryllium*	7.80E-08		3.90E-11	
Fluoride*	6.29E-04		3.15E-07	
Mercury	1.08E-05		5.40E-09	
	gr/dscf			lb/cf
Particulates	1.06E-02			1.51E-06
	ng/dscm	g/dscm	g/dscf	
Dioxin/Furans	16.13	1.61E-08	4.56E-10	1.00E-12
	mg/dscm			
Cadmium	6.76E-03	6.76E-06	1.91E-07	4.21E-10
	ppmvd			
HCl	8.93	1.456E-02	4.12E-04	9.06E-07

Certified CEM calculated emissions

	ppmvd			
SO_2	23.7	6.30E-02	1.78E-03	3.92E-06
	lb/MMBtu	ton/MMBtu		
NOx	0.345	1.73E-04		
	ppmvd	g/dscm	g/dscf	lb/dscf
CO	78.7	9.13E-02	2.58E-03	5.68E-06

Pollutant Emissions lb/hr	Pollutant Emissions TPY	Pollutant Emissions lb/day
1.25E-01	0.55	3.01
3.42E+00	14.98	81.98
2.80E-05	1.23E-04	6.73E-04
2.26E-01	0.99	5.43
3.88E-03	0.02	0.09
11.00	44.82	245.57
7.30E-06	2.97E-05	1.63E-04
3.06E-03	1.25E-02	6.83E-02
6.58	26.82	146.96
28.52	116.16	636.51
124.05	543.32	2977.09
41.30	168.22	921.74

Variables

MMBtu/yr	hrs. of operation
3,149,870.70	8,147

Avg. gas flow rate (dscf/min): 121,090

* Tested every 5 years -2001 Stack test data (PSD FL-108C)

2004 NCRRF Annual Emission Calculations, Unit 1

Emissions calculated from the 2004 annual stack test

	lb/MMBtu		ton/MMBtu	
Lead	1.21E-04		6.05E-08	
VOC	8.60E-03		4.30E-06	
Beryllium*	8.17E-08		4.09E-11	
Fluoride*	5.50E-04		2.75E-07	
Mercury	1.40E-05		7.00E-09	
	gr/dscf			lb/dscf
Particulates	2.00E-03			2.86E-07
	ng/dscm	g/dscm	g/dscf	
Dioxin/Furans	23	2.30E-08	6.51E-10	1.43E-12
	mg/dscm			
Cadmium	2.00E-03	2.00E-06	5.66E-08	1.25E-10
	ppmvd			
HCl	17	2.771E-02	7.84E-04	1.73E-06

Certified CEM calculated emissions

	ppmvd			
SO_2	24.3	6.46E-02	1.83E-03	4.02E-06
	lb/MMBtu	ton/MMBtu		
NOx	0.356	1.78E-04		
	ppmvd	g/dscm	g/dscf	lb/dscf
CO	75.3	8.73E-02	2.47E-03	5.44E-06

Pollutant Emissions lb/hr	Pollutant Emissions TPY	Pollutant Emissions lb/day
4.26E-02	0.19	1.02
3.02E+00	13.25	72.59
2.87E-05	1.26E-04	6.90E-04
1.93E-01	0.85	4.64
4.92E-03	0.02	0.12
2.22	8.89	48.72
1.11E-05	4.46E-05	2.44E-04
9.69E-04	3.88E-03	2.12E-02
13.43	53.69	294.19
31.32	125.24	686.25
125.21	548.40	3004.94
42.32	169.24	927.36

Variables

MMBtu/yr	hrs. of operation
3,080,910.47	7,998

Avg. gas flow rate (dscf/min): 129,702

** Tested every 5 years -2001 Stack test data (PSD FL-108C)*

2004 NCRRF Annual Emission Calculations, Unit 2

Emissions calculated from the 2004 annual stack test

	lb/MMBtu		ton/MMBtu		Pollutant Emissions lb/hr	Pollutant Emissions TPY	Pollutant Emissions lb/day
Lead	1.55E-04		7.75E-08		5.53E-02	0.24	1.33
VOC	7.60E-03		3.80E-03		2.71E+00	11.86	65.08
Beryllium*	7.80E-08		3.90E-11		2.78E-05	1.22E-04	6.68E-04
Fluoride*	6.29E-04		3.15E-07		2.24E-01	0.98	5.30
Mercury	7.00E-05		3.50E-09		2.50E-03	0.01	0.06
	gr/dscf			lb/cf			
Particulates	2.00E-03			2.86E-07	2.21	8.98	49.22
	ng/dscm	gr/dscm	g/dscf				
Dioxin/Furans	22	2.20E-08	8.23E-13	1.37E-12	1.06E-05	4.31E-05	2.36E-04
	mg/dscm						
Cadmium	2.10E-03	2.10E-06	5.94E-08	1.31E-10	1.01E-03	4.11E-03	2.25E-02
	ppmvd						
HCl	20	8.20E-02	9.23E-04	2.03E-06	15.70	63.82	349.68

Certified CEM calculated emissions

	ppmvd						
SO_2	24.1	6.41E-02	1.81E-03	3.99E-06	30.88	125.49	687.63
	lb/MMBtu	ton/MMBtu					
NO_x	0.337	1.69E-04			127.37	557.87	3058.85
	ppmvd	gr/dscm	g/dscf	lb/dscf			
CO	36.7	7.74E-02	2.19E-03	4.82E-06	37.26	151.46	829.93

Variables

MMBtu/hr	hrs. of operation
3,125,347.54	8,129

Avg. gas flow rate (dscf/min): 128,930

* Tested every 5 years -2001 Stack test data (PSD FL-108C)

2005 NCRRF Annual Emission Calculations, Unit 1

Emissions calculated from the 2005 annual stack test

					Pollutant Emissions lb/hr	Pollutant Emissions TPY	Pollutant Emissions lb/day
	lb/MMBtu		ton/MMBtu				
Lead	3.80E-04		1.90E-07		1.25E-01	0.55	3.00
VOC	5.00E-04		2.50E-07		1.64E-01	0.72	3.94
Beryllium*	8.17E-08		4.09E-11		2.69E-05	1.18E-04	6.44E-04
Fluoride*	5.50E-04		2.75E-07		1.81E-01	0.79	4.34
Mercury	8.40E-06		3.20E-09		2.10E-03	0.01	0.05
	gr/dscf			lb/dscf			
Particulates	2.00E-03			2.86E-07	2.33	8.52	46.67
	ng/dscm	g/dscm	g/dscf				
Dioxin/Furans	19	1.90E-08	5.38E-10	1.18E-12	9.65E-06	3.53E-05	1.93E-04
	mg/dscm						
Cadmium	7.00E-03	7.00E-06	1.98E-07	4.36E-10	3.56E-03	1.30E-02	7.12E-02
	ppmvd						
HCl	5	8.150E-03	2.31E-04	5.07E-07	4.14	15.13	82.89

Certified CEM calculated emissions

	ppmvd						
SO_2	22.4	5.96E-02	1.69E-03	3.71E-06	30.27	110.59	606.00
	lb/MMBtu	ton/MMBtu					
NOx	0.313	1.57E-04			102.88	450.59	2469.00
	ppmvd	g/dscm	g/dscf	lb/dscf			
CO	61.5	9.45E-02	2.68E-03	5.89E-06	48.04	175.48	961.51

Variables

MMBtu/yr	hrs. of operation
2,879,189.00	7,306

Avg. gas flow rate (dscf/min): 136,017

* Tested every 5 years -2001 Stack test data (PSD FL-108C)

2005 NCRRF Annual Emission Calculations, Unit 2

Emissions calculated from the 2005 annual stack test

	lb/MMBtu		ton/MMBtu		Pollutant Emissions lb/hr	Pollutant Emissions TPY	Pollutant Emissions lb/day
Lead	3.20E-04		1.60E-07		1.07E-01	0.47	2.56
VOC	4.00E-04		2.00E-07		1.33E-01	0.58	3.20
Beryllium*	7.80E-08		3.90E-11		2.60E-05	1.14E-04	6.24E-04
Fluoride*	6.29E-04		3.15E-07		2.10E-01	0.92	5.03
Mercury	8.00E-06		4.00E-09		2.67E-03	0.01	0.06
	gr/dscf			lb/cf			
Particulates	2.00E-03			2.86E-07	2.17	8.02	43.95
	ng/dscm	g/dscm	g/dscf				
Dioxin/Furans	12	1.20E-08	3.40E-10	7.47E-13	5.68E-06	2.10E-05	1.15E-04
	mg/dscm						
Cadmium	1.05E-04	1.05E-07	2.97E-09	6.54E-12	4.97E-05	1.84E-04	1.01E-03
	ppmvd						
HCl	2	3.260E-03	9.23E-05	2.03E-07	1.54	5.70	31.22

Certified CEM calculated emissions

	ppmvd						
SO_2	22.3	5.93E-02	1.68E-03	3.69E-06	28.06	103.69	568.14
	lb/MMBtu	ton/MMBtu					
NOx	0.337	1.69E-04			112.34	492.07	2696.25
	ppmvd	g/dscm	g/dscf	lb/dscf			
CO	54.2	6.29E-02	1.78E-03	3.91E-06	29.74	109.90	602.18

Variables

MMBtu/yr	hrs. of operation
2,920,273.56	7,391

Avg. gas flow rate (dscf/min): 126,819

* Tested every 5 years -2001 Stack test data (PSD FL-108C)

2006 NCRRF Annual Emission Calculations, Unit 1

Emissions calculated from the 2006 annual stack test

	lb/MMBtu		ton/MMBtu	
Lead	1.30E-04		6.50E-08	
VOC	1.10E-03		5.50E-07	
Beryllium*	8.50E-06		4.25E-11	
Fluoride*	3.70E-04		1.85E-07	
Mercury	4.40E-06		2.20E-09	
	gr/dscf			lb/dscf
Particulates	2.00E-03			2.86E-07
	ng/dscm	g/dscm	g/dscf	
Dioxin/Furans	7	7.00E-09	1.98E-10	4.36E-13
	mg/dscm			
Cadmium	1.80E-02	1.80E-05	5.09E-07	1.12E-09
	ppmvd			
HCl	17.1	2.787E-02	7.89E-04	1.74E-06

Certified CEM calculated emissions

	ppmvd			
SO_2	24.6	6.54E-02	1.85E-03	4.07E-06
	lb/MMBtu	ton/MMBtu		
NOx	0.348	1.74E-04		
	ppmvd	g/dscm	g/dscf	lb/dscf
CO	65.8	7.63E-02	2.16E-03	4.75E-06

Variables

MMBtu/yr	hrs. of operation
3,200,707.1	8,249

Avg. gas flow rate (dscf/min): 123,180

* Tested every 5 years -2006 Stack test data (PSD FL-108C)

Pollutant Emissions lb/hr	Pollutant Emissions TPY	Pollutant Emissions lb/day
4.75E-02	0.21	1.14
4.02E-01	1.76	9.65
3.11E-05	1.36E-04	7.45E-04
1.35E-01	0.59	3.24
1.61E-03	0.01	0.04
2.11	8.71	47.72
3.22E-06	1.33E-05	7.28E-05
8.28E-03	3.42E-02	1.87E-01
12.83	52.90	289.86
30.11	124.19	680.50
127.15	556.92	3051.63
35.12	144.88	793.77

2006 NCRRF Annual Emission Calculations, Unit 2

Emissions calculated from the 2006 annual stack test

	lb/MMBtu		ton/MMBtu		Pollutant Emissions lb/hr	Pollutant Emissions TPY	Pollutant Emissions lb/day
Lead	2.30E-04		1.15E-07		8.35E-02	0.37	2.00
VOC	6.00E-04		3.00E-07		2.18E-01	0.95	5.23
Beryllium*	8.10E-08		4.05E-11		2.94E-05	1.29E-04	7.06E-04
Fluoride*	1.40E-04		7.00E-08		5.08E-02	0.22	1.22
Mercury	7.20E-06		3.60E-09		2.61E-03	0.01	0.06
	gr/dscf			lb/cf			
Particulates	2.00E-03			2.86E-07	2.25	9.13	50.05
	ng/dscm	g/dscm	g/dscf				
Dioxin/Furans	5	5.00E-09	1.42E-10	3.11E-13	2.45E-06	9.95E-06	5.45E-05
	mg/dscm						
Cadmium	3.00E-02	3.00E-05	8.49E-07	1.87E-09	1.47E-02	5.97E-02	3.27E-01
	ppmvd						
HCl	17.4	2.836E-02	8.03E-04	1.77E-06	13.88	56.46	309.34

Certified CEM calculated emissions

	ppmvd						
SO_2	24.6	6.54E-02	1.85E-03	4.07E-06	32.03	130.25	713.71
	lb/MMBtu	ton/MMBtu					
NOx	0.355	1.78E-04			128.87	564.43	3092.76
	ppmvd	g/dscm	g/dscf	lb/dscf			
CO	65.1	7.55E-02	2.14E-03	4.70E-06	38.97	150.32	823.65

Variables

MMBtu/yr	hrs. of operation
3,179,881.0	8,132

Avg. gas flow rate (dscf/min in): 131,051

* Tested every 5 years -2006 Stack test data (PSD FL-108C)

2007 NCRRF Annual Emission Calculations, Unit 1

Emissions calculated from the 2007 annual stack test

	lb/MMBtu		ton/MMBtu		Pollutant Emissions lb/hr	Pollutant Emissions TPY	Pollutant Emissions lb/day
Lead	1.30E-04		6.50E-08		4.74E-02	0.21	1.14
VOC	4.00E-04		2.00E-07		1.46E-01	0.64	3.50
Beryllium*	8.50E-08		4.25E-11		3.10E-05	1.36E-04	7.43E-04
Fluoride*	3.70E-04		1.85E-07		1.35E-01	0.59	3.24
Mercury	5.90E-08		2.95E-09		2.15E-03	0.01	0.05
	gr/dscf			lb/dscf			
Particulates	2.00E-03			2.86E-07	2.10	8.69	47.62
	ng/dscm	g/dscm	g/dscf				
Dioxin/Furans	8	6.00E-09	1.70E-10	3.74E-13	2.74E-06	1.14E-05	6.23E-05
	mg/dscm						
Cadmium	5.00E-03	5.00E-06	1.42E-07	3.11E-10	2.29E-03	9.47E-03	5.19E-02
	ppmvd						
HCl	11.52	1.87BE-02	5.31E-04	1.17E-06	8.59	35.56	194.83

Certified CEM calculated emissions

	ppmvd						
SO_2	25.5	6.78E-02	1.92E-03	4.22E-06	31.02	128.44	703.79
	lb/MMBtu	ton/MMBtu					
NOx	0.363	1.82E-04			132.27	579.32	3174.37
	ppmvd	g/dscm	g/dscf	lb/dscf			
CO	71.1	6.25E-02	2.33E-03	5.13E-06	37.72	156.18	855.75

Variables

MMBtu/yr	hrs. of operation
3,191,857.6	8,280

Avg. gas flow rate (dscf/min): 122,440

* Tested every 5 years -2006 Stack test data (PSD FL-108C)

2007 NCRRF Annual Emission Calculations, Unit 2

Emissions calculated from the 2007 annual stack test

	lb/MMBtu		ton/MMBtu	
Lead	3.50E-04		1.75E-07	
VOC	3.00E-04		1.50E-07	
Beryllium*	8.10E-08		4.05E-11	
Fluoride*	1.40E-04		7.00E-08	
Mercury	3.60E-06		1.80E-09	
	gr/dscf			lb/scf
Particulates	3.00E-03			4.29E-07
	ng/dscm	g/dscm	g/dscf	
Dioxin/Furans	7	7.00E-09	1.98E-10	4.36E-13
	mg/dscm			
Cadmium	9.00E-03	9.00E-06	2.55E-07	5.60E-10
	ppmvd			
HCl	9.21	1.501E-02	4.25E-04	9.35E-07

Certified CEM calculated emissions

	ppmvd			
SO_2	25.4	6.76E-02	1.91E-03	4.21E-06
	lb/MMBtu	ton/MMBtu		
NOx	0.340	1.70E-04		
	ppmvd	g/dscm	g/dscf	lb/dscf
CO	90.7	1.05E-01	2.98E-03	6.55E-06

Pollutant Emissions lb/hr	Pollutant Emissions TPY	Pollutant Emissions lb/day
1.26E-01	0.55	3.02
1.08E-01	0.47	2.59
2.91E-05	1.28E-04	6.99E-04
5.04E-02	0.22	1.21
1.29E-03	0.01	0.03
3.48	14.28	78.27
3.54E-06	1.45E-05	7.96E-05
4.55E-03	1.87E-02	1.02E-01
7.58	31.15	170.70
34.12	140.21	768.28
122.29	535.61	2934.87
53.14	218.33	1196.35

Variables

MMBtu/yr	hrs. of operation
3,150,674.5	8,218

Avg. gas flow rate (dscf/min): 135,196

* Tested every 5 years -2006 Stack test data (PSD FL-108C)

Table 1: Actual Annual Emissions on a per Boiler Basis (Tons/Year)

TABLE 1
Solid Waste Authority of Palm Beach County
North County Resource Recovery Facility
Actual Annual Emissions on a per Boiler Basis (Tons/Year)

Pollutant	2003			2004			2005			2006			2007		
	Unit 1	Unit 2	Total TPY	Unit 1	Unit 2	Total TPY	Unit 1	Unit 2	Total TPY	Unit 1	Unit 2	Total TPY	Unit 1	Unit 2	Total TPY
Particulates, PM	14.2	44.8	59.0	8.9	9.0	17.9	8.5	8.0	16.5	8.7	9.1	17.8	8.7	14.3	23.0
PM10/MWC Metals	14.2	44.8	59.0	8.9	9.0	17.9	8.5	8.0	16.5	8.7	9.1	17.8	8.7	14.3	23.0
Nitrogen Oxides, NOx	669	609	1278	633	654	1287	509	611	1120	599	590	1189	659	694	1353
Carbon Monoxide, CO	123	168	291	169	151	320	175	110	285	145	150	295	156	218	374
Lead, Pb	0.20	0.55	0.75	0.19	0.24	0.43	0.55	0.47	1.02	0.21	0.37	0.58	0.21	0.55	0.76
Mercury, Hg	0.01	0.02	0.03	0.02	0.01	0.03	0.01	0.01	0.02	0.01	0.01	0.02	0.01	0.01	0.02
Beryllium, Be	1.32E-04	1.23E-04	2.55E-04	1.26E-04	1.22E-04	2.48E-04	1.18E-04	1.14E-04	2.32E-04	1.36E-04	1.29E-04	2.65E-04	1.36E-04	1.28E-04	2.64E-04
Hydrogen Fluoride, HF	0.89	0.99	1.88	0.85	0.98	1.83	0.79	0.92	1.71	0.59	0.22	0.81	0.59	0.22	0.81
Volatile Organic Compds,VOC	14.6	15.0	29.6	13.3	11.9	25.2	0.7	0.6	1.3	1.8	1.0	2.8	0.6	0.5	1.1
Sulfur Dioxide, SO2	114.3	116.2	230.5	125.2	125.5	250.7	110.6	103.7	214.3	124.2	130.3	254.5	128.4	140.2	268.6
Hydrogen Chloride, HCl	19.1	26.8	45.9	53.7	63.8	117.5	15.1	5.7	20.8	52.9	56.5	109.4	35.6	31.2	66.8
MWC Organics	3.36E-05	2.97E-05	6.33E-05	4.46E-05	4.31E-05	8.77E-05	3.53E-05	2.10E-05	5.63E-05	1.33E-05	9.95E-06	2.33E-05	1.14E-05	1.45E-05	2.59E-05
Cadmium, Cd	0.0056	0.0125	0.0181	0.0039	0.0041	0.0080	0.0130	0.0002	0.0132	0.0342	0.0597	0.0939	0.0095	0.0187	0.0282
MWC Acid Gas (SO2+HCl)	133	143	276	179	189	368	126	109	235	177	187	364	164	171	335

Annual Emissions obtained from five years (2003-2007) North County Resource Recovery Facility Annual Emissions Report except for NOx where a refined approach consistent with that used to calculate SOx and CO annual emissions was used.

Table 2: Comparison of Baseline and Projected Actual Emissions

TABLE 2
Solid Waste Authority of Palm Beach County
North County Resource Recovery Facility
Comparison in Tons per Year (TPY) of
Current Permit Annual Equivalent, Baseline Actual Emissions (Two Year Average) and Projected Actual Emissions

Pollutant	Current Permit Equivalent (TPY) (1)	PSD SER Net Emission Increase TPY	Baseline Actual Emissons (TPY) (2)				Projected Actual Emissions (TPY) (3)			
			Average of 2003/04	Average of 2004/05	Average of 2005/06	Average of 2006/07	2003/04	2004/05	2005/06	2006/07
Particulates, PM	143	25	38	17	17	20	62	41	41	44
PM10/MWC Metals	143	15	38	17	17	20	52	31	31	34
Nitrogen Oxides, NOx	2495	40	1,282	1,204	1,155	1,271	1,321	1,243	1,194	1,310
Carbon Monoxide, CO	1207	100	306	303	290	335	405	402	389	434
Lead, Pb	2.3	0.60	0.590	0.725	0.800	0.670	1.09	1.23	1.30	1.17
Mercury, Hg	0.364	0.1	0.030	0.025	0.020	0.020	0.12	0.12	0.11	0.11
Beryllium, Be	<1	Not PSD	0.0003	0.0002	0.0002	0.0003	N/A	N/A	N/A	N/A
Hydrogen Fluoride, HF	12	3	1.86	1.77	1.26	0.810	4.36	4.27	3.76	3.31
Volatile Organic Compounds, VOC	58	40	27	13	2.05	1.95	66	52	41	41
Sulfur Dioxide, SO2	401	40	241	233	234	262	280	272	273	301
Hydrogen Chloride, HCl	246	N/A	82	69	65	88	82	69	65	88
MWC Organics	<1	3.50E-06	7.55E-05	7.20E-05	3.98E-05	2.46E-05	7.89E-05	7.54E-05	4.32E-05	2.80E-05
Cadmium, Cd	<1	Not PSD	0.013	0.011	0.054	0.061	N/A	N/A	N/A	N/A
MWC Acid Gas (as SO2+HCl)	647	40	322	302	300	350	361	341	339	389

Note :

1. The "Current Permit Equivalent (TPY)" is taken from the facility's existing Title V permit (0990234-010-AV) Table 1-1, for 1 boiler, multiplied by 2. For MWC Organics, Beryllium, and Cadmium, the equivalent annual emission per boiler is presented as <1 ton per year.

2 Annual Emissions obtained from five years (2003-2007) North County Resource Recovery Facility Annual Emissions Report, except for NOx. The NOx emissions were calculated using the average of the NOx concentrations recorded by the CEMS data and the average flowrate to be consistent with the approach used for both SOx and CO.

3. Projected Actual Emissions is the baseline actual emission rate (average of two boilers) during the specified 24 month period, plus a value slightly less than the Significant Emission Rate (SER).

MALCOLM PIRNIE

INDEPENDENT ENVIRONMENTAL ENGINEERS, SCIENTISTS AND CONSULTANTS

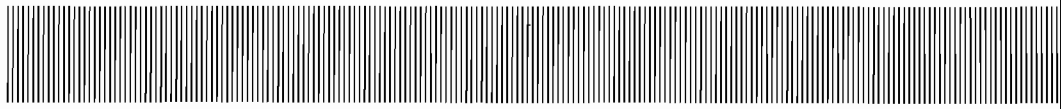
B

APPENDIX

Solid Waste Authority of Palm Beach County
North County Resource Recovery Facility
Application for Air Construction Permit

Section B

Air Construction Permit Application Form



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MALCOLM PIRNIE

Department of Environmental Protection

Division of Air Resource Management

APPLICATION FOR AIR PERMIT - LONG FORM

I. APPLICATION INFORMATION

Air Construction Permit – Use this form to apply for an air construction permit:

- For any required purpose at a facility operating under a federally enforceable state air operation permit (FESOP) or Title V air operation permit;
- For a proposed project subject to prevention of significant deterioration (PSD) review, nonattainment new source review, or maximum achievable control technology (MACT);
- To assume a restriction on the potential emissions of one or more pollutants to escape a requirement such as PSD review, nonattainment new source review, MACT, or Title V; or
- To establish, revise, or renew a plantwide applicability limit (PAL).

Air Operation Permit – Use this form to apply for:

- An initial federally enforceable state air operation permit (FESOP); or
- An initial, revised, or renewal Title V air operation permit.

To ensure accuracy, please see form instructions.

Identification of Facility

1. Facility Owner/Company Name: **Solid Waste Authority of Palm Beach County**	
2. Site Name: **North County Resource Recovery Facility (NCRRF)**	
3. Facility Identification Number: **0990234**	
4. Facility Location... Street Address or Other Locator: **7501 North Jog Road** City: **West Palm Beach** County: **Palm Beach** Zip Code: **33412**	
5. Relocatable Facility? ☐ Yes ☑ No	6. Existing Title V Permitted Facility? ☑ Yes ☐ No

Application Contact

1. Application Contact Name: **Christopher Tilman, P.E.**
2. Application Contact Mailing Address... Organization/Firm: **Malcolm Pirnie, Inc.** Street Address: **4315 Metro Parkway, Suite 520** City: **Fort Myers** State: **Florida** Zip Code: **33916**
3. Application Contact Telephone Numbers... Telephone: **(239) 332 - 1300** ext. Fax: **(239) 332 - 1789**
4. Application Contact E-mail Address: **ctilman@pirnie.com**

Application Processing Information (DEP Use)

1. Date of Receipt of Application:	3. PSD Number (if applicable):
2. Project Number(s):	4. Siting Number (if applicable):

APPLICATION INFORMATION

Purpose of Application

This application for air permit is being submitted to obtain: (Check one)

Air Construction Permit

☑ Air construction permit.

☐ Air construction permit to establish, revise, or renew a plantwide applicability limit (PAL).

☐ Air construction permit to establish, revise, or renew a plantwide applicability limit (PAL), and separate air construction permit to authorize construction or modification of one or more emissions units covered by the PAL.

Air Operation Permit

☐ Initial Title V air operation permit.

☐ Title V air operation permit revision.

☐ Title V air operation permit renewal.

☐ Initial federally enforceable state air operation permit (FESOP) where professional engineer (PE) certification is required.

☐ Initial federally enforceable state air operation permit (FESOP) where professional engineer (PE) certification is not required.

Air Construction Permit and Revised/Renewal Title V Air Operation Permit (Concurrent Processing)

☐ Air construction permit and Title V permit revision, incorporating the proposed project.

☐ Air construction permit and Title V permit renewal, incorporating the proposed project.

Note: By checking one of the above two boxes, you, the applicant, are requesting concurrent processing pursuant to Rule 62-213.405, F.A.C. In such case, you must also check the following box:

☐ I hereby request that the department waive the processing time requirements of the air construction permit to accommodate the processing time frames of the Title V air operation permit.

Application Comment

This is an Air Construction Permit application for the Solid Waste Authority of Palm Beach County's (Authority) NCRRF Refurbishment Project (Project). The Facility receives municipal solid waste (MSW) which is processed into refuse-derived fuel (RDF). The RDF is combusted in the Facility's two municipal waste combustor units which create steam for the generation of electricity.

This Project includes installation of several new air pollution control systems at the Facility, as well as maintenance, repair, and the in-kind replacement in-kind of other components of the Facility. The Project will not change the basic design parameters of the Facility's municipal waste combustor units.

Scope of Application

Emissions Unit ID Number	Description of Emissions Unit	Air Permit Type	Air Permit Processing Fee
1	Municipal Waste Combustor (Boiler) #1	AC1B	$5,000.00
2	Municipal Waste Combustor (Boiler) #2	AC1B	
	Carbon Silo (Insignificant Emission Source)	AC1F	

Application Processing Fee

Check one: [√] Attached - Amount: $ 5,000 [ ] Not Applicable

Owner/Authorized Representative Statement

Complete if applying for an air construction permit or an initial FESOP.

1. Owner/Authorized Representative Name :
   Mark Hammond, Executive Director
2. Owner/Authorized Representative Mailing Address...
   Organization/Firm: **Solid Waste Authority of Palm Beach County**
   Street Address: **7501 North Jog Road**
   City: **West Palm Beach** State: **FL** Zip Code: **33412**
3. Owner/Authorized Representative Telephone Numbers...
   Telephone: **(561) 640 - 4000** ext. Fax: **(561) 640 - 3400**
4. Owner/Authorized Representative E-mail Address: **mhammond@swa.org**
5. Owner/Authorized Representative Statement:

   I, the undersigned, am the owner or authorized representative of the corporation, partnership, or other legal entity submitting this air permit application. To the best of my knowledge, the statements made in this application are true, accurate and complete, and any estimates of emissions reported in this application are based upon reasonable techniques for calculating emissions. I understand that a permit, if granted by the department, cannot be transferred without authorization from the department.

   Mark M — 3/5/09

   Signature Date

Application Responsible Official Certification

Complete if applying for an initial, revised, or renewal Title V air operation permit or concurrent processing of an air construction permit and revised or renewal Title V air operation permit. If there are multiple responsible officials, the "application responsible official" need not be the "primary responsible official."

1. Application Responsible Official Name:
   Mark Hammond, Executive Director

2. Application Responsible Official Qualification (Check one or more of the following options, as applicable):

   ☐ For a corporation, the president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation, or a duly authorized representative of such person if the representative is responsible for the overall operation of one or more manufacturing, production, or operating facilities applying for or subject to a permit under Chapter 62-213, F.A.C.

   ☐ For a partnership or sole proprietorship, a general partner or the proprietor, respectively.

   ☑ For a municipality, county, state, federal, or other public agency, either a principal executive officer or ranking elected official.

   ☐ The designated representative at an Acid Rain source, CAIR source, or Hg Budget source.

3. Application Responsible Official Mailing Address...
   Organization/Firm: **Mark Hammond, Executive Director**
   Street Address: **Solid Waste Authority of Palm Beach County**
   City: **7501 North Jog Road** State: **FL** Zip Code: **33412**

4. Application Responsible Official Telephone Numbers...
   Telephone: **(561) 640 - 4000** ext. Fax: **(561) 640 - 3400**

5. Application Responsible Official E-mail Address: **mhammond@swa.org**

6. Application Responsible Official Certification:

   I, the undersigned, am a responsible official of the Title V source addressed in this air permit application. I hereby certify, based on information and belief formed after reasonable inquiry, that the statements made in this application are true, accurate and complete and that, to the best of my knowledge, any estimates of emissions reported in this application are based upon reasonable techniques for calculating emissions. The air pollutant emissions units and air pollution control equipment described in this application will be operated and maintained so as to comply with all applicable standards for control of air pollutant emissions found in the statutes of the State of Florida and rules of the Department of Environmental Protection and revisions thereof and all other applicable requirements identified in this application to which the Title V source is subject. I understand that a permit, if granted by the department, cannot be transferred without authorization from the department, and I will promptly notify the department upon sale or legal transfer of the facility or any permitted emissions unit. Finally, I certify that the facility and each emissions unit are in compliance with all applicable requirements to which they are subject, except as identified in compliance plan(s) submitted with this application.

   Mark H — 3/5/09

   Signature Date

Professional Engineer Certification

1. Professional Engineer Name: **Christopher Tilman**
   Registration Number: **61903**
2. Professional Engineer Mailing Address...
   Organization/Firm: **Malcolm Pirnie, Inc.**
   Street Address: **4315 Metro Parkway, Suite 520**
   City: **Fort Myers** State: **Florida** Zip Code: **33916**
3. Professional Engineer Telephone Numbers...
   Telephone: **(239) 332 - 1300** ext. Fax: **(239) 332 - 1789**
4. Professional Engineer E-mail Address: **ctilman@pirnie.com**
5. Professional Engineer Statement:

I, the undersigned, hereby certify, except as particularly noted herein, that:*

(1) To the best of my knowledge, there is reasonable assurance that the air pollutant emissions unit(s) and the air pollution control equipment described in this application for air permit, when properly operated and maintained, will comply with all applicable standards for control of air pollutant emissions found in the Florida Statutes and rules of the Department of Environmental Protection; and

(2) To the best of my knowledge, any emission estimates reported or relied on in this application are true, accurate, and complete and are either based upon reasonable techniques available for calculating emissions or, for emission estimates of hazardous air pollutants not regulated for an emissions unit addressed in this application, based solely upon the materials, information and calculations submitted with this application.

(3) If the purpose of this application is to obtain a Title V air operation permit (check here ☐, if so), I further certify that each emissions unit described in this application for air permit, when properly operated and maintained, will comply with the applicable requirements identified in this application to which the unit is subject, except those emissions units for which a compliance plan and schedule is submitted with this application.

(4) If the purpose of this application is to obtain an air construction permit (check here ☑, if so) or concurrently process and obtain an air construction permit and a Title V air operation permit revision or renewal for one or more proposed new or modified emissions units (check here ☐, if so), I further certify that the engineering features of each such emissions unit described in this application have been designed or examined by me or individuals under my direct supervision and found to be in conformity with sound engineering principles applicable to the control of emissions of the air pollutants characterized in this application.

(5) If the purpose of this application is to obtain an initial air operation permit or operation permit revision or renewal for one or more newly constructed or modified emissions units (check here , if so), I further certify that, with the exception of any changes detailed as part of this application, each such emissions unit has been constructed or modified in substantial accordance with the information given in the corresponding application for air construction permit and with all provisions contained in such permit.

Signature 3-2-09
Date

(seal)

II. FACILITY INFORMATION

A. GENERAL FACILITY INFORMATION

Facility Location and Type

1. Facility UTM Coordinates... Zone **17** East (km) **585.82** North (km) **2960.474**		2. Facility Latitude/Longitude... Latitude (DD/MM/SS) **26^0 45' 53" N** Longitude (DD/MM/SS) **80^0 08' 12" W**	
3. Governmental Facility Code: **(3) County**	4. Facility Status Code: **(A) Active**	5. Facility Major Group SIC Code: **(49) Electric, Gas and Sanitary Services**	6. Facility SIC(s): **Primary: 4953**
7. Facility Comment :			

Facility Contact

1. Facility Contact Name: **Mark Hammond, Executive Director**
2. Facility Contact Mailing Address... Organization/Firm: **Solid Waste Authority of Palm Beach County** Street Address: **7501 North Jog Road** City: **West Palm Beach** State: **FL** Zip Code: **33412**
3. Facility Contact Telephone Numbers: Telephone: **(561) 640 - 4000** ext. Fax: **(561) 640 - 3400**
4. Facility Contact E-mail Address: **mhammond@swa.org**

Facility Primary Responsible Official

Complete if an "application responsible official" is identified in Section I that is not the facility "primary responsible official."

1. Facility Primary Responsible Official Name: **Mark Hammond, Executive Director**
2. Facility Primary Responsible Official Mailing Address... Organization/Firm: **Solid Waste Authority of Palm Beach County** Street Address: **7501 North Jog Road** City: **West Palm Beach** State: **FL** Zip Code: **33412**
3. Facility Primary Responsible Official Telephone Numbers... Telephone: **(561) 640 - 4000** ext. Fax: **(561) 640 - 4000**
4. Facility Primary Responsible Official E-mail Address: **mhammond@swa.org**

FACILITY INFORMATION

Facility Regulatory Classifications

Check all that would apply *following* completion of all projects and implementation of all other changes proposed in this application for air permit. Refer to instructions to distinguish between a "major source" and a "synthetic minor source."

1. ☐ Small Business Stationary Source	☐ Unknown
2. ☐ Synthetic Non-Title V Source	
3. ☑ Title V Source	
4. ☑ Major Source of Air Pollutants, Other than Hazardous Air Pollutants (HAPs)	
5. ☐ Synthetic Minor Source of Air Pollutants, Other than HAPs	
6. ☑ Major Source of Hazardous Air Pollutants (HAPs)	
7. ☐ Synthetic Minor Source of HAPs	
8. ☐ One or More Emissions Units Subject to NSPS (40 CFR Part 60)	
9. ☑ One or More Emissions Units Subject to Emission Guidelines (40 CFR Part 60)	
10. ☐ One or More Emissions Units Subject to NESHAP (40 CFR Part 61 or Part 63) .	
11. ☐ Title V Source Solely by EPA Designation (40 CFR 70.3(a)(5))	
12. Facility Regulatory Classifications Comment: **The selected classifications apply to the NCRRF municipal waste combustor units and the upgrade to the Facility's air pollution control systems. Emissions are limited by Permit PSD-FL-108A.**	

FACILITY INFORMATION

List of Pollutants Emitted by Facility

1. Pollutant Emitted	2. Pollutant Classification	3. Emissions Cap [Y or N]
PM10	(A) Major Pollutant	N
NO_X	(A) Major Pollutant	N
CO	(A) Major Pollutant	N
PM	(A) Major Pollutant	N
SO_2	(A) Major Pollutant	N
H114	(B) Facility-regulated pollutant, not major or synthetic minor	N
H027	(B) Facility-regulated pollutant, not major or synthetic minor	N
H021	(B) Facility-regulated pollutant, not major or synthetic minor	N
D/F	(B) Facility-regulated pollutant, not major or synthetic minor	N
H106	(A) Major Pollutant	N
FL	(B) Facility-regulated pollutant, not major or synthetic minor	N
PB	(B) Facility-regulated pollutant, not major or synthetic minor	N
VOC	(B) Facility-regulated pollutant, not major or synthetic minor	N
PM/MWC Metals	(A) Major Pollutant	N
SO_2/ H106	(A) Major Pollutant	N

B. EMISSIONS CAPS

Facility-Wide or Multi-Unit Emissions Caps

1. Pollutant Subject to Emissions Cap	2. Facility-Wide Cap [Y or N]? (all units)	3. Emissions Unit ID's Under Cap (if not all units)	4. Hourly Cap (lb/hr)	5. Annual Cap (ton/yr)	6. Basis for Emissions Cap

7. Facility-Wide or Multi-Unit Emissions Cap Comment:

Not Applicable

C. FACILITY ADDITIONAL INFORMATION

Additional Requirements for All Applications, Except as Otherwise Stated

1. Facility Plot Plan: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   [√] Attached, Document ID: **Section C** [ ] Previously Submitted, Date:_____
2. Process Flow Diagram(s): (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   [√] Attached, Document ID: **Section C** [ ] Previously Submitted, Date:_____
3. Precautions to Prevent Emissions of Unconfined Particulate Matter: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   [√] Attached, Document ID: **Section I** [ ] Previously Submitted, Date:_____

Additional Requirements for Air Construction Permit Applications

1. Area Map Showing Facility Location:
   [ ] Attached, Document ID:_____ [√] Not Applicable (existing permitted facility)
2. Description of Proposed Construction, Modification, or Plantwide Applicability Limit (PAL):
   [√] Attached, Document ID: **Sections A & D**
3. Rule Applicability Analysis:
   [√] Attached, Document ID: **Section H**
4. List of Exempt Emissions Units:
   [ ] Attached, Document ID:_____ [√] Not Applicable (no exempt units at facility)
5. Fugitive Emissions Identification:
   [ ] Attached, Document ID:_____ [√] Not Applicable
6. Air Quality Analysis (Rule 62-212.400(7), F.A.C.):
   [ ] Attached, Document ID:_____ [√] Not Applicable
7. Source Impact Analysis (Rule 62-212.400(5), F.A.C.):
   [ ] Attached, Document ID:_____ [√] Not Applicable
8. Air Quality Impact since 1977 (Rule 62-212.400(4)(e), F.A.C.):
   [ ] Attached, Document ID:_____ [√] Not Applicable
9. Additional Impact Analyses (Rules 62-212.400(8) and 62-212.500(4)(e), F.A.C.):
   [ ] Attached, Document ID:_____ [√] Not Applicable
10. Alternative Analysis Requirement (Rule 62-212.500(4)(g), F.A.C.):
    [ ] Attached, Document ID:_____ [√] Not Applicable

C. FACILITY ADDITIONAL INFORMATION (CONTINUED)

Additional Requirements for FESOP Applications

1. List of Exempt Emissions Units:
   ☐ Attached, Document ID:_____ ☑ Not Applicable (no exempt units at facility)

Additional Requirements for Title V Air Operation Permit Applications

1. List of Insignificant Activities: (Required for initial/renewal applications only)
   ☐ Attached, Document ID:_____ ☑ Not Applicable (revision application)

2. Identification of Applicable Requirements: (Required for initial/renewal applications, and for revision applications if this information would be changed as a result of the revision being sought)
   ☐ Attached, Document ID:_____
   ☑ Not Applicable (revision application with no change in applicable requirements)

3. Compliance Report and Plan: (Required for all initial/revision/renewal applications)
   ☐ Attached, Document ID:_____ **N/A**
   Note: A compliance plan must be submitted for each emissions unit that is not in compliance with all applicable requirements at the time of application and/or at any time during application processing. The department must be notified of any changes in compliance status during application processing.

4. List of Equipment/Activities Regulated under Title VI: (If applicable, required for initial/renewal applications only)
   ☐ Attached, Document ID:_____
   ☐ Equipment/Activities Onsite but Not Required to be Individually Listed
   ☑ Not Applicable

5. Verification of Risk Management Plan Submission to EPA: (If applicable, required for initial/renewal applications only)
   ☐ Attached, Document ID:_____ ☑ Not Applicable

6. Requested Changes to Current Title V Air Operation Permit:
   ☐ Attached, Document ID:_____ ☑ Not Applicable

C. FACILITY ADDITIONAL INFORMATION (CONTINUED)

Additional Requirements for Facilities Subject to Acid Rain, CAIR, or Hg Budget Program

1. Acid Rain Program Forms:

   Acid Rain Part Application (DEP Form No. 62-210.900(1)(a)):
   ☐ Attached, Document ID:_____ ☐ Previously Submitted, Date:_____
   ☑ Not Applicable (not an Acid Rain source)

   Phase II NO_X Averaging Plan (DEP Form No. 62-210.900(1)(a)1.):
   ☐ Attached, Document ID:_____ ☐ Previously Submitted, Date:_____
   ☑ Not Applicable

   New Unit Exemption (DEP Form No. 62-210.900(1)(a)2.):
   ☐ Attached, Document ID:_____ ☐ Previously Submitted, Date:_____
   ☑ Not Applicable

2. CAIR Part (DEP Form No. 62-210.900(1)(b)):
   ☐ Attached, Document ID:_____ ☐ Previously Submitted, Date:_____
   ☑ Not Applicable (not a CAIR source)

3. Hg Budget Part (DEP Form No. 62-210.900(1)(c)):
   ☐ Attached, Document ID:_____ ☐ Previously Submitted, Date:_____
   ☑ Not Applicable (not a Hg Budget unit)

Additional Requirements Comment

III. EMISSIONS UNIT INFORMATION

Title V Air Operation Permit Application - For Title V air operation permitting only, emissions units are classified as regulated, unregulated, or insignificant. If this is an application for an initial, revised or renewal Title V air operation permit, a separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each regulated and unregulated emissions unit addressed in this application. Some of the subsections comprising the Emissions Unit Information Section of the form are optional for unregulated emissions units. Each such subsection is appropriately marked. Insignificant emissions units are required to be listed at Section II, Subsection C.

Air Construction Permit or FESOP Application - For air construction permitting or federally enforceable state air operation permitting, emissions units are classified as either subject to air permitting or exempt from air permitting. The concept of an "unregulated emissions unit" does not apply. If this is an application for an air construction permit or FESOP, a separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each emissions unit subject to air permitting addressed in this application for air permit. Emissions units exempt from air permitting are required to be listed at Section II, Subsection C.

Air Construction Permit and Revised/Renewal Title V Air Operation Permit Application – Where this application is used to apply for both an air construction permit and a revised or renewal Title V air operation permit, each emissions unit is classified as either subject to air permitting or exempt from air permitting for air construction permitting purposes, and as regulated, unregulated, or insignificant for Title V air operation permitting purposes. A separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each emissions unit addressed in this application that is subject to air construction permitting and for each such emissions unit that is a regulated or unregulated unit for purposes of Title V permitting. (An emissions unit may be exempt from air construction permitting but still be classified as an unregulated unit for Title V purposes.) Emissions units classified as insignificant for Title V purposes are required to be listed at Section II, Subsection C.

If submitting the application form in hard copy, the number of this Emissions Unit Information Section and the total number of Emissions Unit Information Sections submitted as part of this application must be indicated in the space provided at the top of each page.

A. GENERAL EMISSIONS UNIT INFORMATION

Title V Air Operation Permit Emissions Unit Classification

1. Regulated or Unregulated Emissions Unit? (Check one, if applying for an initial, revised or renewal Title V air operation permit. Skip this item if applying for an air construction permit or FESOP only.) **NOT APPLICABLE**

☐ The emissions unit addressed in this Emissions Unit Information Section is a regulated emissions unit.

☐ The emissions unit addressed in this Emissions Unit Information Section is an unregulated emissions unit.

Emissions Unit Description and Status

1. Type of Emissions Unit Addressed in this Section: (Check one)

☑ This Emissions Unit Information Section addresses, as a single emissions unit, a single process or production unit, or activity, which produces one or more air pollutants and which has at least one definable emission point (stack or vent).

☐ This Emissions Unit Information Section addresses, as a single emissions unit, a group of process or production units and activities which has at least one definable emission point (stack or vent) but may also produce fugitive emissions.

☐ This Emissions Unit Information Section addresses, as a single emissions unit, one or more process or production units and activities which produce fugitive emissions only.

2. Description of Emissions Unit Addressed in this Section:

Municipal Waste Combustor (Boiler) #1

3. Emissions Unit Identification Number: **1**

4. Emissions Unit Status Code:	5. Commence Construction Date:	6. Initial Startup Date:	7. Emissions Unit Major Group SIC Code:
A		**November 15, 1989**	**49**

8. Federal Program Applicability: (Check all that apply)

☐ Acid Rain Unit

☐ CAIR Unit

☐ Hg Budget Unit

NOT APPLICABLE

9. Package Unit: Manufacturer: **Babcock and Wilcox** Model Number:

10. Generator Nameplate Rating: **62 MW**

11. Emissions Unit Comment:

Emissions Unit Control Equipment/Method: Control 1 of 4

1. Control Equipment/Method Description: **Gas Scrubber, General – Spray Dryer Absorbers**
2. Control Device or Method Code: **013**

Emissions Unit Control Equipment/Method: Control 2 of 4

1. Control Equipment/Method Description: **Fabric Filter (Baghouse)**
2. Control Device or Method Code: **016**

Emissions Unit Control Equipment/Method: Control 3 of 4

1. Control Equipment/Method Description: **Activated Carbon Injection System – Activated Carbon Adsorption**
2. Control Device or Method Code: **048**

Emissions Unit Control Equipment/Method: Control 4 of 4

1. Control Equipment/Method Description: **Selective Non-catalytic Reduction for NO_X**
2. Control Device or Method Code: **107**

B. EMISSIONS UNIT CAPACITY INFORMATION

(Optional for unregulated emissions units.)

Emissions Unit Operating Capacity and Schedule

1. Maximum Process or Throughput Rate:	
2. Maximum Production Rate: **324,000 lb/hr steam**	
3. Maximum Heat Input Rate: **450.8 million Btu/hr**	
4. Maximum Incineration Rate: pounds/hr tons/day	
5. Requested Maximum Operating Schedule:	
24 hours/day	**7** days/week
52 weeks/year	**8,760** hours/year

6. Operating Capacity/Schedule Comment:

The Facility has a nominal design capacity of 2,000 tons per day of municipal solid waste (MSW). The current Title V Air Operation Permit and PSD Permit list the existing MWC unit's heat input rating at 412.5 MMBtu/hr (per MWC unit). An adjustment to this heat input rating is needed to accurately reflect the permitted steaming rate of 324,000 lbs/hr, which is based on a maximum heat input rate of 450.8 MMBtu/hr. To provide a conservative estimate of short-term emissions, a heat input rating of 496 MMBtu/hr was used, which includes a 110% operating "window" over the maximum heat input rate of 450.8 MMBtu/hr. The heat input rating is for "information purposes" only. The operating rate of each MWC boiler is limited by steam production, which effectively limits heat input. The currently permitted steam production limitation is 324,000 lbs/hour (4-hr block average) for each boiler and the Project will not increase this limit. It is requested that the permit use this steam generating rate of 324,000 lbs/hour (4 hour block average) to determine compliance, and due to the inherent variability in the heating value of MSW, that the boiler's nominal design RDF processing rate not be limited by the permit.

Additional Permitting Note: The heat input value is utilized for the purpose of confirming that emissions testing is conducted within 90-100 percent of the emissions unit's rated capacity (or to limit future operation to 110 percent of the test load). The unit's capacity is limited by a steam flow rating of 324,000 lbs/hr, which effectively limits the heat input.

C. EMISSION POINT (STACK/VENT) INFORMATION

(Optional for unregulated emissions units.)

Emission Point Description and Type

1. Identification of Point on Plot Plan or Flow Diagram: [*] **See Section C, Process Flow Diagram for Emission Point Location: Emission ID Number E001**	2. Emission Point Type Code: **(2) An emission point serving two or more emission units capable of simultaneous operation (i.e. a single stack serves two boilers).**
3. Descriptions of Emission Points Comprising this Emissions Unit for VE Tracking:	
4. ID Numbers or Descriptions of Emission Units with this Emission Point in Common: **Municipal Waste Combustor (Boiler) #1 and Municipal Waste Combustor (Boiler) #2.**	

5. Discharge Type Code: **(V) A stack with an unobstructed opening discharging in a vertical or nearly vertical direction.**	6. Stack Height: **250 feet**	7. Exit Diameter: **8 feet**
8. Exit Temperature: **310 °F* (varies)**	9. Actual Volumetric Flow Rate: **191,494 acfm (varies)**	10. Water Vapor: **16.5 %**

11. Maximum Dry Standard Flow Rate: **116,274 dscfm @ 7 % O_2**	12. Nonstack Emission Point Height: feet
13. Emission Point UTM Coordinates... Zone: **17** East (km): **585.82** North (km): **2960.474**	14. Emission Point Latitude/Longitude... Latitude (DD/MM/SS) **26^0 45′ 53″ N** Longitude (DD/MM/SS) **80^0 08′ 12″ W**

15. Emission Point Comment:

1 of 3 individual flues surrounded by a stack shell. Exit temperature used is measured downstream of SDA.
The exit temperature indicated in item 8 is an estimate and may fluctuate. It is requested that the absolute temperature limit in the Facility's current PSD permit (300^0F) be replaced with the temperature limiting language in NSPS CFR 60 Subpart Cb.
*Higher temperature will allow for increased longevity of baghouse, duct work, fans, and also reduces moisture content in the flue gas.

D. SEGMENT (PROCESS/FUEL) INFORMATION

Segment Description and Rate: Segment 1 of 2

1. Segment Description (Process/Fuel Type): **Natural Gas is used during startup/shutdown of unit and during combustion of low BTU waste to maintain combustor temperature. The SCC corresponds to combustion of natural gas in a boiler for electric generation.**		
2. Source Classification Code (SCC): **10100601**	3. SCC Units: **Million cubic feet natural gas burned**	
4. Maximum Hourly Rate: **0.21**	5. Maximum Annual Rate:	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit: **1050**
10. Segment Comment: **Auxiliary burner firing natural gas during startup/shutdown.**		

Segment Description and Rate: Segment 2 of 2

1. Segment Description (Process/Fuel Type): **Primary Fuel – RDF from mixed municipal solid waste.**		
2. Source Classification Code (SCC): **10101202**	3. SCC Units: **Tons of refuse derived fuel burned**	
4. Maximum Hourly Rate: **37.5**	5. Maximum Annual Rate: **312,000**	6. Estimated Annual Activity Factor: **0.95**
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit:
10. Segment Comment: **The Facility is designed to process 2,000 TPD of mixed MSW with an annual throughput of 624,000 tons of RDF.**		

E. EMISSIONS UNIT POLLUTANTS

List of Pollutants Emitted by Emissions Unit

1. Pollutant Emitted	2. Primary Control Device Code	3. Secondary Control Device Code	4. Pollutant Regulatory Code
CO			**EL**
D/F	**013**	**016**	**EL**
FL	**013**	**016**	**EL**
H021	**016**		**EL**
H027	**016**		**EL**
H106	**013**	**016**	**EL**
H114	**048**	**016**	**EL**
NO_X	**107**		**EL**
PB	**016**		**EL**
PM	**016**		**EL**
PM/MWC Metals	**016**		**EL**
SO_2	**013**	**016**	**EL**
VOC	**048**		**EL**
SO_2/H106	**013**		**EL**

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS

(Optional for unregulated emissions units.)

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: **CO – Carbon Monoxide**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **101.3** lb/hour **444** tons/year	4. Synthetically Limited? ☐ Yes ☑ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: **200 ppmvd @ 7% O_2** Reference: **40 CFR 60, Subpart Cb**	7. Emissions Method Code: **(0) Potential emissions were set equal to the equivalent allowable emissions or worst-case allowable emissions.**
8.a. Baseline Actual Emissions (if required): **168** tons/year	8.b. Baseline 24-month Period: From: **2006** To: **2007**
9.a. Projected Actual Emissions (if required): **217** tons/year	9.b. Projected Monitoring Period: ☑ 5 years ☐ 10 years
10. Calculation of Emissions: **Refer Section E**	
11. Potential, Fugitive, and Actual Emissions Comment: **200 ppmvd @ 7% O_2 emission factor based on 40 CFR 60, Subpart Cb, 24-hour average. Annual to avoid PSD.**	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 2

1. Basis for Allowable Emissions Code: **ESCPSD**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **217 tons/yr**	4. Equivalent Allowable Emissions: lb/hour **217** tons/year
5. Method of Compliance: **CEMS**	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions 2 of 2

1. Basis for Allowable Emissions Code: **RULE**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **200 ppmvd @ 7% O_2**	4. Equivalent Allowable Emissions: **101.3** lb/hour **444** tons/year
5. Method of Compliance: **CEMS**	
6. Allowable Emissions Comment (Description of Operating Method): **Allowable emissions 200 ppm vd @ 7% O_2 is based on 40 CFR 60, Subpart Cb, 24-hour block average.**	

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS

(Optional for unregulated emissions units.)

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: **D/F – Dioxin/Furan (MWC Organics)**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **0.0000131** lb/hour **0.0000572** tons/year	4. Synthetically Limited? ☐ Yes ☑ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: **30 nanograms/dscm @ 7% O_2** Reference: **40 CFR 60, Subpart Cb**	7. Emissions Method Code: **(0) Potential emissions were set equal to the equivalent allowable emissions or worst-case allowable emissions.**
8.a. Baseline Actual Emissions (if required): **0. 0000378** tons/year	8.b. Baseline 24-month Period: From: **2003** To: **2004**
9.a. Projected Actual Emissions (if required): **0.0000395** tons/year	9.b. Projected Monitoring Period: ☑ 5 years ☐ 10 years
10. Calculation of Emissions: **Refer Section E**	
11. Potential, Fugitive, and Actual Emissions Comment: **Short term 40 CFR 60, Subpart Cb limit.** **Annual to avoid PSD.**	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 2

1. Basis for Allowable Emissions Code: **ESCPSD**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **0.0000395** tons/yr	4. Equivalent Allowable Emissions: lb/hour **0.0000395** tons/year
5. Method of Compliance: **Initial and annual performance tests using Method 23.**	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions 2 of 2

1. Basis for Allowable Emissions Code: **RULE**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **30 nanograms/dscm @ 7% O_2**	4. Equivalent Allowable Emissions: **0.0000131** lb/hour **0.0000572** tons/year
5. Method of Compliance: **Initial and annual performance tests using Method 23.**	
6. Allowable Emissions Comment (Description of Operating Method): **Basis for allowable emission: 40 CFR Part 60, Subpart Cb.**	

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS

(Optional for unregulated emissions units.)

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: **FL – Fluorides Total (including elemental fluorine and all fluoride compounds)**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **1.59** lb/hour **6.95** tons/year	4. Synthetically Limited? ☐ Yes ☑ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: **0.0032 lb/MMBtu** Reference: **PSD-FL-108A Permit**	7. Emissions Method Code: **(0) Potential emissions were set equal to the equivalent allowable emissions or worst-case allowable emissions.**
8.a. Baseline Actual Emissions (if required): **0.93** tons/year	8.b. Baseline 24-month Period: From: **2003** To: **2004**
9.a. Projected Actual Emissions (if required): **2.18** tons/year	9.b. Projected Monitoring Period: ☑ 5 years ☐ 10 years
10. Calculation of Emissions: **Refer Section E**	
11. Potential, Fugitive, and Actual Emissions Comment: **Emission factor based on PSD permit limit.** **Annual to avoid PSD.**	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 2

1. Basis for Allowable Emissions Code: **ESCPSD**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **2.18 tons/yr**	4. Equivalent Allowable Emissions: lb/hour **2.18** tons/year
5. Method of Compliance: **Annual Performance Test –Every Five Years; Method 13A or 13B.**	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions 2 of 2

1. Basis for Allowable Emissions Code: **RULE**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **0.0032 lb/MMBtu**	4. Equivalent Allowable Emissions: **1.59** lb/hour **6.95** tons/year
5. Method of Compliance: **Annual Performance Test –Every Five Years; Method 13A or 13B.**	
6. Allowable Emissions Comment (Description of Operating Method): **Basis for allowable emission: PSD-FL-108A Permit.**	

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS

(Optional for unregulated emissions units.)

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: **H021 – Beryllium Compounds**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **0.00036** lb/hour **0.0016** tons/year	4. Synthetically Limited? ☐ Yes ☑ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: **0.00000073** lb/MMBtu Reference: **PSD-FL-108A Permit**	7. Emissions Method Code: **(0) Potential emissions were set equal to the equivalent allowable emissions or worst-case allowable emissions.**
8.a. Baseline Actual Emissions (if required): **N/A** tons/year	8.b. Baseline 24-month Period: From: To:
9.a. Projected Actual Emissions (if required): **N/A** tons/year	9.b. Projected Monitoring Period: ☐ 5 years ☐ 10 years
10. Calculation of Emissions: **Refer Section E**	
11. Potential, Fugitive, and Actual Emissions Comment: **Emission factor based on PSD permit limit.**	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: **RULE**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **0.00000073 lb/MMBtu**	4. Equivalent Allowable Emissions: **0.00036** lb/hour **0.0016** tons/year
5. Method of Compliance: **Annual Performance Test –Every Five Years.**	
6. Allowable Emissions Comment (Description of Operating Method): **Basis for allowable emission: PSD-FL-108A Permit.**	

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS

(Optional for unregulated emissions units.)

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: **H027 Cadmium Compounds**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **0.015** lb/hour **0.067** tons/year	4. Synthetically Limited? ☐ Yes ☑ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: **0.035 mg/dscm @ 7% O_2** Reference: **40 CFR 60, Subpart Cb**	7. Emissions Method Code: **(0) Potential emissions were set equal to the equivalent allowable emissions or worst-case allowable emissions.**
8.a. Baseline Actual Emissions (if required): **N/A** tons/year	8.b. Baseline 24-month Period: From: To:
9.a. Projected Actual Emissions (if required): **N/A** tons/year	9.b. Projected Monitoring Period: ☐ 5 years ☐ 10 years
10. Calculation of Emissions: **Refer Section E**	
11. Potential, Fugitive, and Actual Emissions Comment: **Emission factor based on 40 CFR 60, Subpart Cb limit.**	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: **RULE**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **0.035 mg/dscm @ 7% O_2**	4. Equivalent Allowable Emissions: **0.015** lb/hour **0.067** tons/year
5. Method of Compliance: **Initial and annual performance tests; Method 29.**	
6. Allowable Emissions Comment (Description of Operating Method): **Basis for allowable emissions: 40 CFR 60, Subpart Cb.**	

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS

(Optional for unregulated emissions units.)

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: **H106 – Hydrochloric Acid**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **16.5** lb/hour **72.3** tons/year	4. Synthetically Limited? ☐ Yes ☑ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: **25 ppmvd @ 7% O_2** Reference: **Basis for allowable emission: PSD-FL-108A Permit.**	7. Emissions Method Code: **(0) Potential emissions were set equal to the equivalent allowable emissions or worst-case allowable emissions.**
8.a. Baseline Actual Emissions (if required): **N/A** tons/year	8.b. Baseline 24-month Period: From: To:
9.a. Projected Actual Emissions (if required): **N/A** tons/year	9.b. Projected Monitoring Period: ☐ 5 years ☐ 10 years
10. Calculation of Emissions: **Refer Section E**	
11. Potential, Fugitive, and Actual Emissions Comment: **Emission factor based on short term PSD-FL-108A Permit** **Emission limit is 90% reduction or 25 ppmvd @ 7% O2, whichever is less stringent.** **Also 40 CFR 60, Subpart Cb applies. .** **Emission limit is 95% reduction or 29 ppmvd @ 7% O_2, whichever is less stringent.** **HCl is not a PSD regulated pollutant.**	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: **RULE**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **25 ppm dry gas volume @ 7% O_2**	4. Equivalent Allowable Emissions: **16.5** lb/hour **72.3**tons/year
5. Method of Compliance: **Initial and annual performance tests; Method 26 or 26A.**	
6. Allowable Emissions Comment (Description of Operating Method): **Basis for allowable emissions: PSD-FL-108A Permit.**	

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS

(Optional for unregulated emissions units.)

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: **H114 – Mercury Compounds**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **0.02** lb/hour **0.10** tons/year	4. Synthetically Limited? ☐ Yes ☑ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: **50 µg/dscm @ 7% O_2** Reference: **40 CFR 60, Subpart Cb**	7. Emissions Method Code: **(0) Potential emissions were set equal to the equivalent allowable emissions or worst-case allowable emissions.**
8.a. Baseline Actual Emissions (if required): **0.02** tons/year	8.b. Baseline 24-month Period: From: **2003** To: **2004**
9.a. Projected Actual Emissions (if required): **0.06** tons/year	9.b. Projected Monitoring Period: ☑ 5 years ☐ 10 years
10. Calculation of Emissions: **Refer Section E**	
11. Potential, Fugitive, and Actual Emissions Comment: **Short term 40 CFR 60, Subpart Cb limit.** **Annual to avoid PSD.** **Emission limit is 85% reduction or 50 µg/dscm @ 7% O_2, whichever is less stringent.**	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 2

1. Basis for Allowable Emissions Code: **ESCPSD**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **0.06 tons/yr**	4. Equivalent Allowable Emissions: lb/hour **0.06** tons/year
5. Method of Compliance: **Initial and annual performance tests; Method 29.**	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions 2 of 2

1. Basis for Allowable Emissions Code: **RULE**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **50 µg/dscm @ 7% O_2**	4. Equivalent Allowable Emissions: **0.02** lb/hour **0.10** tons/year
5. Method of Compliance: **Initial and annual performance tests; Method 29.**	
6. Allowable Emissions Comment (Description of Operating Method): **Basis for allowable emissions: 40 CFR 60, Subpart Cb.**	

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS

(Optional for unregulated emissions units.)

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: **NO_X – Nitrogen Oxides**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **208.1** lb/hour **912** tons/year	4. Synthetically Limited? ☐ Yes ☑ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: **250 ppmvd @ 7% O_2** Reference: **40 CFR 60, Subpart Cb**	7. Emissions Method Code: **(0) Potential emissions were set equal to the equivalent allowable emissions or worst-case allowable emissions.**
8.a. Baseline Actual Emissions (if required): **641** tons/year	8.b. Baseline 24-month Period: From: **2003** To: **2004**
9.a. Projected Actual Emissions (if required): **660.5** tons/year	9.b. Projected Monitoring Period: ☑ 5 years ☐ 10 years
10. Calculation of Emissions: **Refer Section E**	
11. Potential, Fugitive, and Actual Emissions Comment: **Short term 40 CFR 60, Subpart Cb limit.** **Annual to avoid PSD.**	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 2

1. Basis for Allowable Emissions Code: **ESCPSD**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **660.5 tons/yr**	4. Equivalent Allowable Emissions: lb/hour **660.5** tons/year
5. Method of Compliance: **CEMS**	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions 2 of 2

1. Basis for Allowable Emissions Code: **RULE**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **250 ppmvd @ 7% O_2**	4. Equivalent Allowable Emissions: **208.1** lb/hour **912** tons/year
5. Method of Compliance: **CEMS – 24 hr block average; Method 19.**	
6. Allowable Emissions Comment (Description of Operating Method): **Basis for allowable emissions: 40 CFR 60, Subpart Cb.**	

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS

(Optional for unregulated emissions units.)

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: **PB – Lead – Total (including elemental lead and all lead compounds expressed as lead)**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **0.17** lb/hour **0.76** tons/year	4. Synthetically Limited? ☐ Yes ☑ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: **0.40 mg/dscm @ 7% O_2** Reference: **40 CFR 60, Subpart Cb**	7. Emissions Method Code: **(0) Potential emissions were set equal to the equivalent allowable emissions or worst-case allowable emissions.**
8.a. Baseline Actual Emissions (if required): **0.4** tons/year	8.b. Baseline 24-month Period: From: **2005** To: **2006**
9.a. Projected Actual Emissions (if required): **0.65** tons/year	9.b. Projected Monitoring Period: ☑ 5 years ☐ 10 years
10. Calculation of Emissions: **Refer Section E**	
11. Potential, Fugitive, and Actual Emissions Comment: **Short term 40 CFR 60, Subpart Cb limit.** **Annual to avoid PSD.**	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 2

1. Basis for Allowable Emissions Code: **ESCPSD**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **0.65 tons/yr**	4. Equivalent Allowable Emissions: lb/hour **0.65** tons/year
5. Method of Compliance: **Initial and annual performance tests; Method 29.**	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions 2 of 2

1. Basis for Allowable Emissions Code: **RULE**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **0.40 mg/dscm @ 7% O_2**	4. Equivalent Allowable Emissions: **0.17** lb/hour **0.76** tons/year
5. Method of Compliance: **Initial and annual performance tests; Method 29.**	
6. Allowable Emissions Comment (Description of Operating Method): **Basis for allowable emissions: 40 CFR 60, Subpart Cb.**	

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS

(Optional for unregulated emissions units.)

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: **PM – Particulate Matter – Total**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **10.9** lb/hour **47.6** tons/year	4. Synthetically Limited? ☐ Yes ☑ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: **25 mg/dscm @ 7% O_2** Reference: **40 CFR 60, Subpart Cb**	7. Emissions Method Code: **(0) Potential emissions were set equal to the equivalent allowable emissions or worst-case allowable emissions.**
8.a. Baseline Actual Emissions (if required): **19** tons/year	8.b. Baseline 24-month Period: From: **2003** To: **2004**
9.a. Projected Actual Emissions (if required): **31.2** tons/year	9.b. Projected Monitoring Period: ☑ 5 years ☐ 10 years
10. Calculation of Emissions: **Refer Section E**	
11. Potential, Fugitive, and Actual Emissions Comment: **Short term 40 CFR 60, Subpart Cb limit.** **Annual to avoid PSD.**	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 2

1. Basis for Allowable Emissions Code: **ESCPSD**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **31.2 tons/yr**	4. Equivalent Allowable Emissions: lb/hour **31.2** tons/year
5. Method of Compliance: **Initial and annual performance tests; Method 5.**	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions 2 of 2

1. Basis for Allowable Emissions Code: **RULE**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **25 mg/dscm @ 7% O_2**	4. Equivalent Allowable Emissions: **10.9** lb/hour **47.6** tons/year
5. Method of Compliance: **Initial and annual performance tests; Method 5.**	
6. Allowable Emissions Comment (Description of Operating Method): **Basis for allowable emissions: 40 CFR 60, Subpart Cb.**	

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS

(Optional for unregulated emissions units.)

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: **PM – Municipal Waste Combustor Metals (MWC Metals)**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **10.9** lb/hour **47.6** tons/year	4. Synthetically Limited? ☐ Yes ☑ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: **25 mg/dscm @ 7% O_2** Reference: **40 CFR 60, Subpart Cb**	7. Emissions Method Code: **(0) Potential emissions were set equal to the equivalent allowable emissions or worst-case allowable emissions.**
8.a. Baseline Actual Emissions (if required): **19** tons/year	8.b. Baseline 24-month Period: From: **2003** To: **2004**
9.a. Projected Actual Emissions (if required): **26.2** tons/year	9.b. Projected Monitoring Period: ☑ 5 years ☐ 10 years
10. Calculation of Emissions: **Refer Section E**	
11. Potential, Fugitive, and Actual Emissions Comment: **Short term 40 CFR 60, Subpart Cb limit for PM, assuming all PM is PM10. Annual to avoid PSD.**	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 2

1. Basis for Allowable Emissions Code: **ESCPSD**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **26.2 tons/yr**	4. Equivalent Allowable Emissions: lb/hour **26.2** tons/year
5. Method of Compliance: **Initial and annual performance tests (PM10).**	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions 2 of 2

1. Basis for Allowable Emissions Code: **RULE**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **25 mg/dscm @ 7% O_2**	4. Equivalent Allowable Emissions: **10.9** lb/hour **47.6** tons/year
5. Method of Compliance: **Initial and annual performance tests (PM10).**	
6. Allowable Emissions Comment (Description of Operating Method): **Basis for allowable emissions: 40 CFR 60, Subpart Cb limit for PM, assuming all is PM10.**	

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS

(Optional for unregulated emissions units.)

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: **SO_2 – Sulfur Dioxide**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **33.6** lb/hour **147** tons/year	4. Synthetically Limited? ☐ Yes ☑ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: **29 ppmvd @ 7% O_2** Reference: **40 CFR 60, Subpart Cb.**	7. Emissions Method Code: **(0) Potential emissions were set equal to the equivalent allowable emissions or worst-case allowable emissions.**
8.a. Baseline Actual Emissions (if required): **131** tons/year	8.b. Baseline 24-month Period: From: **2006** To: **2007**
9.a. Projected Actual Emissions (if required): **151** tons/year	9.b. Projected Monitoring Period: ☑ 5 years ☐ 10 years
10. Calculation of Emissions: **Refer Section E**	
11. Potential, Fugitive, and Actual Emissions Comment: **Short term 40 CFR 60, Subpart Cb.** **Annual to avoid PSD.** **Emission limit is 75% reduction or 29 ppmvd @ 7% O_2, whichever is less stringent.**	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 2

1. Basis for Allowable Emissions Code: **ESCPSD**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **151 tons/yr**	4. Equivalent Allowable Emissions: lb/hour **151** tons/year
5. Method of Compliance: **CEMS**	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions 2 of 2

1. Basis for Allowable Emissions Code: **RULE**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **29 ppmvd @ 7% O_2**	4. Equivalent Allowable Emissions: **33.6** lb/hour **147** tons/year
5. Method of Compliance: **CEMS**	
6. Allowable Emissions Comment (Description of Operating Method): **75% removal or 29 ppmvd. Basis for allowable emissions: 40 CFR 60, Subpart Cb.**	

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS

(Optional for unregulated emissions units.)

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: **SO_2/H106 – Municipal Waste Combustor Acid Gases**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **52.7** lb/hour **231** tons/year	4. Synthetically Limited? ☐ Yes ☑ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: **29 ppmvd @ 7% O_2** Reference: **40 CFR 60, Subpart Cb**	7. Emissions Method Code: **(0) Potential emissions were set equal to the equivalent allowable emissions or worst-case allowable emissions.**
8.a. Baseline Actual Emissions (if required): **175** tons/year	8.b. Baseline 24-month Period: From: **2006** To: **2007**
9.a. Projected Actual Emissions (if required): **195** tons/year	9.b. Projected Monitoring Period: ☑ 5 years ☐ 10 years
10. Calculation of Emissions: **Refer Section E**	
11. Potential, Fugitive, and Actual Emissions Comment: **Individual 40 CFR 60, Subpart Cb limits for HCl and SO_2.** **Annual to avoid PSD.**	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: **ESCPSD**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **195 tons/yr**	4. Equivalent Allowable Emissions: lb/hour **195** tons/year
5. Method of Compliance: **CEMS for SO_2 ; Initial and annual performance test for HCl.**	
6. Allowable Emissions Comment (Description of Operating Method):	

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS

(Optional for unregulated emissions units.)

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: **VOC – Volatile Organic Compounds**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **7.93** lb/hour **34.8** tons/year	4. Synthetically Limited? ☐ Yes ☑ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: **0.016 lb/MMBtu** Reference: **PSD-FL-108A**	7. Emissions Method Code: **(0) Potential emissions were set equal to the equivalent allowable emissions or worst-case allowable emissions.**
8.a. Baseline Actual Emissions (if required): **13.7** tons/year	8.b. Baseline 24-month Period: From: **2003** To: **2004**
9.a. Projected Actual Emissions (if required): **33.2** tons/year	9.b. Projected Monitoring Period: ☑ 5 years ☐ 10 years
10. Calculation of Emissions: **Refer Section E**	
11. Potential, Fugitive, and Actual Emissions Comment: **Emission factor based on PSD permit limit.** **Annual to avoid PSD.**	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 2

1. Basis for Allowable Emissions Code: **ESCPSD**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **33.2 tons/yr**	4. Equivalent Allowable Emissions: lb/hour **33.2** tons/year
5. Method of Compliance: **Initial and annual performance tests; Method 25 or 25A.**	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions 2 of 2

1. Basis for Allowable Emissions Code: **RULE**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **0.016 lb/MMBtu**	4. Equivalent Allowable Emissions: **7.93** lb/hour **34.8** tons/year
5. Method of Compliance: **Initial and annual performance tests; Method 25 or 25A.**	
6. Allowable Emissions Comment (Description of Operating Method): **Basis for allowable emission: PSD-FL-108A Permit.**	

G. VISIBLE EMISSIONS INFORMATION

Complete Subsection G if this emissions unit is or would be subject to a unit-specific visible emissions limitation.

Visible Emissions Limitation: Visible Emissions Limitation 1 of 1

1. Visible Emissions Subtype: **VE10 – Visible Emissions – 10% Normal**	2. Basis for Allowable Opacity: ☑ Rule ☐ Other
3. Allowable Opacity: Normal Conditions: % Exceptional Conditions: **10** % Maximum Period of Excess Opacity Allowed: **6** min/hour	
4. Method of Compliance: **EPA Method 9.**	
5. Visible Emissions Comment: **Basis for opacity limit: PSD-FL-108A Permit. The opacity for each unit shall not exceed 10 percent, 6-minute average.**	

H. CONTINUOUS MONITOR INFORMATION

Complete Subsection H if this emissions unit is or would be subject to continuous monitoring.

Continuous Monitoring System: Continuous Monitor 1 of 6

1. Parameter Code: **CO_2**	2. Pollutant(s): **Carbon dioxide**
3. CMS Requirement:	☑ Rule ☐ Other
4. Monitor Information... Manufacturer: **Milton Roy** Model Number: **3300**	Serial Number: **N2C2522T**
5. Installation Date: **05/09/01**	6. Performance Specification Test Date: **05/10/01**
7. Continuous Monitor Comment: **Monitor for Stack 1.**	

Continuous Monitoring System: Continuous Monitor 2 of 6

1. Parameter Code: **EM - Emissions**	2. Pollutant(s): **SO_2**
3. CMS Requirement:	☑ Rule ☐ Other
4. Monitor Information... Manufacturer: **Thermo Electron** Model Number: **43A Serial Number**	Serial Number: **43A-33581-245**
5. Installation Date: **July 1, 1989**	6. Performance Specification Test Date: **October 1989**
7. Continuous Monitor Comment: **SO_2 outlet monitor for stack 1.**	

H. CONTINUOUS MONITOR INFORMATION (CONTINUED)

Continuous Monitoring System: Continuous Monitor 3 of 6

1. Parameter Code: **EM – Emissions**	2. Pollutant(s): **Carbon monoxide**
3. CMS Requirement:	[√] Rule [ ] Other
4. Monitor Information... Manufacturer: **Thermo Electron** Model Number: **48C**	Serial Number: **48C-67137-356**
5. Installation Date: **03/06/07**	6. Performance Specification Test Date: **03/13/07**
7. Continuous Monitor Comment: **CO monitor for flue gas – Unit 1.**	

Continuous Monitoring System: Continuous Monitor 4 of 6

1. Parameter Code: **VE**	2. Pollutant(s): **Visible Emissions (opacity)**
3. CMS Requirement:	[√] Rule [ ] Other
4. Monitor Information... Manufacturer: **Durag** Model Number: **DR-290**	Serial Number: **1204288**
5. Installation Date: **11/09/08**	6. Performance Specification Test Date: **11/26/08**
7. Continuous Monitor Comment: **Opacity monitor for flue gas – Unit 1.**	

H. CONTINUOUS MONITOR INFORMATION (CONTINUED)

Continuous Monitoring System: Continuous Monitor 5 of 6

1. Parameter Code: **EM – Emissions**	2. Pollutant(s): **NO_x**
3. CMS Requirement:	[√] Rule [ ] Other
4. Monitor Information... Manufacturer: **Thermo Electron** Model Number: **42C**	Serial Number: **42C-74785-377**
5. Installation Date: **02/06/03**	6. Performance Specification Test Date: **06/17/03**
7. Continuous Monitor Comment: **NO_X monitor for flue gas Unit-1.**	

Continuous Monitoring System: Continuous Monitor 6 of 6

1. Parameter Code: **EM – Emissions**	2. Pollutant(s): **SO_2**
3. CMS Requirement:	[√] Rule [ ] Other
4. Monitor Information... Manufacturer: **Thermo EnvironM** Model Number: **43A**	Serial Number: **43A-23370-210**
5. Installation Date: **12/09/06**	6. Performance Specification Test Date: **12/21/06**
7. Continuous Monitor Comment: **SO_2 inlet monitor for flue gas for Unit 1.**	

EMISSIONS UNIT INFORMATION
Section [1] of [2]

I. EMISSIONS UNIT ADDITIONAL INFORMATION

Additional Requirements for All Applications, Except as Otherwise Stated

1. Process Flow Diagram: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   [√] Attached, Document ID: **Section C** [ ] Previously Submitted, Date _____

2. Fuel Analysis or Specification: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   [ ] Attached, Document ID: _____ [√] Previously Submitted, Date **May 2, 2005**

3. Detailed Description of Control Equipment: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   [√] Attached, Document ID: **Section D** [ ] Previously Submitted, Date _____

4. Procedures for Startup and Shutdown: (Required for all operation permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   [ ] Attached, Document ID: _____ [√] Previously Submitted, Date **May 2, 2005**
   [ ] Not Applicable (construction application)

5. Operation and Maintenance Plan: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   [ ] Attached, Document ID: _____ [√] Previously Submitted, Date **May 2, 2005**
   [ ] Not Applicable **Updates to the O&M Plan will be submitted after construction.**

6. Compliance Demonstration Reports/Records:
   [ ] Attached, Document ID: _____
   Test Date(s)/Pollutant(s) Tested: _____
   _____
   [ ] Previously Submitted, Date: _____
   Test Date(s)/Pollutant(s) Tested: _____
   _____
   [√] To be Submitted, Date (if known): Performance and compliance tests will be conducted and submitted to the FDEP in accordance with the Facility's Title V Air Operation Permit.
   Test Date(s)/Pollutant(s) Tested: _____
   _____
   [ ] Not Applicable
   Note: For FESOP applications, all required compliance demonstration records/reports must be submitted at the time of application. For Title V air operation permit applications, all required compliance demonstration reports/records must be submitted at the time of application, or a compliance plan must be submitted at the time of application.

7. Other Information Required by Rule or Statute:
   [ ] Attached, Document ID: _____ [√] Not Applicable

I. EMISSIONS UNIT ADDITIONAL INFORMATION (CONTINUED)

Additional Requirements for Air Construction Permit Applications

1. Control Technology Review and Analysis (Rules 62-212.400(10) and 62-212.500(7), F.A.C.; 40 CFR 63.43(d) and (e)): ☐ Attached, Document ID: _____ ☑ Not Applicable
2. Good Engineering Practice Stack Height Analysis (Rules 62-212.400(4)(d) and 62-212.500(4)(f), F.A.C.): ☐ Attached, Document ID: _____ ☑ Not Applicable
3. Description of Stack Sampling Facilities: (Required for proposed new stack sampling facilities only) ☐ Attached, Document ID: _____ ☑ Not Applicable

Additional Requirements for Title V Air Operation Permit Applications

1. Identification of Applicable Requirements: ☐ Attached, Document ID: _____
2. Compliance Assurance Monitoring: ☐ Attached, Document ID: _____ ☑ Not Applicable
3. Alternative Methods of Operation: ☐ Attached, Document ID: _____ ☑ Not Applicable
4. Alternative Modes of Operation (Emissions Trading): ☐ Attached, Document ID: _____ ☑ Not Applicable

Additional Requirements Comment

EMISSIONS UNIT INFORMATION
Section [2] of [2]

A. GENERAL EMISSIONS UNIT INFORMATION

Title V Air Operation Permit Emissions Unit Classification

1. Regulated or Unregulated Emissions Unit? (Check one, if applying for an initial, revised or renewal Title V air operation permit. Skip this item if applying for an air construction permit or FESOP only.) **NOT APPLICABLE**

☐ The emissions unit addressed in this Emissions Unit Information Section is a regulated emissions unit.

☐ The emissions unit addressed in this Emissions Unit Information Section is an unregulated emissions unit.

Emissions Unit Description and Status

1. Type of Emissions Unit Addressed in this Section: (Check one)

☑ This Emissions Unit Information Section addresses, as a single emissions unit, a single process or production unit, or activity, which produces one or more air pollutants and which has at least one definable emission point (stack or vent).

☐ This Emissions Unit Information Section addresses, as a single emissions unit, a group of process or production units and activities which has at least one definable emission point (stack or vent) but may also produce fugitive emissions.

☐ This Emissions Unit Information Section addresses, as a single emissions unit, one or more process or production units and activities which produce fugitive emissions only.

2. Description of Emissions Unit Addressed in this Section:

Municipal Waste Combustor (Boiler) #2

3. Emissions Unit Identification Number: **2**

4. Emissions Unit Status Code:	5. Commence Construction Date:	6. Initial Startup Date:	7. Emissions Unit Major Group SIC Code:
A		**November 15, 1989**	**49**

8. Federal Program Applicability: (Check all that apply)

☐ Acid Rain Unit

☐ CAIR Unit **NOT APPLICABLE**

☐ Hg Budget Unit

9. Package Unit: Manufacturer: **Babcock and Wilcox** Model Number:

10. Generator Nameplate Rating: **62 MW**

11. Emissions Unit Comment:

Emissions Unit Control Equipment/Method: Control 1 of 4

1. Control Equipment/Method Description: **Gas Scrubber, General – Spray Dryer Absorbers**
2. Control Device or Method Code: **013**

Emissions Unit Control Equipment/Method: Control 2 of 4

1. Control Equipment/Method Description: **Fabric Filter (Baghouse)**
2. Control Device or Method Code: **016**

Emissions Unit Control Equipment/Method: Control 3 of 4

1. Control Equipment/Method Description: **Activated Carbon Injection System – Activated Carbon Adsorption**
2. Control Device or Method Code: **048**

Emissions Unit Control Equipment/Method: Control 4 of 4

1. Control Equipment/Method Description: **Selective Non-catalytic Reduction for NO_X**
2. Control Device or Method Code: **107**

B. EMISSIONS UNIT CAPACITY INFORMATION

(Optional for unregulated emissions units.)

Emissions Unit Operating Capacity and Schedule

1. Maximum Process or Throughput Rate:	
2. Maximum Production Rate: **324,000 lb/hr steam**	
3. Maximum Heat Input Rate: **450.8 million Btu/hr**	
4. Maximum Incineration Rate: pounds/hr tons/day	
5. Requested Maximum Operating Schedule:	
24 hours/day	**7** days/week
52 weeks/year	**8,760** hours/year

6. Operating Capacity/Schedule Comment:

The Facility has a nominal design capacity of 2,000 tons per day of municipal solid waste (MSW). The current Title V Air Operation Permit and PSD Permit list the existing MWC unit's heat input rating at 412.5 MMBtu/hr (per MWC unit). An adjustment to this heat input rating is needed to accurately reflect the permitted steaming rate of 324,000 lbs/hr, which is based on a maximum heat input rate of 450.8 MMBtu/hr. To provide a conservative estimate of short-term emissions, a heat input rating of 496 MMBtu/hr was used, which includes a 110% operating "window" over the maximum heat input rate of 450.8 MMBtu/hr. The heat input rating is for "information purposes" only. The operating rate of each MWC boiler is limited by steam production, which effectively limits heat input. The currently permitted steam production limitation is 324,000 lbs/hour (4-hr block average) for each boiler and the Project will not increase this limit. It is requested that the permit use this steam generating rate of 324,000 lbs/hour (4 hour block average) to determine compliance, and due to the inherent variability in the heating value of MSW, that the boiler's nominal design RDF processing rate not be limited by the permit.

Additional Permitting Note: The heat input value is utilized for the purpose of confirming that emissions testing is conducted within 90-100 percent of the emissions unit's rated capacity (or to limit future operation to 110 percent of the test load). The unit's capacity is limited by a steam flow rating of 324,000 lbs/hr, which effectively limits the heat input.

C. EMISSION POINT (STACK/VENT) INFORMATION

(Optional for unregulated emissions units.)

Emission Point Description and Type

1. Identification of Point on Plot Plan or Flow Diagram: [*] **See Section C, Process Flow Diagram for Emission Point Location: Emission ID Number E002**	2. Emission Point Type Code: **(2) An emission point serving two or more emission units capable of simultaneous operation (i.e. a single stack serves two boilers).**

3. Descriptions of Emission Points Comprising this Emissions Unit for VE Tracking:

4. ID Numbers or Descriptions of Emission Units with this Emission Point in Common: **Municipal Waste Combustor (Boiler) #1 and Municipal Waste Combustor (Boiler) #2.**

5. Discharge Type Code: **(V) A stack with an unobstructed opening discharging in a vertical or nearly vertical direction.**	6. Stack Height: **250 feet**	7. Exit Diameter: **8 feet**
8. Exit Temperature: **310 °F* (varies)**	9. Actual Volumetric Flow Rate: **191,494 acfm (varies)**	10. Water Vapor: **16.5 %**

11. Maximum Dry Standard Flow Rate: **116,274 dscfm @ 7 % O_2**	12. Nonstack Emission Point Height: feet
13. Emission Point UTM Coordinates... Zone: **17** East (km): **585.82** North (km): **2960.474**	14. Emission Point Latitude/Longitude... Latitude (DD/MM/SS) **26^0 45′ 53″ N** Longitude (DD/MM/SS) **80^0 08′ 12″ W**

15. Emission Point Comment:

1 of 3 individual flues surrounded by a stack shell. Exit temperature used is measured downstream of SDA.
The exit temperature indicated in item 8 is an estimation and may fluctuate. It is requested that the absolute temperature limit in the Facility's current PSD permit (300^0F) be replaced with the temperature limit language consistent with NSPS CFR 60 Subpart Cb.
*Higher temperature will allow for increased longevity of baghouse, duct work, fans, and also reduces moisture content in the flue gas.

D. SEGMENT (PROCESS/FUEL) INFORMATION

Segment Description and Rate: Segment 1 of 2

1. Segment Description (Process/Fuel Type): **Natural Gas is used during startup/shutdown of unit and during combustion of low BTU waste to maintain combustor temperature. The SCC corresponds to combustion of natural gas in a boiler for electric generation.**		
2. Source Classification Code (SCC): **10100601**	3. SCC Units: **Million cubic feet natural gas burned**	
4. Maximum Hourly Rate: **0.21**	5. Maximum Annual Rate:	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit: **1050**
10. Segment Comment: **Auxiliary burner firing natural gas during startup/shutdown.**		

Segment Description and Rate: Segment 2 of 2

1. Segment Description (Process/Fuel Type): **Primary Fuel – RDF from mixed municipal solid waste.**		
2. Source Classification Code (SCC): **10101202**	3. SCC Units: **Tons of refuse derived fuel burned**	
4. Maximum Hourly Rate: **37.5**	5. Maximum Annual Rate: **312,000**	6. Estimated Annual Activity Factor: **0.95**
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit:
10. Segment Comment: **The Facility is designed to process 2,000 TPD of mixed MSW with an annual throughput of 624,000 tons of RDF.**		

E. EMISSIONS UNIT POLLUTANTS

List of Pollutants Emitted by Emissions Unit

1. Pollutant Emitted	2. Primary Control Device Code	3. Secondary Control Device Code	4. Pollutant Regulatory Code
CO			**EL**
D/F	**013**	**016**	**EL**
FL	**013**	**016**	**EL**
H021	**016**		**EL**
H027	**016**		**EL**
H106	**013**	**016**	**EL**
H114	**048**	**016**	**EL**
NO_X	**107**		**EL**
PB	**016**		**EL**
PM	**016**		**EL**
PM/MWC Metals	**016**		**EL**
SO_2	**013**	**016**	**EL**
VOC	**048**		**EL**
SO_2/H106	**013**		**EL**

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS

(Optional for unregulated emissions units.)

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: **CO – Carbon Monoxide**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **101.3** lb/hour **444** tons/year	4. Synthetically Limited? ☐ Yes ☑ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: **200 ppmvd @ 7% O_2** Reference: **40 CFR 60, Subpart Cb**	7. Emissions Method Code: **(0) Potential emissions were set equal to the equivalent allowable emissions or worst-case allowable emissions.**
8.a. Baseline Actual Emissions (if required): **168** tons/year	8.b. Baseline 24-month Period: From: **2006** To: **2007**
9.a. Projected Actual Emissions (if required): **217** tons/year	9.b. Projected Monitoring Period: ☑ 5 years ☐ 10 years
10. Calculation of Emissions: **Refer Section E**	
11. Potential, Fugitive, and Actual Emissions Comment: **200 ppmvd @ 7% O_2 emission factor based on 40 CFR 60, Subpart Cb, 24-hour average. Annual to avoid PSD.**	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 2

1. Basis for Allowable Emissions Code: **ESCPSD**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **217 tons/yr**	4. Equivalent Allowable Emissions: lb/hour **217** tons/year
5. Method of Compliance: **CEMS**	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions 2 of 2

1. Basis for Allowable Emissions Code: **RULE**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **200 ppmvd @ 7% O_2**	4. Equivalent Allowable Emissions: **101.3** lb/hour **444** tons/year
5. Method of Compliance: **CEMS**	
6. Allowable Emissions Comment (Description of Operating Method): **Allowable emissions 200 ppm vd @ 7% O_2 is based on 40 CFR 60, Subpart Cb, 24-hour block average.**	

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS

(Optional for unregulated emissions units.)

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: **D/F – Dioxin/Furan (MWC Organics)**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **0.0000131** lb/hour **0.0000572** tons/year	4. Synthetically Limited? ☐ Yes ☑ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: **30 nanograms/dscm @ 7% O_2** Reference: **40 CFR 60, Subpart Cb**	7. Emissions Method Code: **(0) Potential emissions were set equal to the equivalent allowable emissions or worst-case allowable emissions.**
8.a. Baseline Actual Emissions (if required): **0. 0000378** tons/year	8.b. Baseline 24-month Period: From: **2003** To: **2004**
9.a. Projected Actual Emissions (if required): **0.0000395** tons/year	9.b. Projected Monitoring Period: ☑ 5 years ☐ 10 years
10. Calculation of Emissions: **Refer Section E**	
11. Potential, Fugitive, and Actual Emissions Comment: **Short term 40 CFR 60, Subpart Cb limit.** **Annual to avoid PSD.**	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 2

1. Basis for Allowable Emissions Code: **ESCPSD**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **0.0000395** tons/yr	4. Equivalent Allowable Emissions: lb/hour **0.0000395** tons/year
5. Method of Compliance: **Initial and annual performance tests using Method 23.**	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions 2 of 2

1. Basis for Allowable Emissions Code: **RULE**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **30 nanograms/dscm @ 7% O_2**	4. Equivalent Allowable Emissions: **0.0000131** lb/hour **0.0000572** tons/year
5. Method of Compliance: **Initial and annual performance tests using Method 23.**	
6. Allowable Emissions Comment (Description of Operating Method): **Basis for allowable emission: 40 CFR Part 60, Subpart Cb.**	

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS

(Optional for unregulated emissions units.)

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: **FL – Fluorides Total (including elemental fluorine and all fluoride compounds)**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **1.59** lb/hour **6.95** tons/year	4. Synthetically Limited? ☐ Yes ☑ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: **0.0032 lb/MMBtu** Reference: **PSD-FL-108A Permit**	7. Emissions Method Code: **(0) Potential emissions were set equal to the equivalent allowable emissions or worst-case allowable emissions.**
8.a. Baseline Actual Emissions (if required): **0.93** tons/year	8.b. Baseline 24-month Period: From: **2003** To: **2004**
9.a. Projected Actual Emissions (if required): **2.18** tons/year	9.b. Projected Monitoring Period: ☑ 5 years ☐ 10 years
10. Calculation of Emissions: **Refer Section E**	
11. Potential, Fugitive, and Actual Emissions Comment: **Emission factor based on PSD permit limit.** **Annual to avoid PSD.**	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 2

1. Basis for Allowable Emissions Code: **ESCPSD**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **2.18 tons/yr**	4. Equivalent Allowable Emissions: lb/hour **2.18** tons/year
5. Method of Compliance: **Annual Performance Test –Every Five Years; Method 13A or 13B.**	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions 2 of 2

1. Basis for Allowable Emissions Code: **RULE**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **0.0032 lb/MMBtu**	4. Equivalent Allowable Emissions: **1.59** lb/hour **6.95** tons/year
5. Method of Compliance: **Annual Performance Test –Every Five Years; Method 13A or 13B.**	
6. Allowable Emissions Comment (Description of Operating Method): **Basis for allowable emission: PSD-FL-108A Permit.**	

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS

(Optional for unregulated emissions units.)

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: **H021 – Beryllium Compounds**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **0.00036** lb/hour **0.0016** tons/year	4. Synthetically Limited? ☐ Yes ☑ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: **0.00000073** lb/MMBtu Reference: **PSD-FL-108A Permit**	7. Emissions Method Code: **(0) Potential emissions were set equal to the equivalent allowable emissions or worst-case allowable emissions.**
8.a. Baseline Actual Emissions (if required): **N/A** tons/year	8.b. Baseline 24-month Period: From: To:
9.a. Projected Actual Emissions (if required): **N/A** tons/year	9.b. Projected Monitoring Period: ☐ 5 years ☐ 10 years
10. Calculation of Emissions: **Refer Section E**	
11. Potential, Fugitive, and Actual Emissions Comment: **Emission factor based on PSD permit limit.**	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: **RULE**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **0.00000073 lb/MMBtu**	4. Equivalent Allowable Emissions: **0.00036** lb/hour **0.0016** tons/year
5. Method of Compliance: **Annual Performance Test –Every Five Years.**	
6. Allowable Emissions Comment (Description of Operating Method): **Basis for allowable emission: PSD-FL-108A Permit.**	

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS

(Optional for unregulated emissions units.)

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: **H027 Cadmium Compounds**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **0.015** lb/hour **0.067** tons/year	4. Synthetically Limited? ☐ Yes ☑ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: **0.035 mg/dscm @ 7% O_2** Reference: **40 CFR 60, Subpart Cb**	7. Emissions Method Code: **(0) Potential emissions were set equal to the equivalent allowable emissions or worst-case allowable emissions.**
8.a. Baseline Actual Emissions (if required): **N/A** tons/year	8.b. Baseline 24-month Period: From: To:
9.a. Projected Actual Emissions (if required): **N/A** tons/year	9.b. Projected Monitoring Period: ☐ 5 years ☐ 10 years
10. Calculation of Emissions: **Refer Section E**	
11. Potential, Fugitive, and Actual Emissions Comment: **Emission factor based on 40 CFR 60, Subpart Cb limit.**	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: **RULE**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **0.035 mg/dscm @ 7% O_2**	4. Equivalent Allowable Emissions: **0.015** lb/hour **0.067** tons/year
5. Method of Compliance: **Initial and annual performance tests; Method 29.**	
6. Allowable Emissions Comment (Description of Operating Method): **Basis for allowable emissions: 40 CFR 60, Subpart Cb.**	

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS

(Optional for unregulated emissions units.)

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: **H106 – Hydrochloric Acid**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **16.5** lb/hour **72.3** tons/year	4. Synthetically Limited? ☐ Yes ☑ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: **25 ppmvd @ 7% O_2** Reference: **PSD-FL-108A Permit**	7. Emissions Method Code: **(0) Potential emissions were set equal to the equivalent allowable emissions or worst-case allowable emissions.**
8.a. Baseline Actual Emissions (if required): **N/A** tons/year	8.b. Baseline 24-month Period: From: To:
9.a. Projected Actual Emissions (if required): **N/A** tons/year	9.b. Projected Monitoring Period: ☐ 5 years ☐ 10 years
10. Calculation of Emissions: **Refer Section E**	
11. Potential, Fugitive, and Actual Emissions Comment: **Emission factor based on short term PSD-FL-108A Permit** **Emission limit is 90% reduction or 25 ppmvd @ 7% O_2, whichever is less stringent.** **40 CFR 60, Subpart Cb also applies** **Emission limit is 95% reduction or 29 ppmvd @ 7% O_2, whichever is less stringent.** **HCl is not a PSD regulated pollutant.**	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: **RULE**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **25 ppm dry gas volume @ 7% O_2**	4. Equivalent Allowable Emissions: **16.5** lb/hour **72.3** tons/year
5. Method of Compliance: **Initial and annual performance tests; Method 26 or 26A.**	
6. Allowable Emissions Comment (Description of Operating Method): **Basis for allowable emissions: PSD-FL-108A Permit.**	

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS

(Optional for unregulated emissions units.)

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: **H114 – Mercury Compounds**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **0.02** lb/hour **0.10** tons/year	4. Synthetically Limited? ☐ Yes ☑ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: **50 µg/dscm @ 7% O_2** Reference: **40 CFR 60, Subpart Cb**	7. Emissions Method Code: **(0) Potential emissions were set equal to the equivalent allowable emissions or worst-case allowable emissions.**
8.a. Baseline Actual Emissions (if required): **0.02** tons/year	8.b. Baseline 24-month Period: From: **2003** To: **2004**
9.a. Projected Actual Emissions (if required): **0.06** tons/year	9.b. Projected Monitoring Period: ☑ 5 years ☐ 10 years
10. Calculation of Emissions: **Refer Section E**	
11. Potential, Fugitive, and Actual Emissions Comment: **Short term 40 CFR 60, Subpart Cb limit.** **Annual to avoid PSD.** **Emission limit is 85% reduction or 50 µg/dscm @ 7% O_2, whichever is less stringent.**	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 2

1. Basis for Allowable Emissions Code: **ESCPSD**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **0.06 tons/yr**	4. Equivalent Allowable Emissions: lb/hour **0.06** tons/year
5. Method of Compliance: **Initial and annual performance tests; Method 29.**	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions 2 of 2

1. Basis for Allowable Emissions Code: **RULE**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **50 µg/dscm @ 7% O_2**	4. Equivalent Allowable Emissions: **0.02** lb/hour **0.10** tons/year
5. Method of Compliance: **Initial and annual performance tests; Method 29.**	
6. Allowable Emissions Comment (Description of Operating Method): **Basis for allowable emissions: 40 CFR 60, Subpart Cb.**	

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS

(Optional for unregulated emissions units.)

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: **NO_X – Nitrogen Oxides**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **208.1** lb/hour **912** tons/year	4. Synthetically Limited? ☐ Yes ☑ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: **250 ppmvd @ 7% O_2** Reference: **40 CFR 60, Subpart Cb**	7. Emissions Method Code: **(0) Potential emissions were set equal to the equivalent allowable emissions or worst-case allowable emissions.**
8.a. Baseline Actual Emissions (if required): **641** tons/year	8.b. Baseline 24-month Period: From: **2003** To: **2004**
9.a. Projected Actual Emissions (if required): **660.5** tons/year	9.b. Projected Monitoring Period: ☑ 5 years ☐ 10 years
10. Calculation of Emissions: **Refer Section E**	
11. Potential, Fugitive, and Actual Emissions Comment: **Short term 40 CFR 60, Subpart Cb limit.** **Annual to avoid PSD.**	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 2

1. Basis for Allowable Emissions Code: **ESCPSD**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **660.5 tons/yr**	4. Equivalent Allowable Emissions: lb/hour **660.5** tons/year
5. Method of Compliance: **CEMS**	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions 2 of 2

1. Basis for Allowable Emissions Code: **RULE**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **250 ppmvd @ 7% O_2**	4. Equivalent Allowable Emissions: **208.1** lb/hour **912** tons/year
5. Method of Compliance: **CEMS – 24 hr block average; Method 19.**	
6. Allowable Emissions Comment (Description of Operating Method): **Basis for allowable emissions: 40 CFR 60, Subpart Cb.**	

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS

(Optional for unregulated emissions units.)

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: **PB – Lead – Total (including elemental lead and all lead compounds expressed as lead)**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **0.17** lb/hour **0.76** tons/year	4. Synthetically Limited? ☐ Yes ☑ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: **0.40 mg/dscm @ 7% O_2** Reference: **40 CFR 60, Subpart Cb**	7. Emissions Method Code: **(0) Potential emissions were set equal to the equivalent allowable emissions or worst-case allowable emissions.**
8.a. Baseline Actual Emissions (if required): **0.4** tons/year	8.b. Baseline 24-month Period: From: **2005** To: **2006**
9.a. Projected Actual Emissions (if required): **0.65** tons/year	9.b. Projected Monitoring Period: ☑ 5 years ☐ 10 years
10. Calculation of Emissions: **Refer Section E**	
11. Potential, Fugitive, and Actual Emissions Comment: **Short term 40 CFR 60, Subpart Cb limit.** **Annual to avoid PSD.**	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 2

1. Basis for Allowable Emissions Code: **ESCPSD**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **0.65 tons/yr**	4. Equivalent Allowable Emissions: lb/hour **0.65** tons/year
5. Method of Compliance: **Initial and annual performance tests; Method 29.**	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions 2 of 2

1. Basis for Allowable Emissions Code: **RULE**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **0.40 mg/dscm @ 7% O_2**	4. Equivalent Allowable Emissions: **0.17** lb/hour **0.76** tons/year
5. Method of Compliance: **Initial and annual performance tests; Method 29.**	
6. Allowable Emissions Comment (Description of Operating Method): **Basis for allowable emissions: 40 CFR 60, Subpart Cb.**	

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS

(Optional for unregulated emissions units.)

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: **PM – Particulate Matter – Total**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **10.9** lb/hour **47.6** tons/year	4. Synthetically Limited? ☐ Yes ☑ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: **25 mg/dscm @ 7% O_2** Reference: **40 CFR 60, Subpart Cb**	7. Emissions Method Code: **(0) Potential emissions were set equal to the equivalent allowable emissions or worst-case allowable emissions.**
8.a. Baseline Actual Emissions (if required): **19** tons/year	8.b. Baseline 24-month Period: From: **2003** To: **2004**
9.a. Projected Actual Emissions (if required): **31.2** tons/year	9.b. Projected Monitoring Period: ☑ 5 years ☐ 10 years
10. Calculation of Emissions: **Refer Section E**	
11. Potential, Fugitive, and Actual Emissions Comment: **Short term 40 CFR 60, Subpart Cb limit.** **Annual to avoid PSD.**	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 2

1. Basis for Allowable Emissions Code: **ESCPSD**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **31.2 tons/yr**	4. Equivalent Allowable Emissions: lb/hour **31.2** tons/year
5. Method of Compliance: **Initial and annual performance tests; Method 5.**	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions 2 of 2

1. Basis for Allowable Emissions Code: **RULE**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **25 mg/dscm @ 7% O_2**	4. Equivalent Allowable Emissions: **10.9** lb/hour **47.6** tons/year
5. Method of Compliance: **Initial and annual performance tests; Method 5.**	
6. Allowable Emissions Comment (Description of Operating Method): **Basis for allowable emissions: 40 CFR 60, Subpart Cb.**	

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS

(Optional for unregulated emissions units.)

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: **PM – Municipal Waste Combustor Metals (MWC Metals)**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **10.9** lb/hour **47.6** tons/year	4. Synthetically Limited? ☐ Yes ☑ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: **25 mg/dscm @ 7% O_2** Reference: **40 CFR 60, Subpart Cb**	7. Emissions Method Code: **(0) Potential emissions were set equal to the equivalent allowable emissions or worst-case allowable emissions.**
8.a. Baseline Actual Emissions (if required): **19** tons/year	8.b. Baseline 24-month Period: From: **2003** To: **2004**
9.a. Projected Actual Emissions (if required): **26.2** tons/year	9.b. Projected Monitoring Period: ☑ 5 years ☐ 10 years
10. Calculation of Emissions: **Refer Section E**	
11. Potential, Fugitive, and Actual Emissions Comment: **Short term 40 CFR 60, Subpart Cb limit for PM, assuming all PM is PM10. Annual to avoid PSD.**	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 2

1. Basis for Allowable Emissions Code: **ESCPSD**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **26.2 tons/yr**	4. Equivalent Allowable Emissions: lb/hour **26.2** tons/year
5. Method of Compliance: **Initial and annual performance tests (PM10); Method 5.**	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions 2 of 2

1. Basis for Allowable Emissions Code: **RULE**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **25 mg/dscm @ 7% O_2**	4. Equivalent Allowable Emissions: **10.9** lb/hour **47.6** tons/year
5. Method of Compliance: **Initial and annual performance tests (PM10); Method 5.**	
6. Allowable Emissions Comment (Description of Operating Method): **Basis for allowable emissions: 40 CFR 60, Subpart Cb limit for PM, assuming all is PM10.**	

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS

(Optional for unregulated emissions units.)

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: **SO_2 – Sulfur Dioxide**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **33.6** lb/hour **147** tons/year	4. Synthetically Limited? ☐ Yes ☑ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: **29 ppmvd @ 7% O_2** Reference: **40 CFR 60, Subpart Cb.**	7. Emissions Method Code: **(0) Potential emissions were set equal to the equivalent allowable emissions or worst-case allowable emissions.**
8.a. Baseline Actual Emissions (if required): **131** tons/year	8.b. Baseline 24-month Period: From: **2006** To: **2007**
9.a. Projected Actual Emissions (if required): **151** tons/year	9.b. Projected Monitoring Period: ☑ 5 years ☐ 10 years
10. Calculation of Emissions: **Refer Section E**	
11. Potential, Fugitive, and Actual Emissions Comment: **Short term 40 CFR 60, Subpart Cb.** **Annual to avoid PSD.** **Emission limit is 75% reduction or 29 ppmvd @ 7% O_2, whichever is less stringent.**	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 2

1. Basis for Allowable Emissions Code: **ESCPSD**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **151 tons/yr**	4. Equivalent Allowable Emissions: lb/hour **151** tons/year
5. Method of Compliance: **CEMS**	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions 2 of 2

1. Basis for Allowable Emissions Code: **RULE**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **29 ppmvd @ 7% O_2**	4. Equivalent Allowable Emissions: **33.6** lb/hour **147** tons/year
5. Method of Compliance: **CEMS**	
6. Allowable Emissions Comment (Description of Operating Method): **75% removal or 29 ppmvd. Basis for allowable emissions: 40 CFR 60, Subpart Cb.**	

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS

(Optional for unregulated emissions units.)

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: **SO_2/H106 – Municipal Waste Combustor Acid Gases**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **52.7** lb/hour **231** tons/year	4. Synthetically Limited? ☐ Yes ☑ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: **29 ppmvd @ 7% O_2** Reference: **40 CFR 60, Subpart Cb**	7. Emissions Method Code: **(0) Potential emissions were set equal to the equivalent allowable emissions or worst-case allowable emissions.**
8.a. Baseline Actual Emissions (if required): **175** tons/year	8.b. Baseline 24-month Period: From: **2006** To: **2007**
9.a. Projected Actual Emissions (if required): **195** tons/year	9.b. Projected Monitoring Period: ☑ 5 years ☐ 10 years
10. Calculation of Emissions: **Refer Section E**	
11. Potential, Fugitive, and Actual Emissions Comment: **Individual 40 CFR 60, Subpart Cb limits for HCl and SO_2.** **Annual to avoid PSD.**	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: **ESCPSD**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **195 tons/yr**	4. Equivalent Allowable Emissions: lb/hour **195** tons/year
5. Method of Compliance: **CEMS for SO_2 ; Initial and annual performance test for HCl.**	
6. Allowable Emissions Comment (Description of Operating Method):	

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS

(Optional for unregulated emissions units.)

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: **VOC – Volatile Organic Compounds**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **7.93** lb/hour **34.8** tons/year	4. Synthetically Limited? ☐ Yes ☑ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: **0.016 lb/MMBtu** Reference: **PSD-FL-108A**	7. Emissions Method Code: **(0) Potential emissions were set equal to the equivalent allowable emissions or worst-case allowable emissions.**
8.a. Baseline Actual Emissions (if required): **13.7** tons/year	8.b. Baseline 24-month Period: From: **2003** To: **2004**
9.a. Projected Actual Emissions (if required): **33.2** tons/year	9.b. Projected Monitoring Period: ☑ 5 years ☐ 10 years
10. Calculation of Emissions: **Refer Section E**	
11. Potential, Fugitive, and Actual Emissions Comment: **Emission factor based on PSD permit limit.** **Annual to avoid PSD.**	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 2

1. Basis for Allowable Emissions Code: **ESCPSD**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **33.2 tons/yr**	4. Equivalent Allowable Emissions: lb/hour **33.2** tons/year
5. Method of Compliance: **Initial and annual performance tests; Method 25 or 25A.**	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions 2 of 2

1. Basis for Allowable Emissions Code: **RULE**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **0.016 lb/MMBtu**	4. Equivalent Allowable Emissions: **7.93** lb/hour **34.8** tons/year
5. Method of Compliance: **Initial and annual performance tests; Method 25 or 25A.**	
6. Allowable Emissions Comment (Description of Operating Method): **Basis for allowable emission: PSD-FL-108A Permit.**	

G. VISIBLE EMISSIONS INFORMATION

Complete Subsection G if this emissions unit is or would be subject to a unit-specific visible emissions limitation.

Visible Emissions Limitation: Visible Emissions Limitation 1 of 1

1. Visible Emissions Subtype:	2. Basis for Allowable Opacity:
VE10 – Visible Emissions – 10% Normal	[√] Rule [ ] Other

3. Allowable Opacity:
Normal Conditions: % Exceptional Conditions: **10** %
Maximum Period of Excess Opacity Allowed: **6** min/hour

4. Method of Compliance:
EPA Method 9.

5. Visible Emissions Comment:

Basis for opacity limit: PSD-FL-108A Permit. The opacity for each unit shall not exceed 10 percent, 6-minute average.

H. CONTINUOUS MONITOR INFORMATION

Complete Subsection H if this emissions unit is or would be subject to continuous monitoring.

Continuous Monitoring System: Continuous Monitor 1 of 6

1. Parameter Code: **CO_2**	2. Pollutant(s): **Carbon dioxide**
3. CMS Requirement:	[√] Rule [ ] Other
4. Monitor Information... Manufacturer: **Milton Roy** Model Number: **3300**	Serial Number: **N3A2463T**
5. Installation Date: **July 1989**	6. Performance Specification Test Date: **October 1989**
7. Continuous Monitor Comment: **CO_2 monitor for Stack 2.**	

Continuous Monitoring System: Continuous Monitor 2 of 6

1. Parameter Code: **EM - Emissions**	2. Pollutant(s): **SO_2**
3. CMS Requirement:	[√] Rule [ ] Other
4. Monitor Information... Manufacturer: **Thermo Electron** Model Number: **43A Serial Number**	Serial Number: **43A-41812-266**
5. Installation Date: **July 1, 1989**	6. Performance Specification Test Date: **October 1989**
7. Continuous Monitor Comment: **SO_2 outlet monitor for stack 2.**	

H. CONTINUOUS MONITOR INFORMATION (CONTINUED)

Continuous Monitoring System: Continuous Monitor 3 of 6

1. Parameter Code: **EM – Emissions**	2. Pollutant(s): **Carbon monoxide**
3. CMS Requirement:	[√] Rule [ ] Other
4. Monitor Information... Manufacturer: **Thermo Electron** Model Number: **48**	Serial Number: **48-23414-210**
5. Installation Date: **05/08/08**	6. Performance Specification Test Date: **05/13/08**
7. Continuous Monitor Comment: **CO monitor for flue gas – Unit 2.**	

Continuous Monitoring System: Continuous Monitor 4 of 6

1. Parameter Code: **VE**	2. Pollutant(s): **Visible Emissions (opacity)**
3. CMS Requirement:	[√] Rule [ ] Other
4. Monitor Information... Manufacturer: **Durag** Model Number: **DR-290**	Serial Number: **1204283**
5. Installation Date: **11/08/08**	6. Performance Specification Test Date: **11/26/08**
7. Continuous Monitor Comment: **Opacity monitor for Unit 2.**	

H. CONTINUOUS MONITOR INFORMATION (CONTINUED)

Continuous Monitoring System: Continuous Monitor 5 of 6

1. Parameter Code: **EM – Emissions**	2. Pollutant(s): **NO_x**
3. CMS Requirement:	☑ Rule ☐ Other
4. Monitor Information... Manufacturer: **Thermo Electron** Model Number: **42C**	Serial Number: **42C0402204741**
5. Installation Date: **03/05/04**	6. Performance Specification Test Date: **03/23/04**
7. Continuous Monitor Comment: **NO_X monitor for stack 2.**	

Continuous Monitoring System: Continuous Monitor 6 of 6

1. Parameter Code: **EM – Emissions**	2. Pollutant(s): **SO_2**
3. CMS Requirement:	☑ Rule ☐ Other
4. Monitor Information... Manufacturer: **Thermo EnvironM** Model Number: **43A**	Serial Number: **43A-41813-266**
5. Installation Date: **July 1989**	6. Performance Specification Test Date: **October 1989**
7. Continuous Monitor Comment: **SO_2 inlet monitor for flue gas for Unit 2.**	

EMISSIONS UNIT INFORMATION
Section [2] of [2]

I. EMISSIONS UNIT ADDITIONAL INFORMATION

Additional Requirements for All Applications, Except as Otherwise Stated

1. Process Flow Diagram: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   [√] Attached, Document ID: **Section C** [ ] Previously Submitted, Date _____

2. Fuel Analysis or Specification: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   [ ] Attached, Document ID: _____ [√] Previously Submitted, Date **May 2, 2005**

3. Detailed Description of Control Equipment: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   [√] Attached, Document ID: **Section D** [ ] Previously Submitted, Date _____

4. Procedures for Startup and Shutdown: (Required for all operation permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   [ ] Attached, Document ID: _____ [√] Previously Submitted, Date **May 2, 2005**
   [ ] Not Applicable (construction application)

5. Operation and Maintenance Plan: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   [ ] Attached, Document ID: _____ [√] Previously Submitted, Date **May 2, 2005**
   [ ] Not Applicable **Updates to the O&M Plan will be submitted after construction.**

6. Compliance Demonstration Reports/Records:
   [ ] Attached, Document ID: _____
   Test Date(s)/Pollutant(s) Tested: _____
   _____
   [ ] Previously Submitted, Date: _____
   Test Date(s)/Pollutant(s) Tested: _____
   _____
   [√] To be Submitted, Date (if known): Performance and compliance tests will be conducted and submitted to the FDEP in accordance with the Facility's Title V Air Operation Permit.
   Test Date(s)/Pollutant(s) Tested: _____
   _____
   [ ] Not Applicable
   Note: For FESOP applications, all required compliance demonstration records/reports must be submitted at the time of application. For Title V air operation permit applications, all required compliance demonstration reports/records must be submitted at the time of application, or a compliance plan must be submitted at the time of application.

7. Other Information Required by Rule or Statute:
   [ ] Attached, Document ID: _____ [√] Not Applicable

I. EMISSIONS UNIT ADDITIONAL INFORMATION (CONTINUED)

Additional Requirements for Air Construction Permit Applications

1. Control Technology Review and Analysis (Rules 62-212.400(10) and 62-212.500(7), F.A.C.; 40 CFR 63.43(d) and (e)): ☐ Attached, Document ID: _____ ☑ Not Applicable
2. Good Engineering Practice Stack Height Analysis (Rules 62-212.400(4)(d) and 62-212.500(4)(f), F.A.C.): ☐ Attached, Document ID: _____ ☑ Not Applicable
3. Description of Stack Sampling Facilities: (Required for proposed new stack sampling facilities only) ☐ Attached, Document ID: _____ ☑ Not Applicable

Additional Requirements for Title V Air Operation Permit Applications

1. Identification of Applicable Requirements: ☐ Attached, Document ID: _____
2. Compliance Assurance Monitoring: ☐ Attached, Document ID: _____ ☑ Not Applicable
3. Alternative Methods of Operation: ☐ Attached, Document ID: _____ ☑ Not Applicable
4. Alternative Modes of Operation (Emissions Trading): ☐ Attached, Document ID: _____ ☑ Not Applicable

Not Applicable

Additional Requirements Comment

MALCOLM PIRNIE

INDEPENDENT ENVIRONMENTAL
ENGINEERS, SCIENTISTS
AND CONSULTANTS

C

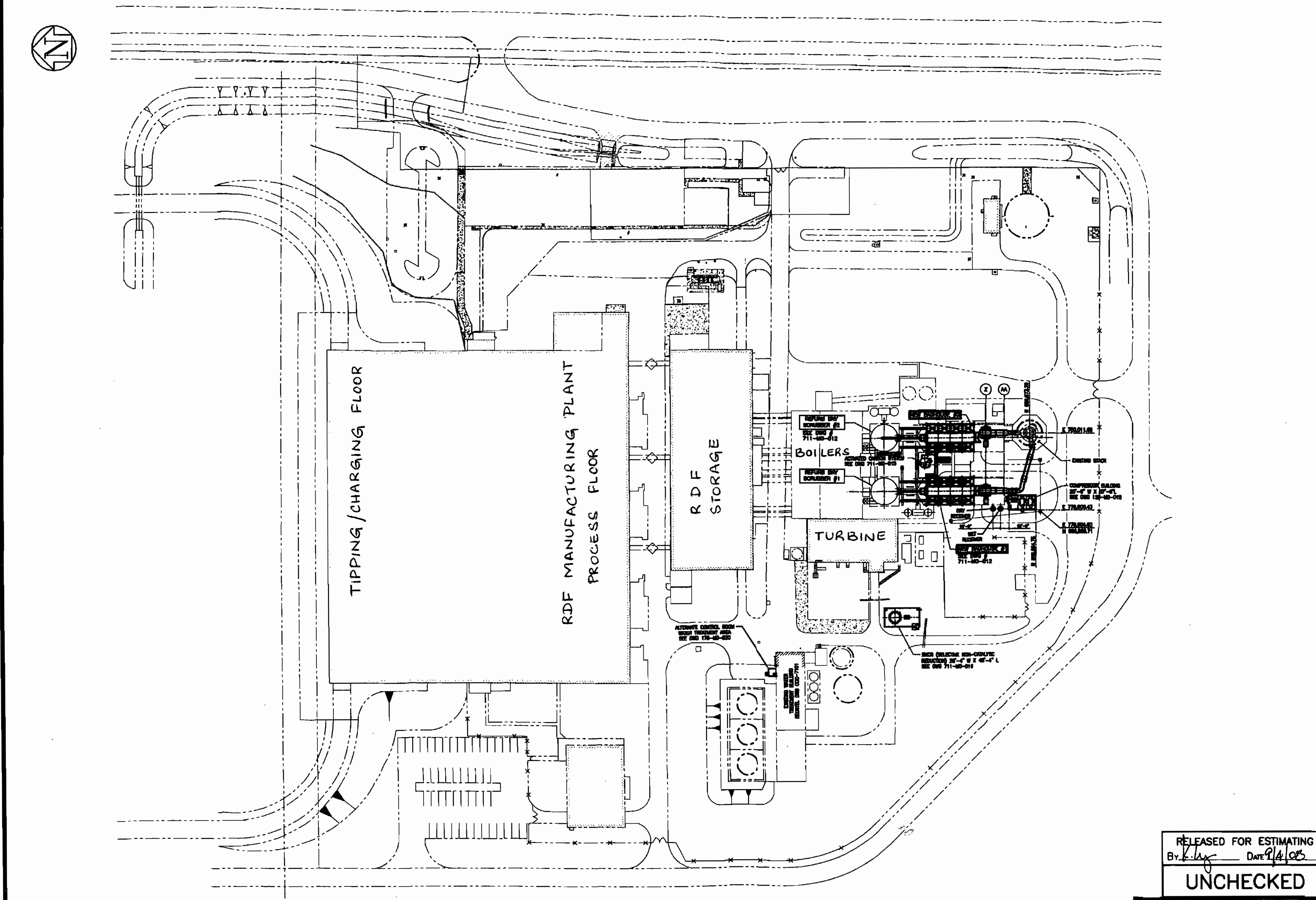
APPENDIX

Solid Waste Authority of Palm Beach County
North County Resource Recovery Facility
Application for Air Construction Permit

Section C

Facility Plot Plan and Process Flow Diagram

MALCOLM PIRNIE



001-MO-024 REV. B

REV.	DATE	REVISIONS	DWN	CKD	ZONE
B		RELEASED FOR ESTIMATING			

DRAWN BY: R. CRAVER DATE: 8/20/08
CHECKED BY: DATE:
DESIGNED BY: DATE:
APPROVED BY: DATE:

RELEASED FOR ESTIMATING
BY K. [signature] DATE 9/4/08
UNCHECKED

APPROVED:
DATE:
SIGNATURE SEAL

BE&K ENGINEERING CO. BIRMINGHAM, ALABAMA
FOR

PALM BEACH RESOURCE RECOVERY
WEST PALM BEACH, FLORIDA

GENERAL ARRANGEMENT NCRRF
REFURBISHMENT
OVERALL SITE PLAN

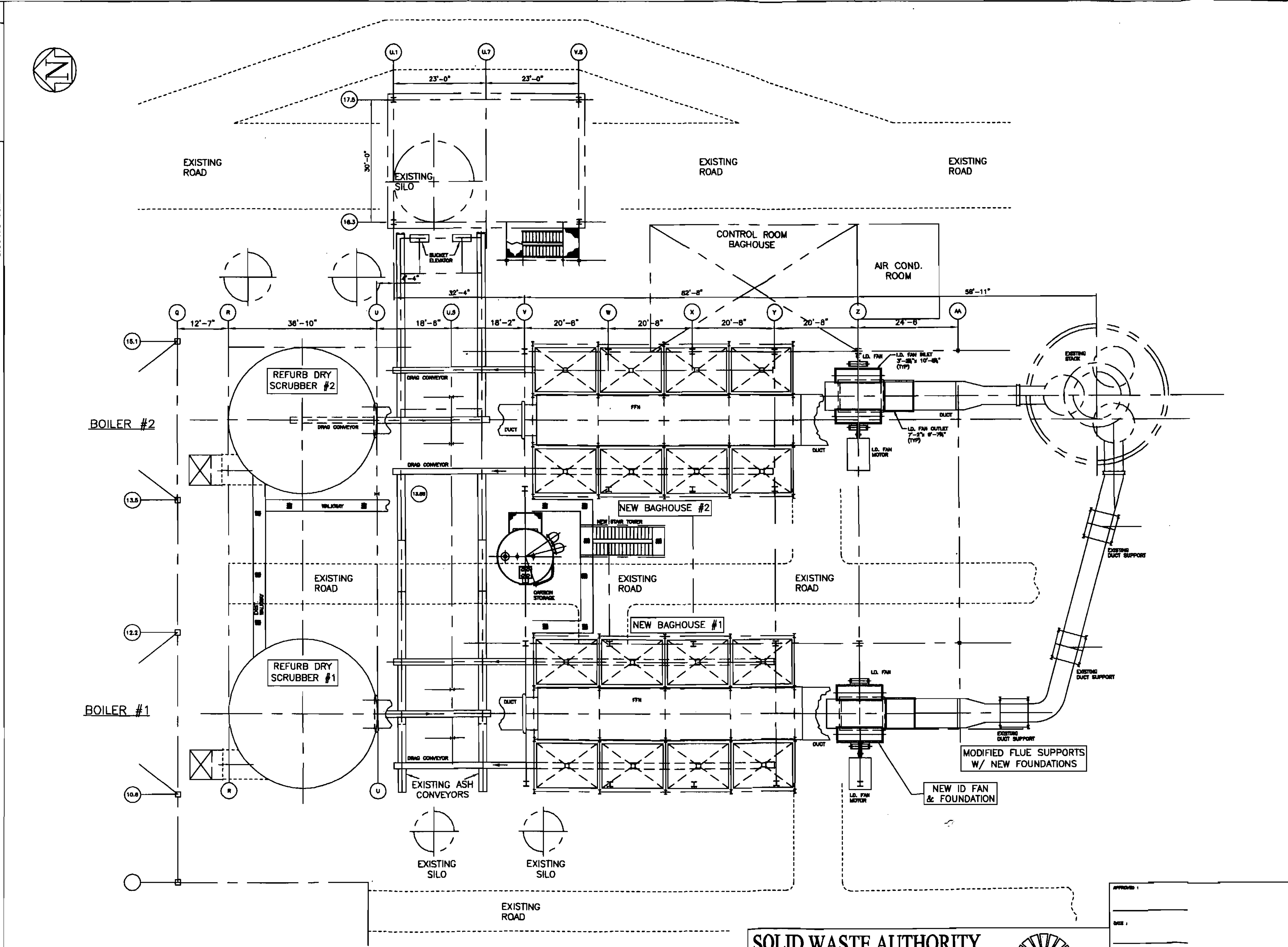
SCALE:	CONTRACT	BE&K DRAWING NO.
1"=60'-0"	5003310	001-MO-024
FILE:		CLIENT DRAWING NO. REV. B

SOLID WASTE AUTHORITY
OF PALM BEACH COUNTY
7501 North Jog Road
West Palm Beach, Florida 33412

SWA

LOGINNAME XREFNAME DWGNAME DATE

SWDBDR



EXISTING ROAD
EXISTING SILO
23'-0"
23'-0"
30'-0"
CONTROL ROOM BAGHOUSE
AIR COND. ROOM
BUCKET ELEVATOR
32'-4"
82'-8"
58'-11"
12'-7"
38'-10"
18'-8"
18'-2"
20'-8"
20'-8"
20'-8"
20'-8"
24'-8"
REFURB DRY SCRUBBER #2
BOILER #2
DRAG CONVEYOR
DUCT
I.D. FAN
I.D. FAN MOTOR
EXISTING STACK
WALKWAY
NEW BAGHOUSE #2
NEW STAIR TOWER
CARBON STORAGE
EXISTING ROAD
EXISTING DUCT SUPPORT
NEW BAGHOUSE #1
REFURB DRY SCRUBBER #1
BOILER #1
EXISTING ASH CONVEYORS
MODIFIED FLUE SUPPORTS W/ NEW FOUNDATIONS
NEW ID FAN & FOUNDATION
EXISTING SILO
EXISTING SILO
EXISTING ROAD

PLAN VIEW (2) NEW BAGHOUSES

SOLID WASTE AUTHORITY
OF PALM BEACH COUNTY
7501 North Jog Road
West Palm Beach, Florida 33412

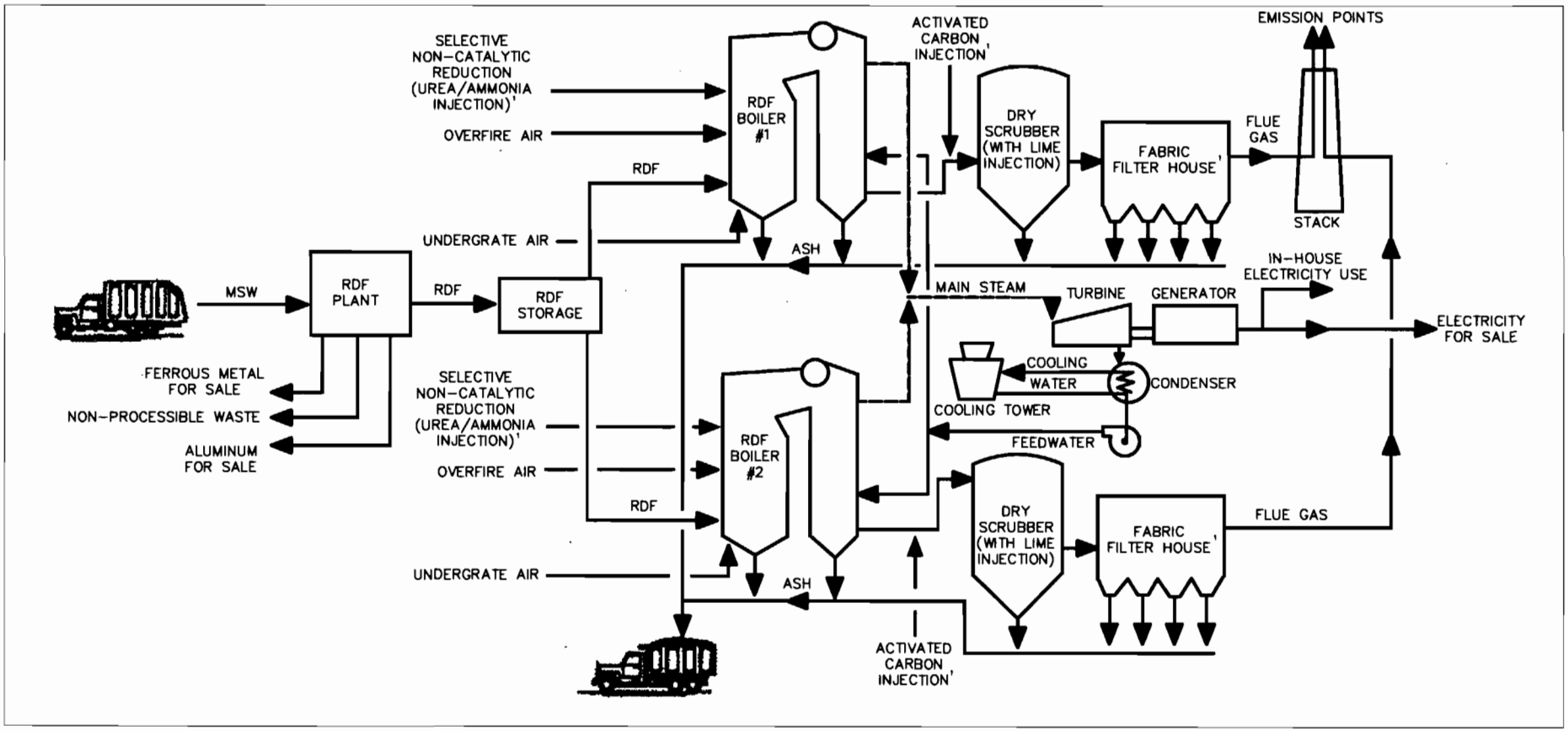
SWA

R CRAVER 6/05/06

PALM BEACH RESOURCE RECOVERY
WEST PALM BEACH, FLORIDA

GENERAL ARRANGEMENT NCRRF REFURBISHMENT

3/32"=1'-0" | 5003310 | 001-MO-020 | A



NOTE:
1. NEW EQUIPMENT AND SYSTEMS INSTALLED AS PART OF THE REFURBISHMENT.

MALCOLM PIRNIE

NO.	BY	DATE	REVISIONS
1	DS	12/22/2006	REFURBISHMENT MODIFICATIONS

DES DS/JK
DRN DS
CHD JK

SOLID WASTE AUTHORITY OF PALM BEACH COUNTY
NORTH COUNTY RESOURCE RECOVERY FACILITY

AIR CONSTRUCTION PERMIT

SCHEMATIC PROCESS FLOW DIAGRAM
EMISSION UNITS E001 AND E002

DATE DECEMBER 2006
SHEET 1 OF 1
CAD REF. NO.

MALCOLM PIRNIE

INDEPENDENT ENVIRONMENTAL ENGINEERS, SCIENTISTS AND CONSULTANTS

D

APPENDIX

Solid Waste Authority of Palm Beach County
North County Resource Recovery Facility
Application for Air Construction Permit

Section D

Control Equipment Description

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D. Control Equipment Description

The Solid Waste Authority of Palm Beach County is committed to ensuring that its operations are conducted in compliance with all of the applicable environmental regulations and as part of this project will upgrade the Facility's air pollution control (APC) systems. Although the Facility currently complies with all of the applicable environmental standards, the Authority intends to install new APC systems that will significantly improve the Authority's ability to reduce the Facility's airborne emissions. This project includes the installation of the following air pollution control equipment: selective non-catalytic reduction to control NOx emissions, activated carbon injection for mercury control, and fabric filter baghouses (FFB) for particulate and metal control. In-addition to the add-on APC equipment, the boiler overfire air system and combustion control systems are being modified to enhance the combustion process thus ultimately providing better carbon monoxide (CO) and NOx control.

Selective Non-Catalytic Reduction (SNCR) system

As part of this project the Authority will install a selective non-catalytic reduction (SNCR) system, which will enhance the Authority's ability to reduce emissions of nitrogen oxides (NOx).

The SNCR system will inject either aqueous ammonia or urea directly into each of the boilers as a method of reducing NOx formation. The number of injection ports, their location and the overall piping layout within the boiler will be designed by the contractor. The SNCR system will be designed to be started, shutdown and monitored via the Facility control system.

The aqueous ammonia or urea storage systems will provide a fourteen day supply and will have a 150% capacity containment dike. To provide system robustness there will be 100% redundancy in all pumping systems.

In addition to the SNCR to be installed, the Authority will also, as stated previously, install a new combustion control system and an improved overfire air system. These systems will improve the Authority's ability to reduce carbon monoxide (CO) emissions and may further reduce the Facility's unabated NOx emissions.

Activated Carbon Injection (ACI) System

The Authority will install an activated carbon injection (ACI) system, which will improve the Authority's ability to reduce mercury emissions. The ACI system is designed to inject powdered activated carbon into the flue gas ductwork just upstream of the dry scrubber (also known as a spray dryer absorber). The activated carbon powder acts as a sorbent for heavy metals, specifically mercury, present in the exhaust gas stream. The carbon particulates and the attached heavy metals will be removed from the exhaust gas stream by the FFB downstream of the dry scrubber. The powdered activated carbon will be stored in a single silo and fed to the injection point via a pneumatic injection train that will be installed for each boiler. Each injection system will consist of the feeding device with air lock and seals, and an air supply and the pneumatic transport will be through pneumatic pipe and/or hoses. To ensure robust operation, sufficient blow out connections will be provided to allow the lines to be quickly cleared should plugging occur. Volumetric feeder with dosage counts (calibrated for weight) or gravimetric feeder will be provided for each unit and one spare feeder system will be installed to provide redundancy.

Fabric Filter Baghouses

The Facility has existing electrostatic precipitators (ESPs) that are used to remove particulates (PM) from the exhaust gas stream. These ESP's will be removed and replaced with fabric filter baghouses (FFB). The new pulse jet FFB particulate removal system will improve the Authority's ability to collect and remove particulates, as well as any heavy metals, dioxins, furans, and mercury that are attached to the particulates. One complete new pulse jet FFB particulate removal system will be installed for each boiler and will be located downstream of the dry scrubber as the final treatment stage before the stack gases are exhausted to atmosphere. Each FFB unit will be designed to treat 100 percent of the flue gas leaving the dry scrubber and will have a minimum of eight compartments. The FFB will be designed to operate with one compartment offline for cleaning, and one compartment offline for maintenance. The pulse-jet cleaning system will be independent from the exhaust gas flow and provided with pneumatic actuated isolation valves to permit off-line cleaning and maintenance on any isolated compartment during full load operation of the plant. Each compartment shall be furnished with one pyramidal shaped hopper to promote collection of the captured particulate. The FFBs shall be designed for non-combustibility, abrasion and corrosion resistance, and overall durability.

Combustion Control System

The new furnace is designed with 14 overfire injection ports located on two injection levels on the furnace. A combination of proprietary adjustable and fixed nozzles with independent control of air mixing volumes is utilized to optimize the combustion process thus potentially leading to lower CO emissions and NOx emissions. An additional RDF transport fan is being added to convey the RDF into the furnace providing a separation between the combustion air system and the transport air system that should allow an additional level of combustion control.

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E

APPENDIX

Solid Waste Authority of Palm Beach County
North County Resource Recovery Facility
Application for Air Construction Permit

Section E

Emissions Calculations

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E. Emissions Calculations

EMISSIONS CALCULATIONS

Calculation of Emission Rate (lb/hr) from Concentration (ppm)

Emission Rate (lbs/hr) = Concentration (ppm) x (1 part/1xE6) x exhaust flow (dscf/min) x 60 (min/hr) x (1 lb-mol/385.5 scf) x molecular weight (lbs/lb-mol)

Calculation of Emission Rate (lb/hr) from Concentration (mg/dscm)

Emission Rate (lbs/hr) = Concentration (mg/dscm) x (1 gram/1000mg) x (1 lb/454 grams) x (0.02832 m^3/ft^3) x exhaust flow (dscf/min) x 60 (min/hr)

Calculation of Emission Rate (lb/hr) from Concentration (µg/dscm)

Emission Rate (lbs/hr) = Concentration (µg/dscm) x (1 gm/1,000,000 µg) x (1 lb/454 grams) x (0.02832 m^3/ft^3) x exhaust flow (dscf/min) x 60 (min/hr)

Calculation of Emission Rate (lb/hr) from Concentration (ng/dscm)

Emission Rate (lbs/hr) = Concentration (ng/dscm) x (1 gram/1,000,000,000 ng) x (1 lb/454 grams) x (0.02832 m^3/ft^3) x exhaust flow (dscf/min) x 60 (min/hr)

Calculation of Emission Rate (lb/hr) from Emission Rate (lb/MMBtu)

Emission Rate (lbs/hr) = Emission Rate (lb/MMBtu) x Firing Rate (MMBtu/hr)

Calculation of Annual Emission Rate (tons/year)

Emission Rate (tons/year) = Emission Rate (lbs/hr) x 8,760 hours/year x 1 ton/2,000 lbs

Notes:

1. All emissions information provided in Sections F1 and F2 are for a single boiler.
2. The Maximum Projected emissions (on a short term basis) are calculated using either:
   a. A maximum gas flow rate of 116,274.0 dscf/min @ 7% O_2 where permit limits are presented in terms of concentration as mass/volume of gas, or
   b. A heat input of 496 MMBtu/hr (110% of the maximum heat input of 450.8 MMBtu/hr) where permit limits are presented as mass/MMBtu.
3. Data collected during stack test or from CEMS will be used together with flow rate, heat input, and annual operating hours to calculate annual emissions.
4. Subpart Cb data is that applicable after April 2009.

North County Resource Recovery Facility
Emission Rates Calculations

Basis for Emissions Calculations

	Design Case	110% Case	
Heat Input (Firing Rate) =	**450.8**	495.88	MMBtu/hour
Exhaust Flow =	**122,440**	134684	dscf/min @ Actual O2
Actual O2 =	**8.9**	**8.9**	%
Emissions O2 Basis =	**7.0**	**7.0**	%
Exhaust Flow = =	105,704	116,274	dscf/min @ 7% O2

Leaving the Tubular Air Heater	Moisture	16.5	%
	Temperature	310	F
	Exhaust Flow	191494	acfm

Calculation of Particulate Matter (PM) Emission Rate (lb/hr) from Concentration (mg/dscm)

$$\frac{25\ \text{mg}}{\text{dscm}} \times \frac{1\ \text{gram}}{1{,}000\ \text{mg}} \times \frac{1\ \text{lb}}{454\ \text{grams}} \times \frac{0.02832\ \text{m}^3}{\text{ft}^3} \times \frac{116274\ \text{dscf}}{\text{min}} \times \frac{60\ \text{min}}{\text{hour}} = \frac{10.9\ \text{lbs}}{\text{hour}}$$

Calculation of Annual Emission Rate (tons/year)

$$\frac{10.9\ \text{lbs}}{\text{hour}} \times \frac{8760\ \text{hour}}{\text{year}} \times \frac{1\ \text{ton}}{2000\ \text{lbs}} = \frac{47.6\ \text{tons}}{\text{year}}$$

Calculation of MWC Metals (PM) Emission Rate (lb/hr) from Concentration (mg/dscm)

$$\frac{25\ \text{mg}}{\text{dscm}} \times \frac{1\ \text{gram}}{1{,}000\ \text{mg}} \times \frac{1\ \text{lb}}{454\ \text{grams}} \times \frac{0.02832\ \text{m}^3}{\text{ft}^3} \times \frac{116274\ \text{dscf}}{\text{min}} \times \frac{60\ \text{min}}{\text{hour}} = \frac{10.9\ \text{lbs}}{\text{hour}}$$

Calculation of Annual Emission Rate (tons/year)

$$\frac{10.9\ \text{lbs}}{\text{hour}} \times \frac{8760\ \text{hour}}{\text{year}} \times \frac{1\ \text{ton}}{2000\ \text{lbs}} = \frac{47.6\ \text{tons}}{\text{year}}$$

North County Resource Recovery Facility
Emission Rates Calculations

Calculation of Nitrogen Oxides (NOX) Emission Rate (lb/hr) from Concentration (ppm)

$$\frac{250\ \text{ppm}}{} \times \frac{1\ \text{part}}{1{,}000{,}000} \times \frac{116274\ \text{dscf}}{\text{min}} \times \frac{60\ \text{min}}{\text{hour}} \times \frac{1\ \text{lb-mol}}{385.5\ \text{dscf}} \times \frac{46\ \text{lbs}}{\text{lb-mol}} = \frac{208.1\ \text{lbs}}{\text{hour}}$$

Calculation of Annual Emission Rate (tons/year)

$$\frac{208.1\ \text{lbs}}{\text{hour}} \times \frac{8760\ \text{hour}}{\text{year}} \times \frac{1\ \text{ton}}{2000\ \text{lbs}} = \frac{912\ \text{tons}}{\text{year}}$$

Calculation of Carbon Monoxide (CO) (24-hr) Emission Rate (lb/hr) from Concentration (ppm)

$$\frac{200\ \text{ppm}}{} \times \frac{1\ \text{part}}{1{,}000{,}000} \times \frac{116274\ \text{dscf}}{\text{min}} \times \frac{60\ \text{min}}{\text{hour}} \times \frac{1\ \text{lb-mol}}{385.5\ \text{dscf}} \times \frac{28\ \text{lbs}}{\text{lb-mol}} = \frac{101.3\ \text{lbs}}{\text{hour}}$$

Calculation of Annual Emission Rate (tons/year)

$$\frac{101.3\ \text{lbs}}{\text{hour}} \times \frac{8760\ \text{hour}}{\text{year}} \times \frac{1\ \text{ton}}{2000\ \text{lbs}} = \frac{444\ \text{tons}}{\text{year}}$$

Calculation of Lead (PB) Emission Rate (lb/hr) from Concentration (mg/dscm)

$$\frac{0.40\ \text{mg}}{\text{dscm}} \times \frac{1\ \text{gram}}{1{,}000\ \text{mg}} \times \frac{1\ \text{lb}}{454\ \text{grams}} \times \frac{0.02832\ \text{m}^3}{\text{ft}^3} \times \frac{116274\ \text{dscf}}{\text{min}} \times \frac{60\ \text{min}}{\text{hour}} = \frac{0.17\ \text{lbs}}{\text{hour}}$$

Calculation of Annual Emission Rate (tons/year)

$$\frac{0.17\ \text{lbs}}{\text{hour}} \times \frac{8760\ \text{hour}}{\text{year}} \times \frac{1\ \text{ton}}{2000\ \text{lbs}} = \frac{0.76\ \text{tons}}{\text{year}}$$

North County Resource Recovery Facility
Emission Rates Calculations

Calculation of Mercury (H114) Emission Rate (lb/hr) from Concentration (µg/dscm)

$$\frac{50\ \mu g}{dscm} \times \frac{1\ gram}{1{,}000{,}000\ \mu g} \times \frac{1\ lb}{454\ grams} \times \frac{0.02832\ m^3}{ft^3} \times \frac{116274\ dscf}{min} \times \frac{60\ min}{hour} = \frac{0.02\ lbs}{hour}$$

Calculation of Annual Emission Rate (tons/year)

$$\frac{0.02\ lbs}{hour} \times \frac{8760\ hour}{year} \times \frac{1\ ton}{2000\ lbs} = \frac{0.10\ tons}{year}$$

Calculation of Hydrogen Fluoride (FL) Emission Rate (lb/hr) from Concentration (lb/MMBru)

$$\frac{0.0032\ lb}{MMBtu} \times \frac{495.88\ MMBtu}{hr} = \frac{1.59\ lbs}{hour}$$

Calculation of Annual Emission Rate (tons/year)

$$\frac{1.59\ lbs}{hour} \times \frac{8760\ hour}{year} \times \frac{1\ ton}{2000\ lbs} = \frac{6.95\ tons}{year}$$

Calculation of Volatile Organic Compoud (VOC) Emission Rate (lb/hr) from Concentration (lb/MMBru)

$$\frac{0.016\ lb}{MMBtu} \times \frac{495.88\ MMBtu}{hr} = \frac{7.93\ lbs}{hour}$$

Calculation of Annual Emission Rate (tons/year)

$$\frac{7.93\ lbs}{hour} \times \frac{8760\ hour}{year} \times \frac{1\ ton}{2000\ lbs} = \frac{34.8\ tons}{year}$$

North County Resource Recovery Facility
Emission Rates Calculations

Calculation of Sulfur Dioxide (SO2) Emission Rate (lb/hr) from Concentration (ppm)

$$\frac{29\ \text{ppm}}{} \times \frac{1\ \text{part}}{1{,}000{,}000} \times \frac{116274\ \text{dscf}}{\text{min}} \times \frac{60\ \text{min}}{\text{hour}} \times \frac{1\ \text{lb-mol}}{385.5\ \text{dscf}} \times \frac{64\ \text{lbs}}{\text{lb-mol}} = \frac{33.6\ \text{lbs}}{\text{hour}}$$

Calculation of Annual Emission Rate (tons/year)

$$\frac{33.6\ \text{lbs}}{\text{hour}} \times \frac{8760\ \text{hour}}{\text{year}} \times \frac{1\ \text{ton}}{2000\ \text{lbs}} = \frac{147\ \text{tons}}{\text{year}}$$

Calculation of MWC Organics (D/F) Emission Rate (lb/hr) from Concentration (ng/dscm)

$$\frac{30\ \text{ng}}{\text{dscm}} \times \frac{1\ \text{gram}}{1{,}000{,}000{,}000\ \text{ng}} \times \frac{1\ \text{lb}}{454\ \text{grams}} \times \frac{0.02832\ \text{m}^3}{\text{ft}^3} \times \frac{116274\ \text{dscf}}{\text{min}} \times \frac{60\ \text{min}}{\text{hour}} = \frac{1.31\text{E-}05\ \text{lbs}}{\text{hour}}$$

Calculation of Annual Emission Rate (tons/year)

$$\frac{1.31\text{E-}05\ \text{lbs}}{\text{hour}} \times \frac{8760\ \text{hour}}{\text{year}} \times \frac{1\ \text{ton}}{2000\ \text{lbs}} = \frac{5.72\text{E-}05\ \text{tons}}{\text{year}}$$

Calculation of HCl (H106) Emission Rate (lb/hr) from Concentration (ppm)

$$\frac{29\ \text{ppm}}{} \times \frac{1\ \text{part}}{1{,}000{,}000} \times \frac{116274\ \text{dscf}}{\text{min}} \times \frac{60\ \text{min}}{\text{hour}} \times \frac{1\ \text{lb-mol}}{385.5\ \text{dscf}} \times \frac{36.5\ \text{lbs}}{\text{lb-mol}} = \frac{19.2\ \text{lbs}}{\text{hour}}$$

Calculation of Annual Emission Rate (tons/year)

$$\frac{19.2\ \text{lbs}}{\text{hour}} \times \frac{8760\ \text{hour}}{\text{year}} \times \frac{1\ \text{ton}}{2000\ \text{lbs}} = \frac{84\ \text{tons}}{\text{year}}$$

North County Resource Recovery Facility
Emission Rates Calculations

Calculation of Beryllium (H021) Emission Rate (lb/hr) from Concentration (lb/MMBru)

$$\frac{7.3E\text{-}07\ \text{lb}}{\text{MMBtu}} \times \frac{495.88\ \text{MMBtu}}{\text{hr}} = \frac{0.00036\ \text{lbs}}{\text{hour}}$$

Calculation of Annual Emission Rate (tons/year)

$$\frac{0.00036\ \text{lbs}}{\text{hour}} \times \frac{8760\ \text{hour}}{\text{year}} \times \frac{1\ \text{ton}}{2000\ \text{lbs}} = \frac{0.0016\ \text{tons}}{\text{year}}$$

Calculation of Cadmium (H027) Emission Rate (lb/hr) from Concentration (mg/dscm)

$$\frac{0.035\ \text{mg}}{\text{dscm}} \times \frac{1\ \text{gram}}{1{,}000\ \text{mg}} \times \frac{1\ \text{lb}}{454\ \text{grams}} \times \frac{0.02832\ \text{m}^3}{\text{ft}^3} \times \frac{116274\ \text{dscf}}{\text{min}} \times \frac{60\ \text{min}}{\text{hour}} = \frac{0.015\ \text{lbs}}{\text{hour}}$$

Calculation of Annual Emission Rate (tons/year)

$$\frac{0.015\ \text{lbs}}{\text{hour}} \times \frac{8760\ \text{hour}}{\text{year}} \times \frac{1\ \text{ton}}{2000\ \text{lbs}} = \frac{0.067\ \text{tons}}{\text{year}}$$

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APPENDIX

Solid Waste Authority of Palm Beach County
North County Resource Recovery Facility
Application for Air Construction Permit

Section F

Summary of Requested Permit Revisions

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F. Summary of Requested Permit Revisions

The permit revisions requested in this application are summarized below:

- Remove the one-hour CO emissions limit of 400 ppm that currently is in the Facility's permit. This change is consistent with 40 CFR 60 (Subpart Cb Emissions Guidelines), which includes 24-hour and 4-hour block average CO concentration emissions limit, but does not include a one-hour limit. The Facility's current Title V Air Operations Permit and PSD Permit already include a 24-hour, 200 ppm CO emissions limitation. Please refer to the available background information regarding the Facility's CO emissions limits, provided in Section G.

- Delete the absolute temperature limitation of 300° F (measured at the particulate matter control device inlet) that applies to the Facility's exhaust gas, pursuant to the Facility's current Title V permit and PSD permit. Replace the existing 300° F limit with temperature limitation language contained in 40 CFR 60, Subpart Cb. Please refer to Section G for available documentation regarding this permit condition.

- Change the Facility's permit to indicate that the Facility's steam flow rate is the short-term operating limit of 324,000 lb/hr (4-hr block average). Steam flow effectively limits heat input and RDF processing rates, and it is directly measured by the Facility.

  Specifically, the following is requested:

  The current Title V Air Operation Permit and PSD Permit identify the existing MWC units' heat input rating as 412.5 MMBtu/hr (per MWC unit). An adjustment to this heat input rating is needed to accurately reflect the permitted steaming rate of 324,000 lbs/hr, which is based on a maximum heat input rate of 450.8 MMBtu/hr. The permit should explicitly state that the heat input design rating is for "information purposes" only and the two MWC boiler operating rates are limited only by steam production.. This request is generally consistent with other waste-to-energy facility air operating permits in Florida. The currently permitted steam production limitation is 324,000 lbs/hour (4-hr block average) for each boiler and the Project will not increase this limit. Additionally, due to the inherent variability in the heating value of MSW, the permit should explicitly state that the boiler's nominal design RDF processing rates are not limited by the

permit. The maximum waste combustor load limitation should be indicated only as stated in the Specific Condition A.2 of the Facility's current Title V Air Operation Permit, ("the highest 4-hour arithmetic average municipal waste combustor load achieved during 4 consecutive hours during the most recent dioxin/furan performance test demonstrating compliance with the applicable limit for MWC organics as specified in Specific Condition A.17.")

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APPENDIX

Solid Waste Authority of Palm Beach County
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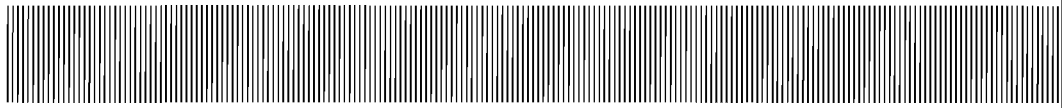
Application for Air Construction Permit

Section G

Supporting Documentation for Existing Permit Conditions Modification



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G. Supporting Documentation for Existing Permit Conditions Modification

I. Request for Removal of CO 1-hour Permit Emission Limit

A. Introduction

The original operating permit for the Facility included a CO requirement of 400 ppm on a 3-hour block average. This permit emission limit and the other emission rates were based upon the vendor's predicted performance. Once operation began and actual performance data for the facility was available, a request to modify several of the permitted emission rates was submitted. A modified PSD permit, PSD-FL-108A, was issued in 1991 and included an increased emission rate for NOx and 1-hour CO limit of 400 ppm and a 24-hour CO limit of 200 ppm, which was consistent with the then recently issued Subpart Cb Emission Guidelines.

B. Current Permit CO Emission Limits

The Facility is currently subject to a 1-hour block average of 400 ppm and a 24-hour block average of 200 ppm @ 7% O_2 for CO. These limits were requested by SWA during the PSD permit modifications to increase the NOx emission limits to demonstrate good combustion.

Excerpt from BACT for NCRRF page 4 May 1991

Carbon Monoxide

The applicant has proposed a reduction in the emission limitation for carbon monoxide as a valid criteria to demonstrate good combustion practices.

The applicant has proposed that the averaging time for the current carbon monoxide limitation of 400 ppmdv at 12% CO_2 be adjusted from 3 hours to 1 hour. In addition, the applicant has also proposed that a carbon monoxide limitation of 200 ppmdv at 12% CO_2 be established with a 24 hour averaging time.

C. Authority's Proposal

The proposed refurbishment project includes the installation of air pollution control equipment together with a new combustion control system, which will optimize the combustion efficiency of the boilers. The applicant requests that the Facility be subject only to a CO emission limit of 200 ppm @ 7% O_2 on a 24-hour block average, in compliance with the applicable Subpart Cb emission guidelines, 40 CFR 60.34b(a) and as is currently included in the Facility's PSD-FL-108A permit condition 3 c (part) and Title V operating permit A.19 (part).

II. Request for Modification to Permit Condition Stack Gas Temperature Limitation

A. Introduction

The Facility is subject to a maximum exhaust gas temperature limit of 300°F, which is applicable at the outlet of the scrubbers (Title V permit condition R18). The PSD permit, PSD-FL-180A, January 1992, specific condition 6, establishes the 300°F temperature limit on the exhaust temperature at the outlet of the scrubber. Upon request, this temperature limitation was increased for a finite period to 350°F, to accommodate especially moisture laden wastes, following hurricane events.

B. Current Permit Temperature Limitation

The existing Title V Permit 09900234-010-V includes a maximum exhaust gas temperature limitation of 300°F (permit condition R18). This requirement is in addition to the general temperature restriction that is included in the permit (permit condition O.2.). The Subpart Cb requirements pursuant to the applicable Subpart Cb regulations (40 CFR 60.34b(b) and 40 CFR 60.51b), limits the stack gas exhaust temperature measured at the particulate matter control device inlet to 17°C above the measured temperature during the most recent stack test that demonstrated compliance with the dioxin/furans (MWC Organics) emission limit. The Subpart Cb temperature limit ensures that the Facility's operation is always similar to the operations during the most recent stack test when the emissions of dioxin/furans were within permit limits. Subpart Cb does not place an absolute limit on the stack gas temperature itself.

C. Basis for Current Permit Temperature Limitation

Available correspondence on the FDEP website was reviewed to determine the basis for the current permit condition. The initial intent of this temperature limitation was described in the *Intent to Permit, Technical Evaluation and Preliminary Determination,*

BACT, issued by the FDEP in May 1991. This document indicates that the temperature limitation was added by the FDEP as a way to ensure the control of heavy metal (mercury and lead) emissions by promoting condensation.

Excerpt from Technical Evaluation and Preliminary Determination for NCRFF, May 1991

Heavy Metals (Lead, Mercury)

Heavy metals such as lead and mercury are controlled by using high efficiency particulate control devices and taking measures to ensure that metals condensation is maximized. The applicant has requested that the emission limitations for lead and mercury be increased from the present values of 0.004 lb/MMBtu and 3,200 grams per day (equivalent to 0.00036 lb/MMBtu), respectively.

A review of the stack testing at the Palm Beach RRF indicates that the maximum lead and mercury levels measured were 7.12×10^{-5} lb/MMBtu and 6.56×10^{-5} lb/MMBtu, respectively. These levels are well below what is currently permitted. Although the emissions of these heavy metals can fluctuate widely depending upon the waste stream, it is not expected that the current limitations will be exceeded based on the test results.

To further enhance the control of heavy metals, recent permits for RRF facilities have established maximum temperatures at the outlet of the scrubber to promote condensation. In each case the temperature at the exit of the scrubber has been limited to 300°F. This temperature limitation along with the current emission limitations for lead and mercury is judged to represent BACT for the Palm Beach RRF.

D. Authority's Proposal

Fabric filters will be installed as part of the Project. These filters will have operating advantages and a potential prolonged life by operating at a higher exhaust gas temperature than the current 300°F limit.

The proposed Project will add fabric filters (replacing the Facility's current electrostatic precipitators) and activated carbon injection (ACI) systems as control technologies that will remove heavy metals from the Facility's exhaust gas stream. Therefore, the 300°F temperature limit to promote condensation to remove heavy metals is no longer necessary. The Authority requests that the 300°F temperature limit be removed as a permit condition. The Facility will continue to be limited to the maximum temperature

specified in permit condition O.2., which is consistent with the applicable Subpart Cb regulation and with recently issued permits for other MWC facilities.

III. Expected Actual Emissions after Project Completion

During the pre-application meeting on December 4, 2008, FDEP requested that in addition to the Baseline Actual Emissions and Projected Actual Emissions for the Project as required for the PSD applicability analysis, the "Expected Actual Emissions" after project completion also be provided. The table below presents these expected actual emissions following the completion of the Refurbishment Project, compared to the Baseline and Projected Actual emissions. Note that the projected estimates of expected actual emissions are provided for informational purposes only.

Table 1
Summary of Annual Emission Rates

Pollutant	Tons per year (TPY)			
	Baseline Actual Emissions[1]	**Projected Actual Emissions**	**Net Emissions Increase**	**Expected Actual Emissions**
Particulate, PM	38.4	62.4	24	62
PM10/MWC Metals [2]	38.4	52.4	14	52
Nitrogen Oxides, NO_x	1,282	1,321	39	1,112
Carbon Monoxide, CO	335	434	99	274
Lead, Pb	0.8	1.3	0.5	0.54
Mercury, Hg	0.03	0.12	0.09	0.11
Hydrogen Fluoride, HF	1.86	4.36	2.5	1.0
Volatile Organic	27.3	66.3	39	36

Pollutant	Tons per year (TPY)			
	Baseline Actual Emissions[1]	**Projected Actual Emissions**	**Net Emissions Increase**	**Expected Actual Emissions**
Compounds, VOC				
Sulfur Dioxide, SO_2	262	301	39	269
MWC Organics, D/F	75.5E-06	78.9E-06	3.4E-06	50 E-06
MWC Acid Gases (as SO_2+HCl) [3]	350	389	39	371

Notes:

1. Baseline Actual Emissions were developed from a review of 5 years of actual annual emissions (calendar years 2003 through 2007). The consecutive 24-month average of calendar years 2003 and 2004 was selected as the baseline for particulates, VOC, mercury, hydrogen fluoride, NO_x, MWC Metals and MWC Organics, the average of calendar years 2005 and 2006 was selected for lead, and the average of calendar years 2006 and 2007 was selected for CO, SO_2 and MWC Acid Gases (SO_2 and HCl).
2. The Facility does not have historical data for PM10 emissions. For this analysis, it has been assumed that PM10 emissions are equal to PM emissions.
3. A significant emissions rate (SER) has not been established in Rule 62-210.200(280) for HCl. However, the SER for MWC acid gases is based on the total of HCl and SO_2 emissions.

There are a number of approaches that can be used to estimate Expected Actual Emissions on an annual basis. However, since the refurbishment project will include the future installation of new equipment, these estimates of Expected Actual Emissions were determined based upon the technical specifications from the proposed equipment vendor whenever available. For those pollutants for which vendor specifications were not available, the Expected Actual Emissions were based upon the maximum of the measured stack test data over the last five years (2003 through 2007).

It is expected that with the refurbishment including the installation of additional controls, emissions are expected to improve. However, for several of the pollutants shown in the table, the Expected Actual Emissions appear greater than the Baseline Actual Emissions.

This is the result of the methodology used to estimate the Expected Actual Emissions. Namely,

1. The use of vendor guarantees wherever available to predict pollutant-specific Expected Actual emissions. This resulted in the Expected Actual Emissions of PM, PM10. mercury, sulfur dioxide, and acid gases to be somewhat above the Baseline Actual Emissions.
2. Where vendor guarantees were unavailable, the use of the maximum measured emission rates from the most recent five years of stack test data. This resulted in the Expected Actual Emissions of VOCs to be slightly higher than baseline.

As shown in the above table, the refurbishment will result in reductions due to the additional control equipment. None of the pollutants will have a PSD significant increase. Table 2 summarizes the controls to be installed as part of the refurbishment project and their anticipated effect on the emissions for each pollutant.

Table 2.
NCRRF Refurbishment Control Technologies

Pollutant	Existing Controls	Controls after Proposed Refurbishment Project
Particulates /PM10	Emissions controlled using an ESP	• Emissions will be controlled with a Fabric Filter which is designed with a higher removal efficiency than the existing ESP to enhance particulate control. • The use of Lime injection with the Spray Dryer Absorber will result in additional particulate control due to caking on the surface of the fabric filter. • Installation of this Air Pollution Control (APC) equipment combination will ensure that short term emission rates are not increased due to the project.
NOx	Furnace Design includes Staged air Combustion	• Enhanced furnace design with staged air and the addition of Non Selective Catalytic Reduction. • Installation of this APC equipment will ensure that short term emission rates are not increased due to the project.
CO	Good Combustion Practices	• The proposed project will install up-to date combustion equipment and more complete combustion is anticipated. • Installation of this new combustion together with Good Combustion Practices will ensure that short term emission rates are not increased due to the project

Pollutant	Existing Controls	Controls after Proposed Refurbishment Project
VOC	Good Combustion Practices	• The proposed project will install up-to date combustion equipment and more complete combustion is anticipated. • Installation of this new combustion together with Good Combustion Practices will ensure that short term emission rates are not increased due to the project
Lead	ESP	• Emissions controlled with a Fabric Filter, the use of Lime injection with the Spray Dryer Absorber will result in enhanced particulate control due to caking on the surface of the fabric filter. • Installation of this APC equipment combination will ensure that short term emission rates are not increased due to the project.
Mercury	ESP	• Emissions controlled by the use of Activated Carbon injection together with the use of a Fabric Filter. The use of Lime injection with the Spray Dryer Absorber will result in enhanced particulate control due to caking on the surface of the fabric filter. • Installation of this APC equipment combination will ensure that short term emission rates are not increased due to the project.
HFl	Spray Dryer Absorber	• Emissions controlled with a Fabric Filter, the use of Lime injection with the Spray Dryer Absorber will result in enhanced particulate and acid gas control due to caking on the surface of the fabric filter. • Installation of this APC equipment combination will ensure that short term emission rates are not increased due to the project.
SO2	Spray Dryer Absorber	• Emissions will continue to be controlled by the Spray Dryer absorber as now. The use of the fabric filter with the Spray Dryer Absorber may result in enhanced SO2 control due to caking on the surface of the fabric filter. • There is no change to the control equipment or exhaust flowrate and therefore short term emission rates are not increased due to the project.
MWC Organics	Good Combustion Practices	• The refurbishment will provide more uniform temperature in the boiler and repair any leakage in the ductwork to improve overall combustion efficiency. • The installation of up-to-date combustion equipment including over fire control in addition to good combustion practices will ensure that short term emission rates are not increased due to the project.
MWC Acids	Spray Dryer Absorber	• Emissions will continue to be controlled by the Spray Dryer absorber. The use of the fabric filter with the

Pollutant	Existing Controls	Controls after Proposed Refurbishment Project
		Spray Dryer Absorber may result in enhanced MWC Acids control due to caking on the surface of the fabric filter. • There is no change to the control equipment or exhaust flowrate and therefore short term emission rates are not increased due to the project.
Beryllium	ESP	• Emissions controlled with a Fabric Filter, the use of Lime injection with the Spray Dryer Absorber will result in enhanced particulate control due to caking on the surface of the fabric filter. • Installation of this APC equipment combination will ensure that short term emission rates are not increased due to the project.
Cadmium	ESP	• Emissions controlled with a Fabric Filter, the use of Lime injection with the Spray Dryer Absorber will result in enhanced particulate control due to caking on the surface of the fabric filter. • Installation of this APC equipment combination will ensure that short term emission rates are not increased due to the project.

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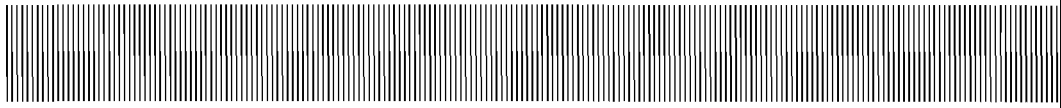
APPENDIX

Solid Waste Authority of Palm Beach County
North County Resource Recovery Facility
Application for Air Construction Permit

Section H

Rule Applicability Analysis



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H. Rule Applicability Analysis

RULE APPLICABILITY ANALYSIS – LIST OF APPLICABLE REGULATIONS

Federal Regulations

- 40 CFR 60 Subpart Cb – Standards of Performance for New Stationary Sources
- 40 CFR 64 – Compliance Assurance Monitoring

Florida Administrative Code

- 62-4 – Permits
- 62-204. 800 – Federal Regulations Adopted by Reference
- 62-210 – Stationary Sources of General Requirements
- 62-210.300 – Permits Required
- 62-210.300(a) – Exemptions
  - 62-210.300(3)(a)13 – Exemption for brazing, soldering or welding equipment
  - 62-210.300(3)(a)15 – Fire and Safety Equipment
  - 62-210.300(3)(a)35 – One (1) or more emergency generators located within a single facility
  - 62-210.300(3)(a)36 – General Purpose Internal Combustion Engine
- 62-210.300(5) – Notification of Startup
- 62-210. 350 – Public Notice and Comment
- 62-210.360 – Administrative Permit Corrections and Amendments
- 62-210.370 – Emissions Computation and Reporting
- 62-210.650 – Circumvention
- 62-210.700 – Excess Emissions
- 62-210.900 – Forms and Instructions
- 62-212 – Stationary Sources Preconstruction Review
- 62-212.300 – General Preconstruction Review Requirements
- 62-212.400 – Prevention of Significant Deterioration (PSD)
- 62-212.500 – Preconstruction Review for Nonattainment Areas
- 62-213 – Operation Permits for Major Sources of Air Pollution
- 62-296 – Stationary Sources - Emission Standards
- 62-296.320 – General Pollutant Emission Limiting Standards
- 62-296.401(2) – Existing Incinerators
- 62-296.416(3) – Mercury Emission Limiting Standards
- 62-297.310 – General Compliance Test Requirements
- 62-297-401 – Compliance Test Methods

- 62-297.620 – Exceptions and Approval of Alternative Procedures and Requirements

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I

APPENDIX

Solid Waste Authority of Palm Beach County
North County Resource Recovery Facility
Application for Air Construction Permit

Section I

Precautions to Prevent Emissions of Unconfined Particulate Matter

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I. Precautions to Prevent Emissions of Unconfined Particulate Matter

Per Rule 62-296.320(4)(c), F.A.C., Unconfined Emissions of Particulate Matter, the Authority will continue to use reasonable precautions to control unconfined emissions of particulate matter. Among other things, the dust control measures practiced at the North County Resource Recovery Facility (NCRRF) site include the application of water as a dust suppressant to unpaved roads and active unpaved areas.

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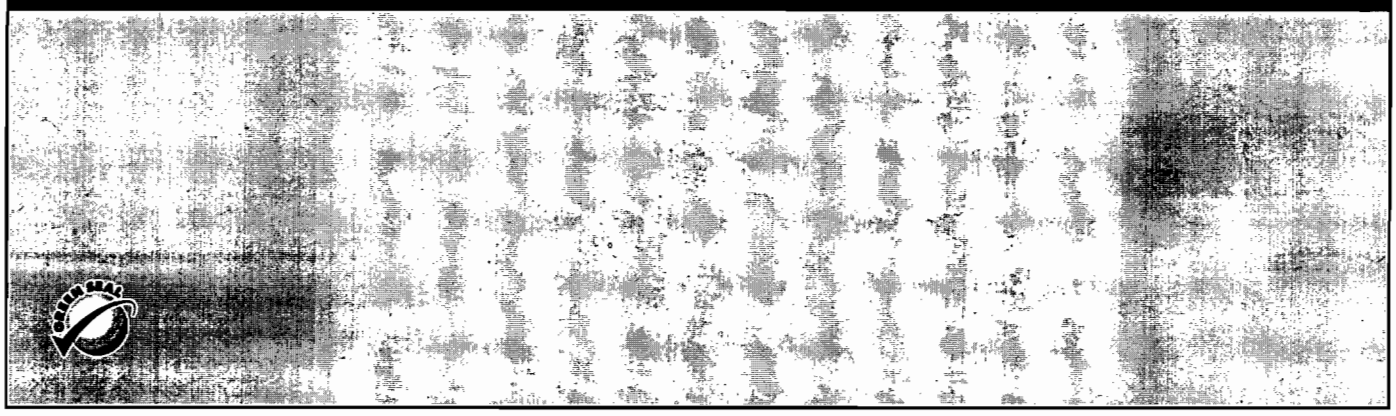
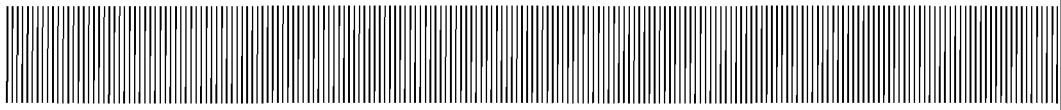


Solid Waste Authority of Palm Beach County
North County Resource Recovery Facility
Application for Air Construction Permit

Section J

Insignificant Emissions Source (Carbon Silo)



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J. Insignificant Emissions Source (Carbon Silo)

Description

The Authority's Project will include the addition of one activated carbon storage silo that will store activated carbon used for mercury control in the MWC units. The silo is equipped with a fabric vent filter to remove entrained carbon from the air vented during loading operations.

Particulate (PM/PM10)

Turbulent conditions in the carbon silo during loading operations entrain carbon particles in the conveying air. As the air moves through the silo, the heavier particles settle out in areas of low air velocity. The remaining particles are removed by the vent filter in the baghouse above the silo. The turbulent conditions that generate particulate emissions only exist in the carbon silo when conveying air (and new carbon) enters the silo during loading operations. Carbon loading operations are only performed at the Facility approximately 20 hours per year, but for the purposes of this analysis, they will be conservatively estimated at 100 hours per year. Potential pre-control particulate emissions estimates are calculated below.

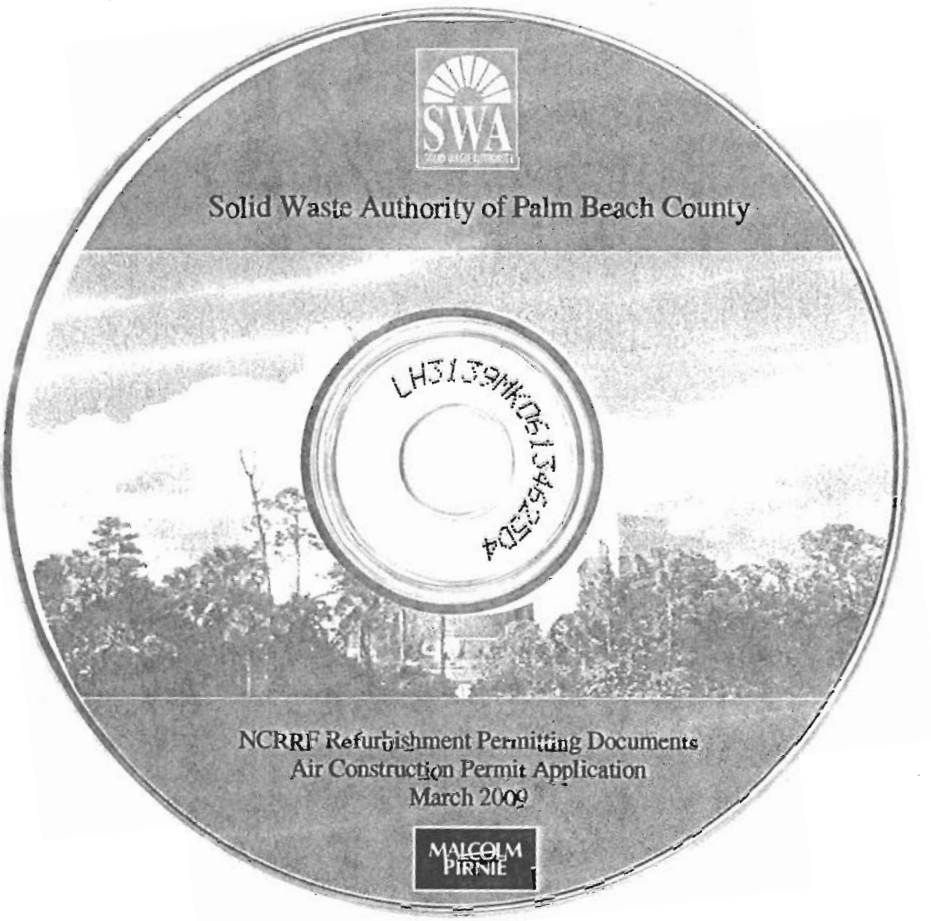
Pre-Control PM Estimate

Emission Factor[1] x ton conversion x design fill rate[2] x operating time[3] = PM emissions estimate
(0.58 lb/ton) x (ton/2,000 lb) x (20 tons/hr) x (100 hrs/yr) = 0.58 tons/yr.

0.58 tons/yr < 5 tons/yr (significance threshold for regulated pollutants under Rule 62-213.430(6)(b)).

[1] Uncontrolled Particulate Matter Emission Factor for Carbon Black Manufacture (from AP-42, Vol.1, Chapter 6), factor for pneumatic system vent, bag filter.
[2] Carbon silo design fill rate used as a conservative estimate. Actual fill rate may be less.
[3] Operating time is based on 100 hours per year. Actual operating time may be less.

Based on the results of these calculations, the proposed carbon silo meets the criteria in Rule 62-213.430(6)(b) and should be considered an insignificant emissions source.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March 2009
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