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MAY 23 2013
DIVISION OF AIR
RESOURCE MANAGEMENT

May 9, 2013

Mr. Syed Arif
Administrator, Permitting Section
Office of Permitting and Compliance
Division of Air Resource Management
Florida Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Project: 0990234-028-AC -
PSD-FL-413B

Re: Solid Waste Authority of Palm Beach County
Palm Beach Renewable Energy Facility No. 2
Air Permit Nos. 0990234-017-AC (PSD-FL-413) and 0990234-023-AC (PSD-FL-413A)
Permit Modification Application

Dear Mr. Arif,

The Solid Waste Authority of Palm Beach County (the Authority) is submitting this permit modification application to request revisions to the air construction permits (Air Permit No. 0990234-017-AC (PSD-FL-413) and Air Permit No. 0990234-023AC (PSD-FL-413A)) issued for the Palm Beach Renewable Energy Facility No. 2 (PBREF No. 2). As we recently discussed with the Department, additional permit modifications are desired as the project is progressing through the detailed design and construction stages. The contractor selected to construct and operate the facility, Babcock & Wilcox (B&W), has provided updated design specifications that will require permit revisions authorizing (a) a reduction in the maximum heat input rate for the natural gas burner system, (b) an increase in the size of the diesel fire pump engines, (c) a different type of air pollution control system for the facility's ash handling building, and (d) the installation of an auxiliary cooling tower. Lastly, the Authority is requesting changes to the mercury (Hg) monitoring and testing requirements specified in the permit for the municipal waste combustors (MWCs). Please recognize that no changes to the emission limits for the MWCs are being requested.

Enclosed are updated permit application forms in Attachment A and emission calculations in Attachment B for the diesel fire pump engines. Attachment B also contains emission calculations for the auxiliary cooling tower. Additionally, as suggested by the Department, we are providing a strike-out/underline version of the air permit in Attachment C to highlight the requested permit modifications.

The requested permit revisions are described below.

- Natural Gas Burner System (EU-024, 025, and 026) – Permit 0990234-017-AC (PSD-FL-413), Section 3.A.9.

The permit provides that the maximum heat input to each MWC unit from natural gas shall be limited to 246 MMBtu/hr. The contractor's current design indicates that the maximum heat input from the natural gas burner system will be 167 MMBtu/hr. Accordingly, a permit revision is requested for this reduction in the maximum heat input.

- Diesel Fire Pump Engines (EU-031 and 032) - Permit No. 0990234-017-AC (PSD-FL-413), Section 3.C. modified by Permit No. 0990234-023-AC (PSD-FL-413A), Section 2.

The modified permit authorizes installation of two diesel fire pump engines, each with a maximum design rating of 305 hp. The contractor's design now calls for an increased maximum design rating of 351 hp for these units to satisfy local fire department codes. Therefore, a permit revision is requested to specify a maximum design rating of 351 hp for the fire pump engines.

- Ash Handling System and Building (EU-034) - Permit No. 0990234-017-AC (PSD-FL-413), Section 3.E.

To minimize particulate matter (PM) emissions from ash handling equipment, the permit requires the use of a fabric filter (FF) baghouse, through which air from the ash handling building is to be routed prior to venting to the atmosphere. In lieu of a FF baghouse, the contractor is planning to install a wet scrubber system for emissions control. A wet scrubber system is believed to be more suitable in light of certain drawbacks associated with a FF baghouse system for this application. These issues include corrosion concerns with respect to a FF baghouse system's carbon steel components and potential for "blinding" (plugging) of the bag filters given the humid conditions expected in the ash handling building due to moisture evaporation from warm bottom ash collected. In contrast, the humid air will not adversely affect the performance of wet scrubber systems, which have reliably been used for effective control of PM emissions from ash handling building exhaust air at other waste-to-energy (WTE) facilities.

The use of a high efficiency Whirl Wet® dust collection system from Tri-Mer Corporation is planned for the ash handling building at the new facility. This system features corrosion-resistant polypropylene construction and a unique process to create intense mixing of particulates and water in a whirl chamber to achieve a high level of dust control (typically in the 99%+ range). The Whirl Wet® system has been permitted by FDEP for PM control of ash handling operations at other Florida facilities including the North Broward, McKay Bay, Hillsborough County and Pinellas County WTE facilities.

■ Auxiliary Cooling Tower

As part of the design development process, an auxiliary water-cooled system has been included in the contractor's design to provide auxiliary cooling of minor loads (such as generator cooling and other critical cooling), while the main air-cooled condenser will handle the primary function of steam condensing as originally planned. The auxiliary cooling tower will have a total circulating flow rate of 4,420 gallons per minute and will contain two cells. The unit's design incorporates drift eliminators which will minimize PM emissions. As shown in Attachment B, maximum annual PM emissions are estimated to be 0.93 tons per year and PM10 and PM2.5 emissions are estimated to be 0.14 tons per year from the auxiliary cooling tower. Consequently, we believe this auxiliary unit is exempt from permitting requirements based on the permit exemption levels defined by F.A.C. Section 62-210.300(3)(b).

Mercury Testing Requirements

In addition to the proposed permit revisions described above for the ancillary equipment, the Authority is requesting changes to the monitoring and testing requirements specified in the permit for mercury (Hg). To monitor Hg emissions, the permit requires the use of a continuous emissions monitoring system (CEMS) for each of the three MWC units. The permit also requires quarterly compliance stack tests for Hg for each MWC unit. Both an annual emission limit (37.7 lbs/yr for each MWC unit) and a short-term limit (25 µg/dscm) are specified in the permit. The permit indicates that compliance with the annual limit is to be based on CEMS data (rolling 12-month sum of monthly average emissions) and compliance with the 25 µg/dscm limit is to be demonstrated by quarterly stack testing.

As the facility design and construction has progressed, the Authority and our contractor (B&W) have further evaluated the challenges and costs associated with implementing the Hg monitoring requirements prescribed by the permit. These evaluations are based on installation of a MERCEM300Z Hg monitoring system from SICK MAIHAK, Inc. This is the same system recently installed on Unit 4 at the Hillsborough County WTE facility. Although Hg CEMS from other manufacturers including Thermo Scientific and Tekran are potentially less expensive options, they are currently not preferred because those Hg CEMS have not been proven to be reliable for application to MWC units.

In light of the substantial costs and operating burdens associated with implementing an Hg CEMS for each of the three MWC units, the Authority is requesting that the permit be modified to require the use of a single Hg CEMS on one of the MWC units and the CEMS data be used for informational purposes only. In addition, we are requesting that the frequency of Hg stack testing for each MWC unit be reduced from quarterly to annually, after two years of successfully demonstrating compliance with the Hg emission limits. As explained below, we believe the proposed monitoring and testing approach provides reasonable assurance that compliance with the Hg emission limits will be achieved.

The use of a single CEMS to monitor Hg emissions from one of the MWC units is a reasonable approach for several reasons. The three MWC units will be identical in all aspects as they will share the same design features and steam production capacity, will be fabricated of identical materials of construction by the same contractor, and will be equipped with identical air pollution control systems, including activated carbon injection (ACI) for mercury emissions control. Additionally, the exhaust air from each unit will be released to the atmosphere through identical exhaust flues co-located in a common stack. The MWCs will also combust the same municipal solid waste (MSW), which will be relatively well-mixed in a common pit before the MSW is used as fuel. Consequently, Hg emissions from each MWC are expected to be essentially equivalent.

Further, Hg emissions from the MWCs are expected to be very low and comfortably below the annual and short-term emission limits specified by the permit, as well as the applicable limit of 50 µg/dscm established by the federal New Source Performance Standards (NSPS) under 40 CFR 60, Subpart Eb. We are confident that Hg emission will be consistently low, based on the performance of the Authority’s existing MWC units and the recent downtrend in Hg emissions from WTE facilities in Florida, reflecting plant modernizations and the addition of ACI for Hg control. A summary of historical Hg emissions data from 2003-2013 annual stack tests performed for the existing MWC units at the Palm Beach Renewable Energy Facility No. 1 (PBREF No. 1) is presented below.

Summary of Hg Emissions from Annual Stack Tests Existing WTE Facility (PBREF No. 1)		
Year	MWC Unit 1 (µg/dscm at 7% oxygen)	MWC Unit 2 (µg/dscm at 7% oxygen)
2003	9.3	11.7
2004	14.9	7.6
2005	7.4	9.2
2006	4.7	7.9
2007	6.4	3.9
2008	6.4	6.8
2009	12.0	4.0
2010	22.8	6.3
2011	0.4	0.6
2012	1.4	1.8
2013	0.7	0.8

Notes:

- 1) Hg emissions data from 2003-2010 are from stack tests performed prior to the refurbishment of the MWCs and start-up of the ACI system for Hg control.
- 2) Hg emissions data from 2011-2013 are from recent stack tests conducted following completion of refurbishment of the MWCs and the addition of ACI for Hg control.

As evident from the stack test results shown above, Hg emissions from the existing units have been consistently well below applicable NSPS emission standards (formerly 70 $\mu\text{g}/\text{dscm}$, and currently 50 $\mu\text{g}/\text{dscm}$). More relevant is the obvious reduction in Hg emissions that has occurred since 2011 following the completion of the MWC refurbishments and addition of ACI for Hg emissions control. Since the MWC units at the new facility (PBREF No. 2) will also use ACI for Hg emissions control, low Hg emissions levels are expected at PBREF No. 2.

The trend of lower Hg emissions at Florida WTE facilities was documented in the Technical Evaluation prepared by the Department as part of the permit issuance process for the new facility. The Department summarized Hg emissions data for the 2007 - 2010 time period for several MWC units located throughout Florida including units at the Broward County, South Bay County, Pasco County, Lee County, Lake County, Hillsborough County and McKay Bay facilities. The summary showed average Hg emissions of 12.3 $\mu\text{g}/\text{dscm}$ in 2007 trending down each year with 2010 average Hg emissions calculated to be 5.4 $\mu\text{g}/\text{dscm}$. This trend is further supported by recent information provided to the Authority during discussions with Hillsborough County in March 2013. Hillsborough County indicated that Hg emissions from Unit 4 have been consistently in the range of 1 - 2 $\mu\text{g}/\text{dscm}$, as measured by the Hg CEMS.

In recognition of this clear downward trend in Hg emissions from MWCs, we are confident that Hg emissions from the MWCs at the new facility will be low and well below the emission limits specified in the permit. Considering the significant costs and complexities involved with implementing an Hg CEMS (as evident from the experience in Hillsborough County), the Authority continues to believe that the use of a Hg CEMS on each MWC unit is inordinately expensive and not justified. Nonetheless, the Authority is proposing to move forward and implement a monitoring approach using a single Hg CEMS.

Given the low levels of Hg emissions expected, and that the three new MWC units will be identical and will all use ACI for mercury control, the use of a single Hg CEMS is believed to be appropriate for monitoring of all three MWC units. The substantial cost associated with installation and operation of three Hg CEMS is not warranted based on the consistently low Hg concentrations expected to be measured. Considering the limited operating experience of an Hg CEMS on a MWC unit (which is one-year of operation on a single unit in Hillsborough County), the Authority is proposing to use the CEMS data for informational purposes only. The Authority requests that compliance with both the annual and short term Hg emissions limits be based on results from stack testing. Compliance with the annual limit of 37.7 lbs/yr will be based on meeting an equivalent annual average stack test concentration of 12 $\mu\text{g}/\text{dscm}$, which conservatively reflects MWC operation at the maximum continuous design rate for 8,760 hours per year. An approach that relies on stack testing has been historically used at WTE facilities for demonstrating compliance with Hg emission limitations. This approach is reasonable and suitable for the new facility as well.

May 9, 2013
Mr. Syed Arif
Page 6 of 6

The Authority is further requesting that stack testing for Hg be conducted quarterly during the first two operating years and annually thereafter. This approach is consistent with the two-year testing requirement specified in the permit for dioxins/furans. This approach provides reasonable assurance that compliance will be achieved with both the annual and short-term Hg emission limits, because (a) very low levels of Hg emissions are anticipated and (b) the Hg emission levels will be established for the MWCs by 24 data points (i.e., the average values obtained from three-run tests) and 72 test runs from the quarterly tests completed during the first two operating years, before the frequency of testing is reduced.

It is also noted that a quarterly stack testing approach for Hg is not required by state or federal law. There is an annual testing requirement specified in the federal NSPS under 40 CFR 60, Subpart Eb. The state standards under F.A.C. Section 62-296.416 only require annual compliance stack testing for WTE units using mercury control equipment.

The requested compliance demonstration approach is also consistent with the FDEP permit issued for Unit 4 at the Hillsborough County facility. The Department's permit for the new Hillsborough County MWC requires quarterly stack testing for the first two years of operation (to provide reasonable assurance that annual emissions are less than the state's PSD threshold of 200 lb/yr) and annually thereafter.

We look forward to the Department's consideration of the Authority's proposed permit revisions. If you have any questions concerning the permit application, please contact Mr. Joel Cohn with ARCADIS at (757) 873-4411 or via e-mail at Joel.Cohn@arcadis-us.com.

Very truly yours,



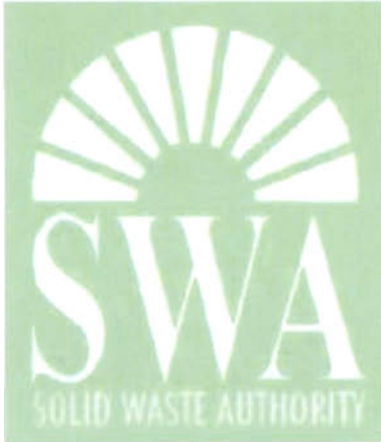
Mark Hammond
Executive Director
Solid Waste Authority of Palm Beach County

Attachments: Four (4) Copies: Attachment A, Attachment B, Attachment C - Permit Modification Application, Palm Beach Renewable Energy Facility No. 2

cc: M. Bruner
R. Schauer
P. Carroll
M. Morrison
L. Richter, Malcolm Pirnie/ARCADIS
J. Cohn, Malcolm Pirnie/ARCADIS
A. Chattopadhyay, Malcolm Pirnie/ARCADIS



The Water Division of ARCADIS



Solid Waste Authority of
Palm Beach County

Palm Beach Renewable
Energy Facility No. 2

Attachment A

FDEP Permit Application Form

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Imagine the result

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DIVISION OF AIR
RESOURCE MANAGEMENT

Project, 0990234-023-AC -
PSD -413B



Department of Environmental Protection

Division of Air Resource Management APPLICATION FOR AIR PERMIT - LONG FORM

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DIVISION OF AIR
RESOURCE MANAGEMENT

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: Palm Beach Renewable Energy Facility No. 2 (PBREF2)	
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? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	6. Existing Title V Permitted Facility? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

Application Contact

1. Application Contact Name: Joel S. Cohn, P.E.	
2. Application Contact Mailing Address... Organization/Firm: ARCADIS U.S., Inc. Street Address: 701 Town Center Drive, Suite 600 City: Newport News State: Virginia Zip Code: 23606	
3. Application Contact Telephone Numbers... Telephone: (757) 873 - 4411 ext. Fax: (757) 873 - 8723	
4. Application Contact E-mail Address: joel.cohn@arcadis-us.com	

Application Processing Information (DEP Use)

1. Date of Receipt of Application: 5-23-13	3. PSD Number (if applicable):
2. Project Number(s): 0990234-121-AC	4. Siting Number (if applicable):

PSD 413 B

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

The purpose of this permit modification application is to request revisions to the final air construction permits (Air Permit No. 0990234-017-AC (PSD-FL-413) issued on December 23, 2010, and Air Permit No. 0990234-023-AC (PSD-FL-413A) issued on January 6, 2012) for the Solid Waste Authority of Palm Beach County's Palm Beach Renewable Energy Facility No. 2 (PBREF2). The proposed permit revisions pertain to design changes for the diesel fire pump engines and the ash handling building air pollution control system, as well as proposed changes to mercury monitoring and testing requirements.

APPLICATION INFORMATION

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: Florida 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>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.</i>  Signature  Date

APPLICATION INFORMATION

Application Responsible Official Certification

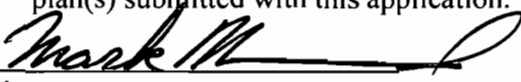
Complete if applying for an initial, revised, or renewal Title V air operation permit or concurrent processing of an air construction permit and revised or renewal Title V air operation permit. If there are multiple responsible officials, the “application responsible official” need not be the “primary 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): <input type="checkbox"/> 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. <input type="checkbox"/> For a partnership or sole proprietorship, a general partner or the proprietor, respectively. <input checked="" type="checkbox"/> For a municipality, county, state, federal, or other public agency, either a principal executive officer or ranking elected official. <input type="checkbox"/> The designated representative at an Acid Rain source or CAIR source.
3. Application Responsible Official Mailing Address... Organization/Firm: Solid Waste Authority of Palm Beach County Street Address: 7501 North Jog Road City: West Palm Beach State: Florida 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

APPLICATION INFORMATION

6. Application Responsible Official Certification:

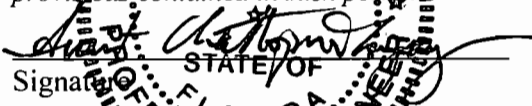
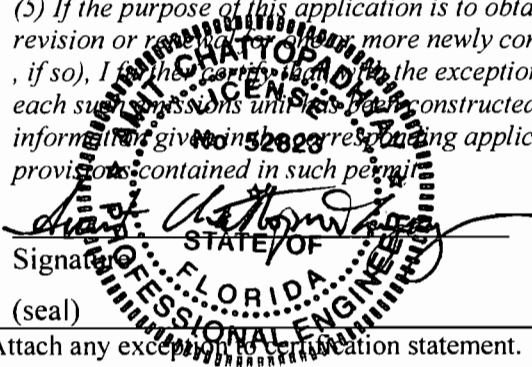
I, the undersigned, am a responsible official of the Title V source addressed in this air permit application. I hereby certify, based on information and belief formed after reasonable inquiry, that the statements made in this application are true, accurate and complete and that, to the best of my knowledge, 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.


Signature

5/9/13
Date

APPLICATION INFORMATION

Professional Engineer Certification

1. Professional Engineer Name: Amit Chattopadhyay Registration Number: 52823
2. Professional Engineer Mailing Address... Organization/Firm: Malcolm Pirnie/ARCADIS U.S., Inc. Street Address: 17-17 Route 208 North, 2nd Floor City: Fair Lawn State: New Jersey Zip Code: 07410
3. Professional Engineer Telephone Numbers... Telephone: (201) 398 - 4311 ext. Fax: (201) 797 - 4399
4. Professional Engineer E-mail Address: Amit.Chattopadhyay@arcadis-us.com
5. Professional Engineer Statement: <i>I, the undersigned, hereby certify, except as particularly noted herein*, that:</i> (1) <i>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</i> (2) <i>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.</i> (3) <i>If the purpose of this application is to obtain a Title V air operation permit (check here <input type="checkbox"/>, 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.</i> (4) <i>If the purpose of this application is to obtain an air construction permit (check here <input checked="" type="checkbox"/>, 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 <input type="checkbox"/>, 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.</i> (5) <i>If the purpose of this application is to obtain an initial air operation permit or operation permit revision or renewal for more newly constructed or modified emissions units (check here <input type="checkbox"/>, 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.</i> Signature:  Date: <u>5/9/2013</u> (seal) 

* Attach any exceptions to certification statement.

II. FACILITY INFORMATION

A. GENERAL FACILITY INFORMATION

Facility Location and Type

1. Facility UTM Coordinates... Zone 17 East (km) 585.3 North (km) 2961.7		2. Facility Latitude/Longitude... Latitude (DD/MM/SS) 26° 46' 33" Longitude (DD/MM/SS) 80° 08' 31"	
3. Governmental Facility Code: 3	4. Facility Status Code: C	5. Facility Major Group SIC Code: 49	6. Facility SIC(s): 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: Florida 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:
2. Facility Primary Responsible Official Mailing Address... Organization/Firm: Street Address: City: State: Zip Code:
3. Facility Primary Responsible Official Telephone Numbers... Telephone: () - ext. Fax: () -
4. Facility Primary Responsible Official E-mail Address:

EMISSIONS UNIT INFORMATION

Section [1] of [1]

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.) <input checked="" type="checkbox"/> The emissions unit addressed in this Emissions Unit Information Section is a regulated emissions unit. <input type="checkbox"/> 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) <input type="checkbox"/> 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). <input checked="" type="checkbox"/> 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. <input type="checkbox"/> 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: Two identical diesel fire pumps. These standby units will be used to provide power to pump water for fire suppression purposes in emergency situations.			
3. Emissions Unit Identification Number: 031, 032			
4. Emissions Unit Status Code: C	5. Commence Construction Date:	6. Initial Startup Date:	7. Emissions Unit Major Group SIC Code: 49
8. Federal Program Applicability: (Check all that apply) <input type="checkbox"/> Acid Rain Unit <input type="checkbox"/> CAIR Unit			
9. Package Unit: Manufacturer:		Model Number:	
10. Generator Nameplate Rating: MW			
11. Emissions Unit Comment: The emissions unit information in this section applies to each of two identical diesel fire pumps each having a maximum power rating of 351 HP. The emissions information is provided on a per unit basis for each of the two diesel fire pumps.			

EMISSIONS UNIT INFORMATION

Section [1] of [1]

Emissions Unit Control Equipment/Method: Control ___ of ___

1. Control Equipment/Method Description:
2. Control Device or Method Code:

Emissions Unit Control Equipment/Method: Control ___ of ___

1. Control Equipment/Method Description:
2. Control Device or Method Code:

NOT APPLICABLE

Emissions Unit Control Equipment/Method: Control ___ of ___

1. Control Equipment/Method Description:
2. Control Device or Method Code:

Emissions Unit Control Equipment/Method: Control ___ of ___

1. Control Equipment/Method Description:
2. Control Device or Method Code:

EMISSIONS UNIT INFORMATION

Section [1] of [1]

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:
3. Maximum Heat Input Rate: 2.6 million Btu/hr
4. Maximum Incineration Rate: pounds/hr tons/day
5. Requested Maximum Operating Schedule: hours/day days/week weeks/year 100 hours/year
Note: additional operating time may be required in emergency situations. See comment below.
6. Operating Capacity/Schedule Comment: The requested maximum operating schedule reflects periodic maintenance and readiness testing of each diesel fire pump engine. Additional operating time may be required for operation during emergency situations.

EMISSIONS UNIT INFORMATION

Section [1] of [1]

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 Figure 2-2 in PSD Permit Application for PBREF2, dated May 2010		2. Emission Point Type Code: 1 (see comment below)	
3. Descriptions of Emission Points Comprising this Emissions Unit for VE Tracking: Not applicable			
4. ID Numbers or Descriptions of Emission Units with this Emission Point in Common: Not applicable			
5. Discharge Type Code: V	6. Stack Height: 25 feet	7. Exit Diameter: 0.5 feet	
8. Exit Temperature: 436 °C	9. Actual Volumetric Flow Rate: 1878 acfm	10. Water Vapor: %	
11. Maximum Dry Standard Flow Rate: dscfm		12. Nonstack Emission Point Height: feet	
13. Emission Point UTM Coordinates... Zone: 17 East (km): 585.44 North (km): 2961.73		14. Emission Point Latitude/Longitude... Latitude (DD/MM/SS) Longitude (DD/MM/SS)	
15. Emission Point Comment: Each of the two diesel fire pump units will have a separate exhaust. The exhaust temperature and flow rate provided above in items 8. and 9. is based on manufacturer information.			

EMISSIONS UNIT INFORMATION

Section [1] of [1]

D. SEGMENT (PROCESS/FUEL) INFORMATION

Segment Description and Rate: Segment 1 of 1

1. Segment Description (Process/Fuel Type): Fire Pump Engine - diesel fuel (ultra low sulfur, 15 ppm_w sulfur content)		
2. Source Classification Code (SCC): 20200102		3. SCC Units: Thousand Gallons Burned
4. Maximum Hourly Rate: 0.019 (see comment)	5. Maximum Annual Rate: 1.9 (see comment)	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur: 0.0015	8. Maximum % Ash:	9. Million Btu per SCC Unit: 138
10. Segment Comment: The maximum hourly rate data provided above in item 4. is based on engine specifications from John Deere Co. (19 gal/hr of diesel at 351 HP). The maximum annual rate assumes 100 hours per year of operation of each standby fire pump engine for maintenance and readiness testing. If emergency situations occur for extended periods, the maximum annual rate may increase.		

Segment Description and Rate: Segment of

1. Segment Description (Process/Fuel Type):		
2. Source Classification Code (SCC):		3. SCC Units:
4. Maximum Hourly Rate:	5. Maximum Annual Rate:	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit:
10. Segment Comment:		

EMISSIONS UNIT INFORMATION

Section [1] of [1]

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
NOX			EL
CO			EL
SO2			EL
PM			EL
VOC			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: NOX		2. Total Percent Efficiency of Control:	
3. Potential Emissions: 2.09 lb/hour 0.10 tons/year		4. Synthetically Limited? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year			
6. Emission Factor: 2.7 grams/HP-hr Reference: John Deere Co., Clarke Model JW6H-UFADD0		7. Emissions Method Code: 0	
8.a. Baseline Actual Emissions (if required): tons/year		8.b. Baseline 24-month Period: From: To:	
9.a. Projected Actual Emissions (if required): tons/year		9.b. Projected Monitoring Period: <input type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions: See Table B-1 for emission calculations			
11. Potential, Fugitive, and Actual Emissions Comment: Potential emissions shown in item 3. reflect operation of each fire pump engine for purposes of maintenance and readiness testing. Additional annual emissions may result if emergency situations occur requiring water for fire suppression purposes for extended periods.			

**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: OTHER	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 2.7 grams/HP-hr	4. Equivalent Allowable Emissions: 2.09 lb/hour 0.10 tons/year
5. Method of Compliance: Purchasing fire pump engines that are certified by the manufacturer to meet the applicable emission standards and maintaining and operating the engines in accordance with manufacturer instructions.	
6. Allowable Emissions Comment (Description of Operating Method): The allowable emissions shown above will meet NSPS (40 CFR 60, Subpart IIII for compression ignition internal combustion engines) and BACT requirements.	

Allowable Emissions Allowable Emissions of

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

Allowable Emissions Allowable Emissions of

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
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: CO		2. Total Percent Efficiency of Control:	
3. Potential Emissions: 0.31 lb/hour 0.015 tons/year		4. Synthetically Limited? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year			
6. Emission Factor: 0.4 grams/HP-hr Reference: John Deere Co., Clarke Model JW6H-UFADD0		7. Emissions Method Code: 0	
8.a. Baseline Actual Emissions (if required): tons/year		8.b. Baseline 24-month Period: From: To:	
9.a. Projected Actual Emissions (if required): tons/year		9.b. Projected Monitoring Period: <input type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions: See Table B-1 for emission calculations			
11. Potential, Fugitive, and Actual Emissions Comment: Potential emissions shown in item 3. reflect operation of each fire pump engine for purposes of maintenance and readiness testing. Additional annual emissions may result if emergency situations occur requiring water for fire suppression purposes for extended periods.			

**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: OTHER	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 0.4 grams/HP-hr	4. Equivalent Allowable Emissions: 0.31 lb/hour 0.015 tons/year
5. Method of Compliance: Purchasing fire pump engines that are certified by the manufacturer to meet the applicable emission standards and maintaining and operating the engines in accordance with manufacturer instructions.	
6. Allowable Emissions Comment (Description of Operating Method): The allowable emissions shown above will meet NSPS (40 CFR 60, Subpart IIII for compression ignition internal combustion engines) and BACT requirements.	

Allowable Emissions Allowable Emissions of

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

Allowable Emissions Allowable Emissions of

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
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: SO2		2. Total Percent Efficiency of Control:	
3. Potential Emissions: 4.05E-03 lb/hour 2.04E-04 tons/year		4. Synthetically Limited? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year			
6. Emission Factor: 15 ppm_w sulfur content (ultra low sulfur diesel fuel) Reference: NSPS requirement		7. Emissions Method Code: 0	
8.a. Baseline Actual Emissions (if required): tons/year		8.b. Baseline 24-month Period: From: To:	
9.a. Projected Actual Emissions (if required): tons/year		9.b. Projected Monitoring Period: <input type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions: See Table B-1 for emission calculations			
11. Potential, Fugitive, and Actual Emissions Comment: Potential emissions shown in item 3. reflect operation of each fire pump engine for purposes of maintenance and readiness testing. Additional annual emissions may result if emergency situations occur requiring water for fire suppression purposes for extended periods.			

**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: OTHER	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 15 ppm_w fuel sulfur content	4. Equivalent Allowable Emissions: 4.05E-03 lb/hour 2.04E-04 tons/year
5. Method of Compliance: Use of diesel fuel with maximum sulfur content specified by applicable NSPS requirements and maintaining and operating the units in accordance with manufacturer instructions.	
6. Allowable Emissions Comment (Description of Operating Method): Allowable emissions reflect the use of ultra low sulfur fuel as required by NSPS (40 CFR 60, Subpart IIII for compression ignition internal combustion engines) and will meet BACT requirements.	

Allowable Emissions Allowable Emissions of

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

Allowable Emissions Allowable Emissions of

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
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: PM		2. Total Percent Efficiency of Control:	
3. Potential Emissions: 0.054 lb/hour 0.0027 tons/year		4. Synthetically Limited? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year			
6. Emission Factor: 0.07 grams/HP-hr Reference: John Deere Co., Clarke Model JW6H-UFADD0		7. Emissions Method Code: 0	
8.a. Baseline Actual Emissions (if required): tons/year		8.b. Baseline 24-month Period: From: To:	
9.a. Projected Actual Emissions (if required): tons/year		9.b. Projected Monitoring Period: <input type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions: See Table B-1 for emission calculations			
11. Potential, Fugitive, and Actual Emissions Comment: Potential emissions shown in item 3. reflect operation of each fire pump engine for purposes of maintenance and readiness testing. Additional annual emissions may result if emergency situations occur requiring water for fire suppression purposes for extended periods.			

**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: OTHER	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 0.07 grams/HP-hr	4. Equivalent Allowable Emissions: 0.054 lb/hour 0.0027 tons/year
5. Method of Compliance: Purchasing fire pump engines that are certified by the manufacturer to meet the applicable emission standards and maintaining and operating the engines in accordance with manufacturer instructions.	
6. Allowable Emissions Comment (Description of Operating Method): The allowable emissions shown above will meet NSPS (40 CFR 60, Subpart IIII for compression ignition internal combustion engines) and BACT requirements.	

Allowable Emissions Allowable Emissions of

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

Allowable Emissions Allowable Emissions of

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
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		2. Total Percent Efficiency of Control:	
3. Potential Emissions: 0.077 lb/hour 0.0039 tons/year		4. Synthetically Limited? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year			
6. Emission Factor: 0.1 grams/HP-hr Reference: John Deere Co., Clarke Model JW6H-UFADD0		7. Emissions Method Code: 0	
8.a. Baseline Actual Emissions (if required): tons/year		8.b. Baseline 24-month Period: From: To:	
9.a. Projected Actual Emissions (if required): tons/year		9.b. Projected Monitoring Period: <input type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions: See Table B-1 for emission calculations			
11. Potential, Fugitive, and Actual Emissions Comment: Potential emissions shown in item 3. reflect operation of each fire pump engine for purposes of maintenance and readiness testing. Additional annual emissions may result if emergency situations occur requiring water for fire suppression purposes for extended periods.			

**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: OTHER	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 0.1 grams/HP-hr	4. Equivalent Allowable Emissions: 0.077 lb/hour 0.0039 tons/year
5. Method of Compliance: Purchasing fire pump engines that are certified by the manufacturer to meet the applicable emission standards and maintaining and operating the engines in accordance with manufacturer instructions.	
6. Allowable Emissions Comment (Description of Operating Method): The allowable emissions shown above will meet NSPS (40 CFR 60, Subpart IIII for compression ignition internal combustion engines) and BACT requirements.	

Allowable Emissions Allowable Emissions of

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

Allowable Emissions Allowable Emissions of

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

EMISSIONS UNIT INFORMATION

Section [1] of [1]

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 __ of __

1. Visible Emissions Subtype:	2. Basis for Allowable Opacity: <input type="checkbox"/> Rule <input type="checkbox"/> Other
3. Allowable Opacity: Normal Conditions: % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour	
4. Method of Compliance:	
5. Visible Emissions Comment: Not Applicable	

Visible Emissions Limitation: Visible Emissions Limitation __ of __

1. Visible Emissions Subtype:	2. Basis for Allowable Opacity: <input type="checkbox"/> Rule <input type="checkbox"/> Other
3. Allowable Opacity: Normal Conditions: % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour	
4. Method of Compliance:	
5. Visible Emissions Comment: 	

EMISSIONS UNIT INFORMATION

Section [1] of [1]

H. CONTINUOUS MONITOR INFORMATION

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

Continuous Monitoring System: Continuous Monitor ___ of ___

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement:	<input type="checkbox"/> Rule <input type="checkbox"/> Other
4. Monitor Information... Manufacturer: Model Number: Serial Number:	
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment:	

Continuous Monitoring System: Continuous Monitor ___ of ___

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement:	<input type="checkbox"/> Rule <input type="checkbox"/> Other
4. Monitor Information... Manufacturer: Model Number: Serial Number:	
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment:	

EMISSIONS UNIT INFORMATION

Section [1] of [1]

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) <input checked="" type="checkbox"/> Attached, Document ID: <u>see comment</u> <input type="checkbox"/> 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) <input checked="" type="checkbox"/> Attached, Document ID: <u>see comment</u> <input type="checkbox"/> Previously Submitted, Date _____
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) <input type="checkbox"/> Attached, Document ID: <u>not applicable</u> <input type="checkbox"/> 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) <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Previously Submitted, Date _____ <input checked="" type="checkbox"/> 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) <input checked="" type="checkbox"/> Attached, Document ID: <u>see comment</u> <input type="checkbox"/> Previously Submitted, Date _____ <input type="checkbox"/> Not Applicable
6. Compliance Demonstration Reports/Records: <input type="checkbox"/> Attached, Document ID: _____ Test Date(s)/Pollutant(s) Tested: _____ <input type="checkbox"/> Previously Submitted, Date: _____ Test Date(s)/Pollutant(s) Tested: _____ <input type="checkbox"/> To be Submitted, Date (if known): _____ Test Date(s)/Pollutant(s) Tested: _____ <input checked="" type="checkbox"/> 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: <input checked="" type="checkbox"/> Attached, Document ID: <u>see comment</u> <input type="checkbox"/> Not Applicable

EMISSIONS UNIT INFORMATION

Section [1] of [1]

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)): <input checked="" type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable
2. Good Engineering Practice Stack Height Analysis (Rules 62-212.400(4)(d) and 62-212.500(4)(f), F.A.C.): <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable
3. Description of Stack Sampling Facilities: (Required for proposed new stack sampling facilities only) <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable

Additional Requirements for Title V Air Operation Permit Applications

1. Identification of Applicable Requirements: <input type="checkbox"/> Attached, Document ID: _____
2. Compliance Assurance Monitoring: <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable
3. Alternative Methods of Operation: <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable
4. Alternative Modes of Operation (Emissions Trading): <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable

Additional Requirements Comment

Additional information noted above is either provided below or was provided in the section identified below in the May 2010 PSD Permit Application for PBREF2.

- **Process Flow Diagram - not applicable since the diesel fire pumps are standby units for fire suppression purposes in emergencies (not part of process operations);**
- **Fuel Analysis – ultra low sulfur diesel (15 ppm_w sulfur content) will be used as required by the applicable NSPS Subpart IIII;**
- **Operation & Maintenance Plan is not available and is to be provided at a later date;**
- **Other Information Required by Rule or Statute (see Section 4 of PSD Permit Application); and**
- **Control Technology Review & Analysis (see Section 5 of PSD Permit Application).**



**Solid Waste Authority of
Palm Beach County**

**Palm Beach Renewable
Energy Facility No. 2**

Attachment B

Emission Calculations

May 2013

TABLE B-1
Estimated Emissions from Diesel Fire Pumps
Palm Beach Renewable Energy Facility No. 2

Fire Water Pump Engine Specifications (Diesel-Fired)	
Air Constuction Permit Emission Unit ID Numbers	031, 032
Power Output Rating (nominal, per unit)	351 hp
Maximum Annual Operating Hours (for maintenance & readiness testing)	100 hrs (per unit)

Pollutant	Emission Data * (g/hp-hr)	Maximum Estimated Emissions Per Unit	
		(lb/hr)	(tons/yr)
Nitrogen Oxides (NO _x)	2.7	2.09	0.104
Carbon Monoxide (CO)	0.4	0.31	0.015
Sulfur Dioxide (SO ₂)	**	4.05E-03	2.02E-04
Particulate Matter (PM)	0.07	0.054	0.0027
VOC	0.1	0.077	0.0039

* Emissions data obtained from vendor emission data sheet (John Deere Power Systems, Clarke Model JW6H-UFADD0)

** SO₂ emissions are based on the use of ultra low sulfur diesel fuel (15 ppm_w sulfur content) and are calculated based on a 19 gal/hr maximum fuel consumption rate from vendor data and a 7.1 lb/gal fuel density.

TABLE B-2
Estimated Emissions from Auxiliary Cooling Tower
Palm Beach Renewable Energy Facility No. 2

Cooling Tower Operating Data	
Circulating Water Flow, gpm	4,420
Maximum Total Dissolved Solids (TDS), ppm	2,400
Maximum Drift, % ⁽¹⁾	0.005
PM Fraction of Drift ⁽²⁾	0.80
PM ₁₀ Fraction of Drift ⁽²⁾	0.12

⁽¹⁾ Maximum drift percentage based on cooling tower vendor guarantee (SPX Cooling Technologies, Inc.).

⁽²⁾ Estimated PM fraction reflects the fraction of particles in the cooling tower drift with a diameter of 100 microns or smaller and PM₁₀ fraction reflects the fraction of particles in the cooling tower drift with a diameter of 10 microns or smaller. This information is based on vendor data for Marley Excel Drift Eliminators.

Emissions Calculations

Maximum Estimated Hourly PM Emissions

$$\begin{aligned}
 &= \text{Circulating Water Flow} \times \text{TDS} \times \text{Maximum Drift} \times \text{PM Fraction} \\
 &= 4,420 \text{ gal/min} \times 2,400 \text{ mg/L} \times 0.005/100 \times 0.80 \\
 &\quad \times 3.785 \text{ L/gal} \times 2.205 \times 10^{-6} \text{ lb/mg} \times 60 \text{ min/hr} \\
 &= 0.212 \text{ lbs/hr}
 \end{aligned}$$

Maximum Estimated Annual PM Emissions

$$\begin{aligned}
 &= 0.212 \text{ lbs/hr} \times 8760 \text{ hr/yr} \times 1 \text{ ton} / 2000 \text{ lb} \\
 &= 0.93 \text{ tons/yr}
 \end{aligned}$$

Maximum Estimated Hourly PM₁₀ Emissions

$$\begin{aligned}
 &= \text{Circulating Water Flow} \times \text{TDS} \times \text{Maximum Drift} \times \text{PM}_{10} \text{ Fraction} \\
 &= 4,420 \text{ gal/min} \times 2,400 \text{ mg/L} \times 0.005/100 \times 0.12 \\
 &\quad \times 3.785 \text{ L/gal} \times 2.205 \times 10^{-6} \text{ lb/mg} \times 60 \text{ min/hr} \\
 &= 0.032 \text{ lbs/hr}
 \end{aligned}$$

Maximum Estimated Annual PM₁₀ Emissions

$$\begin{aligned}
 &= 0.032 \text{ lbs/hr} \times 8760 \text{ hr/yr} \times 1 \text{ ton} / 2000 \text{ lb} \\
 &= 0.14 \text{ tons/yr}
 \end{aligned}$$

Maximum Estimated Hourly PM_{2.5} Emissions

$$= 0.032 \text{ lbs/hr}$$

Maximum Estimated Annual PM_{2.5} Emissions

$$= 0.14 \text{ tons/yr}$$

Note: maximum estimated PM_{2.5} emissions are conservatively assumed to be equivalent to PM₁₀ emissions.



**Solid Waste Authority of
Palm Beach County**

**Palm Beach Renewable
Energy Facility No. 2**

Attachment C

Proposed Permit Modifications

May 2013



Florida Department of Environmental Protection

Bob Martinez Center
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Charlie Crist
Governor

Jeff Kottkamp
Lt. Governor

Mimi A. Drew
Secretary

PERMITTEE

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

Air Permit No. 0990234-017-AC (PSD-FL-413)
Palm Beach Renewable Energy Park
Palm Beach Renewable Energy Facility No. 2

Authorized Representative:
Mark Hammond, Executive Director

Expires: December 31, 2015
Palm Beach County

PROJECT

This is the final air construction permit authorizing the construction of three 1,000 tons per day (TPD) mass-burn municipal waste combustors (MWC), a 90 to 100 megawatts (MW) steam turbine-electrical generator (STG) and ancillary equipment. The proposed work will be conducted at the existing Palm Beach Renewable Energy Park (PBREP), which is a municipal solid waste (MSW) facility categorized under Standard Industrial Classification Number (No.) 4953. The existing facility is located in Palm Beach County at 7501 North Jog Road in West Palm Beach, Florida. The UTM coordinates are Zone 17, 585.3 kilometers (km) East, and 2961.7 km North.

This final permit is organized into the following sections: Section 1 (General Information); Section 2 (Administrative Requirements); Section 3 (Emissions Unit Specific Conditions); and Section 4 (Appendices). Because of the technical nature of the project, the permit contains numerous acronyms and abbreviations, which are defined in Appendix CF of Section 4 of this permit. As noted in the Final Determination provided with this final permit, only minor changes and clarifications were made to the draft permit.

STATEMENT OF BASIS

This air pollution construction permit is issued under the provisions of: Chapter 403 of the Florida Statutes (F.S.) and Chapters 62-4, 62-204, 62-210, 62-212, 62-296 and 62-297 of the Florida Administrative Code (F.A.C.). The permittee is authorized to conduct the proposed work in accordance with the conditions of this permit. This project is subject to the general preconstruction review requirements in Rule 62-212.300, F.A.C. and the preconstruction review requirements for major stationary sources in Rule 62-212.400, F.A.C. for the Prevention of Significant Deterioration (PSD) of Air Quality and a corresponding best available control (BACT) determination.

Upon issuance of this final permit, any party to this order has the right to seek judicial review of it under Section 120.68 of the Florida Statutes by filing a notice of appeal under Rule 9.110 of the Florida Rules of Appellate Procedure with the clerk of the Department of Environmental Protection in the Office of General Counsel (Mail Station #35, 3900 Commonwealth Boulevard, Tallahassee, Florida, 32399-3000) and by filing a copy of the notice of appeal accompanied by the applicable filing fees with the appropriate District Court of Appeal. The notice must be filed within 30 days after this order is filed with the clerk of the Department.

Executed in Tallahassee, Florida

Joseph Kahn, Director
Division of Air Resource Management

(Date)

CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this Final Air Permit package (including the Final Determination and Final Permit with Appendices) was sent by electronic mail, or a link to these documents made available electronically on a publicly accessible server, with received receipt requested before the close of business on _____ to the persons listed below.

- Mark Hammond, SWA, Executive Director: mhammond@swa.org
- Michael Halpin, DEP Siting: mike.halpin@dep.state.fl.us
- Kevin Claridge, DEP SED: kevin.claridge@dep.state.fl.us
- Jim Stormer, Palm Beach County Health Department: james_stormer@doh.state.fl.us
- Heather Abrams, EPA Region 4: abrams.heather@epa.gov
- Dee Morse, NPS: dee_morse@nps.gov
- Amit Chattopadhyay, P.E., Malcolm Pirnie: achattopadhyay@pirnie.com
- Sierra C. Wolfe, Public Commenter, sierra887@gmail.com
- Vickie Gibson, DEP BAR Reading File: victoria.gibson@dep.state.fl.us

Clerk Stamp

FILED AND ACKNOWLEDGMENT FILED, on this date, pursuant to Section 120.52(7), Florida Statutes, with the designated agency clerk, receipt of which is hereby acknowledged.

(Clerk)

(Date)

SECTION 1. GENERAL INFORMATION

FACILITY DESCRIPTION

The existing facility consists of the following emissions units (EU):

Facility ID No. 0990234	
EU ID No.	EU Description
001	Municipal Solid Waste Boiler No. 1
002	Municipal Solid Waste Boiler No. 2
004	Class III Landfill with Flare
005	Refuse Derived Fuel (RDF) Storage
006	RDF Processing Lines
007	Oversized Bulky Waste (OBW) Processing Lines
008	Class I Landfill with Flare
010	Sludge Dryer Train No. 1
011	Sludge Dryer Train No. 2
012	Recycle Material Bin and Pellet Storage Silo for Train No. 1
013	Cooling Tower Train No. 1
014	Recycle Material Bin and Pellet Storage Silo for Train No. 2
015	Cooling Tower Train No. 2
016	Emergency Generator
017	Woody Waste Facility Diesel Engine
018	Cooling Tower
019	Ash Building and Handling System
021	Emergency Generator, 220 break-horsepower (hp), EPA Tier III Certified
023	Powdered Activated Carbon Silo with Baghouse

PROPOSED PROJECT

The permit authorizes the construction of the Palm Beach Renewable Energy Facility No. 2 (PBREF-2). This facility will consist of three 1,000 TPD mass-burn MWC units each with a maximum steam production rate of 320,100 pounds per hour (lb/hr) on a 4-hour average block basis. The project also includes a 90 to 100 MW STG; three lime storage silos; one carbon storage silo; two diesel fire pump engines; one emergency generator; and one ash handling system and building. The proposed work will be conducted at the existing PBREP.

The project will incorporate the following pollution control equipment and measures:

- For each MWC unit, good combustion practices (GCP), spray dryers (SD), fabric filter (FF) baghouses, activated carbon injection (CI), selective catalytic reduction (SCR), as an option selective non-catalytic reduction (SNCR) and use of inherently clean natural gas as a startup, shutdown and flame stabilization fuel.
- Use of inherently clean ultra low sulfur distillate (ULSD) fuel oil and GCP in the emergency generator and emergency fire pump engines; and
- Reasonable precautions and best management practices (BMP) to minimize fugitive particulate matter (PM)/(PM₁₀)/(PM_{2.5}) emissions from MSW handling and processing; ash (bottom and fly) handling, storage and shipment; lime handling, storage and processing; and activated carbon handling, storage and processing.

The project will incorporate continuous emission monitoring systems (CEMS) for CO, SO₂, NO_x and Hg and continuous opacity monitoring systems (COMS) for visible emissions (VE).

SECTION 1. GENERAL INFORMATION

This project will consist of the following EU:

Facility ID No. 0990234	
EU ID No.	EU Description
024	Municipal Solid Waste Combustor No. 4 <u>3</u>
025	Municipal Solid Waste Combustor No. 2 <u>4</u>
026	Municipal Solid Waste Combustor No. 3 <u>5</u> <i>Note: the above unit number changes for the MWCs were previously made in modified Air Permit No. 09902344-023-AC(PSD-FL-413A). No additional unit number changes are being requested at this time.</i>
027	Lime Storage Silo A
028	Lime Storage Silo B
029	Lime Storage Silo C
030	Activated Carbon Storage Silo
031	250 <u>351</u> hp Diesel Fire Pump Engine A
032	250 <u>351</u> hp Diesel Fire Pump Engine B
033	250 <u>2,500</u> Kilowatt (kW) Emergency Generator <i>Note: this size change was previously made in modified Air Permit No. 09902344-023-AC(PSD-FL-413A). No change is being requested for the emergency generator at this time.</i>
034	Ash Handling System and Building

FACILITY REGULATORY CLASSIFICATION

- The existing PBREP and the new PBREF-2 are major sources of HAP.
- The PBREP and the PBREF-2 are not subject to the acid rain provisions of the Clean Air Act (CAA).
- The PBREP is a Title V major source of air pollution in accordance with Chapter 62-213, F.A.C.
- The PBREP is a major stationary source in accordance with Rule 62-212.400 (PSD), F.A.C.
- The PBREF-2 is a modification of a major stationary source in accordance with Rule 62-212.400 (PSD), F.A.C.
- The PBREF-2 is subject to New Source Performance Standards (NSPS) under Section 111 of the CAA and National Emissions Standards for Hazardous Air Pollutants (NESHAP) under Section 112 of the CAA which are incorporated by reference in Chapter 62-204.800, F.A.C.

SECTION 2. ADMINISTRATIVE REQUIREMENTS

1. **Permitting Authority:** The Permitting Authority for this project is the Bureau of Air Regulation in the Division of Air Resource Management of the Department. The mailing address for the Bureau of Air Regulation is 2600 Blair Stone Road, MS #5505, Tallahassee, Florida 32399-2400. All documents related to applications for permits shall be submitted to the Bureau of Air Regulation in the Division of Air Resource Management of the Department.
2. **Compliance Authority:** All documents related to compliance activities such as reports, tests, and notifications shall be submitted to the Department's Southeast District Office at: Air Resource Section, 400 North Congress Avenue, Suite 200, West Palm Beach, FL 33401.
3. **Appendices:** The following Appendices are attached as a part of this permit and the permittee must comply with the requirements of the appendices:
 - Appendix A Identification of General Provisions - NSPS 40 CFR 60, Subpart A;
 - Appendix A1 General Provisions - NSPS 40 CFR 63, Subpart A;
 - Appendix CC Common Conditions;
 - Appendix CEMS Continuous Emissions Monitoring System (CEMS) Requirements;
 - Appendix CF Citation Formats and Glossary of Common Terms;
 - Appendix CTR Common Testing Requirements;
 - Appendix Eb NSPS, 40 CFR 60, Subpart Eb - Standards of Performance for Large Municipal Waste Combustors;
 - Appendix GC General Conditions;
 - Appendix III NSPS, Subpart III – Stationary Compression Ignition Internal Combustion Engines;
 - Appendix XSE Excess Emission Reporting Form; and,
 - Appendix ZZZZ NESHAP, Subpart ZZZZ – Stationary Reciprocating Internal Combustion Engines (RICE).
4. **Applicable Regulations, Forms and Application Procedures:** Unless otherwise specified in this permit, the construction and operation of the subject emissions units shall be in accordance with the capacities and specifications stated in the application. The facility is subject to all applicable provisions of: Chapter 403, F.S.; and Chapters 62-4, 62-204, 62-210, 62-212, 62-213, 62-296 and 62-297, F.A.C. Issuance of this permit does not relieve the permittee from compliance with any applicable federal, state, or local permitting or regulations.
5. **New or Additional Conditions:** For good cause shown and after notice and an administrative hearing, if requested, the Department may require the permittee to conform to new or additional conditions. The Department shall allow the permittee a reasonable time to conform to the new or additional conditions, and on application of the permittee, the Department may grant additional time. [Rule 62-4.080, F.A.C.]
6. **Modifications:** No emissions unit shall be constructed or modified without obtaining an air construction permit from the Department. Such permit shall be obtained prior to beginning construction or modification. [Rules 62-210.300(1) and 62-212.300(1)(a), F.A.C.]
7. **Source Obligation:**
 - (a) Authorization to construct shall expire if construction is not commenced within 18 months after receipt of the permit, if construction is discontinued for a period of 18 months or more, or if construction is not completed within a reasonable time. This provision does not apply to the time period between construction of the approved phases of a phased construction project except that each phase must commence construction within 18 months of the commencement date established by the Department in the permit.

SECTION 2. ADMINISTRATIVE REQUIREMENTS

- (b) At such time that a particular source or modification becomes a major stationary source or major modification (as these terms were defined at the time the source obtained the enforceable limitation) solely by virtue of a relaxation in any enforceable limitation which was established after August 7, 1980, on the capacity of the source or modification otherwise to emit a pollutant, such as a restriction on hours of operation, then the requirements of subsections 62-212.400(4) through (12), F.A.C., shall apply to the source or modification as though construction had not yet commenced on the source or modification.
- (c) At such time that a particular source or modification becomes a major stationary source or major modification (as these terms were defined at the time the source obtained the enforceable limitation) solely by exceeding its projected actual emissions, then the requirements of subsections 62-212.400(4) through (12), F.A.C., shall apply to the source or modification as though construction had not yet commenced on the source or modification.

[Rule 62-212.400(12), F.A.C.]

8. Title V Permit: This permit authorizes specific modifications and/or new construction on the affected emissions units as well as initial operation to determine compliance with conditions of this permit. A Title V operation permit is required for regular operation of the permitted emissions unit. The permittee shall apply for a Title V operation permit at least 90 days prior to expiration of this permit, but no later than 180 days after completing the required work and commencing operation. To apply for a Title V operation permit, the applicant shall submit the appropriate application form, compliance test results, and such additional information as the Department may by law require. The application shall be submitted to the appropriate Permitting Authority with copies to Southeast District of DEP. [Rules 62-4.030, 62-4.050, 62-4.220, and Chapter 62-213, F.A.C.]
9. Objectionable Odors Prohibited: No person shall cause, suffer, allow or permit the discharge of air pollutants which cause or contribute to an objectionable odor. [Rule 62-296.320(2), F.A.C.]
{Note: An objectionable odor is defined in Rule 62-210.200(Definitions), F.A.C., as any odor present in the outdoor atmosphere which by itself or in combination with other odors, is or may be harmful or injurious to human health or welfare, which unreasonably interferes with the comfortable use and enjoyment of life or property, or which creates a nuisance.}
10. Unconfined Emissions of Particulate Matter: No person shall cause, let, permit, suffer or allow the emissions of unconfined particulate matter from any activity, including vehicular movement; transportation of materials; construction, alteration, demolition or wrecking; or industrially related activities such as loading, unloading, storing or handling; without taking reasonable precautions to prevent such emissions. Any permit issued to a facility with emissions of unconfined particulate matter shall specify the reasonable precautions to be taken by that facility to control the emissions of unconfined particulate matter. General reasonable precautions include the following: a. Paving and maintenance of roads, parking areas and yards; b. Application of water or chemicals to control emissions from such activities as demolition of buildings, grading roads, construction, and land clearing; c. Application of asphalt, water, oil, chemicals or other dust suppressants to unpaved roads, yards, open stock piles and similar activities; d. Removal of particulate matter from roads and other paved areas under the control of the owner or operator of the facility to prevent re-entrainment, and from buildings or work areas to prevent particulates from becoming airborne; e. Landscaping or planting of vegetation; f. Use of hoods, fans, filters, and similar equipment to contain, capture and/or vent particulate matter; g. Confining abrasive blasting where possible; and h. Enclosure or covering of conveyor systems.
[Rule 62-296.320(4)(c), F.A.C.]

SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS

A. Municipal Solid Waste Combustors (MWC) Units 1, 2, and 3, 4 and 5 (EU Nos. 024, 025 and 026)

This section of the permit addresses the following EU.

EU ID Nos. 024, 025 and 026	EU Descriptions
	<p><i>Description:</i> These EU consist of three 1,000 TPD mass burn MWC units, each with a fossil fuel fired auxiliary burner system. The natural gas fired burner systems will be used as needed during periods of startup, shutdown and for flame stabilization. Each MWC unit will produce high pressure, high temperature (HPHT) steam that will be used in a single STG to generate 90 to 100 MW of electrical power.</p> <p><i>Fuels:</i> The primary boiler fuel for each MWC unit will be MSW and the other fuels as specified in Specific Condition 12 of this subsection. Natural gas will be used as a startup, shutdown and flame stabilization fuel in the auxiliary burner system.</p> <p><i>Steam Capacity:</i> The maximum steam production limit per unit on a 4 hour block average basis is 320,100 lb steam/hr.</p> <p><i>Heat Input:</i> The heat input required to generate the maximum steam capacity is approximately 458 million British thermal units per hour (mmBtu/hr). The maximum heat input limit for the natural gas burner system for each MWC unit is <u>246 167</u> mmBtu/hr during periods of startup, shutdown and for flame stabilization.</p> <p><i>Controls for each MWC:</i> The air pollution control systems will consist of GCP, SD, FF, CI, SCR and use of inherently clean natural gas as a startup, shutdown and flame stabilization fuel in the MWC.</p> <p><i>Stack Parameters for each MWC:</i> Each of the MWC units will have a separate exhaust flue. The exhaust flues will be co-located and contained in a common outer stack. Each stack flue will be approximately 8.1 feet in diameter (maximum) and 310 feet tall (minimum). Exhaust from each flue will exit the stack at the following approximate conditions: an exit temperature of 285 °F and a volumetric flow rate of 184,310 actual cubic feet per minute (acfm).</p> <p><i>Continuous emissions and opacity monitoring systems (CEMS, COMS):</i> Emissions of <u>CO, NO_x, and SO₂ from each MWC unit and Hg from one of the MWC units</u> will be monitored and recorded by CEMS. Opacity (VE) from each unit will be monitored and recorded by a COMS.</p> <p><i>Applicability of 40 CFR Subpart Eb (NSPS Subpart Eb):</i> Each MWC unit is subject to NSPS Subpart Eb - Standards of Performance for Large Municipal Waste Combustors.</p> <p><i>{Permitting Note: These emission units are subject to BACT determinations for NO_x, CO, SO₂, PM, VOC, MWC acid gases as SO₂+hydrogen chlorides (HCl), MWC organics as dioxin/furans (D/F), and MWC metals as PM.}</i></p> <p><i>{Permitting Note: Unless otherwise specified in a specific condition of this subsection, the descriptions above under Description and Steam Capacity are not operating limitations.}</i></p>

EQUIPMENT

1. **MWC Units:** The permittee is authorized to construct three MWC stoker boiler units each with a natural gas burner system, overfire air ports, steam drum, superheater, economizer, air heater, ash hoppers, ducts, fuel feeding equipment, dry cooling towers, air pollution control equipment and other associated equipment. [Application No. 0990234-017-AC]
2. **Air Pollution Control Equipment:** The permittee shall install the following add-on air pollution control equipment on each MWC unit.
 - a. **SD/FF Baghouse System:** The permittee shall design, install, operate and maintain a SD/FF baghouse system. The SD/FF baghouse system shall be brought on line in accordance with the manufacturer's procedures and guidelines and will be utilized whenever the MWC unit is in operation and burning MSW.
 - b. **SCR System:** The permittee shall design, install, operate, and maintain an ammonia (NH₃) or urea based SCR system including reagent storage tank, pumps, metering system, injection grid, reactor and catalyst to reduce NO_x emissions in the flue gas exhaust and achieve the NO_x emissions limit specified in this subsection. The SCR shall be brought on line in accordance with the SCR manufacturer's procedures and

SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS

A. Municipal Solid Waste Combustors (MWC) Units 1, 2, and 3, 4 and 5 (EU Nos. 024, 025 and 026)

guidelines and shall be utilized whenever the MWC unit is in operation and burning MSW. The SCR system also represents BACT for D/F emissions.

- c. SNCR System: The permittee may install, operate, and maintain an NH₃ or urea based SNCR system including reagent storage tank, pumps, metering system and injection equipment to reduce NO_x in the furnace prior to further downstream treatment by the SCR system.
- d. Activate CI System and FF Baghouse: The permittee shall install, operate and maintain an activated CI system and FF baghouse (same baghouse used for SD) to capture the spent carbon. The CI system and FF baghouse shall be designed, constructed and operated to achieve the Hg and other metals emission limits specified in this subsection. The CI system shall be brought on line in accordance with the manufacturer's procedures and guidelines and will be utilized whenever the MWC unit is in operation and burning MSW.

[Application No. 0990234-017-AC; NSPS Subpart Db; and Rule 62-4.070(3), 62-210.200(PTE) and 62-212.400 (BACT), F.A.C.]

- e. Circumvention: The permittee shall not circumvent the air pollution control equipment or allow the emissions of air pollutants without this equipment operating properly. [Rule 62-210.650, F.A.C.]
3. Aqueous Ammonia or Urea Storage Tank: The permittee is authorized to construct a nominal 30,000 gallon or smaller tank to store aqueous ammonia or urea for the SCR systems. In accordance with 40 CFR 60.130, the storage of aqueous ammonia or urea shall comply with all applicable requirements of the Chemical Accident Prevention Provisions in 40 CFR 68. The tank designed and fabricated in accordance with U.S. Department of Labor Chapter 29, Part 1910.111, Code of Federal Regulations (CFR), American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, ANSI K 61.1, and applicable requirements of Chapter 62-762, F.A.C., Above Ground Storage Tank (AST) Systems.
[Application No. 0990234-017-AC and Rule 62-4.070(3), F.A.C.]

PERFORMANCE REQUIREMENTS AND MONITORING OF MWC OPERATIONS

4. MWC Boiler Unit Fuels: Each MWC boiler unit is authorized to combust MSW and other fuels authorized in **Specific Condition 12** of this subsection. In addition, each MWC unit is authorized to combust natural gas as a startup, shutdown and flame stabilization fuel.
[Application No. 0990234-017-AC; Rules 62-4.070(3), 62-210.200(PTE) and 62-212.400 (BACT), F.A.C.]
5. Steam Production Limits: For each MWC unit, the maximum allowable steam production rate is 320,100 lb/hr (4 hour block average basis).
[Application No. 0990234-017-AC; Rules 62-4.070(3), 62-210.200(PTE) and 62-212.400 (BACT), F.A.C.]
6. Maximum Demonstrated MWC Unit Load: The maximum demonstrated MWC unit load shall be determined during the initial performance test for D/F and each subsequent performance test during which compliance with the D/F emission limit is achieved. The maximum demonstrated MWC unit load shall be the highest 4-hour arithmetic average load based on steam production achieved during four consecutive hours during the most recent test during which compliance with the dioxin/furan emission limit was achieved. Unit load means the steam load of the MWC measured as specified in 40 CFR 60.58b(1)(6). Each unit shall not operate at a load level greater than the steam production rate given in **Specific Condition 5** of this subsection or, if it is less, 110% of the unit's "maximum demonstrated unit load". Higher loads, within the limit in **Specific Condition 5** of this subsection, are allowed for testing purposes as specified in 40 CFR 60.53b(b).
[40 CFR 60.34b(b), 60.51b, 60.53b(b), and 60.58b(1)(6)]
7. Steam Parameters: In accordance with the manufacturer's recommendations, the permittee shall install, calibrate, operate and maintain continuous monitoring and recording devices for the following parameters on each MWC unit: steam temperature (°F), steam pressure (psig) and steam production rate (lb/hour). Records shall be maintained on site and made available upon request.
[Rules 62-4.070(3) and 62-210.200(PTE), F.A.C.]

SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS

A. Municipal Solid Waste Combustors (MWC) Units ~~1, 2, and 3~~, 4 and 5 (EU Nos. 024, 025 and 026)

8. Steam Monitoring: MWC unit load means the steam load of the MWC unit measured as specified in §60.58b(i)(6). The owner or operator shall install, calibrate, maintain, and operate a steam flow meter, shall measure steam flow in lb of steam/hr on a continuous basis, and record the output of the monitor (in accordance with the ASME method described in 40 CFR 60.58b(i)(6)). Steam flow shall be calculated in a 4 hour block arithmetic average. For each MWC unit, the maximum steam production limit corresponding to maximum demonstrated unit load is 320,100 lb/hr (4 hour block average basis). Higher unit loads are allowed for testing purposes pursuant to 40 CFR 60.53b(b). [Rules 62-204.800(8) and 62-4.070(1), and (3), F.A.C., and 40 CFR 60.53b(a), and 60.58b(i)]
9. Heat Input from Fossil Fuels: The maximum heat input capacity from natural gas for each MWC unit on a steady state basis during boiler startup, shutdown and flame stabilization shall be limited to ~~246~~ 167 mmBtu/hr. [Application No. 0990234-017-AC; Rules 62-4.070(3), 62-210.200(PTE) and 62-212.400 (BACT), F.A.C.]
10. Operational Hours: The hours of operation of these MWC units are not restricted (8,760 hours/year). [Application No. 0990234-017-AC; Rules 62-4.070(3) and 62-210.200(PTE)]
11. Prohibited Fuels:
 - a. The facility shall not burn:
 - i. those materials that are prohibited by state or federal law;
 - ii. those materials that are prohibited by this permit;
 - iii. lead acid batteries;
 - iv. hazardous waste;
 - v. nuclear waste;
 - vi. radioactive waste;
 - vii. sewage sludge;
 - viii. explosives; and
 - ix. beryllium-containing waste, as defined in 40 CFR 61, Subpart C.
 - b. Further, the facility shall not knowingly burn:
 - i. nickel-cadmium batteries pursuant to Section 403.7192 (3);
 - ii. mercury containing devices and lamps pursuant to Sections 403.7186(2), and (3);
 - iii. untreated biomedical waste from biomedical waste generators regulated pursuant to Chapter 64E-16, F.A.C., and from similar generators (or sources);
 - iv. segregated loads of biological waste; and
 - v. Copper Chromated Arsenate (CCA) treated wood.
12. Authorized Fuels: The primary fuel for the facility is MSW, including the items and materials that fit within the definition of MSW contained in either 40 CFR 60.51b or Section 403.706(5), F.S. (1995). Subject to the limitations contained in this permit, the authorized fuels for the facility also include the other solid wastes that are not MSW which are described below:
 - a. Subject to the conditions and limitations contained in this permit, the following other solid waste may be used as fuel at the facility:
 - i. Confidential, proprietary or special documents (including but not limited to business records, lottery tickets, event tickets, coupons and microfilm);
 - ii. Contraband which is being destroyed at the request of appropriately authorized local, state or federal governmental agencies, provided that such material is not an explosive, a propellant, a hazardous waste, or otherwise prohibited at the facility. For the purposes of this section, contraband includes but is not limited to drugs, narcotics, fruits, vegetables, plants, counterfeit money, and counterfeit consumer goods;
 - iii. Wood pallets, clean wood, and land clearing debris;
 - iv. Packaging materials and containers;

SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS

A. Municipal Solid Waste Combustors (MWC) Units ~~1, 2, and 3~~, 4 and 5 (EU Nos. 024, 025 and 026)

- v. Clothing, natural and synthetic fibers, fabric remnants, and similar debris, including but not limited to aprons and gloves; or
 - vi. Rugs, carpets, and floor coverings, but not asbestos-containing materials or polyethylene or polyurethane vinyl floor coverings.
- b. Subject to the conditions and limitations contained in this permit, waste tires may be used as fuel at the facility. The total quantity of waste tires received as segregated loads and burned at the facility shall not exceed 3%, by weight, of the facility's total fuel. Compliance with this limitation shall be determined on a calendar month basis in accordance with **Specific Condition 35** of this subsection.
- c. Subject to the conditions and limitations contained in this permit, the following other solid waste materials may be used as fuel at the facility (i.e. the following are authorized fuels that are non-MSW material). The total quantity of the following non-MSW material received as segregated loads and burned at the facility shall not exceed 5%, by weight, of the facility's total fuel. Compliance with this limitation shall be determined on a calendar month basis in accordance with **Specific Condition 35** of this subsection.
- i. Construction and demolition debris.
 - ii. Oil spill debris from aquatic, coastal, estuarine or river environments. Such items or materials include but are not limited to rags, wipes, and absorbents.
 - iii. Items suitable for human, plant or domesticated animal use, consumption or application where the item's shelf-life has expired or the generator wishes to remove the items from the market. Such items or materials include but are not limited to off-specification or expired consumer products, pharmaceuticals, medications, health and personal care products, cosmetics, foodstuffs, nutritional supplements, returned goods, and controlled substances.
 - iv. Consumer-packaged products intended for human or domesticated animal use or application but not consumption. Such items or materials include but are not limited to carpet cleaners, household or bathroom cleaners, polishes, waxes and detergents.
 - v. Waste materials that:
 - (a) are generated in the manufacture of items in categories (iii) or (iv), above and are functionally or commercially useless (expired, rejected or spent); or
 - (b) are not yet formed or packaged for commercial distribution. Such items or materials must be substantially similar to other items or materials routinely found in MSW.
 - vi. Waste materials that contain oil from:
 - (a) the routine cleanup of industrial or commercial establishments and machinery; or
 - (b) spills of virgin or used petroleum products. Such items or materials include but are not limited to rags, wipes, and absorbents.
 - vii. Used oil and used oil filters. Used oil containing a polychlorinated biphenyls (PCB) concentration equal or greater than 50 parts per million (ppm) shall not be burned, pursuant to the limitations of 40 CFR 761.20(e).
{Permitting note: Waste materials specifically authorized above do not require Department approval.}
 - viii. Waste materials generated by manufacturing, industrial or agricultural activities, provided that these items or materials are substantially similar to items or materials that are found routinely in MSW.
[Rule 62-4.070(1), and (3), F.A.C.]
13. Segregated Loads: The fuel may be received either as a mixture or as a single-item stream (segregated load) of discarded materials. If the facility intends to use an authorized fuel that is a segregated non-MSW material, the fuel shall be either:
- a. well mixed with MSW in the refuse pit; or
 - b. alternately charged with MSW in the hopper.

SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS

A. Municipal Solid Waste Combustors (MWC) Units 1, 2, and 3, 4 and 5 (EU Nos. 024, 025 and 026)

14. **Combustion Practices:** To ensure that the facility’s fuel does not adversely affect the facility’s combustion process or emissions, the facility operator shall:
- a. comply with good combustion operating practices in accordance with 40 CFR 60.53b;
 - b. install, operate and maintain CEMS for oxygen, CO, SO₂, NO_x and temperature in accordance with 40 CFR 60.58b; and
 - c. record and maintain the CEMS data in accordance with 40 CFR 60.59b.

These steps shall be used to ensure and verify continuous compliance with the emissions limitations in this permit. Natural gas may be used as fuel during boiler startup, shutdown and flame stabilization, and at other times when necessary and consistent with good combustion practices.

NSPS APPLICABILITY

15. **NSPS Subpart Eb and Subpart A Applicability:** Each MWC unit, including the shared STG, are subject to all applicable requirements of 40 CFR 60, Subpart Eb which applies to Large Municipal Waste Combustors and Subpart A, General Provisions. The applicable conditions are given in Appendices A and Eb of this permit. [Rule 62-204.800(7)(b) and 40 CFR 60, NSPS-Subpart Eb and 40 CFR 60 Subpart A]

EMISSIONS STANDARDS

16. Emissions from each MWC unit (EU-024, EU-025 and EU-026) shall not exceed the following limits:

Pollutant	Emission Standard/Limit ¹	lb/hour ²	Basis
NO _x	50 ppmvd – 24 hour block arithmetic mean	37.4	BACT
	45 ppmvd – 12 month rolling average		BACT
CO	100 ppmvd – 4 hr block arithmetic mean	45.5	Subpart Eb
	80 ppmvd – 30-day rolling average		BACT
SO ₂	24 ppmvd – 24 hour geometric mean	25.0	BACT
HCl ³	20 ppmvd	11.9	BACT
VOC (as propane)	7 ppmvd	5.0	BACT
PM/PM ₁₀ /PM _{2.5}	12.0 mg/dscm	4.7	BACT
Lead (Pb)	125 µg/dscm	0.049	Avoid PSD
Hg ⁴	N/A ⁵	37.7 lb/yr ⁶	Avoid PSD
	25 µg/dscm	0.0098	Applicant Request
Cadmium (Cd)	10 µg/dscm	3.91E ⁻⁰³	Subpart Eb
	13.0 ng/dscm		Subpart Eb
	10 ng/dscm during initial two years		Initial Test
D/F ⁷	0.75 to 10 ng/dscm 3 rd year and thereafter		BACT
	10 % – 6 minute average	N/A	BACT Subpart Eb
Ammonia Slip	10 ppmvd	2.76	PM, Opacity

1 All concentration values are corrected to 7% O₂: µg/dscm = micrograms per dry standard cubic meter; mg/dscm = milligrams per dry standard cubic meter; ng/dscm = nanograms per dry standard cubic meter; and ppmvd = part per million dry volume.
 2 Mass emission limits reflect maximum values calculated at 110% of 24 hour steam production limit of 291,000 lb steam/hr for each MWC. The 110% steam limit is 320,100 lb steam/hr for each MWC.
 3 HCl is not a BACT pollutant. However, it must be limited together with SO₂ because they both comprise MWC-Acid Gases which has its own PSD threshold.
 4 Within 60 days after achieving the maximum production rate, but not later than 180 days after the initial startup, PBREF-2 shall commence quarterly performance Hg stack test events for the first two years of operation for each MWC exhaust flue to show compliance with the 25 µg/dscm emission limit. ~~The 25 µg/dscm quarterly stack based standard is based on the applicant's request. After the first two years of operation, the stack testing frequency can be reduced to annually to show compliance with~~

SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS

A. Municipal Solid Waste Combustors (MWC) Units 1, 2, and 3, 4 and 5 (EU Nos. 024, 025 and 026)

	the 25 µg/dscm emission limit. By meeting the quarterly stack test standard, PBREF-2 will show compliance with Subpart Eb Hg emission standard of 50 µg/dscm.
5	N/A = not applicable.
6	The 37.7 lb/yr emission limit is a 12-month rolled monthly average based on CEMS data equivalent to a 12-month average concentration of 12 µg/dscm (conservatively assuming continuous operation 8,760 hours per year). Compliance with this annual limit is to be demonstrated based on quarterly stack testing during the first two years of operation and annually thereafter. The Hg CEMS is required for monitoring Hg emissions from one of the MWC units and must become operational within 60 days after PBREF-2 achieves its maximum production rate, but not later than 180 days after the initial startup. <u>Hg CEMS data will be used for informational purposes and will not be used for demonstrating compliance with emission limits.</u> During the first four quarters of Hg CEMS availability, the CEMS must achieve an 80% data availability rate. Subsequently, an 85% data availability rate is required. See Appendix CEMS for the procedures to be used for data replacement during times of Hg CEMS unavailability.
7	Dioxins/furans: Total tetra through octa-chlorinated dibenzo-p-dioxins and dibenzofurans. During the first year of the PBREF-2 operation of the 10 ng/dscm limit applies. Subsequently, the To Be Determined (TBD) limit will govern based on initial performance and efficiency tests at the inlet and outlet of the SCR as per Specific Conditions 19 and 20 of this subsection. Based on these tests a D/F limit between 10 ng/dscm and 0.75 ng/dscm will be selected by the Department. The pound per hour limit will correspond to TBD ng/dscm limit.

TEST METHODS AND PROCEDURES

17. Test Methods: Any required stack test shall be performed in accordance with the following methods.

EPA Method	Description of Method and Comments
1 - 4	Determination of Traverse Points, Velocity and Flow Rate, Gas Analysis, and Moisture Content. Methods shall be performed as necessary to support other methods.
5	Determination of Particulate Emissions. The minimum sample volume shall be 30 dry standard cubic feet.
6C	Determination of SO ₂ Emissions (Instrumental).
7E	Determination of NO _x Emissions (Instrumental). NO _x emissions testing shall be conducted with the air heater operating at the highest heat input possible during the test.
8	Measurement of Sulfuric Acid Mist
9	Visual Determination of Opacity
10	Measurement of Carbon Monoxide Emissions (Instrumental). The method shall be based on a continuous sampling train.
13A or 13B	Measurement of Fluoride Emissions
18	Measurement of Gaseous Organic Compound Emissions (Gas Chromatography) <i>{Note: EPA Method 18 may be used (optional) concurrently with EPA Method 25A to deduct emissions of methane and ethane from the total hydrocarbons (THC) emissions measured by Method 25A.}</i>
23	Measurement of Dioxin/Furan Emissions
26 or 26A	Determination of Hydrogen Chloride Emissions
29	Determination of Metals Emissions from Stationary Sources (Hg, Cd, Pb)
CTM-027	Procedure for Collection and Analysis of Ammonia in Stationary Source <ul style="list-style-type: none"> • This is an EPA conditional test method. • The minimum detection limit shall be 1 ppm.

Method CTM-027 is published on EPA's Technology Transfer Network Web Site at "<http://www.epa.gov/ttn/emc/ctm.html>". The other methods are specified in Appendix A of 40 CFR 60, adopted by reference in Rule 62-204.800, F.A.C. No other methods may be used unless prior written approval is received from the Department. Tests shall be conducted in accordance with the appropriate test method and the applicable requirements specified in this permit, and NSPS Subpart A in 40 CFR 60. [Rules

SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS

A. Municipal Solid Waste Combustors (MWC) Units 1, 2, and 3, 4 and 5 (EU Nos. 024, 025 and 026)

62-204.800, F.A.C. and 40 CFR 60, Appendix A]

18. **Testing Requirements:** Initial tests shall be conducted between 90% and 100% of permitted capacity; otherwise, this permit shall be modified to reflect the true maximum capacity as constructed. Subsequent annual tests shall be conducted between 90% and 100% of permitted capacity in accordance with the requirements of Rule 62-297.310(2), F.A.C. [Rule 62-297.310(7)(a) and (b), F.A.C.; 40 CFR 60.8]
19. **Initial Compliance Demonstration:** Initial compliance stack tests shall be conducted within 60 days after achieving the maximum production rate, but not later than 180 days after the initial startup for each MWC unit. In accordance with the test methods specified in this permit, each units exhaust flue gas shall be tested to demonstrate compliance with the emission standards for NO_x, VOC, CO, SO₂, HCl, PM/PM₁₀/PM_{2.5}, Pb, Cd, Hg (quarterly during the first two years of operation and annually thereafter), D/F (quarterly during first two years of operation at the inlet and outlet of the SCR and stack flue exhaust and annually thereafter), VE, and ammonia slip given in **Specific Condition 16** of this subsection. Relative Accuracy Test Audit (RATA) tests for CEMS can constitute initial stack tests for these pollutants. The permittee shall provide the Compliance Authority with any other initial emissions performance tests conducted to satisfy vendor guarantees.
[Rule 62-297.310(7)(a) and (b), F.A.C.; 40 CFR 60.8]
20. **Initial Tests for F and SAM Emission Rates:** Initial compliance stack tests shall be conducted on each units exhaust flue gas within 60 days after achieving the maximum production rate, but not later than 180 days after the initial startup to determine the emission rates of SAM and F.
Rules 62-4.070(3), 62-210.200 (BACT) and 62-212.400 (PSD), F.A.C.]
21. **Subsequent Compliance Testing:** Annual stack tests for each MWC units exhaust flue gas shall be conducted for VOC, HCl, PM/PM₁₀/PM_{2.5}, Pb, Cd, Hg (quarterly during first two years of operation and annually thereafter), D/F (quarterly during first two years of operation at the inlet and outlet of the SCR and stack flue exhaust and annually thereafter at the stack flue exhaust only), VE and ammonia slip during each federal fiscal year (October 1st to September 30th) to show compliance with the emission limits given in **Specific Condition 16** of this subsection. Data collected from the reference method during the required RATA tests for CO, NO_x, SO₂ and Hg (one quarter of four) may be used to satisfy the annual testing requirement provided the notification requirements and emission testing requirements for performance and compliance tests of this permit are satisfied.
[Rules 62-297.310(7)(a) and (b), and 62-296.416, F.A.C., and 40 CFR 60.8 and 60.58b]
22. **Emissions Limit Subject to Revision D/F:** D/F emissions from each MWC shall not exceed the limitation stated **Specific Condition 16** of this subsection. Stack acceptance testing and SCR inlet/outlet D/F destruction testing shall be performed quarterly on each MWC exhaust flue gas during the first two years of operation. The permittee shall provide a protocol for the SCR efficiency testing for review and approval by the Department ninety days prior to the commencement of testing. The permittee shall provide the results to the Department within 45 days of completion of the eight D/F destruction efficiency and stack tests so that the Department can set a numerical BACT D/F limit based on the performance of the SCR technology.

The D/F emission limit standard will be between a maximum value of 10 ng/dscm and a minimum value of 0.75 ng/dscm. Between these upper and lower limit values, the limit will be ten times the average of the eight quarterly D/F SCR efficiency and stack test results conducted during the first two years of PBREF-2 operation. For example, if the average of these tests is 0.50 ng/dscm then the limit will be set by the Department at 5.0 ng/dscm, while if the average of the stack tests is 1.2 ng/dscm then the limit will be set at the upper limit value of 10.0 ng/dscm. A single D/F limit will be established for all three MWC units.

If the D/F average emissions based on the SCR efficiency and stack tests is 0.05 ng/dscm or less, then the D/F emission limit shall be set at 0.74 ng/dscm as a non-PSD/BACT limit. The D/F emission limit shall be established prior to issuance of the facility's Title V operating permit.

SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS

A. Municipal Solid Waste Combustors (MWC) Units ~~1, 2, and 3~~, 4 and 5 (EU Nos. 024, 025 and 026)

*{In accordance with **Specific Condition 6** of this subsection NSPS Subpart Eb, only the annual D/F compliance test and not the additional SCR efficiency tests will be used to re-set the maximum demonstrated MWC unit load or other operating parameter levels.}*

[40 CFR 60.52b(c); Rules 62-4.070(3), 62-210.200 (BACT) and 62-212.400 (PSD), F.A.C.]

23. Continuous Compliance: The permittee shall demonstrate continuous compliance with the CO, NO_x and SO₂ concentration and mass emission standards ~~and the long-term Hg mass emissions standard~~ based on data collected by the certified CEMS. The permittee shall demonstrate continuous compliance with the opacity limit based on data collected by the required COMS.
[Rule 62-210.200 (BACT), F.A.C. and 40 CFR 60, Subpart Eb]

EXCESS EMISSIONS

*{Permitting Note: **Specific Conditions 24, 25 and 26** apply to the State Implementation Plan (SIP)-based emissions standards specified in **Specific Condition 16** of this subsection. Rule 62-210.700, F.A.C. (Excess Emissions) cannot vary or supersede any federal provision of the NSPS, or Acid Rain programs.}*

24. Excess Emissions Prohibited: Excess emissions caused entirely or in part by poor maintenance, poor operation or any other equipment or process failure that may reasonably be prevented during startup, shutdown or malfunction shall be prohibited. All such preventable emissions shall be included in any compliance determinations based on CEMS data. [Rule 62-210.700(4), F.A.C. and Rule 62-4.070(3), F.A.C.]
25. Emission Limit Compliance and Excess Emissions: Because of the long-term nature of the 12-month NO_x ~~and 12-month Hg~~ concentration limits as part of PSD and the associated BACT determination, all emissions data for ~~these~~ this pollutants/averaging times, including periods of startup, shutdown and malfunction, shall be included in compliance determinations based on CEMS data. [Rule 62-210.700(4), 62-210.200(PTE); [Rule 62-212.400(10) (PSD), Control Technology Review; and Rule 62-4.070(3), F.A.C.]
26. Excess Emissions Allowed: As specified in this condition, excess emissions resulting from startup, shutdown and documented malfunctions are allowed for the 24-hour NO_x and 30-day CO rolling concentration and mass limit provided that operators employ the best operational practices to minimize the amount and duration of emissions during such incidents. NO_x and CO emission data exclusions resulting from startup, shutdown, or documented malfunctions shall not exceed three hours in any 24-hour period. A “documented malfunction” means a malfunction that is documented within one working day of detection by contacting the Compliance Authority by telephone, facsimile transmittal, or electronic mail.
27. Regulations Pursuant to 40 CFR 60, Subpart Eb: The following provisions apply to the emissions limits given in **Specific Condition 16** of this subsection that were specified pursuant to 40 CFR 60, Subpart Eb.
- a. *The opacity standards* set forth in 40 CFR 60 shall apply at all times except during periods of startup, shutdown, malfunction, and as otherwise provided in the applicable standard. [40 CFR 60.11(c)]
 - b. *Startup, Shutdown and Malfunction*: Except as provided by 40 CFR 60.56b, the standards under 40 CFR 60, Subpart Eb, as incorporated in Rule 62-204.800(8)(b), F.A.C., apply at all times except during periods of startup, shutdown, or malfunction. Duration of startup or shutdown periods are limited to 3 hours per occurrence, except as provided in 40 CFR 60.58b(a)(1)(iii). During periods of startup, shutdown, or malfunction, monitoring data shall be dismissed or excluded from compliance calculations, but shall be recorded and reported in accordance with the provisions of 40 CFR 60.59b(d)(7).
 - i. The startup period commences when the affected facility begins the continuous burning of municipal solid waste and does not include any warm-up period when the affected facility is combusting fossil fuel or other non-municipal solid waste fuel, and no municipal solid waste is being fed to the combustor.
 - ii. Continuous burning is the continuous, semi-continuous, or batch feeding of municipal solid waste for purposes of waste disposal, energy production, or providing heat to the combustion system in preparation for waste disposal or energy production. The use of municipal solid waste solely to

SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS

A. Municipal Solid Waste Combustors (MWC) Units 1, 2, and 3, 4 and 5 (EU Nos. 024, 025 and 026)

provide thermal protection of the grate or hearth during the startup period when municipal solid waste is not being fed to the grate is not considered to be continuous burning.

[40 CFR 60.58b(a)]

- c. *Special Provisions for CO*: For the purpose of compliance with the carbon monoxide emission limits in 40 CFR 60.53b(a), if a loss of boiler water level control (e.g., loss of combustion air fan, induced draft fan, combustion grate bar failure) is determined to be a malfunction, the duration of the malfunction period is limited to 15 hours per occurrence. [40 CFR 60.58b(a)(1)(iii)]

CONTINUOUS MONITORING REQUIREMENTS

28. CEM Systems: The permittee shall install, calibrate, maintain, and operate CEMS to measure and record the emissions of CO, NO_x, Hg and SO₂ from each MWC unit in a manner sufficient to demonstrate continuous compliance with the CEMS emission standards given in **Specific Condition 16** of this subsection. The permittee shall also install calibrate, maintain, and operate a single CEMS to measure and record Hg emissions from one of the three MWC units for informational purposes. For additional details see Appendix CEMS of this permit.

- a. *CO CEMS*: CO CEMS shall be certified pursuant to 40 CFR 60, Appendix B, Performance Specification 4 or 4A and shall comply with all requirements of 40 CFR 60.58b. Quality assurance procedures shall conform to the requirements of 40 CFR 60, Appendix F, and the Data Assessment Report of Section 7 shall be made each calendar quarter, and reported semiannually to the Compliance Authority. The required RATA tests shall be performed using EPA Method 10 in Appendix A of 40 CFR 60 and shall be based on a continuous sampling train. The CO monitor span values shall be set appropriately, considering the allowable methods of operation and corresponding emission standards.
- b. *NO_x CEMS*: NO_x CEMS shall be certified pursuant to 40 CFR 60, Appendix B, Performance Specification 2 and shall comply with all requirements of 40 CFR 60.58b. Quality assurance procedures shall conform to the requirements of 40 CFR 60, Appendix F, and the Data Assessment Report of Section 7 shall be made each calendar quarter, and reported semiannually to the Compliance Authority. The required RATA tests shall be performed using EPA Method 7E in Appendix A of 40 CFR 60. The NO_x monitor span values shall be set appropriately, considering the allowable methods of operation and corresponding emission standards.
- c. *SO₂ CEMS*: SO₂ CEMS shall be certified pursuant to 40 CFR 60, Appendix B, Performance Specification 2 and shall comply with all requirements of 40 CFR 60.58b. Quality assurance procedures shall conform to the requirements of 40 CFR 60, Appendix F. The required RATA tests shall be performed using EPA Method 6C in Appendix A of 40 CFR 60. The SO₂ monitor span values shall be set appropriately, considering the expected range of emissions and corresponding emission standards.
- d. *Hg CEMS*: Hg CEMS shall be certified pursuant to the requirements in Performance Specification 12A (PS-12A), "Specifications and Test Procedures for Total Vapor Phase Mercury Continuous Monitoring Systems in Stationary Sources," or that has passed verification tests conducted under the auspices of the U.S. Environmental Protection Agency's (EPA) Environmental Technology Verification (ETV) Program. ~~Changes from these standards with regard to data availability of the Hg CEMS are given in Appendix CEMS, along with the method to fill in data during times of Hg CEMS unavailability. After certification the owner or operator will begin reporting Hg concentration emissions data.~~ The owner or operator shall adhere to the calibration drift and quarterly performance evaluation procedures and ongoing data quality assurance procedures in 40 CFR Part 60, Appendix F or 40 CFR Part 75, Appendix B. If the calibration system associated with Hg CEMS is not able to conform to the above referenced data quality assurance procedures, then the owner or operator shall propose alternate quality assurance procedures in the CEMS Operation Plan specified in Appendix CEMS of this permit. ~~The mass emissions shall be estimated based on the actual data collected no later than 30 days following the end of the month. The mercury monitoring data results shall be submitted quarterly.~~ The CEMS shall only be used for informational

SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS

A. Municipal Solid Waste Combustors (MWC) Units ~~1, 2, and 3~~, 4 and 5 (EU Nos. 024, 025 and 026)

~~purposes and will not be used for compliance demonstration purposes as the method of compliance for the annual mass emission rate.~~

- e. *Diluent Monitor*: A continuous emission monitoring system for measuring the oxygen content of the flue gas at each location where carbon monoxide, sulfur dioxide, nitrogen oxides emissions are monitored shall be installed, calibrated, maintained, and operated in accordance with the requirements of 40 CFR 60.58b.

29. COMS: A continuous opacity monitoring system (COMS) shall be installed, calibrated, operated, and maintained in exhaust flue of each MWC unit in a manner sufficient to demonstrate continuous compliance with the opacity standard specified in this section. Opacity shall be based on a 6-minute block average computed from at least one observation (measurement) every 15 seconds. For the COMS, the 6-minute block averages shall begin at the top of each hour. The COMS shall meet the applicable requirements of 40 CFR 60.58b(c)(8).
30. Continuous Flow Monitor: A continuous flow monitor shall be installed to determine the stack exhaust flow rate to be used in determining mass emission rates. The flow monitor shall be certified pursuant to 40 CFR 60, Appendix B, Performance Specification 6.
[Rules 62-210.200(BACT), 62-204.800(8), and 62-4.070(1) and (3), F.A.C.]

OTHER MONITORING REQUIREMENTS

31. Pressure Drop: The permittee shall maintain and calibrate a device which continuously measures and records the pressure drop across each baghouse compartment controlling the PM, sorbent and powdered activated carbon (PAC) emissions for each MWC unit. Records shall be maintained on site and made available upon request. [Rule 62-4.070(3), F.A.C.]
32. Bag Leak Detection: The permittee shall maintain continuous operation of bag leak detection systems on each baghouse for each MWC unit including keeping records of the systems measurements. Baghouse leak detection records shall be kept on site and made available upon request. [Rule 62-4.070(3), F.A.C.]
33. SCR NH₃ or Urea Injection: In accordance with the manufacturer's specifications, the permittee shall install, calibrate, operate and maintain a flow meter to measure and record the NH₃ or urea injection rate for the SCR system on each MWC unit. The permittee shall document the general range of NH₃ or urea flow rates required to meet the NO_x standard over the range of load conditions by comparing NO_x emissions with NH₃ or urea flow rates. During NO_x CEMS downtimes or malfunctions, the permittee shall operate at an NH₃ or urea flow rate that is consistent with the documented flow rate for the given load condition. Records shall be maintained on site and made available upon request. [Rule 62-4.070(3), F.A.C.]
34. Activated CI: In accordance with the manufacturer's specifications, the permittee shall install, calibrate, operate and maintain a mass flow meter or Department approved device to measure and record the activated CI rate (lb/hour) for each MWC unit. The permittee shall document the general range of activated CI mass flow rates required to meet the Hg standard over the range of load conditions by comparing Hg emissions with activated CI mass flow rates. ~~During Hg CEMS downtimes or malfunctions, the permittee shall operate at the activated CI mass flow rate that is consistent with the documented flow rate for the given load condition.~~ Records shall be maintained on site and made available upon request. [Rule 62-4.070(3), F.A.C.]

REPORTING AND RECORD KEEPING REQUIREMENTS

35. Segregated Solid Waste Record Keeping: The following records shall be made and kept to demonstrate compliance with the segregated non-MSW percentage limitations of **Specific Condition 12** of this subsection:
- a. Each segregated load of non-MSW materials, subject to the percentage weight limitations of **Specific Condition 12** of this subsection, which is received for processing, shall be documented as to waste

SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS

A. Municipal Solid Waste Combustors (MWC) Units ~~1, 2, and 3~~, 4 and 5 (EU Nos. 024, 025 and 026)

description and weight. The weight of all waste materials received for processing shall be measured and recorded using the facility truck scale.

- b. Each day the total weight of segregated tires received shall be computed, and the daily total shall be added to the sum of the daily totals from the previous days in the current calendar month. At the end of each calendar month, the resultant monthly total weight of tires shall be divided by the total weight of all waste materials received in the same calendar month, and the resultant number shall be multiplied by 100 to express the ratio in percentage terms. The percentage computed shall be compared to the 3% limitation.
- c. Each day the total weight of segregated non-MSW materials received that are subject to the 5% restriction shall be computed, and the daily total shall be added to the sum of the daily totals from the previous days in the current calendar month. At the end of each calendar month, the resultant monthly total weight of segregated non-MSW materials subject to the 5% restriction shall be divided by the total weight of all waste materials received in the same calendar month, and the resultant number shall be multiplied by 100 to express the ratio in percentage terms. The percentage computed shall be compared to the 5% limitation.

[Rules 62-4.070(1) and (3), and 62-210.200(BACT), F.A.C.]

36. **Stack Test Reports:** The owner or operator of an emissions unit for which a compliance test is required shall file a report with the Compliance Authority on the results of each such test. The required test report shall be filed with the Compliance Authority as soon as practical but no later than 45 days after the last sampling run of each test is completed. The test report shall provide sufficient detail on the emissions unit tested and the test procedures used to allow the Compliance Authority to determine if the test was properly conducted and the test results properly computed. As a minimum, the test report, other than for an EPA or DEP Method 9 test, shall provide the specified in Rule 62-297.310(8), F.A.C. [Rule 62-297.310(8), F.A.C.]
37. **Malfunction Notifications:** If temporarily unable to comply with any condition of the permit due to breakdown of equipment (malfunction) or destruction by hazard of fire, wind or by other cause, the permittee shall immediately (within one working day) notify the Compliance Authority. Notification shall include pertinent information as to the cause of the problem, and what steps are being taken to correct the problem and to prevent its recurrence, and where applicable, the owner's intent toward reconstruction of destroyed facilities. Such notification does not release the permittee from any liability for failure to comply with Department rules. If requested by the Compliance Authority, the owner or operator shall submit a quarterly written report describing the malfunction. [Rules 62-210.700(6) and 62-4.130, F.A.C.]
38. **SIP Quarterly Permit Limits Excess Emissions Report:** Within 30 days following the end of each calendar quarter, the permittee shall submit a report to the Compliance Authority summarizing periods of CO and NO_x emissions in excess of the BACT permit standards and the amounts of authorized data excluded following the format in Appendix XSE of this permit. Periods of startup, shutdown and malfunction shall be monitored and recorded at all times. In addition, the report shall summarize the CEMS systems monitor availability for the previous quarter.
39. **Annual Operating Report:** The permittee shall submit an annual report that summarizes the actual operating rates and emissions from this facility. Annual operating reports shall be submitted to the Compliance Authority by April 1st of each year. [Rule 62-210.370, F.A.C.]

SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS

B. Carbon and Lime Storage Silos (EU Nos. 027, 028, 029 and 030)

This section addresses the following EU.

E.U. ID No.	EU Descriptions
027	Lime Storage Silo #A
028	Lime Storage Silo #B
029	Lime Storage Silo #C
030	Activated Carbon Storage Silo

EQUIPMENT AND CONTROL TECHNOLOGY

1. **Storage Silos:** The permittee is authorized to construct three lime storage silos and one activated carbon storage silo. Each silo will have a volume of approximately ~~9,000 to 11,000~~ 4,000 to 5,000 cubic feet.
2. **FF Baghouses:** Each storage silo will be equipped with its own FF baghouse to control PM emissions. Each baghouse shall be designed, operated and maintained to achieve a PM mass emission rate of 0.01 grains per dry standard cubic foot (gr/dscf) or less. The baghouses shall be operated during all silo filling operations.

PERFORMANCE REQUIREMENTS AND EMISSION STANDARDS

3. **Hours of Operation:** These EU may operate continuously (8,760 hours/year). [Rules 62-4.160(2) and 62-210.228(PTE), F.A.C.]
4. **FF Baghouse PM Emission Standard:** PM emissions from each storage silo baghouse shall not exceed 0.010 gr/dscf. [Application No. 0990234-017-AC; Rules 62-4.070(3), 62-212.400 (BACT), 62-210.200(PTE) and 62-4.070, F.A.C.]
5. **FF Baghouse PM Standard by Opacity Measurement:** A visible emission reading of 5% opacity or less may be used to demonstrate compliance with the PM emission standard in **Specific Condition 4** above. A visible emission reading greater than 5% opacity will require the permittee to perform a PM emissions stack test within 60 days to show compliance with the PM standard. [Application No. 0990234-017-AC; Rules 62-296.603; 62-296.712, 62-4.070 and 62-212.400 (BACT) F.A.C.; and 40 CFR 60.122(a)(2)]
{Permitting Note: The baghouses are designed to control PM emissions to 0.010 gr/dscf. The 5% opacity limitation is consistent with this design and provides reasonable assurance that annual emissions of PM/PM₁₀/PM_{2.5} for EU will be less than 0.1 TPY.}
6. **Fugitive Emissions Limits:** Fugitive emissions are limited to 10% opacity from any emissions point not controlled by a FF baghouse. [Rule 62-4.070(3), F.A.C.]
7. **Best Management Practices to Control Unconfined Emissions of PM:** To ensure the emission standards with regard to opacity and PM of this subsection are complied with, the procedures set forth in **Specific Condition 10 of Section II** of this permit, "Unconfined Emissions of Particulate Matter," shall be adhered to where practical and cost effective. [Application No. 0990234-017-AC; Rules 62-4.070, 62-296.320 and 62-212.400 (BACT) F.A.C.]

TESTING AND MONITORING REQUIREMENTS

8. **Compliance Demonstrations:** Each emission point shall be tested to demonstrate initial compliance with the emission standards for visible emissions given in **Specific Conditions 5 and 6** of this subsection in accordance with EPA Method 9. The tests shall be conducted within 60 days after achieving the maximum production rate at which the unit will be operated, but not later than 180 days after the initial startup. Thereafter, compliance with the visible emission limits for each emission point shall be demonstrated during each federal fiscal year (October 1st to September 30th). As specified in Specific Condition 5 of this

SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS

B. Carbon and Lime Storage Silos (EU Nos. 027, 028, 029 and 030)

subsection, a PM test must be conducted on a FF baghouse of a storage silos with 60 days of its failure in meeting the VE standard. [Rules 62-4.070(3), and 62-297.310(7)(a), F.A.C.]

9. **Test Methods:** Any required tests shall be performed in accordance with the following reference methods and the applicable requirements of Appendix CTR of this permit.

EPA Method	Description of Method and Comments
5	Determination of Particulate Emissions. The minimum sample volume shall be 30 dry standard cubic feet.
9	Visual Determination of the Opacity of Emissions from Stationary Sources

REPORTING AND RECORD KEEPING

10. **Baghouse O&M Plan:** For each baghouse the permittee shall prepare an operation and maintenance (O&M) plan to address proper operation, parametric monitoring, and a schedule for conducting periodic inspections and preventive maintenance. Baghouse inspections and maintenance activities shall be recorded in a written log. The O&M plan shall be submitted to the Compliance Authority prior to the initial compliance tests for these EU. [Rule 62-4.070(3), F.A.C.]
11. **Test Reports:** The permittee shall prepare and submit reports for all required tests in accordance with the requirements specified in Appendix CTR (Common Testing Requirements) of this permit. For each test run, the report shall also indicate the operating rate. [Rule 62-297.310(8), F.A.C.]

SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS

C. Diesel Fire Pump Engines (EU Nos. 031 and 032)

This section of the permit addresses the following EU.

EU ID No.	Emission Unit Description
031	One emergency diesel firewater pump engine with a maximum design rating of 250 <u>351</u> hp
032	One emergency diesel firewater pump engine with a maximum design rating of 250 <u>351</u> hp

NSPS AND NESHAP APPLICABILITY

1. NSPS Subpart IIII Applicability: Each pump engine is an Emergency Stationary Compression Ignition Internal Combustion Engine (Stationary ICE) and shall comply with applicable provisions of 40 CFR 60, Subpart IIII. [40 CFR 60, Subpart IIII - Standards of Performance for Stationary Compression Ignition Internal Combustion Engines]
2. NESHAP Subpart ZZZZ Applicability: The emergency pump engines are Liquid Fueled Reciprocating Internal Combustion Engines (RICE) and shall comply with applicable provisions of 40 CFR 63, Subpart ZZZZ. Pursuant to 40 CFR 63.6590(c) the engines must meet the requirements of Subpart ZZZZ by meeting the requirements of 40 CFR 60, Subpart IIII. [40 CFR 63, Subpart ZZZZ - National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (RICE)]

EQUIPMENT SPECIFICATIONS

3. Engine Driven Fire Pumps: The permittee is authorized to install, operate, and maintain two emergency diesel fire pump engines. The pump engines will each have a maximum rating of ~~250~~ 351 hp (~~186~~ 262 kW) or smaller. [Application No. 0990234-017-AC and Rules 62-210.200(PTE) and 62-212.400 (BACT), F.A.C.]
4. ULSD Fuel Oil Storage Tank: The permittee is authorized to construct a 1,000 gallon tank to store ULSD fuel oil for use in the emergency diesel firewater pump engines. [Rule 62-4.070(3), F.A.C.]
{Permitting Note: The ULSD fuel oil storage tank for the emergency diesel firewater pump engines at the PBREF2 facility is not subject to NSPS Subpart Kb because it stores a liquid (ULSD fuel oil) with a maximum true vapor pressure less than 3.5 kPa (0.51 pounds per square inch (psi)). Accordingly it is an unregulated emissions unit.}
[40 CFR 60.110b(a) and (c) and Rule 62-204.800(8)(b)(17), F.A.C.]

PERFORMANCE RESTRICTIONS

5. Hours of Operation: Each fire pump engine may operate up to 100 hours per year for maintenance and testing purposes. ~~The duration of each maintenance and testing event for each pump engine shall not exceed 30 minutes in any hour, and shall not be conducted concurrently with maintenance and testing of the other pump engine nor the emergency generator diesel engine. Note: this limitation was previously deleted in modified Air Permit No. 09902344-023-AC(PSD-FL-413A).~~ [Application No. 0990234-017-AC; Rules 62-210.200 (PTE) and 62-212.400 (BACT), F.A.C.]
6. Authorized Fuel: Each pump engine shall fire ULSD fuel oil. The ULSD fuel oil shall contain no more than 0.0015% sulfur by weight. [Application No. 0990234-017-AC; Rules 62-210.200 (PTE) and 62-212.400 (BACT), F.A.C.]

EMISSION STANDARDS

7. Emissions Limits: The emergency fire pump engines shall comply with the following emission limits and demonstrate compliance in accordance with the procedures given in 40 CFR 60, Subpart IIII. Manufacturer certification may be provided to the Department in lieu of actual testing. [40 CFR 60.4211 and Rule 62-4.070(3), F.A.C.]

SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS

C. Diesel Fire Pump Engines (EU Nos. 031 and 032)

Emergency Pumps (175 <u>300</u> hp \leq and $<$ 300 <u>600</u> hp)	CO (g/hp-hr) ¹	PM (g/hp-hr)	SO₂ (% S) ²	NMHC³+NO_x (g/hp-hr)
Subpart IIII (2009 and later)	2.6	0.15	0.0015	3.0
1. g/hp-hr means grams per horsepower-hour. 2. SO ₂ emission standard will be met by using ULSD fuel oil in the fire pump engines with fuel sulfur (S) content of 0.0015% by weight. 3. Non-Methane Hydrocarbons				

[Application No. 0990234-017-AC; 40 CFR 60, NSPS Subpart IIII; and Rules 62-4.070(3) and 62-212.400 (BACT), F.A.C.]

RECORDS AND REPORTS

8. Notification, Recordkeeping and Reporting Requirements: The permittee shall adhere to the compliance testing and certification requirements listed in 40 CFR 60.4211 and maintain records demonstrating fuel usage and quality. [Rule 62-212.400 (BACT), F.A.C. and 40 CFR 60.4211]

SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS

D. Emergency Generator (EU-033)

This section of the permit addresses the following emissions units. *Note: the changes shown below were previously made in modified Air Permit No. 09902344-023-AC(PSD-FL-413A). No additional changes are requested for the emergency generator.*

EU ID No.	Emission Unit Description
033	One emergency diesel generator with a maximum design rating of 250 <u>2,500</u> kW

NSPS AND NESHAP APPLICABILITY

1. NSPS Subpart IIII Applicability: This emergency generator is a Stationary Compression Ignition Internal Combustion Engine (Stationary ICE) and shall comply with applicable provisions of 40 CFR 60, Subpart IIII, including emission testing or certification. [40 CFR 60, Subpart IIII - Standards of Performance for Stationary Compression Ignition Internal Combustion Engines]
2. NESHAPS Subpart ZZZZ Applicability: The emergency generator is a Liquid Fueled Reciprocating Internal Combustion Engine (RICE) and shall comply with applicable provisions of 40 CFR 63, Subpart ZZZZ. Pursuant to 40 CFR 63.6590(c) the generators must meet the requirements of Subpart ZZZZ by meeting the requirements of 40 CFR 60, Subpart IIII. [40 CFR 63, Subpart ZZZZ - National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (RICE)]

EQUIPMENT

3. Emergency Generator: The permittee is authorized to install, operate and maintain one emergency generator with a maximum design rating of ~~250~~ 2,500 kW (~~335~~ 3,364 hp) or smaller. [Application No. 0990234-017-AC and Rules 62-210.200 (PTE) and 62-212.400 (BACT), F.A.C.]
4. ULSD Fuel Oil Storage Tank: The permittee is authorized to construct a 1,000 gallon tank to store ULSD fuel oil for use in the emergency diesel generator. [Rule 62-4.070(3), F.A.C.]
{Permitting Note: The ULSD fuel oil storage tank for the emergency diesel generator at PBREF No. 2 is not subject to NSPS Subpart Kb because it stores a liquid (ULSD fuel oil) with a maximum true vapor pressure less than 3.5 kPa (0.51 pounds per square inch (psi)). Accordingly it is an unregulated emissions unit.} [40 CFR 60.110b(a) and (c) and Rule 62-204.800(8)(b)(17), F.A.C.]

PERFORMANCE RESTRICTIONS

5. Hours of Operation: The emergency generator may operate up to 100 hours per year for maintenance and testing purposes. ~~The duration of each maintenance and testing event shall not exceed 30 minutes in any hour, and shall not be conducted concurrently with maintenance and testing of the emergency fire water pump diesel engines.~~
[Application No. 0990234-017-AC and Rules 62-210.200 (PTE) and 62-212.400 (BACT), F.A.C.]
6. Authorized Fuel: The emergency generator shall fire ULSD fuel oil. The ULSD fuel oil shall contain no more than 0.0015% sulfur by weight.
[Application No. 0990234-017-AC and Rules 62-210.200 (PTE) and 62-212.400 (BACT), F.A.C.]

EMISSION STANDARDS

7. Emissions Limits: The emergency generator shall comply with the following emission limits and demonstrate compliance in accordance with the procedures given in 40 CFR 60, Subpart IIII. Manufacturer certification can be provided to the Department in lieu of actual stack testing.

SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS

D. Emergency Generator (EU-033)

Emergency Generator (225 kW ≤ and < 450 kW) (kW > 560)	CO (g/kW-hr)¹	PM (g/kW-hr)	SO₂² (% S)	NMHC³+NO_x (g/kW-hr)
Subpart IIII (2007 and later)	3.5	0.20	0.0015	4.0 <u>6.4</u>
1. g/kW-hr means grams per kilowatt-hour. 2. SO ₂ emission standard will be met by using ULSD fuel oil in the emergency generator with fuel sulfur (S) content of 0.0015% by weight. 3. NMHC means Non-Methane Hydrocarbons.				

[Application No. 0990234-017-AC, NSPS Subpart IIII; and Rules 62-4.070(3) and 62-212.400 (BACT), F.A.C.]

RECORDS AND REPORTS

- Notification, Recordkeeping and Reporting Requirements: The permittee shall adhere to the compliance testing and certification requirements listed in 40 CFR 60.4211 and maintain records demonstrating fuel usage and quality. [40 CFR 60.4211]

SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS

E. Ash Handling System and Building (EU No. 034)

This section of the permit addresses the following EU.

EU ID No.	Emission Unit Description
034	Ash Handling System and Building

EQUIPMENT

1. Ash Handling Building: The permittee is authorized to install, operate, and maintain the ash handling system and building for handling bottom ash from the MWC units and fly ash from the FF baghouses.
2. Enclosed Conveyor System: The permittee is authorized to construct an enclosed conveyor system to transport collected ash from the boiler and air pollution control buildings to the ash management building.
3. Ash Processing Equipment: Within the ash handling building, the permittee is authorized to construct ash processing equipment including ferrous and non-ferrous recovery systems.
4. FF Baghouse Wet Scrubber: To minimize particulate matter emissions from the ash handling equipment, the permittee shall construct a ~~FF baghouse~~ wet scrubber through which air from the ash handling building will be routed to prior to discharge to the atmosphere.

{Permitting Note: To minimize fugitive particulate matter emissions from the ash handling equipment, ash (bottom and fly) will be wetted to a moisture content of approximate of 20 to 25 percent.}

[Applicant Request and Rule 62-210.200(PTE), F.A.C.]

EMISSIONS AND PERFORMANCE REQUIREMENTS

5. Fugitive Ash Emissions:
 - (a) On and after the date on which the initial performance test is completed or is required to be completed under 40 CFR 60.8 of Subpart A, no owner or operator of an affected facility shall cause to be discharged to the atmosphere visible emissions of combustion ash from an ash conveying system (including conveyor transfer points) in excess of 5 percent of the observation period (i.e., 9 minutes per 3-hour period), as determined by EPA Reference Method 22 observations as specified in 40 CFR 60.58b(k), except as provided in paragraphs (b) and (c) below.
 - (b) The emission limit specified in (a) above does not cover visible emissions discharged inside buildings or enclosures of ash conveying systems; however, the emission limit specified in (a) above does cover visible emissions discharged to the atmosphere from buildings or enclosures of ash conveying systems.
 - (c) The provisions of (a) above do not apply during maintenance and repair of ash conveying systems.[40 CFR 60.36b and 40 CFR 60.55b]
6. Testing for Fugitive Ash Emissions: The procedures specified in (1) through (4) below shall be used for determining compliance with the fugitive ash emission limit under 40 CFR 60.55b.
 - (1) The EPA Reference Method 22 shall be used for determining compliance with the fugitive ash emission limit under 40 CFR 60.55b. The minimum observation time shall be a series of three 1-hour observations. The observation period shall include times when the facility is transferring ash from the municipal waste combustor unit to the area where ash is stored or loaded into containers or trucks.
 - (2) The average duration of visible emissions per hour shall be calculated from the three 1-hour observations. The average shall be used to determine compliance with 40 CFR 60.55b.
 - (3) The owner or operator of an affected facility shall conduct an initial performance test for fugitive ash emissions as required under 40 CFR 60.8.
 - (4) Following the date that the initial performance test for fugitive ash emissions is completed or is required to be completed under 40 CFR 60.8 for an affected facility, the owner or operator shall conduct a

SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS

E. Ash Handling System and Building (EU No. 034)

performance test for fugitive ash emissions on an annual basis (no more than 12 calendar months following the previous performance test).

[40 CFR 60.38b and 40 CFR 60.58b(k)]

- 7. ~~Ash Handling Wet Scrubber FF Baghouse PM Emission Standard:~~ PM emissions from the ~~baghouse wet scrubber~~ of the ash handling building shall not ~~exceed~~ exhibit greater than 5% opacity, 0.010 g/dscf. [Rules 62-4.070(3), 62-212.400 (BACT), 62-210.200(PTE) and 62-4.070, F.A.C.]
- 8. ~~Wet Scrubber Baghouse PM Emission Standard by Opacity Measurement:~~ A visible emission reading of 5% opacity or less may be used to demonstrate compliance with the ~~PM VE emission~~ standard in **Specific Condition 7** above. ~~A visible emission reading greater than 5% opacity will require the permittee to perform a PM emissions stack test within 60 days to show compliance with the PM standard.~~
[Rules 62-296.712, 62-4.070 and 62-212.400 (BACT) F.A.C.]

TESTING AND MONITORING REQUIREMENTS

- 9. Initial Compliance Tests: The bottom and fly ash conveyors, transfer points, drop points, hoppers, chutes and dust collectors associated with this emission unit shall be tested to demonstrate initial compliance with the VE standards specified in **Specific Condition 5** of this subsection. The ash handling building ~~FF baghouse wet scrubber~~ shall be tested to demonstrate initial compliance with the VE standard specified in **Specific Condition 8** of this subsection. The initial tests shall be conducted within 180 days after initial operation. [Rules 62-297.310(7)(a)1., F.A.C. and 62-4.070(3), F.A.C.]
- 10. Annual Compliance Tests: During each federal fiscal year (October 1st to September 30th), the bottom and fly ash conveyors, transfer points, drop points, hoppers, chutes and dust collectors associated with this emission unit shall be tested to demonstrate compliance with the VE emissions standards specified in **Specific Condition 5** of this subsection. During each federal fiscal year (October 1st to September 30th), the ash handling building ~~FF baghouse wet scrubber~~ shall be tested to demonstrate compliance with the VE emissions standard specified in **Specific Condition 8** of this subsection. [Rules 62-297.310(7)(a)4, 62-212.400 (BACT) and 62-4.070(3), F.A.C.]
- 11. ~~Ash Handling Building FF Baghouse PM Compliance Test:~~ ~~The initial and annual VE tests in Specific Conditions 9 and 10 of this subsection with regard to the ash handling building FF baghouse shall serve as a surrogate for the PM emissions tests. If the VE emissions standard in Specific Condition 8 of this subsection is not met for the ash handling building FF baghouse, a PM test utilizing EPA Method 5 must be conducted on the baghouse stack to show compliance with the PM emissions standard in Specific Condition 7 of this subsection within 60 days. [Rule 62-297.620(4), F.A.C.]~~
- 12. ~~Bag Leak Detection:~~ ~~The permittee shall maintain continuous operation of bag leak detection systems, including records, on the ash handling building FF baghouse. Baghouse leak detection records shall be kept on-site and made available upon request. [Rule 62-4.070(3), F.A.C.]~~
- 13. Test Methods: Any required tests shall be performed in accordance with the following methods.

EPA Method	Description of Method and Comments
5	Determination of Particulate Emissions. The minimum sample volume shall be 30 dry standard cubic feet.
22	Fugitive Opacity

SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS

E. Ash Handling System and Building (EU No. 034)

RECORDS AND REPORTS

14. Test Reports: The permittee shall prepare and submit reports for all required tests in accordance with the requirements specified in Appendix CTR (Common Testing Requirements) of this permit. For each test run, the report shall also indicate the operating rate. [Rule 62-297.310(8), F.A.C.]