

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
NOTICE OF PERMIT

In the Matter of an
Application for Permit by:

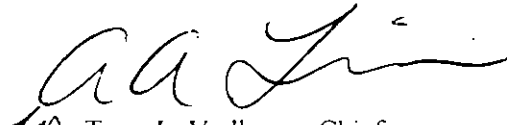
Mr. John D. Booth, Executive Director
Solid Waste Authority of Palm Beach County
7501 North Jog Road
West Palm Beach, Florida 33412-2414

DEP Permit No. 0990234-006-AC and PSD-FL-108F
North County Resource Recovery Site
Biosolids Pelletization Facility
Palm Beach County

Enclosed is the Final Permit Number 0990234-006-AC and PSD-FL-108F for the construction of a Biosolids Pelletization Facility (BPF) at the North County Resource Recovery Facility Site. The site is located at 7501 North Jog Road, West Palm Beach, Palm Beach County. This permit is issued pursuant to Chapter 403, Florida Statutes.

Any party to this order (permit) has the right to seek judicial review of the permit pursuant to Section 120.68, F.S., by the filing of a Notice of Appeal pursuant to Rule 9.110, Florida Rules of Appellate Procedure, with the Clerk of the Department in the Legal Office; 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 of Appeal must be filed within 30 (thirty) days from the date this Notice is filed with the Clerk of the Department.

Executed in Tallahassee, Florida.


for Trina L. Vielhauer, Chief
Bureau of Air Regulation

CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this NOTICE OF PERMIT (including the Final permit) was sent by certified mail (*) and copies were sent by U.S. Mail or electronic mail before the close of business on 2/3/06 to the person(s) listed:

Mr. John D. Booth, SWA *
jbooth@swa.org

Mr. Alex H. Makled, P.E., CDM
makledah@cdm.com

Mr. Ray Schauer, SWA
rschauer@swa.org

Ms. Jill Grimaldi, CDM
GrimaldiJT@cdm.com

Mr. Kevin C. Leo, P.E., CDM
leokc@cdm.com

Mr. Steve Palmer, DEP, Siting Coordination Office
Steve.Palmer@dep.state.fl.us

Mr. Darrel Graziani, SED
Darrel.Graziani@dep.state.fl.us

Mr. James Stormer, PBCHD
Mr. John Bunyak, NPS
Mr. Gregg Worley, EPA

Clerk Stamp

FILING AND ACKNOWLEDGMENT

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

Mary J. Army 2/3/06
(Clerk) (Date)

Final Determination

Solid Waste Authority of Palm Beach County
North County Resource Recovery Facility

January 25, 2006

Permit Type(s): Air Construction Permit
Prevention of Significant Deterioration

Permit Nos.: 0950137-006-AC and PSD-FL-108F
Amendment to PA84-20

Project: Biosolids Pelletization Facility

I. Public Notice.

An "Intent to Issue PSD Air Construction Permit" to the Solid Waste Authority (SWA) of Palm Beach County for the construction of a 675 wet tons of sludge per day Biosolids Pelletization Facility (BPF) at the North County Resource Recovery Facility Site was clerked on November 21, 2005. This site is located at 7501 North Jog Road, West Palm Beach in Palm Beach County.

The clerked package included the Department's Draft PSD Air Construction Permit, the "Intent to Issue PSD Air Construction Permit," the "Technical Evaluation and Preliminary Determination," and the "Public Notice of Intent to Issue PSD Air Construction Permit." The Department sent copies of the package to the persons listed.

The "Public Notice of Intent to Issue PSD Air Construction Permit" was published in the Palm Beach Post on November 29, 2005. The Draft air construction permit was available for public inspection at the Palm Beach County Health Department, the Department's Southeast District Office and the permitting authority's office in Tallahassee. Proof of publication of the "Public Notice of Intent to Issue PSD Air Construction Permit" was received on December 8, 2005. The 30-day public comment period ended on January 3, 2006.

II. Comment(s).

Comments were received from two respondents: the National Park Service and CDM. CDM submitted comments on behalf of the SWA and the New England Fertilizer Company (NEFCO), the contractor for the project. The Draft permit was changed in response to comments submitted. Responses to the comments were not considered significant enough to reissue the Draft permit and require another Public Notice. Listed below is a response to each comment in the order that each comment was received. The comments are not restated below {please see the original comment letters}. The responses are numbered and contain sufficient context for cross referencing to the original comments.

A. E-mail received December 2, 2005, from Dee Morse, National Park Service.

1. The Department acknowledges the comment.

B. Letter from Mr. Kevin C. Leo, P.E., CDM dated December 28, 2005, and received on January 3, 2006.

General Comments

1. The rated capacity for each dryer and RTO in terms of mmBtu/hour heat input have been corrected throughout the permit and Appendix BD Best Available Control Technology (BACT).
2. The reference from dual stacks to one stack with two flues is changed in the permit and Appendix BD.

Public Notice

3. The public notice was corrected prior to publication to reflect the correct facility-wide numbers. Table AP-1 Summary of Air Pollutants, which is a part of the permit was not affected by the error in the facility-wide PTE numbers that appeared in the public notice.

Technical Evaluation & Preliminary Determination

4. Page 10 of 16. No change is necessary to Table AP-1 Summary of Air Pollutants.

Draft PSD Permit

5. Page 6 of 14. Permitted Capacity. Demonstration of each emissions unit's operation rate is required {see Condition C.4.}. The specific methods of demonstration of the operation rates is left up to the owner or operator. The capacities referenced are the maximum operation rates allowed by physical design of the proposed project.
6. Page 10 of 14. Compliance Testing. Pursuant to the Department's rules on testing frequency, the testing frequency for SO₂ will be every 5 years. The test requirement, test method and frequency of testing for SO₂ is added to Condition C.1. As specified in this permit, the testing frequency for VOC and CO emissions is an initial demonstration only; the permit is revised to more clearly reflect this. No subsequent testing is required for VOC and CO provided the emission rates are achieved. {Please also see the related response in item 12. below.}
7. Page 10 of 14. Compliance Testing. Yes, the change is made. Under the NESHAP, testing is required within 90 days of the initial startup, not 180 days.
8. Page 10 of 14. Compliance Testing. Yes, the change is made. Method 6C is acceptable for SO₂ compliance.
9. Page 10 of 14. Test Notification. Yes, the change is made. Notification under the NESHAP is required to be 30 days, not 15 days.
10. Page 11 of 14. Test Reports. The comment is not clear, no change was made.

Table AP-1 Summary of Air Pollutants

11. Table AP-1 Summary of Air Pollutants. Clarification of footnote 2. Yes, these are not standards for the emergency generator and cooling tower.
12. Table AP-1 Summary of Air Pollutants. Emission Limitations and Standards for SO₂, CO and VOC. These three pollutants are tabulated below with potential emissions, each's respective significant emission rate (SER), whether or not air pollution control devices will be used along with the estimated control device efficiency. Exceedance of an SER triggers the applicability of BACT for that pollutant. Based on the emission estimations, the SERs were not exceeded.

<u>Pollutant, Facility-wide</u>	<u>Potential, TPY</u>	<u>SER, TPY</u>	<u>SER Exceeded?</u>	<u>APCD?</u>	<u>Effic.</u>
SO ₂	39.1	40	No	Yes	not claimed
CO	33.7	100	No	Yes	not stated
VOC	9.3	40	No	Yes	98%

"TPY" = tons per year.

"SER" = significant emission rate.

"APCD" = air pollution control device.

"Effic." = air pollution control device efficiency.

SO₂

SO₂ emissions are generated in the dryers from the combustion of the landfill gas assumed to have a sulfur content of 190 ppm. SO₂ emissions are essentially uncontrolled and may fluctuate due to the sulfur content of landfill gas. SO₂ emissions may be controlled in the venturi scrubber, however, no credit was used in the potential emission calculation. Potential SO₂ emissions are very close to the significant emission rate. The calculated potential emissions for SO₂ were 39.1 TPY, while the SER is 40 TPY. For this reason, an emission limitation is deemed appropriate along with a frequent test. Since the emission levels are less than "major" the testing frequency will be every 5 years.

CO & VOC

Both CO and VOC emissions are controlled. Proper operation of the regenerative thermal oxidizer (RTO), an air pollution control device, and good combustion practices can assure emissions are reduced. The majority of VOC and CO emissions at the BPF are generated by the dryers, specifically, 8.8 TPY of VOC and 29.5 TPY of CO. These levels are not significantly close to the respective SER's. However, it is assumed that VOC's are combusted by the dryer burners with an estimated efficiency of 98% followed by the RTO with a control device efficiency of 98%. The vendor guarantees the RTO's VOC removal efficiency, an emission rate of 1.00 lb/hour and an outlet methane concentration of 25 ppmv. It is not known whether or not VOC emissions exiting the dryer without consideration of further destruction in the RTO would exceed the SER. A CO emission rate of 3.37 lb/hour from each dryer was used from a similar unit and was represented as achievable by vendors. CO emissions are controlled by good combustion in the dryer and in the RTO. No control efficiency was provided for CO emissions. Good combustion and proper operation of the RTO should ensure that actual emissions are consistent with the emission estimates relied upon. Frequent testing could be required under the Department's rules. In lieu of frequent testing, a condition requiring the owner or operator to follow the Operation and Maintenance Manuals for the burners and the RTO is added to the permit to provide reasonable assurances. An initial demonstration of VOC and CO emissions is deemed appropriate.

In conclusion, the emission limitations in the permit for SO₂, CO and VOC are established to verify the emission estimations relied upon are below each SER for BACT applicability. The relied upon emission estimates are from a similar facility, the Greater Lawrence Sanitary District (GLSD) project located in North Andover, Massachusetts. The GLSD facility is an NEFCO project. The emission estimates were provided by the applicant in Table E-4, Appendix E of the application. The GLSD facility's dryer RTO emissions are limited by permit for SO₂, CO and VOC emissions. Similar sources in Florida have limitations on VOC emissions. The NEFCO guaranteed the emission rates of SO₂, CO and VOC for this project. The Department needs reasonable assurances to confirm the vendor's guarantees. Rule 62-4.070(1)&(3), F.A.C., requires the Department to include conditions in permits to provide reasonable assure of compliance with Department standards and rules. The established limitations on these three pollutants along with the testing provides the Department reasonable assurances that PSD applicability is not triggered for these pollutants. The regulatory citations in the permit and Table AP-1 are changed from: Rule 62-4.070, F.A.C. to: Rule 62-4.070(1)&(3), F.A.C. and the source obligation regulatory citation of Rule 62-212.400(2)(g), F.A.C. is also added. Testing frequencies beyond the initial tests will be established in the Title V permit.

13. Add a footnote 3. Yes, the change is made. A footnote is added.
14. Updated site plan. The updated site plan is acknowledged.
15. Additional comments. The submitted "mark up" documents as Attachments 2 and 3 to the comments were also reviewed and minor changes were made. The use of natural gas as an alternate fuel is clarified.

Added dry process rate references for sludge per day

III. Department Changes.

The following additional Department initiated changes were made.

Permit

1. Added the effective date of the permit on the signatory page.
2. Moved the expiration date.
3. Updated the emissions unit description for the dryer RTO trains.
4. Added a condition to require the daily sludge process rate to be monitored and recorded.
5. Added a condition to clarify that the applicant proposed a Hg limit lower than the NESHAP.
6. Added a condition requiring the owner or operator to follow the Operation and Maintenance Manuals for the selected air pollution control technologies.

BACT Determination

1. Added cross references to Title V permits for existing similar sources.

B. Document(s) on file with the permitting authority:

- E-mail received December 2, 2005, from Dee Morse, National Park Service (attached).
- Letter received January 3, 2006, from Mr. Kevin C. Leo, P.E., CDM (attached).

IV. Conclusion.

In conclusion, the changes that have been made are insignificant in nature and do not impose additional public noticing requirements. The permitting authority hereby issues the Final Permit, with any changes noted above.

FINAL

PERMITTEE

Solid Waste Authority of Palm Beach County North County Resource Recovery Facility (NCRRF) 7501 North Jog Road West Palm Beach, Florida 33412-2414	Permit No.: 0950137-006-AC and PSD-FL-108F
	Facility ID No.: 0990234
	Project: Biosolids Pelletization Facility

PROJECT AND LOCATION

This permit authorizes the construction of a 675 wet tons per day of sludge (wtpd, at 20% solids) Biosolids Pelletization Facility (BPF).

The facility, North County Resource Recovery Facility (NCRRF), is located at 7501 North Jog Road, West Palm Beach, Palm Beach County. The UTM coordinates are Zone 17; 585.8 km E; 2960.2 km N.

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 work specified in accordance with the conditions of this permit and as described in the application, approved drawings, plans, and other documents on file with the Department.

APPENDICES

The following appendices are attached as part of this permit.

Appendix GC - Construction Permit General Conditions

Appendix BD - BACT Determination

Table AP-1 Summary of Air Pollutants

Appendix 40 CFR 61 Subpart A - NESHAP General Provisions (version dated 05/06/04)

Appendix 40 CFR 61 Subpart E - NESHAP for Mercury (version dated 03/20/03)

Appendix SS-1, Stack Sampling Facilities

Effective Date: 2/2/06

Expiration Date: March 31, 2008

Michael G. Cooke

Michael G. Cooke, Director
Division of Air Resource Management

FACILITY DESCRIPTION

The facility, North County Resource Recovery Facility (NCRRF), is located at 7501 North Jog Road, West Palm Beach, Palm Beach County. The UTM coordinates are Zone 17; 585.8 km E; 2960.2 km N. {See Figure No. 2-4 provided by the applicant showing the proposed site for this project}

This existing facility consists of a *very large* municipal waste combustor plant designed to process 2,000 tons per day (TPD) of municipal solid waste (MSW). This existing facility includes two boilers and two landfills, a Class I Landfill and a Class III Landfill, each with its own gas collection system and flare.

PROJECT

The permittee, Solid Waste Authority of Palm Beach County, proposes to construct a Biosolids Pelletization Facility (BPF) with a nominal capacity of 675 wet tons of sludge per day (wtpd, at 20% solids). The BPF will have two 337.5 wtpd process trains and related appurtenances. The proposed BPF will be located adjacent to the existing landfill. Each dryer train at the BPF will combust landfill gas generated from the nearby landfill in a rotary drum dryer to dry sewage sludge, and then screen the dried sludge into marketable fertilizer pellets. Natural gas will be used as an alternate fuel. Each dryer has a rated capacity of 40 MMBTU/hr heat input {for either landfill or natural gas} plus an additional 2 MMBTU/hr heat input from each regenerative thermal oxidizer (RTO) for a total rated capacity of 84 MMBTU/hr heat input from the dryers and RTO.

Regulatory Classifications

Title III: The facility is identified as a major source of hazardous air pollutants (HAPs).

NESHAP: The proposed project will be subject to the requirements of the National Emission Standard for Hazardous Air Pollutants of 40 CFR 61 Subpart E, NESHAP for Mercury.

NESHAP: The facility operates one or more units subject to National Emission Standards for Hazardous Air Pollutants of 40 CFR 63.

MACT: A case-by-case MACT was not required.

Title IV: The facility operates no units subject to the acid rain provisions of the Clean Air Act.

Title V: The facility is a Title V major source of air pollution in accordance with Chapter 213, F.A.C.

NSPS: The facility operates one or more units subject to New Source Performance Standards of 40 CFR 60.

Stationary Sources - Emission Standards in Chapter 62-296, F.A.C.: The facility operates one or more units subject to an emission standard.

RACT: The entire State of Florida is either classified as attainment or considered to be in attainment (i.e., unclassifiable) with respect to the NAAQS for all pollutants. In addition, Palm Beach County is not part of any maintenance areas for lead or PM. Therefore, the proposed projects are not subject to the Reasonably Available Control Technology (RACT) requirements for these pollutants in Rule 62-296, F.A.C. The NO_x RACT provisions of Rule 62-296.500(b), FAC, do apply to facilities in Palm Beach County. However, new or modified NO_x emitting facilities subject to major-source PSD permitting and preparing a BACT analysis are exempt from these requirements. Since the BPF will be meeting NO_x BACT, these rules do not apply.

SECTION I. FACILITY INFORMATION

PSD: The facility is an existing PSD-major source of air pollution in accordance with Rule 62-212.400, F.A.C.

Power Plant Siting Act: This project was requested to be an amendment leading to the modification of the existing power plant siting certification PA84-20.

RELEVANT DOCUMENTS

- Permit PSD-FL-108E
- Power Plant Siting Act Certification PA84-20
- Current Title V Air Operation Permit 0990234-004-AV
- Department's Technical Evaluation & Preliminary Determination dated November 18, 2005
- Department's Final Determination dated January 25, 2006

GENERAL AND ADMINISTRATIVE REQUIREMENTS

1. Permitting Authority: All documents related to applications for permits to construct, modify or operate this emissions unit shall be submitted to the Bureau of Air Regulation (BAR), Florida Department of Environmental Protection (DEP), at 2600 Blair Stone Road, Tallahassee, Florida 32399-2400 and phone number 850/488-0114. Copies of these documents shall be submitted to the Compliance Authority.
2. Compliance Authority: All documents related to compliance activities such as reports, tests, and notifications should be submitted to the compliance authority.
3. General Conditions: The owner and operator are subject to, and shall operate under, the attached General Conditions listed in *Appendix GC* of this permit. General Conditions are binding and enforceable pursuant to Chapter 403 of the Florida Statutes. [Rule 62-4.160, F.A.C.]
4. Applicable Regulations, Forms and Application Procedures: Unless otherwise indicated in this permit, the construction and operation of this project shall be in accordance with the capacities and specifications stated in the application. The facility is subject to all applicable provisions of: Chapter 403 of the Florida Statutes (F.S.); and Chapters 62-4, 62-204, 62-210, 62-212, 62-213, 62-296, and 62-297 of the Florida Administrative Code (F.A.C.). The permittee shall use the applicable forms listed in Rule 62-210.900, F.A.C. and follow the application procedures in Chapter 62-4, F.A.C. Issuance of this permit does not relieve the facility owner or operator from compliance with any applicable federal, state, or local permitting or regulations. [Rules 62-204.800, 62-210.300 and 62-210.900, F.A.C.]
5. Permit Expiration: For good cause, the permittee may request that this air construction permit be extended. Such a request shall be submitted to the Department's Bureau of Air Regulation at least sixty (60) days prior to the expiration of this permit. [Rules 62-4.070(4), 62-4.080, and 62-210.300(1), F.A.C.]
6. 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.]
7. Modifications: No emissions unit or facility subject to this permit 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.]
8. Title V Permit: This permit authorizes construction of the proposed project and initial operation to determine compliance with Department rules. This project involves no changes in the descriptions, applicable requirements, or conditions of the facility Title V Operation Permit. The permittee is required to apply for a revised Title V operation permit following completion of the project.

SECTION III. EMISSIONS UNIT SPECIFIC CONDITIONS

The proposed new emissions units are:

E.U. ID Nos.	Brief Description
-###	Sludge Dryer Train #1
-###	Sludge Dryer Train #2
-###	Recycle Material Bin & Pellet Storage Silo for Sludge Dryer Train #1
-###	Cooling Tower Train #1
-###	Recycle Material Bin & Pellet Storage Silo for Sludge Dryer Train #2
-###	Cooling Tower Train #2
-###	Emergency Generator

CONSTRUCTION ACTIVITIES

1. Unconfined Particulate Matter Emissions: Pursuant to Rules 62-296.320(4)(c)1., 3. & 4., F.A.C., reasonable precautions to prevent emissions of unconfined particulate matter at the BPF include the following requirements consistent with current practices by the Solid Waste Authority:
 - a. Pave all parking lots and permanent drives;
 - b. Street sweep paved areas on a regular basis; and,
 - c. Use a water truck to spray water on unpaved roads and active unpaved areas.[Rule 62-296.320(4)(c)2., F.A.C.; and, items a., b., and c. proposed by the applicant.]

2. General Pollutant Emission Limiting Standards. Objectionable Odor 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.]

SECTION III. EMISSIONS UNIT SPECIFIC CONDITIONS

Subsection A. This section addresses the following emissions units.

E.U. ID Nos.	Brief Description
-###	Sludge Dryer Train #1
-###	Sludge Dryer Train #2

The BPF will have two 337.5 wtpd {67.5 dry tpd} sludge drying trains Dryer Train #1 and #2, and related appurtenances. Each dryer train at the BPF will combust landfill gas generated from the nearby landfill in a rotary drum dryer to dry sewage sludge, and then screen the dried sludge into marketable fertilizer pellets. Natural gas will be used as an alternate fuel. Each dryer has a rated capacity of 40 MMBTU/hr heat input {for either landfill or natural gas} plus an additional 2 MMBTU/hr heat input from each regenerative thermal oxidizer (RTO) for a total rated capacity of 84 MMBTU/hr heat input from the dryers and RTOs.

Dry low NOx burners and acid addition in the tray/condenser scrubber shall be used to control NOx emissions from each dryer's exhaust. A tray/condenser scrubber and a venturi scrubber shall be used to control PM emissions from each dryer's exhaust. The BPF shall also use a regenerative thermal oxidizer (RTO) on each dryer exhaust to control VOC emissions with an efficiency of 98%. The RTO also minimizes odors. VOC's are also combusted in the dryer burners with an estimated efficiency of 98%. CO emissions are controlled by good combustion in the dryer and in the RTO. Each dryer RTO train has its own flue within a shared single stack.

The following specific conditions apply to the emissions units listed above:

Essential Potential to Emit (PTE) Parameters

A.1. Permitted Capacity. The maximum process rate for each dryer train shall be 337.5 wet tons of sludge per day (wtpd, at 20% solids) or 67.5 dry tpd. The maximum process rate for the Biosolids Pelletization Facility (BPF) shall be 675 wet tons of sludge per day (wtpd, at 20% solids) or 135 dry tpd. The maximum heat input rate for each dryer and RTO are as follows:

E.U. ID No.		Landfill or Natural Gas
-###	Sludge Dryer Train #1	42 MMBtu/hour
-###	Sludge Dryer Train #2	42 MMBtu/hour

[Rules 62-4.160(2) and 62-210.228(PTE), F.A.C.]

A.2. Methods of Operation - Fuels. The dryers shall be fired primarily by landfill gas with natural gas used as an alternate fuel.

[Rules 62-4.160(2) and 62-210.228(PTE), F.A.C.]

A.3. Hours of Operation. These emission units may operate continuously, i.e., 8,760 hours/year.

[Rules 62-4.160(2) and 62-210.228(PTE), F.A.C.]

SECTION III. EMISSIONS UNIT SPECIFIC CONDITIONS

Monitoring of Operations

A.4. The owner or operator shall monitor and record daily the sludge process rate for each dryer train.
[Rule 62-4.070(1)&(3), F.A.C.]

Air Pollution Control Technologies

A.5. The owner or operator shall install, operate and maintain the selected air pollution control technologies, e.g., dry low NOx burners, exhaust gas recirculation system, tray scrubber/condenser scrubber, venturi scrubbers and RTOs.
[BACT Determination]

Operation and Maintenance Plans

A.6. The owner or operator shall follow the manufacturers' Operation and Maintenance Manuals for the selected air pollution control technologies, e.g., dry low NOx burners, exhaust gas recirculation system, tray scrubber/condenser scrubber, venturi scrubber and RTOs.
[BACT Determination]

Emission Limitations and Standards

A.7. Emissions from each dryer train shall not exceed the specific emission limitations and standards in **Table AP-1 Summary of Air Pollutants** attached to this permit.
[BACT Determination, Rule 62-4.070(1)&(3), F.A.C. and Rule 62-212.400(2)(g), F.A.C.]

40 CFR 61 Subpart E, NESHAP for Mercury

A.8. The dryers shall comply with **Appendix 40 CFR 61 Subpart E - NESHAP for Mercury** attached to this permit.

A.9. Mercury emissions from each dryer RTO train shall not exceed 2.2 E-02 lb/24-hour period. {The Hg emissions standard under the NESHAP is 3.2 kg (7.1 lb)/24-hour period. The applicant proposed a limit which is much lower than the NESHAP standard.}
[Applicant Request, Rule 62-4.070(1)&(3), F.A.C. and Rule 62-212.400(2)(g), F.A.C.]

40 CFR 61 Subpart A - NESHAP General Provisions

A.10. The dryers shall comply with **Appendix 40 CFR 61 Subpart A - General Provisions** attached to this permit.

Test Methods and Procedures

A.11. These emissions units are also subject to the conditions contained in **Subsection C. Common Conditions**.

SECTION III. EMISSIONS UNIT SPECIFIC CONDITIONS

Subsection B. This section addresses the following emissions units.

E.U. ID Nos.	Brief Description
-###	Recycle Material Bin & Pellet Storage Silo for Sludge Dryer Train #1
-###	Cooling Tower Train #1
-###	Recycle Material Bin & Pellet Storage Silo for Sludge Dryer Train #2
-###	Cooling Tower Train #2
-###	Emergency Generator

Each biosolids dryer train will have the following additional air emissions sources: exhaust vent on one recycle material bin exhaust from one fertilizer pellet storage silo, and one cooling tower. All of these are potential sources of PM emissions. Each of two recycle material bins will be ventilated through a fugitive dust control baghouse and then through a building odor scrubber. Dusty air resulting from silo filling operations will be ducted to the recycle bin baghouses, mentioned above. Emissions from the cooling towers and emergency generator are uncontrolled.

The following specific conditions apply to the emissions units listed above:

Essential Potential to Emit (PTE) Parameters

B.1. Permitted Capacity. These emissions units are associated with the BPF. The maximum process/operation rates for the BPF associated emissions units are based on the 675 wet tons of sludge per day (wtpd, at 20% solids) or 135 dry tpd.
[Rules 62-4.160(2) and 62-210.228(PTE), F.A.C.]

B.2. Hours of Operation. These emission units may operate continuously, i.e., 8,760 hours/year.
[Rules 62-4.160(2) and 62-210.228(PTE), F.A.C.]

Air Pollution Control Technologies

B.3. The owner or operator shall install, operate and maintain fabric filters on each material recycle bin exhaust and each pellet storage silo exhaust to control PM emissions.
[BACT Determination]

Operation and Maintenance Plans

B.4. The owner or operator shall follow the manufacturer's Operation and Maintenance Manual for the fabric filters.
[BACT Determination]

SECTION III. EMISSIONS UNIT SPECIFIC CONDITIONS

Emission Limitations and Standards

B.5. Emissions from these emissions units shall not exceed the specific emission limitations and standards in **Table AP-1 Summary of Air Pollutants** attached to this permit.

[BACT Determination, Rule 62-4.070(1)&(3), F.A.C. and Rule 62-212.400(2)(g), F.A.C.]

Test Methods and Procedures

B.6. These emissions units are also subject to the conditions contained in **Subsection C. Common Conditions.**

B.7. Minor PM Particulate Source Test Methods. The maximum permitted allowable particulate matter emission rate (gr/dscf) from the silos and material recycling bins are stated in **Table AP-1.** Because of the expense and complexity of conducting a stack test on minor sources of particulate matter, and because these sources are equipped with a baghouse, the Department pursuant to the authority granted under Rule 62-297.620(4), F.A.C., hereby establishes a visible emission limitation not to exceed an opacity of 5% in lieu of a particulate stack test. In accordance with Rule 62-297.620(4), minor particulate sources equipped with baghouses with visible emissions that are greater than or equal to 5 percent opacity may result in the permittee being required to perform a stack test in accordance with approved methods to verify compliance with the gr/dscf emission limits. The visible emissions test shall be conducted by a certified observer using Method 9 and the procedures in 40 CFR. 60.11 and Rule 62-297.320, F.A.C.

[Rule 62-297.620(4), F.A.C.]

SECTION III. EMISSIONS UNIT SPECIFIC CONDITIONS

Subsection C. Common Conditions

This section addresses the following emissions units.

E.U. ID Nos.	Brief Description
-###	Sludge Dryer Train #1
-###	Sludge Dryer Train #2
-###	Recycle Material Bin & Pellet Storage Silo for Sludge Dryer Train #1
-###	Recycle Material Bin & Pellet Storage Silo for Sludge Dryer Train #2

Test Methods and Procedures

C.1. Compliance Testing. This facility shall comply with all applicable requirements of Rule 62-297.310, F.A.C., General Compliance Test Requirements and 40 CFR 60.8. Performance Tests. Compliance with the emission limitations and standards shall be determined by using the following reference methods as described in 40 CFR 60, Appendix A and 40 CFR 61, Appendix B adopted by reference in Chapter 62-204, F.A.C. Initial tests for each pollutant shall be conducted within 60 days after achieving the maximum production rate, but not later than 90 days after the initial startup of such facility and at such other times as may be required by the Department or the EPA. The test methods are summarized below.

- Method 5** Determination of Particulate Matter Emissions
- Method 6C** Determination of Sulfur Dioxide Emissions
- Method 9** Visual Determination of the Opacity of Emissions
- Method 7** Determination of Nitrogen Oxides Emissions
- Method 10** Determination of Carbon Monoxide Emissions (I)
- Method 25** Determination of Volatile Organic Compound Emissions (I)
- Method 101A** Determination of Particulate and Gaseous Mercury Emissions from Sewage Sludge Incinerators or **Method 105** Determination of Mercury in Wastewater Treatment Plant Sewage Sludge. The specific testing and sampling conditions as outlined in 40 CFR 61.53 and 61.54 shall be followed as described.

Note: "(I)" refers to an initial test only. The testing frequency for VOC and CO emissions is an initial demonstration only; no subsequent testing is required for VOC and CO provided the lb/hr emission rates stated in Table AP-1 are achieved in the initial test {see Rule 62-297.310(7)(a)4., F.A.C.} In lieu of frequent testing for VOC and CO emissions, the owner or operator shall follow the Operation and Maintenance Manuals for the dry low NOx burners and the RTOs.

[Chapter 297, F.A.C., Stationary Sources - Emissions Monitoring; and 40 CFR 60 Subpart A, and 40 CFR 61, Subpart A, General Provisions]

C.2. Test Notification. The owner or operator shall notify the Department, at least 30 days prior to the date on which each formal compliance test is to begin, of the date, time, and place of each such test, and the test contact person who will be responsible for coordinating and having such test conducted for the owner or operator.

[Rule 62-297.310(7)9., F.A.C. and 40 CFR 61.13(c)]

SECTION III. EMISSIONS UNIT SPECIFIC CONDITIONS

C.3. Required Stack Sampling Facilities. When a mass emissions stack test is required, the permittee shall comply with the requirements contained in **Appendix SS-1, Stack Sampling Facilities**, attached to this permit.

[Rule 62-297.310(6), F.A.C.]

C.4. Determination of Process Variables.

(a) **Required Equipment.** The owner or operator of an emissions unit for which compliance tests are required shall install, operate, and maintain equipment or instruments necessary to determine process variables, such as process weight input or heat input, when such data are needed in conjunction with emissions data to determine the compliance of the emissions unit with applicable emission limiting standards.

(b) **Accuracy of Equipment.** Equipment or instruments used to directly or indirectly determine process variables, including devices such as belt scales, weight hoppers, flow meters, and tank scales, shall be calibrated and adjusted to indicate the true value of the parameter being measured with sufficient accuracy to allow the applicable process variable to be determined within 10% of its true value.

[Rule 62-297.310(5), F.A.C.]

C.5. Test Reports.

(a) The owner or operator of an emissions unit for which a compliance test is required shall file a report with the Department on the results of each such test.

(b) The required test report shall be filed with the Department as soon as practical but no later than 45 days after the last sampling run of each test is completed.

(c) The test report shall provide sufficient detail on the emissions unit tested and the test procedures used to allow the Department 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 following information:

1. The type, location, and designation of the emissions unit tested.
2. The facility at which the emissions unit is located.
3. The owner or operator of the emissions unit.
4. The normal type and amount of fuels used and materials processed, and the types and amounts of fuels used and material processed during each test run.
5. The means, raw data and computations used to determine the amount of fuels used and materials processed, if necessary to determine compliance with an applicable emission limiting standard.
6. The type of air pollution control devices installed on the emissions unit, their general condition, their normal operating parameters (pressure drops, total operating current and GPM scrubber water), and their operating parameters during each test run.
7. A sketch of the duct within 8 stack diameters upstream and 2 stack diameters downstream of the sampling ports, including the distance to any upstream and downstream bends or other flow disturbances.
8. The date, starting time and duration of each sampling run.
9. The test procedures used, including any alternative procedures authorized pursuant to Rule 62-297.620, F.A.C. Where optional procedures are authorized in this chapter, indicate which option was used.
10. The number of points sampled and configuration and location of the sampling plane.

SECTION III. EMISSIONS UNIT SPECIFIC CONDITIONS

11. For each sampling point for each run, the dry gas meter reading, velocity head, pressure drop across the stack, temperatures, average meter temperatures and sample time per point.

12. The type, manufacturer and configuration of the sampling equipment used.

13. Data related to the required calibration of the test equipment.

14. Data on the identification, processing and weights of all filters used.

15. Data on the types and amounts of any chemical solutions used.

16. Data on the amount of pollutant collected from each sampling probe, the filters, and the impingers, are reported separately for the compliance test.

17. The names of individuals who furnished the process variable data, conducted the test, analyzed the samples and prepared the report.

18. All measured and calculated data required to be determined by each applicable test procedure for each run.

19. The detailed calculations for one run that relate the collected data to the calculated emission rate.

20. The applicable emission standard, and the resulting maximum allowable emission rate for the emissions unit, plus the test result in the same form and unit of measure.

21. A certification that, to the knowledge of the owner or his authorized agent, all data submitted are true and correct. When a compliance test is conducted for the Department or its agent, the person who conducts the test shall provide the certification with respect to the test procedures used. The owner or his authorized agent shall certify that all data required and provided to the person conducting the test are true and correct to his knowledge.

[Rule 62-297.310(8), F.A.C.]

SECTION IV. EMISSIONS UNIT SPECIFIC CONDITIONS (DRAFT)

Appendix GC - Construction Permit General Conditions

- G.1 The terms, conditions, requirements, limitations, and restrictions set forth in this permit are "Permit Conditions" and are binding and enforceable pursuant to Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is placed on notice that the Department will review this permit periodically and may initiate enforcement action for any violation of these conditions.
- G.2 This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings or exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the Department.
- G.3 As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey any vested rights or any exclusive privileges. Neither does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit is not a waiver or approval of any other Department permit that may be required for other aspects of the total project which are not addressed in the permit.
- G.4 This permit conveys no title to land or water, does not constitute State recognition or acknowledgment of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the State. Only the Trustees of the Internal Improvement Trust Fund may express State opinion as to title.
- G.5 This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, or plant life, or property caused by the construction or operation of this permitted source, or from penalties therefore; nor does it allow the permittee to cause pollution in contravention of Florida Statutes and Department rules, unless specifically authorized by an order from the Department.
- G.6 The permittee shall properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by Department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by Department rules.
- G.7 The permittee, by accepting this permit, specifically agrees to allow authorized Department personnel, upon presentation of credentials or other documents as may be required by law and at a reasonable time, access to the premises, where the permitted activity is located or conducted to:
- (a) Have access to and copy and records that must be kept under the conditions of the permit;
 - (b) Inspect the facility, equipment, practices, or operations regulated or required under this permit, and,
 - (c) Sample or monitor any substances or parameters at any location reasonably necessary to assure compliance with this permit or Department rules.

Reasonable time may depend on the nature of the concern being investigated.

- G.8 If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately provide the Department with the following information:
- (a) A description of and cause of non-compliance; and
 - (b) The period of noncompliance, including dates and times; or, if not corrected, the anticipated time the non-compliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the non-compliance.

SECTION IV. EMISSIONS UNIT SPECIFIC CONDITIONS (DRAFT)

Appendix GC - Construction Permit General Conditions

The permittee shall be responsible for any and all damages, which may result and may be subject to enforcement action by the Department for penalties or for revocation of this permit.

- G.9 In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source which are submitted to the Department may be used by the Department as evidence in any enforcement case involving the permitted source arising under the Florida Statutes or Department rules, except where such use is prescribed by Sections 403.73 and 403.111, Florida Statutes. Such evidence shall only be used to the extent it is consistent with the Florida Rules of Civil Procedure and appropriate evidentiary rules.
- G.10 The permittee agrees to comply with changes in Department rules and Florida Statutes after a reasonable time for compliance, provided, however, the permittee does not waive any other rights granted by Florida Statutes or Department rules.
- G.11 This permit is transferable only upon Department approval in accordance with Florida Administrative Code Rules 62-4.120 and 62-730.300, F.A.C., as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the Department.
- G.12 This permit or a copy thereof shall be kept at the work site of the permitted activity.
- G.13 This permit also constitutes:
- (a) Determination of Best Available Control Technology (**applicable to this project**);
 - (b) Determination of Prevention of Significant Deterioration (**applicable to this project**); and
 - (c) Compliance with New Source Performance Standards (**not applicable to this project**).
- G.14 The permittee shall comply with the following:
- (a) Upon request, the permittee shall furnish all records and plans required under Department rules. During enforcement actions, the retention period for all records will be extended automatically unless otherwise stipulated by the Department.
 - (b) The permittee shall hold at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation) required by the permit, copies of all reports required by this permit, and records of all data used to complete the application or this permit. These materials shall be retained at least three years from the date of the sample, measurement, report, or application unless otherwise specified by Department rule.
 - (c) Records of monitoring information shall include:
 - 1. The date, exact place, and time of sampling or measurements;
 - 2. The person responsible for performing the sampling or measurements;
 - 3. The dates analyses were performed;
 - 4. The person responsible for performing the analyses;
 - 5. The analytical techniques or methods used; and
 - 6. The results of such analyses.
- G.15 When requested by the Department, the permittee shall within a reasonable time furnish any information required by law, which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the Department, such facts or information shall be corrected promptly.

APPENDIX BD
BEST AVAILABLE CONTROL TECHNOLOGY DETERMINATION (BACT)

Solid Waste Authority of Palm Beach County
North County Resource Recovery Facility Site
PSD-FL-108F and 0990234-006-AC
Palm Beach County, Florida

BACKGROUND

Solid Waste Authority of Palm Beach County
7501 North Jog Road
West Palm Beach, Florida 33412-2414

Authorized Representative: Mr. John D. Booth, Executive Director

APPLICATION PROCESSING SCHEDULE

May 4, 2005 Received application to construct; incomplete.
July 15, 2005 Incompleteness letter.
August 30, 2005 Received additional information; application complete.

{Note: The applicant requested a modification to their original project submitted in July 2002. The applicant has withdrawn the lime recalcination part of the project and increased the biosolids pelletization rate from 400 wet TPD to 675 wet TPD.}

The applicant, Solid Waste Authority of Palm Beach County, proposes to construct a 675 wet tons of sludge per day (wtpd, at 20% solids) Biosolids Pelletization Facility (BPF). The BPF will have two 337.5 wtpd process trains and related appurtenances. The proposed BPF will be located adjacent to the existing landfill. Each dryer train at the BPF will combust landfill gas generated from the nearby landfill in a rotary drum dryer to dry sewage sludge, and then screen the dried sludge into marketable fertilizer pellets. Natural gas will be used as an alternate fuel. Each dryer has a rated capacity of 40 MMBTU/hr heat input {for either landfill or natural gas} plus an additional 2 MMBTU/hr heat input from each regenerative thermal oxidizer (RTO) for a total rated capacity of 84 MMBTU/hr heat input from the dryers and RTO.

AIR POLLUTION CONTROL TECHNOLOGY REVIEW

Applicant's NOx and PM Review

Summary of NOx Control Technologies Reviewed by the Applicant

In Section 5 of the PSD permit application, the applicant provided a thorough review of NOx control technologies. The use of NOx controls will reduce NOx emissions by at least 50%. The applicant reviewed the following NOx control strategies: (1) low temperature SCR; (2) low temperature ozone oxidation; (3) multi-chemical wet scrubbing system; and, (4) low NOx burners with acid addition. The cost \$/ton of NOx removed for each respective strategy is: (1) \$17,700; (2) \$29,900 (3) \$20,200 and, (4) \$2,900. The only technology determined to be technically and economically feasible is the low NOx burners with acid addition. The Greater Lawrence Sanitary

APPENDIX BD
BEST AVAILABLE CONTROL TECHNOLOGY DETERMINATION (BACT)

District and Massachusetts Water Resource Authority have low NOx burners on the dryer and RTO and acid addition to the condenser/scrubber. According to the applicant, no other controls were indicated in use by other biosolids suppliers.

Summary of PM Control Technologies Reviewed by the Applicant

In Section 5 of the PSD permit application, the applicant provided a thorough review of PM control technologies. A tray condenser/scrubber and exhaust gas recirculation is considered to be integral parts of the dryer system. The use of the tray condenser/scrubber will achieve 97% control. After the tray condenser/scrubber the exhaust stream is split with 75% of the stream being recycled back to the dryer. The remaining 25% of the exhaust stream goes to a venturi scrubber to remove particles prior to the regenerative thermal oxidizer (RTO) to prevent PM from clogging the heat exchanger media in the RTO. Control technologies were evaluated for the remaining 25% gas stream. The uses of three additional control technologies were evaluated: (1) fabric filter; (2) dry ESP; and, (3) wet ESP. The cost \$/ton to remove PM from each of these technologies is respectively: (1) \$26,700; (2) \$31,600; and, (3) \$29,400. According to the applicant, none of these additional control technologies are economically feasible.

The proposed BPF and combined flare maximum expected air pollutant emission rates, based on regulatory requirements, vendor information, and the results of the Best Available Control Technology (BACT) analysis are summarized in Section 5 of Volume II of the permit application.

In summary, the applicant proposes the use of dry low NOx burners with acid addition in the tray/condenser scrubber to control NOx emissions from each dryer's exhaust. The applicant proposes to use a tray/condenser scrubber and a venturi scrubber to control PM emissions from each dryer's exhaust. The BPF will also use a regenerative thermal oxidizer (RTO) on each dryer train exhaust to control VOC emissions and odors. Fabric filters will be used on each material recycle bin exhaust and each pellet storage silo exhaust to control PM emissions.

Department's Preliminary NOx and PM BACT Determinations

Due to the limited information available in the RBLC database, similar projects were reviewed. Large metropolitan areas were researched due to large quantities of wastewater sludge generated used to produce pelletized biosolids.

In the response to request additional information dated August 16, 2005, the applicant provided a summary of projects around the country. The table lists the projects, location, air pollution control systems and startup year. All of the plants with drum dryers use a one or two stage scrubbing system. The larger biosolid facilities use RTOs. (See the **Table 1 Municipal Biosolids Dryer Plants in the USA** provided in the Response to Request for Additional Information dated August 16, 2005}

The applicant provided actual performance data summarizing key information from the Greater Lawrence Sanitary District project located in North Andover, Massachusetts which is very similar to the proposed project. The applicant's summary included a scaling of this project to this

APPENDIX BD
BEST AVAILABLE CONTROL TECHNOLOGY DETERMINATION (BACT)

operating project, e.g., size of unit, air pollutant emission rates, fuels, etc. This BPF project will be unique in that it will be the first biosolids drying facility to use landfill gas as its primary fuel. The control technologies proposed for this project are proven at the operating Greater Lawrence Sanitary District project. The Greater Lawrence Sanitary District project started up in 2003.

General manufacturer information for the BACT technology proposed specifically, the dry low NOx burners, tray scrubber/condenser scrubber, and venturi scrubber was also provided. The dry low NOx burners are Kinedizer® gas burners provided by Maxon Corporation, or equivalent. The scrubber manufacturer is SLY, Inc., or equivalent. The tray scrubber/condenser scrubber alone will reduce inlet PM at least 97% {See **Attachment 2 Manufacture's Product Literature** provided the Response to Request for Additional Information dated August 16, 2005}

The applicant provide information on 30 projects around the U.S. with 10 of the projects having start up dates between 2003 and 2006 {See the **Table 1 Municipal Biosolids Dryer Plants in the USA.**} This proposed project's control technologies are consistent with the few recent projects using dry low NOx burners and RTOs.

The Department accepts the applicant's proposed BACT technologies. The proposed control technology proposed for PM emissions is readily available and proven. The use of additional PM controls is not cost effective; the cost to remove additional PM is between \$26,000 and \$32,000 /ton. The proposed control technology for NOx emissions, specifically, dry low NOx burners, is readily available and is demonstrated in other types of stationary sources of air pollution. The use of dry low NOx burners with an estimated cost of \$2,900/ton is cost effective. In general, a cost effectiveness value for NOx control is \$18,000/ton.

BACT EMISSION LIMITATIONS AND STANDARDS

Department's Procedure

In accordance with Rule 62-212.400, F.A.C., this BACT determination is based on the maximum degree of reduction of each pollutant emitted which the Department, on a case by case basis, taking into account energy, environmental and economic impacts, and other costs, determines is achievable through application of production processes and available methods, systems, and techniques. In addition, the regulations state that, in making the BACT determination, the Department shall give consideration to:

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

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BEST AVAILABLE CONTROL TECHNOLOGY DETERMINATION (BACT)

The EPA currently stresses that BACT should be determined using the "Top-Down" approach, particularly when permits are issued by states acting on behalf of EPA. The Department considers Top-Down to be a useful tool, though not a unique or required approach to achieve a BACT under the State regulations. The first step in this approach is to determine, for the emission unit in question, the most stringent control available for a similar or identical emission unit or emission unit category.

If it is shown that this level of control is technically or economically unfeasible for the emission unit in question, then the next most stringent level of control is determined and similarly evaluated. This process continues until the BACT level under consideration cannot be eliminated by any substantial or unique technical, environmental, or economic objections.

NSPS AND NESHAP REVIEW

The NSPS and NESHAP federal regulations do not contain emission standards or limitations for NO_x or PM/PM₁₀.

The BPF dryers are subject to the Hg (mercury) standard under the National Emission Standard for Hazardous Air Pollutants (NESHAP), 40 CFR 61, Subpart E. The Hg emissions standard under the NESHAP is 3.2 kg (7.1 lb)/24-hour period which is equivalent to 1.296 TPY. The applicant proposed a limit of 2.2 E-02 TPY which is much lower than the NESHAP standard. Mercury emissions from both trains are limited to 8.08 E-03 TPY which is lower than the significant emission rate for Hg. The significant emission rate for Hg is 0.17 TPY. This facility is therefore not subject to BACT for Hg.

VE STANDARDS REVIEW

While the general VE standard in Rule 62-296.320, F.A.C., limits VE to 20% from each train's stack, a VE limit of 5% with the exception for 20% up to 3-minutes in 1-hour should be attainable; expected VE from such an emissions unit is 0%. The Greater Lawrence Sanitary District, City of Largo and the City of Tampa units meet a VE limit of 5%.

BACT Emission Limitations and Standards

The emission limitations and standards from three similar facilities were reviewed two of which are located in Florida. The three facilities reviewed were: (1) Greater Lawrence Sanitary District project located in North Andover, Massachusetts; (2) City of Largo and, (3) City of Tampa. Each 337.5 TPD dryer train of this project processes an equivalent 123,187 TPY of wet sludge. Emissions standards and limitations from these projects are summarized below.

(1) Greater Lawrence Sanitary District (GLSD). This wastewater treatment plant project is located in North Andover, Massachusetts. Each train at this facility processes approximately 24,800 TPY wet biosolids (the wet sludge moisture content is 70% per Massachusetts DEP). Emissions are controlled by tray scrubbers with acid addition, venturi scrubbers and RTOs. PM is limited to 0.64 pounds/hour; VE 5%, and NO_x to 1.20 pounds/hour. The applicant scaled the emission limits from the GLSD by a factor of 3.78 to this project as follows: PM to 2.42 pounds/hour; and NO_x to 4.54 pounds/hour.

(2) City of Largo. The City of Largo Wastewater Reclamation Facility located in Pinellas County, Florida operates two sludge dryer trains permitted under Permit Number 1030060-004-AV. The

Solid Waste Authority of Palm Beach County
Biosolids Pelletization Facility

North County Resource Recovery Facility
File No. 0990234-006-AC and PSD-FL-108F

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facility was upgraded in 1991. Each train processes 36,455 TPY of wet sludge. Emissions are controlled by venturi scrubbers and an RTO. PM is limited to 3 pounds/hour; VE 5%, and VOC to 2.05 pounds/hour.

(3) City of Tampa. The City of Tampa Howard F. Curren AWT Plant located in Hillsborough County, Florida operates two sludge dryer trains permitted under Permit Number 0570373-012-AV. Each train processes 64,900 TPY of wet sludge. This facility began operations in 1990. Emissions are controlled by venturi scrubbers and an RTO. PM is limited to 10.3 pounds/hour; VE 5%, and VOC to 7.1 pounds/hour.

Based on the selected control technologies the BACT emission limitations and standards proposed for this project are shown in **Table AP-1 Summary of Air Pollutants**. BACT standards are established for PM/PM₁₀, opacity and NO_x. Emissions from each train are calculated in the exhaust gases exiting the dryer and RTO. Establishment of a performance standard on the dry low NO_x burners themselves was not possible due to the design of each train; NO_x emissions are also formed in the RTO. A condition requiring the owner or operator to follow the Operation and Maintenance Manuals for the tray scrubber/condenser scrubber and the venturi scrubber is added to the permit to provide reasonable assurances.

Other Emission Limitations and Standards

Emissions of SO₂, CO and VOC are limited for reasonable assurances. Potential SO₂ emissions are very close to the significant emission rate. The calculated potential emissions for SO₂ were 39.1 TPY, while the SER is 40 TPY. For this reason, an emission limitation is deemed appropriate along with a frequent test. VOC and CO emission levels are not significantly close to the respective SER's. An initial demonstration of VOC and CO emissions is deemed appropriate to verify the vendor's guarantees. Proper operation of each regenerative thermal oxidizer (RTO), an air pollution control device, and good combustion practices can assure continued compliance. An initial demonstration of VOC and CO emissions is deemed appropriate. In lieu of frequent testing for VOC and CO emissions, a condition requiring the owner or operator to follow the Operation and Maintenance Manuals for the burners and the RTO is added to the permit to provide reasonable assurances.

Mercury is limited under the NESHAP and by the applicant's request. The applicant proposed a limit which is much lower than the NESHAP standard.

APPENDIX BD
BEST AVAILABLE CONTROL TECHNOLOGY DETERMINATION (BACT)

DETAILS OF THE ANALYSIS MAY BE OBTAINED BY CONTACTING:

Recommended By:

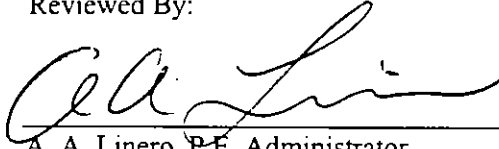


Scott M. Sheplak, P.E., Professional Engineer

02/01/06

Date

Reviewed By:



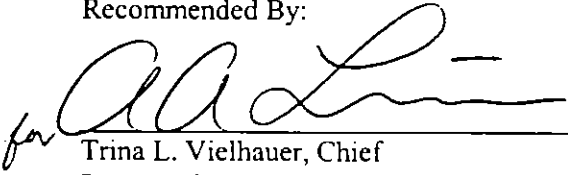
A. A. Linero, P.E. Administrator

2/1/06

Date

Air Permitting South Section
Bureau of Air Regulation
Division of Air Resource Management
State of Florida, Department of Environmental Protection
Mail Station #5505
2600 Blair Stone Road
Tallahassee, FL 32399

Recommended By:


for 

Trina L. Vielhauer, Chief
Bureau of Air Regulation

2/2/06

Date

Approved By:



Michael G. Cooke, Director
Division of Air Resource Management

2/2/06

Date

{Filename: PSD-FL-108F final BACT}

Table AP-1. Summary of Air Pollutants

Solid Waste Authority of Palm Beach County
North County Regional Resource Recovery Facility

Permit Nos.: 0990234-006-AC and PSD-FL-108F

Emissions Unit	Pollutant(s)	Fuel(s) ¹	Hours	Emission Limitations and Standards ¹			Equivalent Emissions ²		Regulatory Citation(s)
				Standard(s)	lb/hr	TPY	lb/hr	TPY	
	NO _x								
Sludge Dryer Train #1		landfill gas	8760	-	5.60	24.5	5.60	24.55	BACT
Sludge Dryer Train #2		landfill gas	8760	-	5.60	24.5	5.60	24.55	BACT
				{subtotal}		49.1		49.1	BACT
Emergency Generator			500	-	-	-	3.4	3.4	BACT
							52.5	52.5	BACT
	PM/PM ₁₀ & Opacity								
Sludge Dryer Train #1		landfill gas	8760	5% opacity, except 20% for up to 3 minutes in 1-hour	2.42	10.6	2.42	10.6	BACT
Sludge Dryer Train #2		landfill gas	8760	5% opacity, except 20% for up to 3 minutes in 1-hour	2.42	10.6	2.42	10.6	BACT
				{subtotal}		21.2		21.2	BACT
Emergency Generator			8760	0.697 g/bhp-hr ²	-	-	0.2	0.2	BACT
Material Bins & Silos			8760	0.010 gr/dscf, 5% opacity	-	-	0.6	0.6	BACT
Cooling Tower			8760	3333 ppm in drift ²	-	-	0.06	0.274	BACT
							22.3	22.3	BACT
	SO ₂								
Sludge Dryer Train #1		landfill gas	8760	190 ppmvd sulfur content ³	4.45	19.5	4.45	19.5	Rule 62-4.070(1)&(3), F.A.C. and Rule 62-212.400(2)(g), F.A.C.
Sludge Dryer Train #2		landfill gas	8760	190 ppmvd sulfur content ³	4.45	19.5	4.45	19.5	"
					8.9	39	8.9	39	"
	CO								
Sludge Dryer Train #1		landfill gas	8760	-	3.37	14.75	3.37	14.75	Rule 62-4.070(1)&(3), F.A.C. and Rule 62-212.400(2)(g), F.A.C.
Sludge Dryer Train #2		landfill gas	8760	-	3.37	14.75	3.37	14.75	"
					6.74	29.5	6.74	29.5	"
	VOC								
Sludge Dryer Train #1		landfill gas	8760	-	1	4.4	1	4.4	Rule 62-4.070(1)&(3), F.A.C. and Rule 62-212.400(2)(g), F.A.C.
Sludge Dryer Train #2		landfill gas	8760	-	1	4.4	1	4.4	"
					2	8.8	2	8.8	"
	Hg								
Sludge Dryer Train #1		landfill gas	8760	2.2 E-02 lb/24-hour period			9.22 E-04	4.04 E-03	Applicant Request, Rule 62-4.070(1)&(3), F.A.C. and Rule 62-212.400(2)(g), F.A.C.
Sludge Dryer Train #2		landfill gas	8760	2.2 E-02 lb/24-hour period			9.22 E-04	4.04 E-03	"
							8.08 E-03	8.08 E-03	"

¹ standard unless otherwise noted.

² not a standard, a basis for a standard.

³ natural gas is used as an alternate fuel

Memorandum

Florida Department of Environmental Protection

TO: Michael G. Cooke, Director DARM

THRU: Trina L. Vielhauer, Chief *copy for TLV*

THRU: A. A. Linero, P.E. *copy*

FROM: Scott M. Sheplak, P.E. *SMS*

DATE: February 1, 2006

SUBJECT: Solid Waste Authority of Palm Beach County
North County RRF Site Modification
Biosolids Pelletization Facility
Final Permit Nos. 0990234-006-AC and PSD-FL-108F

Attached for approval and signature is a final PSD permit modification for the construction of a biosolids pelletization facility (BPF) at the existing site.

This facility is a major PSD source. The proposed project is subject to PSD for emissions of NO_x and PM/PM₁₀ because the significant emission rates were exceeded. NO_x emissions were 52.5 TPY and PM/PM₁₀ emissions were 22.6/22.3 TPY. The significant emission rates are 40 TPY for NO_x and 25/15 TPY for PM/PM₁₀. BACT standards are established for PM/PM₁₀, opacity and NO_x. Emissions of SO₂, CO and VOC are limited for reasonable assurances.

The applicant proposes the use of dry low NO_x burners with acid addition in the tray/condenser scrubber to control NO_x emissions from each dryer's exhaust. The applicant proposes to use a tray/condenser scrubber and a venturi scrubber to control PM emissions from each dryer's exhaust. The BPF will also use a regenerative thermal oxidizer (RTO) on the dryer exhaust to control VOC emissions and odors. Fabric filters will be used on each material recycle bin exhaust and each pellet storage silo exhaust to control PM emissions.

This project is unique in that it will use acid addition in a tray/condenser scrubber. Comments from the applicant were received and addressed in the final determination.

We recommend your approval and signature.

Attachments

AAL/SMS

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Mr. John D. Booth, Executive Director
 Solid Waste Authority of Palm Beach
 County
 7501 North Jog Road
 West Palm Beach, Florida 33412-2414

2. Article Number
 (Transfer from service label)

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John D. Booth

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C. Date of Delivery
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