# Florida Department of Environmental Protection

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**PERMITTEE**

Hillsborough County
Public Utilities Department
925 Twiggs Street
Tampa, Florida 33602

Authorized Representative:
Ms. Patricia V. Berry, Group Manager
Solid Waste Management

Air Permit No. 0570261-016-AC
(PSD-FL-121E and PSD-FL-369D)
Hillsborough County Resource Recovery Facility
Standard Industrial Classification Code No. 4953

Permit Expires: June 30, 2014
Use of Biosolids and Process Limits
Hillsborough County, Florida

**PROJECT**

This is the final air construction permit modification that authorizes the combustion of "biosolids" (dewatered sewage sludge) in Municipal Waste Combustor (MWC) Unit 1, 2, 3 and 4 at the Hillsborough County Resource Recovery Facility located at 350 North Falkenburg Road in Tampa, Florida 33619. The UTM Coordinates are: Zone 17, 268.2 kilometers (km) East and 3092.7 km North. The permit also removes the waste throughput limits in previous air construction Permits PSD-FL-121 (Units 1, 2 and 3) and subsequent modifications to that permit and retains the steam production limit of 102,000 pounds per hour per unit.

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 A of Section 4 of this 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.). This project is subject to the general preconstruction review requirements in Rule 62-212.300, F.A.C. and is not subject to 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. A copy of this permit modification shall be filed with the referenced permit and shall become part of the permit.

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
*(Electronic Signature)*

A.A. Linero
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for Jeffery F. Koerner, Program Administrator
Office of Permitting and Compliance
Division of Air Resource Management

JFK/aal/yha

## 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 the date indicated below to the following persons.

Patricia V. Berry, Hillsborough County: berryp@hillsboroughcounty.org
Glenn Hoag, Covanta Hillsborough: ghoag@covantaenergy.com
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Lynn Scearce, DEP OPC: lynn.scearce@dep.state.fl.us (for reading file)

Clerk Stamp

**FILING 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.
*(Electronic Signature)*

Lynn Scearce
2012.12.14 09:23:24 -05'00'

## FACILITY DESCRIPTION

The Hillsborough County Resource Recovery Facility consists of: four municipal waste combustors (MWC's) (Units 1, 2, 3 and 4) with auxiliary burners; lime storage and processing facilities; ash storage and processing facilities; cooling towers; a wastewater treatment plant and, ancillary support equipment. The facility is owned by Hillsborough County and is currently operated by Covanta Hillsborough, Inc., a subsidiary of Covanta Energy Corporation.

The total capacity of the Hillsborough County RRF is approximately 1,800 tons/day of municipal solid waste (MSW). The gross nominal electric generating capacity of the facility is 47 megawatts (MW). Steam production from Units 1, 2 and 3 is limited to 102,000 pounds of per hour per unit (lb/hour/unit) and 200,000 lb/hour from Unit 4.

Units 1, 2 and 3 commenced operation in 1986. Unit 4 commenced operation in 2009. Emissions from each unit are controlled by:

- Good combustion practices (GCP) in the furnaces that minimize formation of carbon monoxide (CO), nitrogen oxide ($NO_X$) and particulate matter (PM);
- Ammonia or urea-based Selective Non-Catalytic Reduction (SNCR) systems in each furnace to further control $NO_X$ emissions;
- Spray Dryer Absorbers (SDA), based on lime slurry injection, which absorbs and neutralizes MWC-acid gases including sulfur dioxide ($SO_2$) and hydrogen chloride (HCl) for subsequent capture as PM;
- Powered Activated Carbon Injection (ACI) systems to capture (adsorb) certain metals, such as mercury (Hg), and organic hazardous air pollutants (HAP) including dioxin and furan (dioxin/furan) for subsequent capture as PM; and
- Fabric filters (baghouses) to capture PM originating from combustion, the acid gas reactions and the spent activated carbon.

The facility is equipped with continuous emission monitoring systems (CEMS) for carbon monoxide (CO), $SO_2$ and $NO_X$ and continuous opacity monitoring systems (COMS) for visible emissions (VE). The four units exhaust to a common stack consisting of four separate flues.

This permit affects or includes the emissions units (E.U.) listed below that were constructed under the authority of Permit Nos. PSD-FL-104 and PSD-FL-121 (Units 1, 2 and 3) and PSD-FL-369 (Unit 4) issued in 1979, 1987 and 2006, respectively, and Florida Power Plant Site Certification PA 83-19 (as amended).

| E.U. No. | Emission Unit Description |
|---|---|
| 001 | Municipal Waste Combustor Unit 1 |
| 002 | Municipal Waste Combustor Unit 2 |
| 003 | Municipal Waste Combustor Unit 3 |
| 107 | Municipal Waste Combustor Unit 4 |

## PROPOSED PROJECT

### Proposed Project

The proposed project is to: remove the design capacity-based waste and heat input operational limitations applicable to Units 1, 2 and 3; remove the prohibition against "sewage sludge" use as a fuel in Units 1-4; and to use approximately 5 percent (%) biosolids, by weight, as received (treated, dewatered sewage sludge). The biosolids would have a solids content typically greater than or equal to 12%. The material would be trucked in from the Hillsborough County Falkenburg Advanced Wastewater Treatment Plants (WWTP) and the Valrico and South County Advanced WWTP's. In the future similar biosolids may be obtained from other County-owned treatment plants and water reclamation facilities after installation of dewatering facilities.

No additional equipment or physical modifications are actually required to implement the project. The biosolids will be directly dumped into the main refuse storage bunker along with MSW. The crane operators will mix the WWTP biosolids and MSW to achieve a more homogenous fuel. Once the mixing is complete, the crane operators will pick up the mixed fuel and feed it directly into the boiler hopper. Hillsborough County proposes to combust up to 90 wet tons/day (as received) biosolids. This is 5% of the facility nominal design feed rate of 1,800 tons/day of MSW. The objective is to achieve 5% biosolids (after mixing) in each batch fed to each MWC.

Removal of the design capacity-based waste and heat input operational limitations applicable to Units 1, 2 and 3 would leave the presently applicable four-hour block steam rate of 102,000 lb/hour/unit as the permanently enforceable limit on capacity. The units would also continue to be limited to 110% of the four-hour block steam rate achieved during the most recent dioxin/furan test in accordance with the specific requirements applicable to large municipal waste combustors.

**FACILITY REGULATORY CLASSIFICATION**

- The facility is a major source of hazardous air pollutants (HAP).
- The facility does not operate units subject to the acid rain provisions of the Clean Air Act (CAA).
- The facility is a Title V major source of air pollution in accordance with Chapter 213, F.A.C.
- The facility is a major stationary source in accordance with Rule 62-212.400(PSD), F.A.C.
- The facility includes units subject to applicable Standards of Performance for New Stationary Sources (NSPS) contained in Title 40, Code of Federal Regulations, Part 60 (40 CFR 60).
- The facility includes units subject to applicable National Emissions Standards for Hazardous Air Pollutants (NESHAP) in 40 CFR 61 and 40 CFR 63.
- The facility is regulated under Chapter 62-17, F.A.C. – Electrical Power Plant Siting

## SECTION 2. ADMINISTRATIVE REQUIREMENTS

1. Permitting Authority: The permitting authority for this project is the Office of Permitting and Compliance in the Division of Air Resource Management, Florida Department of Environmental Protection (Department). The mailing address for the Office of Permitting and Compliance is 2600 Blair Stone Road (MS #5505), Tallahassee, Florida 32399-2400.
2. Compliance Authority: All documents related to compliance activities, such as reports, tests, and notifications, shall be submitted to the Department's Southwest District Office at: 13051 North Telecom Parkway, Temple Terrace, Florida 33637-0926, Telephone: (813) 632-7600, Fax: (813) 632-7665.
3. Appendices: The following Appendices are attached as a part of this permit:
   a. Appendix A: Citation Formats and Glossary of Common Terms;
   b. Appendix B: General Conditions;
   c. Appendix C: Common Conditions;
   d. Appendix D: 40 CFR 61 Subpart A, General Provisions;
   e. Appendix E: 40 CFR 61 Subpart E, National Emission Standard for Mercury;
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) & 62-212.300(1)(a), F.A.C.]
7. Source Obligation:
   - 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.
   - 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. Application for Title V Air Operation Permit Revision: This permit authorizes modification of the permitted emissions units. A Title V air operation permit revision is required for regular operation of the permitted emissions units. The permittee shall apply for a Title V operation permit revision 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 air operation permit revision, 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 the Compliance Authority. Rules 62-4.030, 62-4.050, 62-4.220 & 62-213, F.A.C.]

## Municipal Waste Combustors (E.U. 001, 002, 003 and 107)

This section of the permit addresses the following emissions units.

| E.U. ID No. | Brief Description |
|---|---|
| 001 | Municipal Waste Combustor Unit 1 |
| 002 | Municipal Waste Combustor Unit 2 |
| 003 | Municipal Waste Combustor Unit 3 |

Nominal Design Rate Capacity: The nominal design rate capacity of each municipal waste combustor is 400 tons/day. Actual waste throughput will vary depending upon the higher heating value of the waste actually burned and the steam production requirements. [Permits PSD-FL-104 and PSD-FL-121]

Maximum Steam Capacity Limit: The maximum steam capacity limit of each municipal waste combustor is 102,000 pounds per hour based on 4-hour block averages. [Permit PSD-FL-121B]

| E.U. ID No. | Brief Description |
|---|---|
| 107 | Municipal Waste Combustor Unit 4 |

Nominal Design Rate Capacity: The nominal design rate capacity of Municipal Waste Combustor Unit 4 is 600 tons/day. Actual waste throughput will vary depending upon the higher heating value of the waste actually burned and the steam production requirements. [Permit No. 0570261-007-AC/PSD-FL-369]

Maximum Steam Capacity Limit: The maximum steam capacity limit of Municipal Waste Combustor Unit 4 is 200,000 pounds per hour based on 4-hour block averages. [Permit No. 0570261-009-AC/PSD-FL-369B]

### COMPLIANCE WITH EXISTING PERMIT CONDITIONS

1. Existing Permits: This permit supplements all existing valid permits. The permittee shall continue to comply with all applicable conditions from valid air construction and facility Title V operation permits. [Permit Nos. PSD-FL-121B, 0570261-002-AC (PSD-FL-121C), 0570261-015-AC (PSD-FL-121D) and 0570261-014-AV]

### COMPLIANCE WITH EXISTING REGULATIONS

2. New Source Performance Standards (NSPS) and Emission Guidelines: This permit supplements all existing valid regulations. The following key regulations continue to apply to the four municipal waste combustors:

   a. Units 1, 2 and 3 are regulated pursuant to Rule 62-204.800(9)(b), F.A.C. – Municipal Waste Combustors, Title 40, Code of Federal Regulations, Part 60 (40 CFR 60), Subpart Cb - Emission Guidelines and Compliance Times for Large Municipal Waste Combustors That Are Constructed on or Before September 20, 1994 (the Department's MWC Rule).

   b. Unit 4 is regulated pursuant to 40 CFR 60, Subpart Eb - Standards of Performance for Large Municipal Waste Combustors for Which Construction is Commenced After September 20, 1994 (adopted and incorporated by reference as Department Rule 62-204.800(8)(b)7., F.A.C.).

3. National Emission Standards for Hazardous Air Pollutants (NESHAP): When combusting biosolids (wastewater treatment plant sludge) the four municipal waste combustors shall comply with all applicable requirements contained in:

   a. 40 CFR 61, Subpart A-General Provisions: The General Provisions are adopted by reference in Rule 62-204.800(10)(d), F.A.C., except as indicated therein. [Rule 62-204.800(10)(d), F.A.C.]

   b. 40 CFR 61, Subpart E-National Emission Standard for Mercury (Hg): The mercury NESHAP is adopted by reference in Rule 62-204.800(10)(b)3., F.A.C., except as indicated therein. [Rules 62-204.800(10)(b)3., F.A.C.]

## ADDITIONAL METHOD OF OPERATION (FUELS)

4. Authorized Fuels – Dewatered Sewage Sludge (Biosolids): Sewage sludge (previously prohibited by original PSD permits) is not a prohibited fuel or a prohibited solid waste and may be utilized, after dewatering, as biosolids (containing at least 12% solids by weight) in MWC Units 1, 2, 3 and 4.

   [Permit No. PSD-FL-121B, Condition B.6.1(g) and Permit No. 0570261-007-AC (PSD-FL-369), Condition 9.a.vii.; Rule 62-640, F.A.C. – Biosolids, including Sections 62-640.100(Scope, Intent, Purpose and Applicability) and 62-640.200(Definitions), F.A.C.]

5. Limitation of Biosolids: The owner or operator is authorized to combust up to 5% by weight (90 wet tons per day, as received) of biosolids that contain at least 12% solids, by weight, in MWC Units 1, 2, 3 and 4 combined. [Applicant Request]

   *{Permitting Note: This expands the allowable fuels in Permit No. PSD-FL-121B (Units 1, 2 and 3), Condition B.6. and Permit PSD-FL-369 (Unit 4), Condition 10, Authorized Fuels}*

## STEAM CAPACITY LIMITS

6. Maximum Operating Rates: The maximum operating rate applicable to each of MWC Units 1, 2 and 3 measured as steam flow shall not exceed 102,000 pounds/hour based on 4-hour block averaged measurements and shall not exceed the "maximum demonstrated MWC unit load" defined as 110% of the highest 4-hour average MWC unit load achieved during 4 consecutive hours during the most recent dioxin/furan performance test.

   [Application; Rule 62-210.200, F.A.C. (Definition of Potential to Emit - PTE) and the Department's MWC Rule]

   *{The stated maximum operating limits already apply to MWC Units 1, 2 and 3. This condition replaces and supersedes Permit PSD-FL-121B, Section III, Condition B.2., Process Operating Rates, that also limited MWC throughput and heat input.}*

## EMISSIONS LIMITING AND PERFORMANCE STANDARDS

7. Emission Limiting and Performance Standards: The existing applicable emission limiting and performance standards for MWC Units 1, 2, 3 and 4 are contained in the Facility Title V Air Operation Permit No. 0570261-014-AV and are not changed by the permit. In addition to the mercury emission standards established by previous air construction permits or applicable rules and contained in the Title V Air Operation Permit, mercury emissions from MWC Units 1, 2, 3 and 4 combined shall not exceed 7.1 pounds per 24-hour period when combusting sewage sludge biosolids.

   [Permit Nos. PSD-FL-121B, 0570261-002-AC (PSD-FL-121C), 0570261-015-AC (PSD-FL-121D) and 0570261-014-AV; 40 CFR 61, Subpart E, §61.52(b); Rule 62-204.800(10)(b)3., F.A.C.]

   *{Permitting note: the applicable mercury emission standards contained in the referenced permits are much more stringent and insure compliance with the mass emission rate limit stated above.}*

## CONTINUOUS MONITORING REQUIREMENTS, TEST METHODS AND PROCEDURES

8. Monitoring and Testing Requirements: The existing applicable continuous monitoring requirements, test methods and procedures for MWC Units 1, 2, 3 and 4 are contained in the Facility Title V Air Operation Permit No. 0570261-014-AV and are not changed by this permit. The Department approves the use of EPA Method 29 as an alternative test method in lieu of EPA Method 101A to demonstrate compliance with the additional mercury emission limiting standard specified Condition 7. above. The applicant is authorized to use the mercury test frequencies and procedures already required for the MWC Units 1, 2, 3 and 4 pursuant to the Department's MWC Rule and 40 CFR 60, Subpart Eb and incorporated in the facility Title V operating permit.

   [Permit Nos. PSD-FL-121B, 0570261-002-AC (PSD-FL-121C), 0570261-015-AC (PSD-FL-121D) and 0570261-014-AV; 40 CFR 61, Subpart E, §61.13(h)(1)(iii); Rule 62-204.800(10)(b)3., F.A.C.]

9. Determination of CO, $SO_2$, $NO_X$ and Hg Emission Changes while Combusting Biosolids: The permittee shall compare CO, $SO_2$, $NO_X$ and Hg concentrations and mass emissions measured with the installed continuous emission monitoring systems (CEMS) for 30 operating days from Unit 4 with the first 30 operating days after initiating biosolids utilization at Unit 4. The permittee shall submit the comparison as a letter report to the Department including a summary of measures taken to insure emission increases caused by biosolids utilization are minimized. [Rule 62-4.070, F.A.C.; Avoidance of Rule 62-212.400, F.A.C.]

10. Stack Testing while Combusting Biosolids: During the first scheduled, required annual compliance testing after issuance of this permit, each emissions unit shall demonstrate compliance with the emissions standards for VE, PM, mercury, cadmium, lead and HCl while utilizing up to 5% biosolids. At least one unit shall be tested for and demonstrate compliance with the emissions standard for dioxin/furan while practicing biosolids utilization. If the permittee is not able to practice biosolids utilization during the regular compliance stack test(s), the permittee may schedule and conduct separate stack testing before or after the regularly scheduled test, but within the time frame allotted by this permit (before September 30, 2013).
[Rule 62-4.070, F.A.C., Reasonable Assurance and 62-297.310(7), F.A.C.; Department's MWC Rule; 40 CFR 60, Subpart Eb]

**BEST MANAGEMENT PRACTICES AND OPERATOR TRAINING**

11. Best Management Practices (BMP's) for Biosolids Utilization: To ensure good mixing of biosolids with other waste processed in MWC Units 1, 2, 3 and 4, the owner or operator shall document and employ best management practices (BMP's) when utilizing biosolids (dewatered sewage sludge) and include the following minimum requirements:

    a. The BMP's shall be incorporated into the site-specific municipal waste combustor operator training and certification pursuant to Department's MWC Rule and 40 CFR 60, Subpart Eb, §60.54b, Standards for Municipal Waste Combustor Operator Training and Certification.

    b. The BMP's shall provide for operator training and identify and implement practices that promote good mixing and combustion.

    c. All mixing shall occur in a waste storage bunker or refuse pit. Biosolids shall not be placed on the tipping floor, or alone, in a waste storage bunker.

    d. The operator shall evenly spread biosolids with the crane grapple(s) over the top of the MSW in the waste storage bunker. Other MSW may be spread over the top of the biosolids.

    e. Well-mixed (combined) materials shall be fed directly into the combustor feed hopper.

    f. The owner or operator shall maintain records including the source, classification and typical characteristics (e.g. metals, pathogen results, solids) and amount introduced into the process.

    [Rules 62-4.070(1) and (3), F.A.C., Reasonable Assurance; Department's MWC Rule and 40 CFR 60, Subpart Eb]