City of Tampa – Wastewater Department
Howard F. Curren AWT Plant

Facility ID No. 0570373
Hillsborough County

Title V Air Operation Permit Revision

DRAFT/PROPOSED Permit No. 0570373-021-AV

(Revision of Title V Air Operation Permit No. 0570373-018-AV)

Permitting and Compliance Authority:
Environmental Protection Commission of Hillsborough County
3629 Queen Palm Drive
Tampa, FL 33619
Telephone: (813) 627-2600
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Title V Air Operation Permit Renewal

DRAFT/PROPOSED Permit No. 0570373-021-AV

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PERMITTEE:
Anthony Kasper, P.E., Director
City of Tampa – Wastewater Department
306 East Jackson St.
Tampa, FL 33602

DRAFT/PROPOSED Permit No.: 0570373-021-AV
Facility ID No.: 0570373
SIC No.: 4952
Project: Title V Air Operation Permit Revision

The purpose of this project is to revise the existing Title V permit to incorporate Permit No. 0570373-020-AC, which authorized the installation of oxidation catalysts on four existing diesel fired generators. The generators are non-emergency generators and are subject to 40 CFR 63 Subpart ZZZZ, National Emissions Standards for Hazardous Air Pollutants (NESHAP) for Stationary Reciprocating Internal Combustion Engines (RICE). This facility is located at 2700 Maritime Boulevard, Tampa, Hillsborough County; UTM Coordinates: Zone 17, 364.00 East and 3089.5 North; Latitude: 27° 55' 20" North and Longitude: 82° 26' 20" West.

The Title V air operation permit is issued under the provisions of Chapter 403, Florida Statutes (F.S.), and Florida Administrative Code (F.A.C.) Chapters 62-4, 62-210, 62-213. The above named permittee is hereby authorized to operate the facility in accordance with the terms and conditions of this permit.

Effective Date: TBD
Renewal Application Due Date: March 21, 2016
Expiration Date: November 1, 2016

_____
Richard D. Garrity, Ph.D.
Executive Director

RDG/LAW/law

Subsection A. Facility Description.

The regulated emissions units at this wastewater treatment plant consist of two sludge dryer trains, five sludge storage silos, two truck loading stations with three truck loading spouts, four diesel generators, two natural gas fired generators, five digester gas fired generators, and a methanol storage tank. The sludge drying facility consists of two identical sludge dryer trains (No. 2 and No. 3) operating in parallel with separate but identical process and control equipment. The sludge stream from wastewater treatment is chemically treated then mechanically pressed with belt filter presses to raise the solids content from approximately 1-2% to around 20%. The sludge cake then moves via conveyor over belt scales to a wet storage bin. The sludge then goes to a pug mill where the water content is lowered further by mixing it with dry, recycled sludge from a recycle bin. From the pugmill, the sludge is fed into a natural gas fired rotary dryer, a settling chamber, and a Sweco screen for sizing. Oversized sludge particles go to a crusher and then to the recycle bin. Undersized sludge is sent directly to the recycle bin. The properly sized sludge is conveyed to the four sludge storage silos (Silo Nos. 2, 3, 4, and 5). From the four storage silos, the sludge is either loaded onto trucks at one of two loading stations (Station Nos. 1 and 2), directed to a fifth storage silo (Silo No. 6) with a dedicated loading spout, sent to the recycle bin, or routed back to the four main storage silos.

Particulate matter emissions from each sludge drying train are controlled with a cyclone and a venturi scrubber that includes a cyclonic separator. Volatile organic compound emissions are controlled with a natural gas fired regenerative thermal oxidizer operating in series with the particulate control devices. Emissions from each storage silo and truck loading station are controlled with fabric filters. Odors from the sludge drying building are controlled by two spray mist scrubbers which use a sodium hypochlorite and water solution. One scrubber operates at a time with the other serving as a back-up.

An alternate method of operation of Sludge Dryer Train Nos. 2 and 3 is the heat recovery mode. This mode utilizes the waste heat in the exhaust gases from Engine Nos. 1 and 2 to offset the heat normally generated by firing natural gas in a combustion chamber for the dryers. The exhaust gas from Engine 1 can only feed Sludge Dryer Train No. 3 and Engine 2 can only feed Sludge Dryer Train No. 2. Even though a different heat source is used in the heat recovery mode, the flow rate through each rotary dryer is the same as that under normal operations. Additional heat can be added to handle the varying moisture content of the sludge by the combustion of natural gas in the existing combustion chamber.

Methanol is used as a feedstock for the biological denitrification stage of the wastewater treatment process. The methanol is delivered on a daily to weekly basis by truck or railcar to a fixed roof storage tank with a volume of approximately 95,000 gallons. Methanol is considered a VOC and HAP, and emissions are generated by evaporative losses (breathing and working losses) through the venting of displaced air through the “J” neck vent located on the roof of the tank. Minimal emissions are also generated from evaporation of methanol in the denitrification stage and from the fugitive losses of handling methanol through the piping, valves, flanges, etc. VOC and HAP emissions, which includes methanol, will be controlled by limiting the product throughput and submerged filling pursuant to Rule 62-296.320, F.A.C., General Pollutant Emission Limiting Standards.

Electricity for the facility is normally supplied by Tampa Electric Company and the five digester gas generators (0.5 MW each). However, two natural gas fired generators can be used as standby emergency power as well as supplemental generation that will be dispatched to the grid for Tampa

Electric Company. These generators have been identified as Engine Nos. 1 and 2. These emission units are two identical Waukesha 16V-AT27GL engines, 4 stroke, spark ignition, each rated at 4,073 bhp, fired exclusively on natural gas, each coupled to a nominal 2.9 MW electrical generator. The maximum heat input rate is 27.2 MMBTU/hr (HHV) based on natural gas heating value of 1025 Btu/cf.

The five digester gas generator engines are five Waukesha VHP-L7042 GU engines, 4 stroke spark ignition engines, rated at 670.5 bhp, and fired exclusively on digester gas. The maximum heat input rate is 5.6 MMBtu/hr based on a digester gas heating value of 621 Btu/cf and a fuel flow rate of 9,000 cf/hr. Also on site are four 3.2 MMBtu/hr Bryan Flexible Tube emergency boilers for the digester generators in the rare event that the digester generators are not in service. These boilers are being included on the insignificant emission unit list since the PTE's are below the exemption threshold for individual emission units.

In addition, the facility has four diesel-fired generators (EU No. 012) which can produce standby emergency power in the event of a power outage or provide supplemental power generation to the electric power grid for Tampa Electric Company (non-emergency operation). Each generator is a 2 MW generator equipped with a Caterpillar 3516 DITA engine. The compression ignition engines, rated at 2,847 bhp, are fired on No. 2 diesel fuel at a maximum rate of 137.5 gallons/hr. These generators were installed between 1993 and 1994. Each generator is equipped with a crankcase ventilation kit to capture any non-exhaust emissions from the engines. Also, each engine also has a catalyst, manufactured by Johnson Matthey, which is used to comply with the 70% CO reduction requirement of 40 CFR 63, Subpart ZZZZ.

CAM does apply to the control systems (cyclones, scrubbers, oxidizers) for Sludge Dryer Train Nos. 2 and 3 for VOC and PM. This sludge drying facility is subject to 40 CFR 61, Subpart E - National Emission Standard for Mercury and Rule 62-296.700, F.A.C. (PM-RACT). The engines at the facility are subject to 40 CFR 63 Subpart ZZZZ, and are not subject to 40 CFR 60 Subpart IIII nor Subpart JJJJ due to the date of construction of the engines.

Also included in this permit are miscellaneous insignificant emissions units and/or activities.

Based on the Title V Air Operation Permit Renewal application received November 12, 2010, this facility is not a major source of hazardous air pollutants (HAPs).

Subsection B. Summary of Emissions Units.

EU No.	Brief Description
Regulated Emissions Units	
001	Wastewater Treatment Plant Sludge Dryer Train No. 2
002	Wastewater Treatment Plant Sludge Dryer Train No. 3
005	Sludge Silo No. 2
006	Sludge Silo No. 3
007	Sludge Silo No. 4

EU No.	Brief Description
008	Sludge Silo No. 5
009	Truck Loading Station No. 1
010	Truck Loading Station No. 2
011	Sludge Silo No. 6
012	Four Diesel Non-Emergency Generators controlled by Oxidation Catalysts
016	Silo No. 6 Truck Loading Spout
017	Engine 1 with Nominal 2.9 MW Generator
018	Engine 2 with Nominal 2.9 MW Generator
019	Methanol Storage Tank
020	Five Digester Generator Engines
Unregulated Emissions Units (See Appendix U-1)	
003	Building Fugitives and Odor Control System No. 1
004	Building Fugitives and Odor Control System No. 2

Subsection C. Applicable Regulations.

Based on the Title V air operation permit renewal application received November 12, 2010, this facility is not a major source of hazardous air pollutants (HAP). Because this facility operates stationary reciprocating internal combustion engines, it is subject to regulation under 40 CFR 63, Subpart ZZZZ, - National Emissions Standards For Hazardous Air Pollutants For Stationary Reciprocating Internal Combustion Engines. A summary of applicable regulations is shown in the following table.

Regulation	EU No(s).
40 CFR 63, Subpart A, NESHAP General Provisions	012, 017, 018, 020
40 CFR 63, Subpart ZZZZ - National Emissions Standards For Hazardous Air Pollutants For Stationary Reciprocating Internal Combustion Engines	012, 017, 018, 020
40 CFR 61, Subpart E -National Emission Standard for Mercury	001, 002
Rule 62-212.400, F.A.C., Prevention of Significant Deterioration and BACT for NO_x	017, 018
Rule 62-296.320, F.A.C., General Pollutant Emission Limiting Standards	001, 002, 003, 004, 012, 017, 018, 019, 020
Rule 62-296.711, F.A.C. - Materials Handling, Sizing, Screening, Crushing and Grinding Operations (RACT Particulate Matter)	005, 006, 007, 008, 009, 010, 011, 016
Rule 62-296.712, F.A.C. - Miscellaneous Manufacturing Process Operations (RACT Particulate Matter)	001, 002

The following conditions apply facility-wide to all emission units and activities:

FW1. Appendices. The permittee shall comply with all documents identified in Section IV, Appendices, listed in the Table of Contents. Each document is an enforceable part of this permit unless otherwise indicated. [Rule 62-213.440, F.A.C.]

Emissions and Controls

FW2. Not federally Enforceable. Objectionable Odor Prohibited. No person shall cause, suffer, allow or permit the discharge of air pollutants, which cause or contribute to an objectionable odor. An "objectionable odor" means 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. [Rule 62-296.320(2) and 62-210.200(Definitions), F.A.C.]

FW3. General Volatile Organic Compounds (VOC) Emissions or Organic Solvents (OS) Emissions The permittee shall allow no person to store, pump, handle, process, load, unload or use in any process or installation, volatile organic compounds or organic solvents without applying known and existing vapor emission control devices or systems deemed-necessary and ordered by the Department. [Rule 62-296.320(1), F.A.C.]

FW4. General Visible Emissions No person shall cause, let, permit, suffer or allow to be discharged into the atmosphere the emissions of air pollutants from any activity equal to or greater than 20% opacity. EPA Method 9 is the method of compliance pursuant to Chapter 62-297, F.A.C. This regulation does not impose a specific testing requirement. [Rule 62-296.320(4)(b)1, F.A.C.]

FW5. Unconfined 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. Reasonable precautions to prevent emissions of unconfined particulate matter at this facility include: [Rule 62-296.320(4)(c), F.A.C.]

a. Paving and maintenance of roads, parking areas and yards.
b. Application of asphalt, water, oil, chemicals or other dust suppressants to unpaved roads, yards, open stock piles and similar activities.
c. Sweeping and removal of fugitive product at the truck loadout area on an as needed basis.
d. Limiting vehicular traffic to 20 MPH.
e. Landscaping or planting of vegetation.
f. Use of hoods, fans, filters, and similar equipment to contain, capture and/or vent particulate matter.
g. Ducting the dryer trains, silos, and truck loading to the associated control equipment.
h. Enclosing and venting to a control device all conveyor belts and connectors that handle dry material, with the exception of the recirculation (overheated product) conveyor used in emergencies to prevent overheating of the silos. The recirculation conveyor must remain covered with the belt transfer point vented to Truck No. 1 (EU 009) baghouse when in use.
i. Practicing good housekeeping of facility grounds.

Annual Reports and Fees

See Appendix RR, Facility-wide Reporting Requirements for additional details.

FW6. 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(3), F.A.C.]

FW7. Annual Emissions Fee Form and Fee The annual Title V emissions fees are due (postmarked) by March 1st of each year. The completed form and calculated fee shall be submitted to: Major Air Pollution Source Annual Emissions Fee, P.O. Box 3070, Tallahassee, Florida 32315-3070. The forms are available for download by accessing the Title V Annual Emissions Fee On-line Information Center at the following Internet web site: http://www.dep.state.fl.us/air/emission/tvfee.htm. [Rule 62-213.205, F.A.C.]

FW8. Annual Statement of Compliance The permittee shall submit an annual statement of compliance to the compliance authority at the address shown on the cover of this permit within 60 days after the end of each calendar year during which the Title V permit was effective. [Rules 62-213.440(3)(a)2. & 3. and (3)(b), F.A.C.]

FW9. Prevention of Accidental Releases (Section 112(r) of CAA) The permittee shall comply with the Risk Management Plan as follows: [40 CFR 68]

a. Submit its Risk Management Plan (RMP) to the Chemical Emergency Preparedness and Prevention Office (CEPPO) RMP Reporting Center. Any Risk Management Plans, original submittals, revisions or updates to submittals, should be sent to: RMP Reporting Center, Post Office Box 10162, Fairfax, VA 22038, Telephone: (703) 227-7650.
b. Submit to the permitting authority Title V certification forms or a compliance schedule in accordance with Rule 62-213.440(2), F.A.C.

FW10. In order to establish the facility as a non-Title V source for Hazardous Air Pollutants (HAP), the HAP, as defined in Rule 62-210.200, F.A.C., emissions shall be less than 10 tons in any 12 consecutive month period for any individual HAP, and less than 25 tons in any 12 consecutive month period for any combination of HAPs. [Rule 62-210.200, F.A.C., Definitions-Potential to Emit (PTE), Major Source of Air Pollution, and Synthetic Non-Title V Source]

FW11. Modifications No emissions unit or facility shall be constructed or modified without obtaining the appropriate air construction permit. Such permit must be obtained prior to the beginning of construction or modification. [Rules 62-210.300(1) and 62-212.300(1)(a), F.A.C.]

FW12. Circumvention No person shall circumvent any air pollution control device or allow the emission of air pollutants without the applicable air pollution control device operating properly. [Rule 62-210.650, F.A.C.]

FW13. Excess Emissions (EU Nos. 017 & 018): [Rule 62-210.700(4), F.A.C.]

a. Excess emissions resulting from malfunction of these emissions units shall be permitted providing (1) best operational practices to minimize emissions are adhered to and (2) the

duration of excess emissions shall be minimized, but in no case exceed 15 minutes for startup, 15 minutes for shutdown, and 15 minutes for malfunction, in any 24 hour period. [Rules 62-210.700(1) & (5), F.A.C. and PSD-FL-291]

b. Excess emissions which are caused entirely or in part by poor maintenance, poor operation, or any other equipment or process failure which may reasonably be prevented during start-up, shutdown, or malfunction shall be prohibited.

FW14. When the Environmental Protection Commission of Hillsborough County, after investigation, has good reason (such as complaints, increased visible emissions or questionable maintenance of control equipment) to believe that any applicable emission standard contained in a Department rule or in a permit issued pursuant to those rules is being violated, it shall require the owner or operator of the facility to conduct compliance tests which identify the nature and quantity of pollutant emissions from the emissions units and to provide a report on the results of said tests to the Environmental Protection Commission of Hillsborough County. [Rule 62-297.310(7)(b), F.A.C.]

FW15. Duration of Recordkeeping 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. 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 for this permit. These materials shall be retained at least five years from the date of the sample, measurement, report, or application unless otherwise specified by Department rule. [Rules 62-4.160(14) and 62-213.440(1)(b)2.b., F.A.C.]

FW16. Test Reports The owner or operator of an emission unit for which a compliance test is required shall file a report with the Environmental Protection Commission of Hillsborough County (EPCHC) on the results of each compliance test 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 Environmental Protection Commission of Hillsborough County 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 applicable information listed in Rule 62-297.310(8)(c), F.A.C. [Rule 62-297.310(8), F.A.C.]

FW17. Excess Emissions Report If excess emissions occur, the owner or operator shall notify the Environmental Protection Commission of Hillsborough County within one working day of: the nature, extent, and duration of the excess emissions; the cause of the excess emissions; and the actions taken to correct the problem. In addition, the Environmental Protection Commission of Hillsborough County may request a written summary report of the incident. [Rule 62-4.130, F.A.C.]

FW18. Excess Emissions Report - Malfunctions In case of excess emissions resulting from malfunctions, each owner or operator shall notify the Environmental Protection Commission of Hillsborough County in accordance with Rule 62-4.130, F.A.C. A full written report on the malfunctions shall be submitted in a quarterly report if requested by the Department. [Rule 62-210.700(6), F.A.C.]

FW19. When appropriate, any recording, monitoring or reporting requirements that are time-specific shall be in accordance with the effective date of this permit, which defines day one. [Rule 62-213.440, F.A.C.]

FW20. Any reports, data, notifications, certifications, and requests required to be sent to the Environmental Protection Commission of Hillsborough County should be sent to:

Environmental Protection Commission of Hillsborough County
Air Management Division
3629 Queen Palm Drive
Tampa, FL 33619
Telephone: (813) 627-2600; Fax: (813) 627-2660

FW21. Any reports, data, notifications, certifications, and requests required to be sent to the United States Environmental Protection Agency, Region 4, should be sent to:

United States Environmental Protection Agency
Region 4
Air, Pesticides & Toxics Management Division
Air and EPCRA Enforcement Branch
Air Enforcement Section
61 Forsyth Street
Atlanta, Georgia 30303-8960
Telephone: 404/562-9155; Fax: 404/562-9163

FW22. The use of property, facilities, equipment, processes, products, or compounds, or the commission of paint overspraying or any other act, that causes or materially contributes to a public nuisance is prohibited. [Hillsborough County Environmental Protection Act, Section 16, Chapter 84-446, Laws of Florida, as Amended.]

FW23. Certification by Responsible Official (RO). In addition to the professional engineering certification required for applications by Rule 62-4.050(3), F.A.C., any application form, report, compliance statement, compliance plan and compliance schedule submitted pursuant to Chapter 62-213, F.A.C., shall contain a certification signed by a responsible official that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete. Any responsible official who fails to submit any required information or who has submitted incorrect information shall, upon becoming aware of such failure or incorrect submittal, promptly submit such supplementary information or correct information. [Rule 62-213.420(4), F.A.C.]

FW24. If the permittee wishes to transfer this permit to another owner, an "Application for Transfer of Permit" (DEP Form 62-210.900(7)) shall be submitted, in duplicate, to the Environmental Protection Commission of Hillsborough County within 30 days after the sale or legal transfer of the permitted facility. [Rule 62-4.120, F.A.C.]

The specific conditions in this section apply to the following emissions units:

EU No.	Brief Description
-001	Wastewater Treatment Plant Sludge Dryer Train No. 2
-002	Wastewater Treatment Plant Sludge Dryer Train No. 3
-003	Building Fugitives and Odor Control System No. 1
-004	Building Fugitives and Odor Control System No. 2

Two identical sludge drying trains (No. 2 and No. 3) each consists of a wet storage bin, a pug mill, a gas fired rotary dryer, a separator, a crusher, sizing screens, a recycle bin, and the associated conveyor systems.

Emissions of particulate matter, volatile organic compounds and odorous compounds from each train are controlled by a venturi scrubber in series with a second cyclonic separator and a Hunting Energy Systems, Inc., Model No. 105 thermal oxidizer. Each train exhaust is ducted to a separate and identical emissions control system. Each incinerator has a maximum heat input rate of 3.78 MMBtu/hr., and is fired solely on natural gas. The dryer exhaust system includes an incinerator bypass outlet and a crossover duct, which allows one train to operate using the other train's incinerator unit. Fugitive emissions of odorous compounds are controlled by the complete enclosure of the sludge drying trains and the use of two (2) Quad Chemtact Mist Scrubbing Systems. The scrubbing liquor is a mixture of sodium hypochlorite and water. Typically only one odor control unit is in operation at any given time, but both may be in operation simultaneously.

In the heat recovery mode, Sludge Dryer Train No. 2 utilizes the exhaust gas from Engine No. 2 and Sludge Dryer Train No. 3 utilizes the exhaust gas from Engine No. 1. Additional heat can be added from each train's combustion chamber to handle the varying moisture content of the sludge.

{Permitting note(s): Emissions Units 001 and 002 are subject to 40 CFR 61, Subpart E - National Emission Standard for Mercury and Rule 62-296.712, F.A.C. - Miscellaneous Manufacturing Process Operations (RACT Particulate Matter).}

Essential Potential to Emit (PTE) Parameters

A.1. Permitted Capacity. The maximum allowable processing rates are as follows: [Rules 62-4.160(2), 62-4.070(3), 62-210.200(PTE), and Air Construction Permit AC29-246231]

EU No.	MMBtu/hr Heat Input	Fuel Type	Maximum Wet Sludge Input (tons/month)[1]	Minimum VOC Destruction Efficiency (%)	Minimum Afterburner Chamber Temperature(^{o}F)[2]
-001	20	Natural Gas	1,104	90	1299
-002	20	Natural Gas	1,104	90	1298

[1]Determined on a dry weight basis.

[2]Based on the 3-hour average during the latest successful emissions compliance test. Compliance is demonstrated based on a 3-hour average temperature.

A.2. Methods of Operation. [Rule 62-213.410, F.A.C., Rule 62-4.160(2), F.A.C.]

a. *Normal mode:* Heat for the sludge drying operation is provided by natural gas burned in the dryer(s).
b. *Heat Recovery mode:* Heat for the sludge drying operation is provided by waste heat generated from Engine No. 1 or Engine No. 2. The engines may provide all or a portion of the heat required to run the dryers.

A.3. Hours of Operation. These emissions units may operate continuously (8,760 hours/year) under either normal or heat recovery mode of operation or any combination thereof. [Rule 62-4.160(2), F.A.C. and Rule 62-210.200 (PTE), F.A.C.]

A.4. Emissions Unit Operating Rate Limitation After Testing. See the related testing provisions in Appendix TR, Facility-wide Testing Requirements. [Rule 62-297.310(2), F.A.C.]

Emission Limitations and Standards

Permitting Note: The attached Table 1, Summary of Air Pollutant Standards, summarizes information for convenience purposes only. This table does not supersede any of the terms or conditions of this permit.

A.5. Visible Emissions. Visible emissions shall not exceed 5% opacity from each drying train. [Construction Permit AC29-246231, Rule 62-296.712(2), F.A.C. and Renewal Application received November 12, 2010]

A.6. PM Emissions. Particulate matter emissions shall not exceed 5.15 lbs/hr and 22.6 tons in any twelve (12) consecutive month period from each drying train based on a design flow rate of 20,028 DSCFM. [Construction Permit AC29-246231, Rules 62-296.700(4)(b)(1) and 62-296.712(2), F.A.C.]

A.7. VOC Emissions. Volatile Organic Compound emissions shall not exceed 3.54 lbs/hr and 15.5 tons in any twelve (12) consecutive month period from each drying train. [Construction Permit AC29-246231, Permit No. 0570373-003-AV and Renewal Application received November 12, 2010]

A.8. Mercury Emissions. Total emissions of mercury from the sludge drying facility shall not exceed 3,200 grams (7.1 lb) per 24-hour period and 1.3 tons in any twelve (12) consecutive month period. [40 CFR 61.52(b)]

A.9. Circumvention. The permittee shall not circumvent the emission limitation of Specific Condition A.6. by increasing the volume of gas in any exhaust or group of exhausts for the purpose of reducing the stack gas concentration. This includes allowing dilution air to enter the system through leaks, open vents, or similar means. [Rule 62-296.700(5), F.A.C.]

Excess Emissions

A.10. Excess Emissions Allowed. Excess emissions resulting from malfunction shall be permitted provided that best operational practices to minimize emissions are adhered to and the duration of excess emissions shall be minimized but in no case exceed two hours in any 24 hour period unless specifically authorized by the Department for longer duration. [Rule 62-210.700(1), F.A.C.]

A.11. Excess Emissions Allowed. Excess emissions resulting from startup or shutdown shall be permitted provided that best operational practices to minimize emissions are adhered to and the duration of excess emissions shall be minimized. [Rule 62-210.700(2), F.A.C.]

A.12. Excess Emissions Prohibited. Excess emissions which are caused entirely or in part by poor maintenance, poor operation, or any other equipment or process failure which may reasonably be prevented during startup, shutdown or malfunction shall be prohibited. [Rule 62-210.700(4), F.A.C.]

Monitoring of Operations

A.13. CAM Plan. Emissions units 001 and 002 are subject to the Compliance Assurance Monitoring (CAM) requirements contained in the attached Appendix CAM. Failure to adhere to the monitoring requirements specified does not necessarily indicate an exceedance of a specific emissions limitation; however, it may constitute good reason to require compliance testing pursuant to Rule 62-297.310(7)(b), F.A.C. [40 CFR 64; Rules 62-204.800 and 62-213.440(1)(b)1.a., F.A.C.]

Test Methods and Procedures

Permitting Note: The attached Table 2, Summary of Compliance Requirements, summarizes information for convenience purposes only. This table does not supersede any of the terms or conditions of this permit.

A.14. Test Methods. Required tests shall be performed in accordance with the following reference methods:

Method	Description of Method and Comments
1-4	Traverse Points, Velocity and Flow Rate, Gas Analysis, and Moisture Content
5	Determination of Particulate Matter Emissions from Stationary Sources
9	Visual Determination of the Opacity of Emissions from Stationary Sources
25A	Determination of Total Gaseous Organic Concentration using a Flame Ionization Analyzer
101A	Determination of particulate and gaseous mercury emissions
105	Determination of mercury in wastewater treatment plant sewage sludges

The above methods are described in 40 CFR 60, Appendix A or 40 CFR 61, Appendix B and 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. [Rules 62-296.712(3), 62-297.401 and 62-4.070(3), F.A.C., and Construction Permit AC29-246231]

A.15. Common Testing Requirements. Unless otherwise specified, tests shall be conducted in accordance with the requirements and procedures specified in Appendix TR, Facility-Wide Testing Requirements, of this permit. [Rule 62-297.310, F.A.C.]

A.16. Compliance Tests Required. The permittee shall have formal compliance tests conducted each calendar year on both sludge dryer trains for opacity in either the normal or heat recovery mode of operation. Every five (5) years, the permittee shall have formal compliance tests conducted on both sludge dryer trains for particulate matter (PM), volatile organic compounds (VOC), and mercury in either the normal or heat recovery mode of operation. However, if the results of a mercury test, as specified in Specific Condition A.17., indicate that either (or both) drying train's mercury emissions exceed 1.6 kg (3.5 lb) per 24-hour period, then the permittee shall monitor mercury emissions from that corresponding train (or both, if both exceeded the 3.5 lb/24-hr threshold) at intervals of at least once per year by use of the methods stated above. [Rule 62-297.310(7)(a), F.A.C. and 40 CFR 61.55(a)]

A.17. Mercury Compliance Test Requirements. For mercury, compliance testing shall be performed using EPA Methods 101A (in accordance to 40 CFR 61.53) or 105 contained in 40 CFR 61, Appendix B, and shall satisfy the following requirements: [40 CFR 61.53 and 61.54, Construction Permit AC29-246231, and Rule 62-213.440(1)(b)2.b..F.A.C.]

a. The Environmental Protection Commission of Hillsborough County shall be notified at least 30 days prior to a sludge sampling test.
b. Sludge shall be sampled according to paragraph (b)(1) of this specific condition, sludge charging rate for the plant shall be determined according to paragraph (b)(2) of this specific condition, and the sludge analysis shall be performed according to paragraph (b)(3) of this specific condition.
    (1) The sludge shall be sampled according to EPA Method 105 - Determination of Mercury in Wastewater Treatment Plant Sewage Sludges. A total of three composite samples shall be obtained within an operating period of 24 hours. When the 24-hour operating period is not continuous, the total sampling period shall not exceed 72 hours after the first grab sample is obtained. Samples shall not be exposed to any condition that may result in mercury contamination or loss.
    (2) The maximum 24-hour period sludge drying rate shall be determined by use of a flow rate measurement device that can measure the mass rate of sludge charged to the dryer with an accuracy of ± 5 percent over its operating range. Other methods of measuring sludge mass charging rates may be used if they have received prior approval by the Environmental Protection Commission of Hillsborough County.
    (3) The sampling, handling, preparation, and analysis of sludge samples shall be accomplished according to EPA Method 105 in 40 CFR 61, Appendix B.
c. The mercury emissions shall be determined by use of the following equation.

$$E_{Hg} = \frac{M \times Q \times Fsm(avg)}{1000}$$

where:

E_{Hg} = mercury emissions, grams/day

M = mercury conc. of sludge on a dry basis, micrograms/gram sludge
Q = sludge feed rate, kilograms/day
Fsm = weight fraction of solids in the collected sludge after mixing

d. No changes in the operation of a plant shall be made after a sludge test has been conducted which would potentially increase emissions above the level determined by the most recent sludge test, until the new emission level has been estimated by calculation and the results reported to the Environmental Protection Commission of Hillsborough County.
e. All sludge samples shall be analyzed for mercury content within 30 days after the sludge sample is collected. Each determination shall be reported to the Environmental Protection Commission of Hillsborough County by a registered letter dispatched within 15 calendar days following the date such determination is completed.
f. Records of sludge sampling, charging rate determination and other data needed to determine mercury content of wastewater treatment plant sludges shall be retained at the source and made available, for inspection by the Environmental Protection Commission of Hillsborough County, for a minimum of five (5) years.
g. The minimum requirements for source sampling and reporting shall be in accordance with Rule 62-297, F.A.C., and 40 CFR 60, Appendix A.

A.18. Operating Rate During Testing. Testing of emissions shall be conducted with the source operating at capacity. Capacity is defined as 90-100% of 3,067 lbs/hour of sludge input per train (dry weight basis), based on the permitted limit of 1,104 dry tons per month. If it is impracticable to test at capacity, then the source may be tested at less than capacity; in this case subsequent source operation is limited to 110% of the test load until a new test is conducted. Once the unit is so limited, then operation at higher capacities is allowed for no more than fifteen days for purposes of additional compliance testing to regain the rated capacity in the permit, with prior notification to the Environmental Protection Commission of Hillsborough County. Failure to submit the input rates and actual operating conditions, such as the sludge input rate (dry weight basis), heat input rate, thermal oxidizer temperature, scrubber liquid flow rate, and scrubber pressure drop, may invalidate the test. [Construction Permit AC29-246231 and Rule 62-297.310(2) and (8)(c), F.A.C.]

A.19. The required minimum period of observation for each EPA Method 9 compliance test shall be thirty (30) minutes. The opacity test observation period shall include the period during which the emissions unit is operating at capacity as defined in specific condition A.11. Exceptions to these requirements are as follows: [Rule 62-297.310(4)(a), F.A.C.]

a. The minimum observation period for opacity tests conducted by the Environmental Protection Commission of Hillsborough County to verify the day-to-day continuing compliance of a unit or activity shall be twelve minutes.

Monitoring, Recordkeeping, and Reporting Requirements

A.20. The following Operation and Maintenance (O&M) Plan, including all the referenced design parameters, monitoring requirements and recordkeeping requirements, is an enforceable condition of this permit. In order to demonstrate compliance with Specific Condition Nos. A.5, A.6, A.7., and A.8. the

permittee shall maintain records of operations as specified in the following O&M Plan: [Construction Permit AC29-246231; and Rules 62-213.440(1)(b)2.b., 62-296.700(4) & (6) and 62-4.070(3), F.A.C.]

Operation and Maintenance Plan for Particulate Control:

a. Process Parameters:
   (1) Cyclone Separators (two (2))
      (i) Manufacturer: Emtrol Corporation
      (ii) Model Name and Number: 2-52M160
      (iii) Design Flow Rate: 28,724 ACFM @ 178° F
   (2) Venturi Scrubber/Cyclonic Separator (two (2))
      (i) Manufacturer: Emtrol Corporation
      (ii) Model Name and Number: 42096 W-20
      (iii) Design Flow Rate: 28,724 ACFM @ 178° F. - Air, 288 gallons/min. - H_2O
      (iv) Minimum Flow Rate: 250 gallons/min - H_2O
      (v) Minimum Pressure Drop: 6.0 inches H_2O
   (3) Afterburner (two (2))
      (i) Manufacturer: Huntington Energy Systems, Inc.
      (ii) Model Name and Number: 105
      (iii) Design Flow Rate: 35,124 ACFM @ 261° F.
      (iv) Overall Efficiency Rating at Design Capacity: 99.64% PM, 90% VOC
      (v) Stack Height Above Ground: 75 ft.
      (vi) Exit Diameter: 3.1 ft.
      (vii) Exit Velocity: 67 f.p.s.
      (viii) Water Vapor Content: 15.25%
      (ix) Process Controlled by Collection System: Train Nos. 2 and 3
      (x) Material Handling Rate: 1104 tons of sludge input per train per month (dry weight basis) or 3,067 lbs./hour.
      (xi) Operation Schedule: 24 hrs./day; 7 days/wk.; 52 wks./yr.
   (4) Odor Control System (2 units)
      (i) Manufacturer: Quad Environmental Technologies
      (ii) Model Name and Number: Quad Chemtact Mist Scrubbing System
      (iii) Design Flow Rate: 49,000 ACFM - Air, 2.25 gpm - Scrubbing Solution (H_2O + NaOCl)
      (iv) Minimum Flow Rate: 0.3 gpm - Scrubbing Solution (10% NaOCl + H_2O)
      (v) Minimum System Air Pressure: 70 psi
      (vi) Stack Height Above Ground: 38 ft.
      (vii) Exit Diameter: 5 ft.
      (viii) Exit Velocity: 41.59 f.p.s.
      (ix) Process Controlled by Collection System: Train Nos. 2 and 3
      (x) Operation Schedule: 24 hrs./day; 7 days/wk.; 52 wks./yr.

b. The following observations, procedures, checks and recordkeeping requirements are to be completed at the frequency specified for monitoring and control of source discharge:
   (1) Daily
      (i) Record natural gas consumption for each dryer in MMBTU/day
      (ii) Record belt scale totalizer readings.

(iii) Observe Wet Bin level.
(iv) Check Recycle Bin level.
(v) Check cyclone drop-out for plugging.
(vi) [Reserved]
(vii) Record venturi scrubber pressure drop and water flow rate.
(viii) Record ID fan DP.
(ix) Check afterburner operation including burner status. Record reaction chamber, inlet, and outlet temperatures. To demonstrate requirements established in the CAM Plan, records of instantaneous and 1-hour average temperatures of the afterburner chamber shall be maintained.
(x) Perform and record the results of an instantaneous visual emissions determination on each afterburner.
(xi) Observe building odor control operation - check chemical feed and filter pressure, and record scrubbing solution flow rate and system air pressure.
(xii) Perform general cleaning around conveyors and belt scales.
(xiii) Maintain records of dryer feed rates and total natural gas usage of sludge drying system including afterburner.

(2) Weekly
(i) Inspect afterburner exhaust fan and reactor switch valves for proper operation.
(ii) Observe operation and condition of settling chamber, cyclone, venturi scrubber, and ID fan.
(iii) Check odor control compressors for water and oil level.
(iv) Perform acid cleaning to nozzles of building odor control system.

(3) Monthly
(i) Record monthly dry sludge production per train and maintain 12-month rolling average.
(ii) Determine and record mercury concentration in the wet sludge using EPA Method 7471 or the latest EPA approved method. Calculate and record the estimated mercury emissions for each month and maintain a 12-month rolling average.
(iii) Inspect and clean ID fans for build-up of debris if needed.
(iv) Manually inspect and clean building odor control nozzles.
(v) Lubricate afterburner switch valve camshaft.

(4) Semiannually
(i) Check oil in bearings of ID fan and afterburner fan.
(ii) Inspect afterburner fan for build-up of debris and clean.
(iii) Perform mechanical check on all gas piping for leaks.
(iv) Perform mechanical inspection and lubrication of vane axial fan of building odor control system.

(5) Annually
(i) Lubricate afterburner fan bearings and perform electrical checks for proper operation.
(ii) Perform electrical checks to building exhaust fan and lubricate.
(iii) Inspect afterburner insulation for refractory lining damage.

c. Records: Records of inspections, maintenance, and performance parameters shall be retained for a minimum of five years and shall be made available to the Environmental Protection Commission of Hillsborough County, state or federal air pollution agency upon request.

d. Deviations: If at any time any of the operating restrictions of (a)(2)(iv), (a)(2)(v), (a)(4)(iv), or (a)(4)(v) of this specific condition is not met, immediate corrective action shall be taken and a deviation plan shall be submitted within 30 days to the Environmental Protection Commission of Hillsborough County. A single observation of visible emissions pursuant to (b)(1)(x) shall also trigger the need for corrective actions and the submission of a deviation plan.

A.21. Other Reporting Requirements. See Appendix RR, Facility-Wide Reporting Requirements, for additional reporting requirements.

The specific conditions in this section apply to the following emissions units:

EU No.	Brief Description
-005	Sludge Silo No. 2
-006	Sludge Silo No. 3
-007	Sludge Silo No. 4
-008	Sludge Silo No. 5
-009	Truck Loading Station No. 1
-010	Truck Loading Station No. 2

Four storage silos store dry pelletized sludge (natural fertilizer) generated from the two sludge dryer trains. Two truck loading stations load the product from the silos into trucks. Particulate emissions generated during silo loading are controlled by four dust collectors, one on each silo. Emissions generated by the truck loading operations are controlled by two dust collectors.

{Permitting note(s): These emissions units are subject to Rule 62-296.711, F.A.C. - Materials Handling, Sizing, Screening, Crushing and Grinding Operations (RACT Particulate Matter).}

Essential Potential to Emit (PTE) Parameters

B.1. Permitted Capacity. The maximum allowable sludge handling rate is as follows: [Rules 62-4.160(2), 62-4.070(3), 62-204.800, 62-210.200(PTE), and Renewal Application received November 12, 2010]

EU Nos.	Tons Dry Sludge/12-Consecutive Month Period
-005 thru -010	36,576

B.2. Hours of Operation. These emissions units may operate continuously (8,760 hours/year). [Rule 62-210.200(PTE) and 62-4.070(3), F.A.C., and Renewal Application received November 12, 2010]

B.3. Emissions Unit Operating Rate Limitation After Testing. See the related testing provisions in Appendix TR, Facility-wide Testing Requirements. [Rule 62-297.310(2), F.A.C.]

Emission Limitations and Standards

Permitting Note: The attached Table 1, Summary of Air Pollutant Standards, summarizes information for convenience purposes only. This table does not supersede any of the terms or conditions of this permit.

B.4. Visible Emissions. Visible emissions shall not exceed 5% opacity. [Rules 62-296.711 and 62-297.620(4), F.A.C., Construction Permit AC29-203780, and Renewal Application received November 12, 2010]

B.5. PM Emissions. Particulate matter emissions shall not exceed 0.03 gr/dscf, 0.26 pounds/hr, and 1.13 tons/twelve (12) consecutive month period for each emission unit in this subsection. [Rules 62-296.711 and 62-297.620(4), F.A.C., Construction Permit AC29-203780, and Renewal Application received November 12, 2010]

Excess Emissions

B.6. Excess Emissions Allowed. Excess emissions resulting from malfunction shall be permitted provided that best operational practices to minimize emissions are adhered to and the duration of excess emissions shall be minimized but in no case exceed two hours in any 24 hour period unless specifically authorized by the Department for longer duration. [Rule 62-210.700(1), F.A.C.]

B.7. Excess Emissions Allowed. Excess emissions resulting from startup or shutdown shall be permitted provided that best operational practices to minimize emissions are adhered to and the duration of excess emissions shall be minimized. [Rule 62-210.700(2), F.A.C.]

B.8. Excess Emissions Prohibited. Excess emissions which are caused entirely or in part by poor maintenance, poor operation, or any other equipment or process failure which may reasonably be prevented during startup, shutdown or malfunction shall be prohibited. [Rule 62-210.700(4), F.A.C.]

Test Methods and Procedures

Permitting Note: The attached Table 2, Summary of Compliance Requirements, summarizes information for convenience purposes only. This table does not supersede any of the terms or conditions of this permit.

B.9. Test Methods. Required tests shall be performed in accordance with the following reference methods:

Method	Description of Method and Comments
1-4	Traverse Points, Velocity and Flow Rate, Gas Analysis, and Moisture Content
5	Determination of Particulate Matter Emissions from Stationary Sources
9	Visual Determination of the Opacity of Emissions from Stationary Sources

The above methods are described in 40 CFR 60, Appendix A, and 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. [Rule 62-297.401, F.A.C. and Construction Permit AC29-203780]

B.10. Common Testing Requirements. Unless otherwise specified, tests shall be conducted in accordance with the requirements and procedures specified in Appendix TR, Facility-Wide Testing Requirements, of this permit. [Rule 62-297.310, F.A.C.]

B.11. Annual Compliance Tests Required. During each federal fiscal year (October 1st to September 30th), Emission Units 005 through 010 shall be tested to demonstrate compliance with the emissions standards for opacity. A visible emissions test indicating no visible emissions (5 percent opacity) may be submitted in lieu of a particulate stack test for these emissions units; however, failure to demonstrate compliance with the 5% opacity standard may require formal PM stack testing using EPA Method 5 to

ensure compliance with Specific Condition B.5. [Rules 62-297.310(7)(a)4., 62-297.620(4), and 62-296.711, F.A.C.]

B.12. Operating Rate During Testing. Testing of emissions shall be conducted with the source operating at capacity. Capacity is defined as 90-100% of the maximum loading rate of 24,000 lbs/hr for each silo and the maximum truck loading rate 42,000 lbs/hr for each truck loading station. The loading rates are considered maximum average rates, so some fluctuation in instantaneous loading may occur. If it is impracticable to test at capacity, then the source may be tested at less than capacity; in this case subsequent source operation is limited to 110% of the test load until a new test is conducted. Once the unit is so limited, then operation at higher capacities is allowed for no more than fifteen days for purposes of additional compliance testing to regain the rated capacity in the permit, with prior notification to the Environmental Protection Commission of Hillsborough County. Failure to submit the input rates and actual operating conditions may invalidate the test. [Construction Permit AC29-203780 and Rule 62-297.310(2), F.A.C.]

B.13. The required minimum period of observation for an EPA Method 9 compliance test shall be thirty (30) minutes. Observations should be made at the point of highest opacity from the operation. The opacity test observation period shall include the period during which the emissions unit is operating at capacity as defined in specific condition B.12. Exceptions to these requirements are as follows: [Rules 62-297.310(4)(a) and 62-4.070(3), F.A.C.]

a. The minimum observation period for opacity tests conducted by the Environmental Protection Commission of Hillsborough County to verify the day-to-day continuing compliance of a unit or activity shall be twelve minutes.

Monitoring, Recordkeeping, and Reporting Requirements

B.14. Operation and Maintenance Plan. The following Operation and Maintenance (O&M) Plan, including all the referenced design parameters, monitoring requirements, and recordkeeping requirements, is an enforceable condition of this permit. In order to demonstrate compliance with Specific Condition Nos. B.4. and B.5., the permittee shall maintain records of operations as specified in the following O&M Plan: [Rules 62-296.700(4) & (6) and 62-213.440(1)(b), F.A.C.]

Operation and Maintenance Plan for Particulate Control:

a. Equipment Specifications:
   (1) Dust Collector Bin Vent (4) - Silo Nos. 2, 3, 4, and 5
      (i) Manufacturer: American Air Filter
      (ii) Model: Fabri-Pulse, Design M, Model 2, Size 6-42-150 dust collector
      (iii) Maximum pressure Drop: 6.0 inches H_2O
   (2) Truck Loading Dust Collector (2) - Truck Loading Station Nos. 1 and 2
      (i) Manufacturer: American Air Filter
      (ii) Model: Fabri-Pulse, Design M, Model 2, Size 6-42-150 dust collector
      (iii) Maximum Pressure Drop: 6.0 inches H_2O
   (3) Rotary Valves (4) - Silos Nos. 2, 3, 4, and 5
      (i) Manufacturer: MAC
      (ii) Model: MD7 w/VFD controller

(iii) Material Handling Rate: 42,000 lbs./hr. maximum
(iv) Operation Schedule: 8760 hrs./yr.

b. The following observations, procedures, checks and recordkeeping requirements are to be completed at the frequency specified for monitoring and control of source discharge:

Dust Collector Bin Vent

(1) Daily
- (i) Observe bin vent operating status for silo in service.
- (ii) Perform and record the results of an instantaneous visual emissions determination on each silo in service.
- (iii) Note silo product levels.
- (iv) Note silo product temperatures.

(2) Annually
- (i) Perform inspection of filters - clean/replace if necessary.
- (ii) Inspect filters for leakage.
- (iii) Lubricate fan motor and perform electrical check.

Truck Loading Dust Collector

(3) Daily
- (i) Record dust collector differential pressure and observe operation for leaks.
- (ii) Perform and record the results of an instantaneous visual emissions determination on each dust collector.

(4) Monthly
- (i) Record total monthly dry sludge loaded and maintain 12-month rolling average.
- (ii) Inspect filters - clean/replace as necessary.
- (iii) Inspect loading spout and apron for wear.
- (iv) Check air and water supply of dust removal system.

(5) Annually
- (i) Perform electrical inspection and motor lubrication

For Rotary Valves on Silos Nos. 2, 3, 4, 5

(6) Daily
- (i) Record the frequency of the Rotary Valve Variable Frequency Drive.

(7) Annually
- (i) Visually inspect rotary valve for product buildup and damage.
- (ii) Perform electrical and mechanical inspections and maintenance per manufacturer's specifications.
- (iii) Verify product load rate.

c. Records: Records of inspections, maintenance, and performance parameters shall be retained for a minimum of five years and shall be made available to the Environmental Protection Commission of Hillsborough County upon request.

d. Deviations: If at any time any of the operating restriction of (a)(2)(iii) of this specific condition is not met, immediate corrective action shall be taken and a deviation plan shall be submitted within 30 days to the Environmental Protection Commission of Hillsborough County. A single observation of visible emissions pursuant to (b)(1)(ii) or (b)(3)(iii) shall also trigger the need for corrective actions and the submission of a deviation plan.

Subsection C. The specific conditions in this section apply to the following emissions units:

EU No.	Brief Description
-011	Sludge Silo No. 6
-016	Silo No.6 Truck Loading Spout

Silo No.6 receives dry pelletized sludge from any of the four storage silos, where the product is then loaded out into trucks through its dedicated loading spout. Particulate emissions generated during silo filling and truck loading operation are controlled by a single dust collector.

{Permitting note(s): These emissions units are subject to Rule 62-296.711, F.A.C. - Materials Handling, Sizing, Screening, Crushing and Grinding Operations (RACT Particulate Matter).}

Essential Potential to Emit (PTE) Parameters

C.1. Permitted Capacity. The maximum allowable sludge handling rate is as follows: [Rules 62-4.160(2), 62-4.070(3), 62-204.800, 62-210.200(PTE), and Renewal Application received November 12, 2010]

EU Nos.	Tons Dry Sludge/12-Consecutive Month Period
-011 and -016	10,000

C.2. Hours of Operation. These emissions units may operate continuously (8,760 hours/year). [Rule 62-210.200(PTE) and 62-4.070(3), F.A.C., and Renewal Application received November 12, 2010]

C.3. Emissions Unit Operating Rate Limitation After Testing. See the related testing provisions in Appendix TR, Facility-wide Testing Requirements. [Rule 62-297.310(2), F.A.C.]

Emission Limitations and Standards

Permitting Note: The attached Table 1, Summary of Air Pollutant Standards, summarizes information for convenience purposes only. This table does not supersede any of the terms or conditions of this permit.

C.4. Visible Emissions. Visible emissions shall not exceed 5% opacity. [Rules 62-296.711 and 62-297.620(4), F.A.C., Construction Permit 0570373-002-AC, and Renewal Application received November 12, 2010]

C.5. PM Emissions. Particulate matter emissions shall not exceed 0.03 gr/dscf, 0.81 pounds/hr, and 3.6 tons/twelve (12) consecutive month period for each emission unit in this subsection. [Rules 62-296.711 and 62-297.620(4), F.A.C., Construction Permit 0570373-002-AC, and Renewal Application received November 12, 2010]

Excess Emissions

C.6. Excess Emissions Allowed. Excess emissions resulting from malfunction shall be permitted provided that best operational practices to minimize emissions are adhered to and the duration of excess emissions shall be minimized but in no case exceed two hours in any 24 hour period unless specifically authorized by the Department for longer duration. [Rule 62-210.700(1), F.A.C.]

C.7. Excess Emissions Allowed. Excess emissions resulting from startup or shutdown shall be permitted provided that best operational practices to minimize emissions are adhered to and the duration of excess emissions shall be minimized. [Rule 62-210.700(2), F.A.C.]

C.8. Excess Emissions Prohibited. Excess emissions which are caused entirely or in part by poor maintenance, poor operation, or any other equipment or process failure which may reasonably be prevented during startup, shutdown or malfunction shall be prohibited. [Rule 62-210.700(4), F.A.C.]

Test Methods and Procedures

Permitting Note: The attached Table 2, Summary of Compliance Requirements, summarizes information for convenience purposes only. This table does not supersede any of the terms or conditions of this permit.

C.9. Test Methods. Required tests shall be performed in accordance with the following reference methods: [Rule 62-297.401, F.A.C. and Construction Permit 0570373-002-AC]

Method	Description of Method and Comments
1-4	Traverse Points, Velocity and Flow Rate, Gas Analysis, and Moisture Content
5	Determination of Particulate Matter Emissions from Stationary Sources
9	Visual Determination of the Opacity of Emissions from Stationary Sources

The above methods are described in 40 CFR 60, Appendix A, and 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.

C.10. Common Testing Requirements. Unless otherwise specified, tests shall be conducted in accordance with the requirements and procedures specified in Appendix TR, Facility-Wide Testing Requirements, of this permit. [Rule 62-297.310, F.A.C.]

C.11. Annual Compliance Tests Required. During each federal fiscal year (October 1st to September 30th), Emission Units 011 and 016 shall be tested to demonstrate compliance with the emissions standards for opacity. A visible emissions test indicating no visible emissions (5 percent opacity) may be submitted in lieu of a particulate stack test for these emissions units; however, failure to demonstrate compliance with the 5% opacity standard may require formal PM stack testing using EPA Method 5 to ensure compliance with Specific Condition C.5. [Rules 62-297.310(7)(a)4., 62-297.620(4), and 62-296.711, F.A.C.]

C.12. Operating Rate During Testing. Testing of emissions shall be conducted with the source operating at capacity. Capacity is defined as 90-100% of the rated capacity of 20,000 lbs/hr for Silo No. 6 and the maximum truck loading rate of 40,000 lbs/hr for the loading spout. The loading rates are considered maximum average rates, so some fluctuation in instantaneous loading may occur. If it is impracticable to test at capacity, then the source may be tested at less than capacity; in this case subsequent source operation is limited to 110% of the test load until a new test is conducted. Once the unit is so limited, then operation at higher capacities is allowed for no more than fifteen days for purposes of additional compliance testing to regain the rated capacity in the permit, with prior notification to the Environmental Protection Commission of Hillsborough County. Failure to submit the input rates and actual operating conditions may invalidate the test. [Permit 0570373-002-AC and Rule 62-297.310(2), F.A.C.]

C.13. The required minimum period of observation for an EPA Method 9 compliance test shall be thirty (30) minutes. Observations should be made at the point of highest opacity from the operation. The opacity test observation period shall include the period during which the emissions unit is operating at capacity as defined in Specific Condition C.12. Exceptions to these requirements are as follows: [Rules 62-297.310(4)(a) and 62-4.070(3), F.A.C.]

a. The minimum observation period for opacity tests conducted by the Environmental Protection Commission of Hillsborough County to verify the day-to-day continuing compliance of a unit or activity shall be twelve minutes.

Monitoring, Recordkeeping, and Reporting Requirements

C.14. Operation and Maintenance Plan. The following Operation and Maintenance (O&M) Plan, including all the referenced design parameters, monitoring requirements, and recordkeeping requirements, is an enforceable condition of this permit. In order to demonstrate compliance with Specific Condition Nos. C.4. and C.5., the permittee shall maintain records of operations as specified in the following O&M Plan: [Rules 62-296.700(4) & (6) and 62-213.440(1)(b), F.A.C.]

Operation and Maintenance Plan for Particulate Control

a. Source Designator:
    (1) Truck Loading Retractable Spout
        (i) Manufacturer: Pebco
        (ii) Model: CLS-22
    (2) Baghouse Air Filter
        (i) Manufacturer: Kice
        (ii) Model: VS 36-10 Venturi-Jet
        (iii) Design Flow: 3,150 dscfm
        (iv) Efficiency Rating: 99%
        (v) Maximum Pressure Drop: 8 inches H_2O
        (vi) Air to Cloth Ratio: 7.5:1
        (vii) Bag Weave: 420 sq. ft. @ 12 oz./sq. yd.
        (viii) Bag Material: Polyester Felt
        (ix) Bag Cleaning Conditions: Pulse Jet every 180 seconds

(x) Gas Flow Rate: 3150 scfm
(xi) Gas Temperature: Ambient
(xii) Stack Height Aboveground: 20 ft.
(xiii) Exit dimensions: 12 in. x 12 in.
(xiv) Exit Velocity: 3150 ft/min
(xv) Water Vapor Content: Ambient
(xvi) Process Controlled by Baghouse: Bin Loading
(xvii) Material Handling Rate: 10 tons/hour silo loading; 40,000 lbs/hour truck loading
(xviii) Operation Schedule: 8,760 hrs/yr

b. The following observations, procedures, and checks shall be performed at the frequency specified.

<u>For Retractable Spout</u>

(1) Daily
  (i) Observe operation of spout during truck loading for proper operation.
(2) Monthly
  (i) Record the monthly dry sludge processed and maintain 12-month rolling average.
(2) Quarterly
  (i) Inspect lifting cable assembly.
  (ii) Inspect loading spout and apron for wear.
(3) Annually
  (i) Perform electrical and mechanical inspections.

<u>For Baghouse Air Filter</u>

(4) Daily
  (i) Record Baghouse Air Filter differential pressure.
  (ii) Record reverse air pressure.
  (iii) Observe system, listening for leaks and proper operation.
  (iv) Perform and record the results of an instantaneous visual emissions determination.
(5) Weekly
  (i) Check bag cleaning sequence for proper operation.
  (ii) Check differential pressure indicating equipment for plugged lines.
(6) Quarterly
  (i) Inspect filters--clean and replace as necessary.
  (ii) Inspect airlock for leaks and vibration.
  (iii) Inspect fan for corrosion and material build-up.
(7) Annually
  (i) Lubricate bearings on blower and air lock.
  (ii) Perform electrical and mechanical inspections and maintenance per manufacturer's specifications.

c. Records: Records of inspections, maintenance, and performance parameters shall be retained for a minimum of five years and shall be made available to the Environmental Protection Commission of Hillsborough County upon request.

d. Deviations: If at any time any of the operating restriction of (a)(2)(v) of this specific condition is not met, immediate corrective action shall be taken and a deviation plan shall be submitted within 30 days to the Environmental Protection Commission of Hillsborough County. A single observation of visible emissions pursuant to (b)(4)(iv) shall also trigger the need for corrective actions and the submission of a deviation plan.

The specific conditions in this section apply to the following emissions unit(s):

EU No.	Brief Description
-012	Four Diesel Non-Emergency Generators controlled by Oxidation Catalysts

Four diesel-fired generators that produce standby emergency power in the event of a power outage, or provide supplemental power generation to the electric power grid for Tampa Electric Company (non-emergency operation). Each generator is a 2 MW generator equipped with a Caterpillar 3516 DITA engine. The compression ignition engines, rated at 2,847 bhp, are fired on No. 2 diesel fuel at a maximum rate of 137.5 gallons/hr. These generators were installed between 1993 and 1994. Each generator is equipped with a crankcase ventilation kit to capture any non-exhaust emissions from the engines. Also, each engine also has a catalyst, manufactured by Johnson Matthey, which is used to comply with the 70% CO reduction requirement of 40 CFR 63, Subpart ZZZZ.

Essential Potential to Emit (PTE) Parameters

D.1. Permitted Capacity. The maximum fuel usage shall not exceed the following: [Rules 62-4.160(2), 62-204.800, 62-210.200(PTE), and Permit Nos. 0570373-006-AC and 0570373-020-AC]

EU No.	Gallons/12-Consecutive Month Period	Fuel Type
-012	115,000	No. 2 Diesel Fuel

D.2. The permittee shall comply with the following fuel requirements: [40 CFR 63.6604, Rule 62-4.070(3), F.A.C. and Permit No. 0570373-020-AC]

a. The sulfur content of the No. 2 diesel fuel shall not exceed 0.05% by weight.
b. Beginning January 1, 2015, the sulfur content of the No. 2 diesel fuel burned shall not exceed 15 ppm by weight (Ultra Low Sulfur Diesel), except that higher sulfur content fuel that has already been purchased prior to January 1, 2015 may be used until depleted.
c. Cetane or Aromatic Content: A minimum cetane index of 40, or a maximum aromatic content of 35 volume percent.
d. Compliance with the fuel requirements shall be demonstrated by the Certificate of Fuel Analysis from the fuel supplier.

D.3. Hours of Operation. This emission unit may operate as needed to off-set power shortages during the year and provide supplemental power to the external power grid without restrictions on hours, but must abide by the maximum fuel usage limit from Specific Condition No. D.1. [Rule 62-210.200(PTE), F.A.C. and Permit No. 0570373-020-AC]

D.4. Emissions Unit Operating Rate Limitation After Testing. See the related testing provisions in Appendix TR, Facility-wide Testing Requirements. [Rule 62-297.310(2), F.A.C.]

Emission Limitations and Standards

Permitting Note: The attached Table 1, Summary of Air Pollutant Standards, summarizes information for convenience purposes only. This table does not supersede any of the terms or conditions of this permit.

D.5. Visible Emissions. Visible emissions from each generator shall not exceed 20% opacity. [Rule 62-296.320(4)(b)1., F.A.C. and Permit Nos. 0570373-006-AC and 0570373-020-AC]

D.6. CO Emissions. The facility shall install, operate, and maintain oxidation catalysts on the four (4) diesel generators in order to achieve a minimum of 70% reduction in CO emissions. Alternatively, the facility may limit the concentration of CO in the diesel generator exhausts to 23 ppmvd at 15 percent oxygen. [40 CFR 63.6603(a), Rule 62-4.070(3), F.A.C. and Permit No. 0570373-020-AC]

Excess Emissions

D.7. Excess Emissions Allowed. Excess emissions resulting from malfunction shall be permitted provided that best operational practices to minimize emissions are adhered to and the duration of excess emissions shall be minimized but in no case exceed two hours in any 24 hour period unless specifically authorized by the Department for longer duration. [Rule 62-210.700(1), F.A.C.]

D.8. Excess Emissions Allowed. Excess emissions resulting from startup or shutdown shall be permitted provided that best operational practices to minimize emissions are adhered to and the duration of excess emissions shall be minimized. [Rule 62-210.700(2), F.A.C.]

D.9. You must be in compliance with the emission limitations, operating limitations, and other requirements under 40 CFR 63, Subpart ZZZZ that apply to you at all times. At all times you must operate and maintain any affected source, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. The general duty to minimize emissions does not require you to make any further efforts to reduce emissions if levels required by this standard have been achieved. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Administrator which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source. [40 CFR 63.6605, Rule 62-4.070(3), F.A.C., and Permit No. 0570373-020-AC]

D.10. Minimize the engine's time spent at idle during startup and minimize the engine's startup time to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes, after which time the emission standards applicable to all times other than startup apply. [40 CFR 63.6625(h) and Rule 62-4.070(3), F.A.C.]

Test Methods and Procedures

Permitting Note: The attached Table 2, Summary of Compliance Requirements, summarizes information for convenience purposes only. This table does not supersede any of the terms or conditions of this permit.

D.11. Test Methods. Required tests shall be performed in accordance with the following reference methods. [Rule 62-297.401, F.A.C., and Permit Nos. 0570373-006-AC and 0570373-020-AC]

Method	Description of Method and Comments
1	Sample and velocity traverses for stationary sources
1A	Sample and velocity traverses for stationary sources with small stacks or ducts
3	Gas analysis for the determination of dry molecular weight
3A	Determination of Oxygen and Carbon Dioxide Concentrations in Emissions From Stationary Sources (Instrumental Analyzer Procedure)
3B	Gas analysis for the determination of emission rate correction factor or excess air
4	Determination of moisture content in stack gases
9	Visual Determination of the Opacity of Emissions from Stationary Sources
10	Determination of carbon monoxide emissions from stationary sources

The above methods are described in 40 CFR 60, Appendix A, and 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.

D.12. Common Testing Requirements. Unless otherwise specified, tests shall be conducted in accordance with the requirements and procedures specified in Appendix TR, Facility-Wide Testing Requirements, of this permit. [Rule 62-297.310, F.A.C.]

D.13. Annual Compliance Tests Required. During each federal fiscal year (October 1st to September 30th), each generator engine shall be tested to demonstrate compliance with the emissions standards for opacity in accordance with EPA Method 9. [Rule 62-297.310(7)(a)4., F.A.C., Ch. 1-3.52, Rules of the EPCHC, and Permit No. 0570373-006-AC]

D.14. Test each generator engine for CO emissions every 8,760 hours or 3 years, whichever comes first, as follows. [40 CFR 63.6615, Rule 62-4.070(3), F.A.C. and Permit No. 0570373-020-AC]

a. If you are complying with the requirement to reduce CO emissions by 70% or more, you shall:

	Using . . .	According to the following requirements . . .
i. Measure the O_2 at the inlet and outlet of the control device; and	(1) Method 3 or 3A or 3B of 40 CFR Part 60, Appendix A	(a) Measurements to determine O_2 must be made at the same time as the measurements for CO concentration.
ii. Measure the CO concentration at the inlet and the outlet of the control device	(1) Method 10 of 40 CFR Part 60, Appendix A	(a) The CO concentration must be at 15 percent O_2, dry basis.

b. If you are complying with the requirement to limit the concentration CO in the stationary RICE exhaust to 23 ppmvd at 15 percent oxygen, you shall:

	Using . . .	According to the following requirements . . .
i. Select the sampling port location and the number of traverse points; and	(1) Method 1 or 1A of 40 CFR Part 60, Appendix A	The sampling site must be located at the outlet of the control device.
ii. Determine the O_2 concentration of the stationary RICE exhaust at the sampling port location; and	(1) Method 3 or 3A or 3B of 40 CFR Part 60, Appendix A	(a) Measurements to determine O_2 concentration must be made at the same time and location as the measurements for CO concentration.
iii. Measure moisture content of the stationary RICE exhaust at the sampling port location; and	(1) Method 4 of 40 CFR part 60, Appendix A	(a) Measurements to determine moisture content must be made at the same time and location as the measurements for CO concentration.
iv. Measure CO concentration at the exhaust of the stationary RICE.	(1) Method 10 of 40 CFR Part 60, Appendix A	(a) CO concentration must be at 15 percent O_2, dry basis. Results of this test consist of the average of the three 1-hour runs.

D.15. Operating Rate During Testing. Testing of emissions shall be conducted with the source operating at capacity. Capacity is defined as 90-100% of the rated capacity of 137.5 gallons per hour per generator. If it is impracticable to test at capacity, then the source may be tested at less than capacity; in this case subsequent source operation is limited to 110% of the test load until a new test is conducted. Once the unit is so limited, then operation at higher capacities is allowed for no more than fifteen days for purposes of additional compliance testing to regain the rated capacity in the permit, with prior notification to the Environmental Protection Commission of Hillsborough County. Failure to submit the input rates, load levels, monitored parameters (catalyst inlet temperature and pressure drop), and actual operating conditions may invalidate the test [Rule 62-297.310(2), F.A.C. and Permit No. 0570373-020-AC]

D.16. Required Stack Sampling Facilities. Sampling facilities include sampling ports, work platforms, access to work platforms, electrical power, and sampling equipment support. All stack sampling facilities must meet any Occupational Safety and Health Administration (OSHA) Safety and Health Standards described in 29 CFR Part 1910, Subparts D and E. [40 CFR 63.6612 and 63.6615; Rule 62-297.310, F.A.C., and Permit No. 0570373-020-AC]

D.17. The required minimum period of observation for an EPA Method 9 compliance test shall be thirty (30) minutes. The opacity test observation period shall include the period during which the emissions unit is operating at capacity as defined in Specific Condition D.15. Exceptions to these requirements are as follows: [Rule 62-297.310(4)(a), F.A.C. and Ch. 1-3.52, Rules of the EPCHC,]

a. The minimum observation period for opacity tests conducted by the Environmental Protection Commission of Hillsborough County to verify the day-to-day continuing compliance of a unit or activity shall be twelve minutes.

Monitoring, Recordkeeping, and Reporting Requirements

D.18. Other Reporting Requirements. See Appendix RR, Facility-Wide Reporting Requirements, for additional reporting requirements.

D.19. Oxidation Catalyst Parameter Monitoring. The permittee shall comply will the following catalyst parameter monitoring requirements: [40 CFR 63.6603(a) and Permit No. 0570373-020-AC]

a. Maintain the catalyst so that the pressure drop across the catalyst does not change by more than 2 inches of water from the pressure drop across the catalyst that was measured during the initial performance test; and
b. Maintain the temperature of your stationary RICE exhaust so that the catalyst inlet temperature is greater than or equal to 450 °F and less than or equal to 1,350 °F.

D.20. Install and maintain a closed crankcase ventilation system that prevents crankcase emissions from being emitted to the atmosphere [40 CFR 63.6625(g) and Rule 62-4.070(3), F.A.C.]

D.21. Monitoring Procedures. The catalyst parameter monitoring shall be conducted according to the following procedures: [40 CFR 63.6640 and 63.6625(b), Rule 62-4.070(3), F.A.C., and Permit No. 0570373-020-AC]

a. Collect the catalyst inlet temperature data according to 40 CFR 63.6625(b);
b. Reduce the data to 4-hour rolling averages;
c. Maintain the 4-hour rolling averages within the operating limitations for the catalyst inlet temperature; and
d. Measure the pressure drop across the catalyst once per month and demonstrate that the pressure drop across the catalyst is within the operating limitation established during the performance test.

D.22. Fuel Oil Analysis. A certificate of fuel oil analysis from the fuel supplier shall be maintained for each shipment of diesel fuel [Rule 62-4.070(3), F.A.C. and Permit 0570373-020-AC]

D.23. Recordkeeping. The permittee shall keep the following records in readily accessible hard copy or electronic form for at least 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record: [40 CFR 63.6645 and 63.6660 and Permit No. 0570373-020-AC]

a. Monthly amount of fuel used
b. Monthly total of the hours of operation of each engine
c. Rolling twelve month totals of a. and b. above

d. A copy of each notification and report that you submitted to comply with 40 CFR 63, Subpart ZZZZ, including all documentation supporting any Initial Notification or Notification of Compliance Status;
e. Records of the occurrence and duration of each malfunction of operation (i.e., process equipment) or the air pollution control and monitoring equipment;
f. Records of performance tests and CMS performance evaluations;
g. Records of all required maintenance performed on the air pollution control and monitoring equipment;
h. Records of actions taken during periods of malfunction to minimize emissions, including corrective actions to restore malfunctioning process and air pollution control and monitoring equipment to its normal or usual manner of operation.
i. Each period during which a CMS is malfunctioning or inoperative (including out-of-control periods);
j. All required measurements needed to demonstrate compliance with a relevant standard (including, but not limited to, 15-minute averages of CMS data, raw performance testing measurements, and raw performance evaluation measurements, that support data that the source is required to report);
k. All results of performance tests and CMS performance evaluations;
l. All measurements as may be necessary to determine the conditions of performance tests and performance evaluations;
m. All CMS calibration checks;
n. All adjustments and maintenance performed on CMS; and,
o. Records of all monitoring data required to be recorded under Specific Condition Nos. D.19. and D.21.

Other Requirements

D.24. Federal 40 CFR 63 NESHAP Subpart ZZZZ Requirements. In addition to the specific conditions in this permit, the existing stationary engines (EU ID No. 012) are required to comply with all of the applicable requirements of 40 CFR 63 Subpart ZZZZ (National Emissions Standards for Hazardous Air Pollutants (NESHAP) for Stationary Reciprocating Internal Combustion Engines (RICE), which is attached to this permit. [40 CFR 63 Subpart ZZZZ, Rules 62-204.800, F.A.C. and 62-4.070(3), F.A.C. and Permit No. 0570373-020-AC]

D.25. Federal 40 CFR 63 NESHAP Subpart A - General Provisions. The permittee shall comply with all of the applicable requirements of 40 CFR 63 Subpart A, General Provisions, which is attached to this permit. [40 CFR 63 Subpart A, Rules 62-204.800, F.A.C. and 62-4.070(3), F.A.C. and Permit No. 0570373-020-AC]

The specific conditions in this section apply to the following emissions units:

EU No.	Brief Description
-017	Engine No. 1 with nominal 2.9 MW generator: 4073 brake hp natural gas fired Waukesha Model 16V-AT27GL engine coupled to a nominal 2.9 MW electrical generator. Maximum heat input rate is 27.2 MMBtu/hr (HHV) based on a natural gas heating value of 1,025 Btu/cf.
-018	Engine No. 2 with nominal 2.9 MW generator: 4073 brake hp natural gas fired Waukesha Model 16V-AT27GL engine coupled to a nominal 2.9 MW electrical generator. Maximum heat input rate is 27.2 MMBtu/hr (HHV) based on a natural gas heating value of 1,025 Btu/cf.

The identification of these two generators was changed from Engines 7 and 8 to Engines 1 and 2 at the request of the permittee. In the heat recovery mode, Engine 2 only exhausts its gas to Sludge Dryer Train No. 2 and Engine 1 only exhausts its gas to Sludge Dryer Train No. 3.

[Note: These emissions units are subject to the requirements for Prevention of Significant Deterioration pursuant to Rule 62-212.400, F.A.C., for NO_x and of the state rules as indicated in this permit. Emissions of CO and VOC are limited to ensure that these emission units will not exceed the PSD significance level for these pollutants.]

Essential Potential to Emit (PTE) Parameters

E.1. Permitted Capacity. The maximum allowable heat input rate is as follows: [Rules 62-4.160(2), 62-204.800, 62-210.200(PTE), and Air Construction Permit No. 0570373-009-AC]

EU No.	MMBtu/hr Heat Input	Fuel Type
-017	27.2	Natural Gas
-018	27.2	Natural Gas

E.2. Methods of Operation. [Rule 62-213.410, F.A.C., Rule 62-4.160(2), F.A.C.]

a. *Normal mode*: Emissions from the engines are vented directly to the atmosphere through a stack.
b. *Heat Recovery mode*: Emissions from the engines are ducted to the sludge drying train(s) to provide supplemental heat input for the sludge drying process. Heat for the sludge drying operation is provided by waste heat generated from Engine No. 1 or Engine No. 2. The engines may provide all or a portion of the heat required to run the dryers.

E.3. Hours of Operation. Combined operation of these emissions units shall not exceed 13,000 hours/12 consecutive month period under either the direct venting of engine exhausts to the atmosphere or heat recovery mode of operation or any combination thereof. [Rule 62-210.200, F.A.C., Definitions-Potential to Emit (PTE), and limitation on PTE to avoid PSD for CO and VOC; Revised (07/01) with PSD-FL-291A]

E.4. Emissions Unit Operating Rate Limitation After Testing. See the related testing provisions in Appendix TR, Facility-wide Testing Requirements. [Rule 62-297.310(2), F.A.C.]

Emission Limitations and Standards

Permitting Note: The attached Table 1, Summary of Air Pollutant Standards, summarizes information for convenience purposes only. This table does not supersede any of the terms or conditions of this permit.

E.5. Visible Emissions. Visible emissions from each engine shall not exceed 20% opacity. [Rule 62-296.320, F.A.C. and Construction Permit 0570373-010-AC]

E.6. NO_X Emissions. Nitrogen oxide emissions from each engine shall not exceed 14.0 lbs/hour, based on a 3-hour averaging time. NO_X emissions are to be reported as NO_2. [Rules 62-4.070(3) and 62-212.400, F.A.C., BACT (for NOx), and Permit 0570373-010-AC]

E.7. CO Emissions. Carbon Monoxide emissions from each engine shall not exceed 14.9 lbs/hour, based on a 3-hour averaging time. [Rules 62-4.070(3) and 62-212.400, F.A.C., and Permit 0570373-010-AC]

E.8. VOC Emissions. Volatile Organic Compound emissions from each engine shall not exceed 5.0 lbs/hour, based on a 3-hour averaging time [Rules 62-4.070(3) and 62-212.400, F.A.C., and Permit 0570373-010-AC]
[Permitting Note: The mass emission limits correspond to the following emissions at full load in units of g/bhp-hr: VOC, 0.55, NOx, 1.56, CO, 1.66. This condition and the hours of operation limitation will effectively limit VOC, NOx, and CO emissions to 32.5, 91.0 and 96.8 tons per year, respectively.]

E.9. Emissions Reductions: By October 19, 2013, the permittee shall either: [40 CFR 63.6603]

a. Limit the concentration of CO in the stationary RICE exhausts to 47 ppmvd at 15 percent O_2; or
b. Reduce CO emissions by 93 percent or more.

E.10. During periods of startup the permittee shall minimize the engine's time spent at idle and minimize the engine's startup time to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes, after which time the non-startup emission limitations apply. [40 CFR 63.6625(h)]

Excess Emissions

Rule 62-210.700 (Excess Emissions), F.A.C. cannot vary any requirement of an NSPS, NESHAP or Acid Rain program provision.

E.11. Excess Emissions Allowed. Excess emissions resulting from malfunction shall be permitted provided that best operational practices to minimize emissions are adhered to and the duration of excess emissions shall be minimized but in no case exceed two hours in any 24 hour period unless specifically authorized by the Department for longer duration. [Rule 62-210.700(1), F.A.C.]

E.12. Excess Emissions Allowed. Excess emissions resulting from startup or shutdown shall be permitted provided that best operational practices to minimize emissions are adhered to and the duration of excess emissions shall be minimized. [Rule 62-210.700(2), F.A.C.]

E.13. Excess Emissions Prohibited. Excess emissions which are caused entirely or in part by poor maintenance, poor operation, or any other equipment or process failure which may reasonably be prevented during startup, shutdown or malfunction shall be prohibited. [Rule 62-210.700(4), F.A.C.]

Test Methods and Procedures

Permitting Note: The attached Table 2, Summary of Compliance Requirements, summarizes information for convenience purposes only. This table does not supersede any of the terms or conditions of this permit.

E.14. Test Methods. Required tests shall be performed in accordance with the following reference methods: [Rules 62-4.070(3), 62-212.400, 62-297.340, and 62-297.401, F.A.C.]

Method	Description of Method and Comments
1-4	Traverse Points, Velocity and Flow Rate, Gas Analysis, and Moisture Content
7 or 7E	Determination of Nitrogen Oxide Emissions from Stationary Sources
9	Visual Determination of the Opacity of Emissions from Stationary Sources
10	Determination of Carbon Monoxide Emissions from Stationary Sources
18	Measurement of Gaseous Organic Compound Emissions by Gas Chromatography (optional)[1]
25 or 25A	Method for Determining Gaseous Organic Concentrations

[1]Method 18 may be used to determine the methane content which may be excluded from the total VOC measured using Method 25 or 25A.
The above methods are described in 40 CFR 60, Appendix A, and 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.

E.15. Common Testing Requirements. Unless otherwise specified, tests shall be conducted in accordance with the requirements and procedures specified in Appendix TR, Facility-Wide Testing Requirements, of this permit. [Rule 62-297.310, F.A.C.]

E.16. Annual Compliance Tests Required. During each federal fiscal year (October 1st to September 30th), each engine shall be tested to demonstrate compliance with the emissions standards for NO_X, CO, and opacity. Compliance with the emission limits for NO_X and CO shall be demonstrated by compliance tests conducted annually on both emissions units in the heat recovery mode of operation. The testing location shall be the sample ports in the ducts between the engines and the sludge dryer trains. Compliance with the opacity limit shall be demonstrated annually by EPA Method 9 while the engines are being vented directly to the atmosphere. The required minimum period of observation for the EPA Method 9 compliance test shall be thirty (30) minutes. [Rule 62-297.310(4) and (7), F.A.C. and Permit No. 0570373-010-AC]

E.17. Compliance Tests Prior To Renewal. Compliance tests shall be performed on each engine for VOC once every 5 years in the heat recovery mode of operation. The test shall occur prior to obtaining a renewed operating permit to demonstrate compliance with the emission limit in Specific Condition E.8. [Rules 62-210.300(2)(a) and 62-297.310(7)(a), F.A.C.]

E.18. Operating Rate During Testing. Testing of emissions shall be conducted with the source operating at capacity. Capacity is defined as 90-100% of the rated capacity of 27.2 MMBtu/hr per engine. If it is impracticable to test at capacity, then the source may be tested at less than capacity; in this case subsequent source operation is limited to 110% of the test load until a new test is conducted. Once the unit is so limited, then operation at higher capacities is allowed for no more than fifteen days for purposes of additional compliance testing to regain the rated capacity in the permit, with prior notification to the Environmental Protection Commission of Hillsborough County. Failure to submit the input rates, actual operating conditions may invalidate the test. [Permit 0570373-010-AC and Rule 62-297.310(2), F.A.C.]

E.19. The required minimum period of observation for a EPA Method 9 compliance test shall be thirty (30) minutes. The opacity test observation period shall include the period during which the emissions unit is operating at capacity as defined in Specific Condition E.18. Exceptions to these requirements are as follows: [Rule 62-297.310(4)(a), F.A.C.]

a. The minimum observation period for opacity tests conducted by the Environmental Protection Commission of Hillsborough County to verify the day-to-day continuing compliance of a unit or activity shall be twelve minutes.

Monitoring, Recordkeeping, and Reporting Requirements

E.20. Other Reporting Requirements. See Appendix RR, Facility-Wide Reporting Requirements, for additional reporting requirements.

E.21. Monthly Records: The owner or operator shall equip each engine with a run hours meter and shall maintain monthly records of hours of operation, rolling 12-month total hours of operation, and fuel consumption for each emission unit no later than ten days after the end of each month. [Rule 62-4.070(3), F.A.C.]

E.22. At all times the permittee shall operate and maintain any affected source, including associated air pollution control equipment and monitoring equipment, in a manner consistent with the manufacturer's emission-related operation and maintenance instructions and good air pollution control practices for minimizing emissions. The general duty to minimize emissions does not require you to make any further efforts to reduce emissions if the levels required have been achieved. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Administrator which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source. [40 CFR 63.6605(b)]

E.23. The permittee shall keep the following records: [40 CFR 63.6655]

a. A copy of each notification and report that was submitted, including all documentation supporting any Initial Notification or Notification of Compliance Status, according to the requirement in §63.10(b)(2)(xiv).
b. Records of the occurrence and duration of each malfunction of operation (i.e., process equipment).
c. Records of performance tests and performance evaluations as required in §63.10(b)(2)(viii).
d. Records of actions taken during periods of malfunction to minimize emissions in accordance with §63.6605(b), including corrective actions to restore malfunctioning process and air pollution control and monitoring equipment to its normal or usual manner of operation.

Other Requirements

E.24. Federal 40 CFR 63 NESHAP Subpart ZZZZ Requirements – In addition to the Specific Conditions listed in this permit, the existing stationary engines, EU ID No. 017 and 018, are required to comply with all the applicable requirements of NESHAP 40 CFR 63 Subpart ZZZZ (National Emissions Standards for Hazardous Air Pollutants (NESHAP) for Stationary Reciprocating Internal Combustion Engines (RICE)), which is attached to this permit. The compliance date for EU 017 and 018 is October 19, 2013. [40 CFR 63 Subpart ZZZZ, Rule 62-204.800, F.A.C., and Rule 62-4.070(3), F.A.C.]

The specific conditions in this section apply to the following emissions unit:

EU No.	Brief Description
-019	Methanol Storage Tank

A methanol tank is used within the wastewater processing section of the facility as feedstock for the biological denitrification stage of the water treatment process. The fixed roof storage tank was constructed in 1978 with a volume of approximately 95,000 gallons. The tank is typically loaded on a daily to weekly basis by tanker truck or railcar. Methanol is considered a VOC and a HAP, and emissions are generated by evaporative losses (breathing and working losses) through the venting of displaced air through the "J" neck vent located on the roof of the tank. Emissions are also generated from evaporation of methanol in the denitrification stage and from the fugitive losses of handling methanol through the piping, valves, flanges etc. Potential emissions from the tank have been determined to be greater than the insignificant designation threshold from Rule 62-213.430(6), F.A.C. VOC and HAP emissions, which includes methanol, will be controlled by limiting the product throughput and submerged filling pursuant to Rule 62-296.320, F.A.C., General Pollutant Emission Limiting Standards.

[Note: This emission unit is not subject to 40 CFR 60, Subpart Kb since the tank was constructed prior to 1984 and no known modifications have occurred since this date. This emission unit is regulated under Rule 62-296.320, F.A.C., General Pollutant Emission Limiting Standards.]

Essential Potential to Emit (PTE) Parameters

F.1. Permitted Capacity. The maximum allowable methanol throughput rate is as follows: [Rules 62-4.160(2), 62-210.200(PTE), F.A.C., and Air Construction Permit No. 0570373-015-AC.]

EU No.	Gallons/12-Consecutive Month Period
-019	3,000,000

F.2. Hours of Operation. This emissions units may operate continuously (8,760 hours/year). [Rule 62-210.200(PTE), F.A.C. and Air Construction Permit No. 0570373-015-AC.]

Emission Limitations and Standards

Permitting Note: The attached Table 1, Summary of Air Pollutant Standards, summarizes information for convenience purposes only. This table does not supersede any of the terms or conditions of this permit.

F.3. In order to establish the facility as a synthetic non-Title V source for Hazardous Air Pollutants (HAP), the HAP, as defined in Rule 62-210.200, F.A.C., emissions shall be less than 10 tons in any 12 consecutive month period for any individual HAP, and less than 25 tons in any 12 consecutive month period for any combination of HAPs. [Rule 62-210.200, F.A.C., Definitions-Potential to Emit (PTE), Major Source of Air Pollution, and Synthetic Non-Title V Source; and Permit No. 0570373-015-AC]

Work Practice Standards

F.4. The permittee shall comply with the following work and operational practice requirements: [Rules 62-296.320(1)(a) and 62-4.070(3), F.A.C. and Air Construction Permit No. 0570373-015-AC]

a. The tank shall be maintained to retain the structure, roof type, and color characteristics described in the application.
b. Utilize submerged filling techniques (bottom loading) to load the storage tank.
c. The tank shall be clearly identified to denote product contained within.

Test Methods and Procedures

Permitting Note: The attached Table 2, Summary of Compliance Requirements, summarizes information for convenience purposes only. This table does not supersede any of the terms or conditions of this permit.

F.5. Common Testing Requirements. Unless otherwise specified, tests shall be conducted in accordance with the requirements and procedures specified in Appendix TR, Facility-Wide Testing Requirements, of this permit. [Rule 62-297.310, F.A.C.]

F.6. The permittee shall annually estimate the Standing (Breathing) loss and Working loss for the tank using the most recent version of the Tanks Program and report the losses as a part of the Annual Operating Report and the record keeping of Specific Condition F.8. [Rules 62-210.370(3) and 62-4.070(3), F.A.C., and Permit Nos. 0570373-014-AC and 0570373-015-AC]

F.7. The permittee shall annually perform a visual inspection of the tank, associated piping system and pump for rust, cracks or leaks. Records of the inspections including any corrective action taken shall be maintained for a period of at least 5 years from the date of the inspection. [Rules 62-213.440(1)(b) and 62-4.070(3), F.A.C.]

Recordkeeping and Reporting Requirements

F.8. Compliance with emission limitations/restrictions of Specific Condition Nos. F.1. and F.3. shall be demonstrated, in part, by use of monthly records commencing on the effective date of this permit. The records shall be retained at least for the most recent five year period. The record shall be made available to the Environmental Protection Commission of Hillsborough County, the Department, or federal air pollution agency upon request. The records shall include, but are not limited to, the following: [Rules 62-213.440(1)(b)1.b. and 62-4.070(3), F.A.C.]

a. Month, year
b. Material throughput (gal)
c. Rolling 12-month total of the methanol handled through the tank

F.9. Other Reporting Requirements. See Appendix RR, Facility-Wide Reporting Requirements, for additional reporting requirements.

The specific conditions in this section apply to the following emissions unit:

EU No.	Brief Description
-020	Five Digester Generator Engines

Sludge generated in the wastewater treatment process is fermented in the heated sludge digester tanks. Anaerobic bacteria aid in the sludge decomposition process for a period of time until all harmful microorganisms contained in the sludge are destroyed. The sludge decomposition process generates digester gas (a mixture of approximately 60% methane, 30% CO_2, nitrogen, and other impurities) which is fed to the five 0.5 MW digester gas fired generator RICE, which generate a portion of the electricity required to run the wastewater treatment plant. The five digester generators are not equipped with add-on controls, so the emissions are vented directly to the atmosphere. The engines are five Waukesha VHP-L7042 GU engines, 4 stroke spark ignition, rated at 670.5 bhp, fired exclusively on digester gas. The maximum total heat input rate is 5.6 MMBtu/hr based on a digester gas heating value of 621 Btu/cf and a fuel flow rate of 9,000 cf/hr.

This emission unit is subject to 40 CFR 63 Subpart ZZZZ, National Emissions Standards for Hazardous Air Pollutants (NESHAP) for Stationary RICE. This emission unit is not subject to 40 CFR 60, Subpart IIII or JJJJ since the engines were constructed in between 1984 and 1987, and there are no known modifications since then. Emissions are controlled by operation and maintenance practices and minimizing emissions during startup, shutdown, and malfunction.

Essential Potential to Emit (PTE) Parameters

G.1. Permitted Capacity. The maximum allowable heat input rate is as follows: [Rules 62-4.160(2) and 62-210.200(PTE), F.A.C., and Permit No. 0570373-019-AC]

EU No.	MMBtu/hr Heat Input	MMCF/12-Consecutive Month Period	Fuel Type
-020	5.6	78.8	Digester Gas

G.2. Hours of Operation. These emissions units may operate continuously (8,760 hours/year). [Rule 62-210.200(PTE), F.A.C. and Permit No. 0570373-019-AC]

G.3. Emissions Unit Operating Rate Limitation After Testing. See the related testing provisions in Appendix TR, Facility-wide Testing Requirements. [Rule 62-297.310(2), F.A.C.]

Emission Limitations and Standards

Permitting Note: The attached Table 1, Summary of Air Pollutant Standards, summarizes information for convenience purposes only. This table does not supersede any of the terms or conditions of this permit.

G.4. Visible Emissions. Visible emissions from the digester generators shall not exceed 20% opacity. [Rule 62-296.320(4)(b)1., F.A.C. and Permit 0570373-019-AC]

G.5. [Reserved].

Excess Emissions
Rule 62-210.700 (Excess Emissions), F.A.C. cannot vary any requirement of an NSPS, NESHAP or Acid Rain program provision.

G.6. Excess Emissions Allowed. Excess emissions resulting from malfunction shall be permitted provided that best operational practices to minimize emissions are adhered to and the duration of excess emissions shall be minimized but in no case exceed two hours in any 24 hour period unless specifically authorized by the Department for longer duration. [Rule 62-210.700(1), F.A.C.]

G.7. Excess Emissions Allowed. Excess emissions resulting from startup or shutdown shall be permitted provided that best operational practices to minimize emissions are adhered to and the duration of excess emissions shall be minimized. [Rule 62-210.700(2), F.A.C.]

G.8. Excess Emissions Prohibited. Excess emissions which are caused entirely or in part by poor maintenance, poor operation, or any other equipment or process failure which may reasonably be prevented during startup, shutdown or malfunction shall be prohibited. [Rule 62-210.700(4), F.A.C.]

Test Methods and Procedures
Permitting Note: The attached Table 2, Summary of Compliance Requirements, summarizes information for convenience purposes only. This table does not supersede any of the terms or conditions of this permit.

G.9. Test Methods. Required tests shall be performed in accordance with the following reference methods:

Method	Description of Method and Comments
1-4	Traverse Points, Velocity and Flow Rate, Gas Analysis, and Moisture Content
7E	Determination of Nitrogen Oxide Emissions from Stationary Sources
9	Visual Determination of the Opacity of Emissions from Stationary Sources
10	Determination of Carbon Monoxide Emissions from Stationary Sources

The above methods are described in 40 CFR 60, Appendix A, and 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. [Rule 62-297.401, F.A.C. and Permit No. 0570373-019-AC]

G.10. Common Testing Requirements. Unless otherwise specified, tests shall be conducted in accordance with the requirements and procedures specified in Appendix TR, Facility-Wide Testing Requirements, of this permit. [Rule 62-297.310, F.A.C.]

G.11. Annual Compliance Tests Required. During each federal fiscal year (October 1st to September 30th), each digester generator shall be tested to demonstrate compliance with the emission standard for opacity. [Rule 62-297.310(7), F.A.C. and Permit No. 0570373-019-AC]

G.12. Operating Rate During Testing. Testing of emissions shall be conducted with the source operating at capacity. Capacity is defined as 90-100% of the rated capacity of 1.1 MMBtu/hr per engine, for a total of 5.6 MMBtu/hr. If it is impracticable to test at capacity, then the source may be tested at less than capacity; in this case subsequent source operation is limited to 110% of the test load until a new test is conducted. Once the unit is so limited, then operation at higher capacities is allowed for no more than fifteen days for purposes of additional compliance testing to regain the rated capacity in the permit, with prior notification to the Environmental Protection Commission of Hillsborough County. Failure to submit the input rates, actual operating conditions may invalidate the test. [Construction Permit 0570373-010-AC and Rule 62-297.310(2), F.A.C.]

G.13. The required minimum period of observation for a EPA Method 9 compliance test shall be thirty (30) minutes. The opacity test observation period shall include the period during which the emissions unit is operating at capacity as defined in Specific Condition G.12. Exceptions to these requirements are as follows: [Rule 62-297.310(4)(a), F.A.C.]

a. The minimum observation period for opacity tests conducted by the Environmental Protection Commission of Hillsborough County to verify the day-to-day continuing compliance of a unit or activity shall be twelve minutes.

Monitoring, Recordkeeping, and Reporting Requirements

G.14. Other Reporting Requirements. See Appendix RR, Facility-Wide Reporting Requirements, for additional reporting requirements.

G.15. The permittee shall maintain monthly records and 12-month rolling totals of the hours of operation and the digester gas fuel usage for the digester generators. [Rule 62-213.440(1)(b)1.b., F.A.C. and Permit No. 0570373-019-AC]

G.16. The following inspections and maintenance shall be conducted on the schedule specified: [40 CFR 63.6603 and Rule 62-4.070(3), F.A.C.]

a. Every 1,440 hours of operation or annually, whichever comes first:
   (1) Change engine oil and filter.
   (2) Replace engine intake air filter.
   (3) Inspect spark plugs and replace as necessary.
   (4) Inspect all hoses and belts and replace as necessary.
b. Annually
   (1) Conduct maintenance on the engine cooling system in accordance with the manufacturer's specifications.
   (2) Test all engine shut-down devices.

G.17. At all times the permittee shall operate and maintain any affected source, including associated air pollution control equipment and monitoring equipment, in a manner consistent with the manufacturer's emission-related operation and maintenance instructions and good air pollution control practices for minimizing emissions. The general duty to minimize emissions does not require you to make any further efforts to reduce emissions if the levels required have been achieved. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Administrator which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source. [40 CFR 63.6605 and 63.6640]

G.18. The permittee shall keep the following records: [40 CFR 63.6655]

a. A copy of each notification and report that was submitted, including all documentation supporting any Initial Notification or Notification of Compliance Status, according to the requirement in §63.10(b)(2)(xiv).
b. Records of the occurrence and duration of each malfunction of operation (i.e., process equipment).
c. Records of performance tests and performance evaluations as required in 40 CFR 63.10(b)(2)(viii).
d. Records of actions taken during periods of malfunction to minimize emissions in accordance with §63.6605(b), including corrective actions to restore malfunctioning process and air pollution control and monitoring equipment to its normal or usual manner of operation.

Other Requirements

G.19. Federal 40 CFR 63 NESHAP Subpart ZZZZ Requirements - The existing stationary engines in EU ID No. 020 are required to comply with all the applicable requirements of NESHAP 40 CFR 63 Subpart ZZZZ (National Emissions Standards for Hazardous Air Pollutants (NESHAP) for Stationary Reciprocating Internal Combustion Engines (RICE)), which is attached to this permit. The compliance date for EU 020 is October 19, 2013. [40 CFR 63 Subpart ZZZZ, Rule 62-204.800, F.A.C., and Rule 62-4.070(3), F.A.C.]

SECTION IV. APPENDICES.

The Following Appendices Are Enforceable Parts of This Permit:

Appendix A, Glossary.
Appendix CAM, Compliance Assurance Monitoring Plan.
Appendix I, List of Insignificant Emissions Units and/or Activities.
Appendix NESHAP, Subpart A – General Provisions.
Appendix NESHAP, Subpart ZZZZ.
Appendix RR, Facility-wide Reporting Requirements.
Appendix TR, Facility-wide Testing Requirements.
Appendix TV, Title V General Conditions.
Appendix U, List of Unregulated Emissions Units and/or Activities.

REFERENCED ATTACHMENTS.

The Following Attachments Are Included for Applicant Convenience:

Table H, Permit History.
Table 1, Summary of Air Pollutant Standards and Terms.
Table 2, Compliance Requirements.