# Florida Department of Environmental Protection

Southwest District Office
13051 North Telecom Parkway
Temple Terrace, Florida 33637-0926

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Governor

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Lt. Governor

Herschel T. Vinyard Jr.
Secretary


## FINAL PERMIT

**PERMITTEE**

Manatee County Utilities Department
4410 66th St. West
Bradenton, FL 34210

Authorized Representative:
Mr. Dan Gray, Director

Air Permit No. 0810055-009-AC
Permit Expires: 08/31/2014
Site Name: Manatee Lena Road Landfill
Minor Air Construction Permit
New LFG Fired Engine Generator Set

This is the final air construction permit for a new LFG fired engine generator set at the Manatee County Lena Road Landfill (Standard Industrial Classification No. 4953), located in Manatee County at 3333 Lena Road in Bradenton, Florida. The UTM coordinates are Zone 17, 355.02 km East, and 3049.21 km North. As noted in the Final Determination provided with this final permit, no changes or only minor changes and clarifications were made to the draft permit.

This final permit is organized by the following sections:

Section 1. General Information

Section 2. Administrative Requirements

Section 3. Emissions Unit Specific Conditions

Section 4. Appendices

Due to the technical nature of the project, the permit contains numerous acronyms and abbreviations, which are defined in Appendix A of Section 4 of this permit.

This air pollution permit is issued under the provisions of: Chapter 403 of the Florida Statutes (F.S.) and Chapters 62-4, 62-204, 62-210, 62-212, 62-296 and 62-297 of the Florida Administrative Code (F.A.C.). The permittee is authorized to conduct the proposed work in accordance with the conditions of this permit. This project is subject to the general preconstruction review requirements in Rule 62-212.300, F.A.C. and is not subject to the preconstruction review requirements for major stationary sources in Rule 62-212.400, F.A.C. for the Prevention of Significant Deterioration (PSD) of Air Quality.

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

Executed in Hillsborough County, Florida

_____ _____

Robert C. Wong Effective Date
District Air Program Administrator
Southwest District

**CERTIFICATE OF SERVICE**

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

Dan Gray, Director, Manatee County Utilities Department
(dan.gray@mymanatee.org)

Mike Gore, Solid Waste Division Manager, Manatee County Solid Waste
(mike.gore@mymanatee.org)

Daniel Cooper, P.E., SCS Engineers
(dcooper@scsengineers.com)

Danielle Henry, Air Program Compliance Manager
(Danielle.D.Henry@dep.state.fl.us)

Clerk Stamp

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

_____ _____

(Clerk) (Date)

## FACILITY AND PROJECT DESCRIPTION

**Existing Facility** (Facility ID No. 0810055)

This facility is engaged in landfilling of municipal solid waste (MSW). This Class I disposal facility (landfill) consists of three areas: Stage I (approximately 132 acres) which is a closed area; Stage III (approximately 66 acres) which is the active area (became active in January of 2004); and Stage II (approximately 118 acres), which is an undeveloped expansion area which will be the last area to be used. Stage I and Stage III have an active landfill gas (LFG) collection system with an open candlestick LFG flare control device. A thermal sludge dryer also utilizes LFG from the landfill as a supplemental fuel. This facility does not include a bioreactor.

The existing facility consists of the following emissions units (EUs).

Regulated Emissions Units

| EU ID No. | Emission Unit (EU) Description |
|---|---|
| 003 | Municipal Solid Waste (MSW) Landfill |
| 004 | Sludge Dryer |
| 005 | Dried Product (Sludge/Pellets) Handling System |
| 006 | Two Dried Product (Pellet) Storage Silos |
| 007 | Dried Product (Pellet) Truck Loadout Station |

Unregulated Emissions Units and/or Activities

| E.U. ID No. | Brief Description |
|---|---|
| 002 | Fugitive PM/PM10 Emissions (Roads and Earthmoving Operations) |
| 011 | Diesel Engines |

**Project Description and Proposed Emission Units**

The project consists of construction of an engine generator set for the generation of electricity. The engine generator set will be Caterpillar generator rated at 1.6 MW powered by a Caterpillar Model G 3520C reciprocating internal combustion engine (RICE) that will be fired exclusively with landfill gas (LFG) from the Lena Road Landfill. The LFG will be processed through a LFG treatment system (LFG Gas Treatment System) prior to introduction into the engine as fuel.

This project will add the following emissions unit (EU).

| EU ID No. | Emission Unit (EU) Description |
|---|---|
| 012 | LFG Fired Engine Generator Set (with a LFG gas treatment system) |

***NOTE:*** *Please reference the Permit No., Facility ID, and Emission Unit ID in all correspondence, test report submittals, applications, etc.*

## FACILITY REGULATORY CLASSIFICATION

- The facility is not a major source of hazardous air pollutants (HAPs).
- The facility has no units subject to the acid rain provisions of the Clean Air Act (CAA).
- The facility is a Title V major source of air pollution in accordance with Chapter 62-213, F.A.C.
- The facility is not a major stationary source in accordance with Rule 62-212.400 (PSD), F.A.C.
- This Municipal Solid Waste (MSW) landfill is subject to the Emission Guidelines contained in Rule 62-204.800(9)(c), F.A.C. (which adopts by reference and implements the requirements of 40 CFR 60 Subpart Cc – Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills) since it has a design capacity greater than 2.5 million megagrams (Mg) and 2.5 million cubic meters ($m^3$). This emission guidelines rule requires that this MSW landfill meet specific requirements of NSPS 40 CFR 60 Subpart WWW - New Source Performance Standards (NSPS) for Solid Waste Landfills. This landfill is subject to the collection and control system requirements of Subpart WWW, since current emissions of NMOC (Non-methane Organic Compounds) are greater than 50 Mg/year. This facility is also subject to NESHAP 40 CFR 63 Subpart AAAA - National Emission Standards for Hazardous Air Pollutants (NESHAP) from Municipal Solid Waste Landfills.
- The new stationary spark ignition (SI) reciprocating internal combustion engine (RICE) which is a part of the new LFG Fired Engine Generator Set (new EU No. 012), is subject to NSPS 40 CFR 60 Subpart JJJJ (Standards of Performance for Stationary Spark Ignition Internal Combustion Engines).

  *(NESHAP Subpart ZZZZ Note - This Engine Generator Set engine is also potentially subject to Federal NESHAP 40 CFR 63 Subpart ZZZZ (National Emissions Standards for Hazardous Air Pollutants (NESHAP) for Stationary Reciprocating Internal Combustion Engines). However, in accordance with Subpart ZZZZ 40 CFR 63.6590(c), this new stationary RICE "must meet the requirements of Subpart ZZZZ by meeting the requirements of NSPS 40 CFR 60 Subpart JJJJ for spark ignition engines", and "no further requirements apply under Subpart ZZZZ".)*

## PERMIT HISTORY/AFFECTED PERMITS

Reference current facility Title V Air Operation Permit No. 0810055-008-AV.

*(Additional Permitting Note – This facility previously had an air construction permit for three (3) LFG fired engine generator sets (Permit No. 0810055-006-AC, issued on 08/10/2007). This construction permit expired on 01/31/12 without any of the engine generator sets having been constructed.)*

**1.** Permitting Authority - The permitting authority for this project is the Florida Department of Environmental Protection (Department), Southwest District's Air Resource Management Section. The Southwest District's mailing address and phone number is:

Florida Department of Environmental Protection
Southwest District Office
Air Resource Management Section
13051 North Telecom Parkway
Temple Terrace, Florida 33637-0926
Telephone: 813-632-7600

All documents related to applications for permits shall be submitted to the above address.

**2.** Compliance Authority - All documents related to compliance activities such as reports, tests, and notifications shall be submitted to the Southwest District Office's Air Resource Management Section (see above mailing address and phone number).

**3.** Appendices - The following Appendices are attached as part of this permit*:

a. Appendix A. Citation Formats and Glossary of Common Terms;
b. Appendix B. General Conditions;
c. Appendix C. Common Conditions;
d. Appendix D. Common Testing Requirements;
e. Appendix E. NSPS 40 CFR 60 Subpart JJJJ (Standards of Performance for Stationary Spark Ignition Internal Combustion Engines)

*(*Permitting Note – Items a. through d. above are in one combined appendices document. Item e. (Appendix E.) is a separate document.)*

**4.** Applicable Regulations, Forms and Application Procedures - Unless otherwise specified in this permit, the construction and operation of the subject emissions units shall be in accordance with the capacities and specifications stated in the application. The facility is subject to all applicable provisions of: Chapter 403, F.S.; and Chapters 62-4, 62-204, 62-210, 62-212, 62-213, 62-296 and 62-297, F.A.C. Issuance of this permit does not relieve the permittee from compliance with any applicable federal, state, or local permitting or regulations.

**5.** New or Additional Conditions - For good cause shown and after notice and an administrative hearing, if requested, the Department may require the permittee to conform to new or additional conditions. The Department shall allow the permittee a reasonable time to conform to the new or additional conditions, and on application of the permittee, the Department may grant additional time.
[Rule 62-4.080, F.A.C.]

**6.** Modifications - Unless otherwise exempt by rule, the permittee shall not initiate any construction, reconstruction, or modification at the facility and shall not install/modify any pollution control device at the facility without obtaining prior authorization from the Department. Modification is defined as: Any physical change or changes in the method of operations or addition to a facility that would result in an increase in the actual emissions of any air pollutant subject to air regulations, including any not previously emitted, from any emission unit or facility. [Rules 62-210.200 - Definition of "Modification" and 62-210.300(1)(a), F.A.C.]

**7.** Annual Operating Report - On or before **April 1** of each year, the permittee shall submit a completed DEP Form 62-210.900(5), "Annual Operating Report for Air Pollutant Emitting Facility" (AOR) for the preceding calendar year. The report may be submitted electronically in accordance with the instructions received with the AOR package sent by the Department, or a hardcopy may be sent to the Compliance Authority. [Rule 62-210.370(3), F.A.C.]

**8.** Application for Title V Air Operation Permit Revision - This permit authorizes construction of the permitted emissions unit and initial operation to determine compliance with Department rules. A Title V air operation permit revision is required for continued operation of the permitted emissions unit. The permittee shall apply for a facility Title V air operation permit revision at least 90 days prior to expiration of this permit, but no later than 180 days after commencing operation of the LFG Fired Engine Generator Set *(see Specific Condition No. A.16. for commencement of construction and operation notification requirements)*. Commencing operation means setting into operation of any emissions unit for any purpose. To apply for a Title V air operation permit revision, the applicant shall submit the following:

a. the appropriate permit application form *(see current version of Rule 62-210.900, F.A.C. (Forms and Instructions), and/or FDEP Division of Air Resource Management website at: http://www.dep.state.fl.us/air/)*;

b. a detailed description of the Engine Generator Set LFG Gas Treatment System, including the following for each part of the system *(see also Specific Condition No. A.12.)*:

   (1) equipment description and purpose, and targeted gas treatment level; and

   (2) operation parameter to be monitored, method of parameter monitoring, proposed acceptable parameter operating rage (or minimum or maximum) with justification, and method of recordkeeping/data retention.

c. a statement of any vent to the atmosphere that exists on the as-installed Engine Generator Set LFG Gas Treatment System (or a statement that there is no vent to the atmosphere) *(see Specific Condition No. A.7.d.)*; and

d. a copy of the Engine Generator Set LFG Gas Treatment System operating parameter monitoring records for the most recent month *(see Specific Condition No. A.14.)*.

The application shall be submitted to the Permitting Authority.
[Rules 62-4.030, 62-4.050, 62-4.070(3), 62-4.220 , and 62-213.420(1)(a)3., F.A.C.]

## A. EU No. 012 – LFG Fired Engine Generator Set

This section of the permit addresses the following emissions unit (EU).

| EU ID No. | Emission Unit (EU) Description |
|---|---|
| 012 | LFG Fired Engine Generator Set (with a LFG Gas Treatment System)<br>This emissions unit consists of an engine generator set for the generation of electricity. The engine generator set will be a Caterpillar generator rated at 1.6 MW powered by a Caterpillar Model G 3520C (DM 5860) 4-stroke lean burn (4SLB) spark ignition (SI) reciprocating internal combustion engine (RICE) rated at 2,233 bhp that will be fired exclusively with landfill gas (LFG) from the Lena Road Landfill. The maximum design heat input rating of the engine is 16.38 MMBtu/hr, based on an expected average heating value of the LFG of 456 Btu/scf (LHV). The LFG will be delivered to the engine using the LFG collection system blower system (currently being used to collect and deliver LFG to an open candlestick flare and the sludge dryer), with the blowers (3) operating in parallel as needed to supply LFG to the equipment. The LFG for the engine generator set will be processed through a LFG treatment system (LFG Gas Treatment System) *(see description below)* prior to introduction into the engine as fuel. The maximum delivery volume of LFG from the LFG Gas Treatment System to the engine will be approximately 546 scfm.<br>Emissions from the generator engine will be limited by lean burn combustor design and use of air-to-fuel ratio controls.<br>The LFG Gas Treatment System will consist of the following gas treatment equipment and processes:<br>1. LFG will be drawn into the gas treatment skid at approximately 30 inches water column (w.c.) vacuum.<br>2. A gas compressor will increase gas pressure to approximately 5 psig.<br>3. An air-to-gas heat exchanger will reduce (cool) the temperature of the compressed gas.<br>4. A separator will remove all condensed moisture and other particulates having a diameter of 5-micron and larger.<br>The components of the LFG Gas Treatment System will not be equipped with atmospheric vents (therefore it is not itself an emissions source). Therefore, all of the LFG received by the unit will be directed to the generator set RICE engine for use as fuel.<br>The NSPS 40 CFR 60 Subpart WWW LFG control system requirements do not apply to the LFG fired engine generator set engine because the LFG is first sent to a gas treatment system (the LFG Gas Treatment System) prior to piping to the engine for use as a fuel. This satisfies one of the Subpart WWW LFG control system options (40 CFR 60.752(b)(2)(iii)C. - "Route the gas to a treatment system that processes the collected gas for subsequent sale or use."). There are no additional Subpart WWW requirements for the subsequent use of the treated gas that would apply to the LFG fired engine. |

## FEDERAL REGULATORY REQUIREMENTS FOR LFG FIRED ENGINE

**A.1.** Federal NSPS 40 CFR 60 Subpart JJJJ – The Engine Generator Set engine is subject to the applicable requirements of New Source Performance Standards (NSPS) 40 CFR 60 Subpart JJJJ (Standards of Performance for Stationary Spark Ignition (SI) Internal Combustion Engines), adopted and incorporated by reference in Rule 62-204.800(8), F.A.C. Subpart JJJJ is made a part of this permit in the attached Appendix NSPS 40 CFR 60 Subpart JJJJ. Applicable requirements of Subpart JJJJ are based upon whether or not the engine is certified by the manufacturer that it complies with the emission standards and requirements of Subpart JJJJ. The permittee has stated that they will be purchasing an engine that is not certified by the manufacturer. This means that they will be subject to the owner/operator requirements for non-certified engines. The applicable requirements of 40 CFR 60 Subpart JJJJ are shown below.

40 CFR 60 Subpart JJJJ Applicable Provision References for the Engine Generator Set Engine* (applicable sections shown, with applicable subsections shown in *italics* below the section caption)

**What This Subpart Covers**

§ 60.4230 Am I subject to this subpart?
*(a)(4)(i)*

**Emission Standards for Owners and Operators**

§ 60.4233 What emission standards must I meet if I am an owner or operator of a stationary SI internal combustion engine?
*(e) and (f)(5)*

§ 60.4234 How long must I meet the emission standards if I am an owner or operator of a stationary SI internal combustion engine?
*(entire section applies)*

**Compliance Requirements for Owners and Operators**

§ 60.4243 What are my compliance requirements if I am an owner or operator of a stationary SI internal combustion engine?
*(a)(2)(iii), (b)(2)(ii), (c), and (i)(2)*

**Testing Requirements for Owners and Operators**

§ 60.4244 What test methods and other procedures must I use if I am an owner or operator of a stationary SI internal combustion engine?
*(entire section applies)*

**Notification, Reports, and Records for Owners and Operators**

§ 60.4245 What are my notification, reporting, and recordkeeping requirements if I am an owner or operator of a stationary SI internal combustion engine?
*(a), (c), and (d)*

**A.1.** *(continued)*

**General Provisions**

§ 60.4246 What parts of the General Provisions apply to me?
*(entire section applies)*

**Definitions**

§ 60.4248 What definitions apply to this subpart?
*(entire section applies)*

**Table 1 to Subpart JJJJ of Part 60**—$NO_X$, CO, and VOC Emission Standards for Stationary Non-Emergency SI Engines ≥100 HP (Except Gasoline and Rich Burn LPG), Stationary SI Landfill/Digester Gas Engines, and Stationary Emergency Engines >25 HP
*(applicable standards for a Landfill/Digester Gas fired engine > 500 HP manufactured after 07/01/2010)*

**Table 2 to Subpart JJJJ of Part 60**—Requirements for Performance Tests

**Table 3 to Subpart JJJJ of Part 60**—Applicability of General Provisions to Subpart JJJJ

[Rule 62-204.800(8)(b) and (d), F.A.C.; NSPS 40 CFR 60 Subpart JJJJ; email response from applicant's consultant (Daniel Cooper, P.E., of SCS Engineers, Inc.) dated July 17, 2012]

*(* Permitting Note - See also Specific Condition Nos. A.8., A.9.,A.10., A.13., and A.16. for specific conditions containing the applicable Subpart JJJJ emission standards, compliance procedures, reporting requirements, and recordkeeping requirements.)*

**FEDERAL REGULATORY REQUIREMENTS FOR LFG GAS TREATMENT SYTEM**

**A.2.** Federal Emission Guideline 40 CFR 60 Subpart Cc, and NSPS 40 CFR 60 Subpart WWW - In accordance with Rule 62-204.800(9)(c), F.A.C. and 40 CFR 60 Subpart Cc (Emission Guidelines for Municipal Solid Waste Landfills), this emissions unit shall comply with applicable provisions of 40 CFR 60 Subpart WWW (Standards of Performance for Municipal Solid Waste Landfills), as adopted and incorporated by reference in Rule 62-204.800(8), F.A.C. The Engine Generator Set LFG Gas Treatment System is the NSPS Subpart WWW LFG control device for LFG being routed to the LFG Fired Engine Generator Set and is subject to the following applicable requirements of 40 CFR 60 Subpart WWW*:

40 CFR 60 Subpart WWW Applicable Provision References for the LFG Gas Treatment System** (applicable sections shown, with applicable subsections shown in *italics* below the section caption)

**§ 60.752 Standards for air emissions from municipal solid waste landfills.**
*(b)(2)(i)(B), (b)(2)(iii)(C), and (b)(2)(iv)*

**§ 60.753 Operational standards for collection and control systems.**
*(f)*

**§ 60.755 Compliance provisions.**
*(e)*

**§ 60.756 Monitoring of operations.**
*(d)*

**§ 60.757 Reporting requirements.**
*(f)(1)-(3)*

**§ 60.758 Recordkeeping requirements.**
*(c) and (c)(2)*

[Rules 62-204.800(8)(b) and (9)(c), F.A.C.; NSPS 40 CFR 60 Subpart WWW]

*(*NSPS 40 CFR 60 Subpart WWW Note - For the complete provisions of NSPS Subpart WWW, see Appendix NSPS 40 CFR 60 Subpart WWW in the current Title V air operation permit for this facility (Manatee County Lena Road Landfill Permit No. 0810055-008-AV), or subsequent revision/renewal Title V operation permit.)*

*(** Permitting Note - See also Specific Condition Nos. A.7., A.12, A.14., and A.19. for conditions containing key applicable requirements of 40 CFR 60 Subpart WWW.)*

**A.3.** Federal NESHAP 40 CFR 63 Subpart AAAA and Subpart A - The LFG Gas Treatment System for the LFG Fired Engine Generator Set is subject to the applicable requirements of NESHAP 40 CFR 63 Subpart AAAA (National Emission Standards for Hazardous Air Pollutants (NESHAP): Municipal Solid Waste Landfills), and Subpart A (General Provisions for 40 CFR 63), which are adopted by reference in Rule 62-204.800(11), F.A.C. The applicable provisions of 40 CFR 63 Subpart AAAA are shown below*:

Applicable Requirements of 40 CFR 63 Subpart AAAA for the LFG Gas Treatment System** (applicable sections shown, with applicable subsections shown in *italics* below the section caption)

**What This Subpart Covers**

63.1930 What is the purpose of this subpart?
*(entire section applies)*

63.1935 Am I subject to this subpart?
*(a)(3)*

63.1940 What is the affected source of this subpart?
*(a)*

63.1945 When do I have to comply with this subpart?
*(b)*

**Standards**

63.1955 What requirements must I meet?
*(a)(2), (b), and (c)*

**General and Continuing Compliance Requirements**

63.1960 How is compliance determined?
*(entire section applies)*

63.1965 What is a deviation?
*(c)*

**Notifications, Reports and Records**

63.1980 What records and reports must I keep and submit?
*(a) and (b)*

**Other Requirements and Information**

63.1985 Who enforces this subpart?
*(entire section applies)*

63.1990 What definitions apply to this subpart?
*(entire section applies)*

*(continued)*

**A.3.** *(continued)*

**Appendix to Subpart AAAA of Part 63**

Appendix 1 of Subpart AAAA of Part 63 - Applicability of NESHAP General Provisions to Subpart AAAA

*(* NESHAP 40 CFR 63 Subparts AAAA and A Note - For the complete provisions of NESHAP 40 CFR 63 Subparts AAAA and A, see Appendix 40 CFR 63 Subpart AAAA and Appendix 40 CFR 63 Subpart A in the current Title V air operation permit for this facility (Manatee County Lena Road Landfill Permit No. 0810055-008-AV), or subsequent revision/renewal Title V operation permit.)*

*(** Permitting Note - See also Specific Condition Nos. A.7., A.12., A.14., A.15., and A.19. for conditions containing the key applicable requirements of Subpart AAAA.)*

[Rule 62-204.800(11)(b) and (d), F.A.C., NESHAP 40 CFR 63 Subparts AAAA]

**ADDITIONAL FEDERAL REGULATORY REQUIREMENTS FOR LFG FIRED ENGINE AND LFG GAS TREATMENT SYTEM**

**A.4.** Federal NSPS 40 CFR 60 Subpart A - The LFG Engine Generator Set engine and the LFG Gas Treatment System for the LFG Fired Engine Generator Set are subject to the applicable requirements of 40 CFR 60 Subpart A (General Provisions for 40 CFR 60)*,**, which is adopted by reference in Rule 62-204.800(8), F.A.C.
[Rule 62-204.800(8)(d), F.A.C.]

*(* NSPS Subpart A Note - For the complete provisions of NSPS 40 CFR 60 Subpart A, see Appendix NSPS 40 CFR 60 Subpart A, in the current Title V air operation permit for this facility (Manatee County Lena Road Landfill Permit No. 0810055-008-AV), or subsequent revision/renewal Title V operation permit.)*

*(** Permitting Note - See also Specific Condition No. A.16. for applicable commencement of construction and commencement of operation notification requirements of Subpart A.)*

**PERFORMANCE RESTRICTIONS**

**A.5.** Authorized Fuel - The fuel for the engine of the Engine Generator Set shall be limited to landfill gas (LFG) from the Manatee County Lena Road Landfill. All of the LFG used by the engine must be processed through the onsite Engine Generator Set LFG Gas Treatment System prior to use.
[Rules 62-210.200 (Potential to Emit), and 62-204.800(8)(b), F.A.C.; as requested by permittee in construction permit application dated 06/25/12; NSPS Subpart WWW 40 CFR 60.752(b)(iii)(C)]

**A.6.** Hours of Operation - The hours of operation for this emissions unit are not limited (i.e., permitted for 8,760 hours per year).
[Rules 62-4.070(3) and 62-210.200 (definition of Potential to Emit), F.A.C.]

**A.7.** Engine Generator Set LFG Gas Treatment System Operation Requirements - In order to meet the landfill gas (LFG) control system requirements of Rule 62-204.800(9)(c), F.A.C. (40 CFR 60, Subpart Cc, Emission Guidelines for Municipal Solid Waste Landfills), and the referenced requirements of NSPS 40 CFR 60 Subpart WWW (Standards of Performance for Municipal Solid Waste Landfills) *(see Specific Condition Nos. A.2. and A.3.)*, the LFG fired in the Engine Generator Set engine shall be processed through a gas treatment system (the Engine Generator Set LFG Gas Treatment System) which meets the following requirements.

a. All of the LFG to be used in the engine shall be processed through the LFG Gas Treatment System prior to going to the engine for use. The LFG Gas Treatment System shall dewater, filter, compress, and cool the LFG prior to routing to the engine for firing. [40 CFR 60.752(b)(2)(iii)C.]

b. The LFG Gas Treatment System shall be in operation and operating properly at all times when collected LFG is routed to it. This applies at all times except during periods of start-up, shut down, or malfunction, provided that the duration of start-up, shutdown or malfunction shall not exceed 1 hour for the LFG Gas Treatment System. [40 CFR 60.755]

c. All LFG processed through the LFG Gas Treatment System shall be delivered to and combusted by the Engine Generator Set engine or routed back to the facility LFG flare for combustion. No treated LFG shall be routed from the LFG Gas Treatment System to the atmosphere uncombusted or uncontrolled. [40 CFR 60.752(b)(2)(iii)C.]

d. All emissions from any atmospheric vent from the LFG Gas Treatment System** shall be subject to the LFG control requirements of 40 CFR 60.752(b)(2)(iii)(A) *(open flare)* or (B) *(control device)*. [40 CFR 60.752(b)(2)(iii)C.)]

   (**LFG Treatment System Vent Note - The information submitted as part of the construction permit application stated that the components of the gas treatment system would not be equipped atmospheric vents. If there are any atmospheric vents from the gas treatment system, this information, as well as a description of how the above requirement will be complied with, shall be submitted as part of the required Title V operation permit revision application *(see Section 2, Specific Condition No. 8.c.)*.

e. All of the equipment included in the LFG Gas Treatment System shall be operated and maintained in accordance with the applicable equipment manufacturers operation and maintenance procedures.

f. The permittee shall operate the LFG Gas Treatment System to maintain system operating parameters at a level that indicates proper performance of the gas treatment system in terms of filtering, dewatering, compressing and controlling the temperature of the LFG. [40 CFR 60.756(d)] *(Permitting Note - See Specific Condition Nos. A.12., A.14., and A.19. for associated monitoring, recordkeeping and reporting requirements.)*

[Rules 62-4.070(3), 62-210.650 (Circumvention), 62-204.800(8)(b), 62-204.800(9)(c), and 62-204.800(11)(b), F.A.C.; NSPS Subpart WWW 40 CFR 60.752(b)(2), 60.755 and 60.756(d); NESHAP Subpart AAAA 40 CFR 63.1955 and 63.1960]

## EMISSION LIMITATIONS

**A.8.** NSPS 40 CFR 60 Subpart JJJJ NOx, CO, and VOC Emission Standards for the Engine Generator Set Engine - Owners and operators of a non-certified stationary SI ICE with a maximum engine power greater than or equal to 75 KW (100 HP) must comply with the emission standards in Table 1 to 40 CFR 60 Subpart JJJJ, as shown below. Owners and operators of stationary SI ICE must operate and maintain stationary SI ICE that achieve these emission standards over the entire life of the engine.

40 CFR 60 Subpart JJJJ Table 1 Emission Standards For Non-Emergency Stationary SI Landfill Gas Engines HP>500

a. nitrogen oxides (NOx) emissions shall not exceed 150 ppmvd @ 15% $O_2$ (2.0 g/HP-hr)

b. carbon monoxide emissions (CO) emissions shall not exceed 610 ppmvd @ 15% $O_2$ (5.0 g/HP-hr)

c. volatile organic compound (VOC) emissions* shall not exceed 80 ppmvd @ 15% $O_2$ (1.0 g/HP -hr)

*(* VOC Emission Standard Note - For purposes of demonstrating compliance with this Subpart JJJJ emission standards, when calculating emissions of volatile organic compounds, emissions of formaldehyde should not be included. [Note to Table 1 Subpart JJJJ]*

[Rule 62-204.800(8)(b), F.A.C.; NSPS Subpart JJJJ 40 CFR 60.4233(e) and 60.4234, and Table 1 to Subpart JJJJ]

## COMPLIANCE AND COMPLIANCE TESTING REQUIREMENTS

**A.9.** NSPS 40 CFR 60 Subpart JJJJ Compliance Requirements Standards for the Engine Generator Set Engine **-** An owner or operator of a stationary SI internal combustion engine who purchases a non-certified engine and must comply with the emission standards specified in §60.4233(e), must demonstrate compliance with the emission standards specified in §60.4233(e) according to the requirements specified in §60.4244 (compliance testing methods and procedures), as applicable, and, for an owner or operator of a stationary SI internal combustion engine greater than 500 HP, shall:

a. keep a maintenance plan;

b. keep records of conducted maintenance *(see also Specific Condition No. A.X)*;

c. to the extent practicable, maintain and operate the engine in a manner consistent with good air pollution control practice for minimizing emissions;

d. within 60 days after achieving the maximum generation rate at which the engine generator set will be operated, but not later than 180 days after initial startup of the engine generator, conduct **initial performance (compliance) testing** on the engine to demonstrate compliance with the emission standards *(see Specific Condition No. A.8.);* and

*(continued)*

**A.9.** (*continued)*

e. conduct **subsequent performance (compliance) testing** every 8,760 hours of operation* or 3 years, whichever comes first, thereafter to demonstrate continuing compliance *(*see also Specific Condition No. A.13.d. for associated engine operating hour recordkeeping requirements)*.

[Rule 62-204.800(8)(b), F.A.C.; NSPS Subpart JJJJ 40 CFR 60.4243(b)(2)(ii); NSPS Subpart A 40 CFR 60.8(a0]

**A.10.** NSPS 40 CFR 60 Subpart JJJJ Performance Testing Methods and Procedures for the Engine Generator Set Engine - Owners and operators of stationary SI ICE conducting performance (compliance) tests must follow the methods and procedures shown below.

a. Each performance test must be conducted within 10 percent of 100 percent peak (or the highest achievable) load and according to the requirements in Subpart A 40 CFR 60.8, and under the specific conditions that are specified in Table 2 to Subpart JJJJ *(see Appendix NSPS 40 CFR 60 Subpart JJJJ (06-28-11 FR))*.

b. Performance tests may not be conducted during periods of startup, shutdown, or malfunction, as specified in §60.8(c). If the stationary SI internal combustion engine is non-operational, you do not need to startup the engine solely to conduct a performance test; however, you must conduct the performance test immediately upon startup of the engine.

c. Three separate test runs shall be conducted for each performance test required in this section, as specified in §60.8(f). Each test run must be conducted within 10 percent of 100 percent peak (or the highest achievable) load and last at least 1 hour.

d. Compliance with the NOx, CO and VOC emission limitations of NSPS Subpart JJJJ 40 CFR 60.4233 shall be determined in accordance with the procedures and equations of 40 CFR 60.4244(d), (e), and (f) *(see Appendix NSPS 40 CFR 60 Subpart JJJJ (06-28-11 FR))*.

[Rule 62-204.800(8)(b), F.A.C.; NSPS Subpart JJJJ 40 CFR 60.4244, and Table 2 to Subpart JJJJ]

**A.11.** Compliance Test Requirements – Performance (compliance) tests shall be conducted in accordance with the applicable requirements specified in Appendix D (Common Testing Requirements) of this permit. [Rule 62-297.310, F.A.C.]

## MONITORING REQUIREMENTS

**A.12.** LFG Gas Treatment System Monitoring Requirements – The permittee shall comply with the requirements of NSPS Subpart WWW 40 CFR 60.756(d) *(shown below, with underline emphasis added)*, which is applicable to the LFG Gas Treatment System as the NSPS Subpart WWW LFG control device for LFG used by the LFG Fired Engine Generator Set.

§ 60.756 Monitoring of operations.

(d) Each owner or operator seeking to demonstrate compliance with § 60.752(b)(2)(iii) using a device other than an open flare or an enclosed combustor shall provide information

*(continued)*

**A.12.** *(continued)*

> satisfactory to the Administrator as provided in § 60.752(b)(2)(i)(B) describing the operation of the control device, the operating parameters that would indicate proper performance, and appropriate monitoring procedures. The Administrator shall review the information and either approve it, or request that additional information be submitted. The Administrator may specify additional appropriate monitoring procedures.

In order to meet the above requirements, the permittee shall establish what gas treatment system equipment and parameters are to be monitored and conduct such monitoring from the start of operation of the gas treatment system. As part of the submittal for an operation permit revision *(see Section 2., Specific Condition 8.b.)*, the permittee shall submit the following for the Engine Generator Set LFG Gas Treatment System:

a. the gas treatment system operating parameters (two at a minimum) being monitored (e.g., pressure, temperature, moisture content);

b. the equipment being monitored (e.g., compressor, heat exchanger, separator) and the monitoring devices being used to measure the operating parameters; and

c. the operating parameter operating ranges (or minimums or maximums) (including averaging time if applicable) to be maintained to indicate proper performance of the gas treatment system, along with a justification for how the parameter and operating range indicate proper performance of the equipment.

*(Permitting Note - See also Specific Condition Nos. A.14., and A.19. for associated recordkeeping and reporting requirements.)*

[Rules 62-204.800(8)(b), 62-204.800(9)(c), 62-204.800(11)(b), and 62-210.650 (Circumvention), F.A.C.; NSPS Subpart WWW 40 CFR 60.756(d); NESHAP Subpart AAAA 40 CFR 63.1960]

## RECORDKEEPING REQUIREMENTS

**A.13.** NSPS 40 CFR 60 Subpart JJJJ Recordkeeping Requirements for the Engine Generator Set Engine - Owners and operators of all stationary SI internal combustion engines (ICE) must keep records of the following information.

a. All notifications submitted to comply with this subpart and all documentation supporting any notification.

b. Maintenance conducted on the engine.

c. If the stationary SI internal combustion engine is not a certified engine or is a certified engine operating in a non-certified manner and subject to §60.4243(a)(2), documentation that the engine meets the emission standards.

d. Engine operating hours, for each day and a running total since the date of the last compliance testing *(see Specific Condition No. A.9.e.)*

[Rules 62-4.070(3), and 62-204.800(8)(b), F.A.C.; NSPS Subpart JJJJ 40 CFR 60.4245(a)]

**A.14.** LFG Gas Treatment System Operating Parameter Recordkeeping Requirements - In accordance with the requirements of NSPS Subpart WWW 40 CFR 60.758(c), the permittee shall keep up-to-date, readily accessible daily records of the Engine Generator Set LFG Gas Treatment System operating parameters established and required in Specific Condition No. A.12. (or approved alternatives as included in the facility Title V operation permit), as well as up-to-date, readily accessible records for periods of operation during which the parameter boundaries are exceeded, as well as actions taken to address and correct this condition. The records shall be retained for at least five (5) years.
[Rules 62-4.070(3), 62-210.650 (Circumvention), 62-204.800(8)(b), 62-204.800(11)(b), and 62-213.440(1)(b)2.b., F.A.C.; NSPS Subpart WWW 40 CFR 60.758(c); NESHAP Subpart AAAA 40 CFR 63.1960 and 63.1980(a)]

## STARTUP, SHUTDOWN AND MALFUNCTION (SSM) PLAN REQUIREMENTS

**A.15.** Facility NESHAP Subpart A Startup, Shutdown and Malfunction (SSM) Plan - Within 60 days of initial operation of the LFG Fired Engine Generator Set, the permittee shall incorporate the Engine Generator Set and the associated LFG Gas Treatment System into the facility Startup, Shutdown and Malfunction (SSM) Plan required by NESHAP Subpart A 40 CFR 63.6(e)(3). The permittee shall maintain at the affected source a current startup, shutdown, and malfunction plan and must make the plan available upon request for inspection and copying by the Department.
[Rule 62-204.800(11)(d), F.A.C; NESHAP Subpart A 40 CFR 63.6(e)(3)]

## NOTIFICATION REQUIREMENTS

**A.16.** NSPS Subparts A and JJJJ Commencement of Construction and Operation Notification Requirements - In accordance with the requirements of NSPS Subpart A 40 CFR 60.7(a), the permittee shall submit the following notifications to the Compliance Authority.

a. Commencement of Construction Notification - The permittee shall submit a written notification of the date construction of the LFG Fired Engine Generator Set is commenced, postmarked no later than thirty (30) days after such date, pursuant to 40 CFR 60.7(a)(1). In accordance with NSPS Subpart JJJJ 40 CFR 60.4245(c), for owners and operators of stationary SI ICE greater than or equal to 500 HP that have not been certified by an engine manufacturer to meet the emission standards in Subpart JJJJ, the notification must include the following information:

(1) name and address of the owner or operator;

(2) the address of the affected source;

(3) engine information including make, model, engine family, serial number, model year, maximum engine power, and engine displacement;

(4) emission control equipment; and

(5) fuel used.

*(continued)*

**A.16.** *(continued)*

b. Commencement of Operation Notification - The permittee shall submit a written notification of the actual date of initiation of combustion of LFG in the LFG Fired Engine Generator Set, postmarked within fifteen (15) days after such date, pursuant to 40 CFR 60.7(a)(3).

[Rule 62-204.800(8)(d), F.A.C.; NSPS Subpart A 40 CFR 60.7(a), and Subpart JJJJ 60.4245(c)]

**A.17.** Performance Compliance Test Notification - The permittee shall notify the Compliance Authority in writing at least 30 days* prior to any required performance compliance tests. The notification must include the following information: the date, time, and location of each test; the name and telephone number of the facility's contact person who will be responsible for coordinating the test; and the name, company, and the telephone number of the person conducting the test.

(*Permitting Note - The notification should also include the relevant emission unit ID No., test method(s) to be used, and pollutants to be tested.*)

*(* Compliance Testing Prior Notification Permitting Note – This 30 day notification requirement is from NSPS Subpart A 40 CFR 60.8(d). This requirement is more stringent than, and takes precedence over (and will meet the requirements of), the 15 day notification requirement of Condition 4.a.4. in Appendix D (Common Testing Requirements).)*

[Rules 62-4.070(3), 62-204.800(8)(d), and 62-297.310(7)(a)9., F.A.C.; NSPS Subpart A 40 CFR 60.8(d)]

## REPORTING REQUIREMENTS

**A.18.** Compliance Test Reports - The permittee shall prepare and submit reports for all required compliance tests in accordance with the requirements specified in Appendix D (Common Testing Requirements) of this permit*. The test report shall include a statement of the engine generator set operating level (in terms of MW or engine HP), and in terms of percent (%) of peak (or highest achievable) load *(see Specific Condition Nos. A6.a. and c.)*.
[Rule 62-297.310(8), F.A.C.]

*(* Compliance Test Submittal Permitting Note – NSPS Subpart JJJJ 40 CFR 60.4245(d) requires that performance test reports must be submitted within 60 days after the test has been completed. However, Condition 5. in Appendix D (Common Testing Requirements) requires that compliance test reports shall be filed with the Department no later than 45 days after the testing is completed. This requirement is more stringent than and takes precedence over (and will meet the requirements of) the Subpart JJJJ requirement.)*

**A.19.** Semi-Annual NSPS and NESHAP Exceedance Reports - In accordance with NSPS Subpart WWW 40 CFR 60.757(f) and NESHAP Subpart AAAA 40 CFR 63.1980(a), every 6 months the permittee shall submit to the Compliance Authority reports of the value and length of time of exceedances of the applicable Engine Generator System LFG Gas Treatment System operating parameters ranges required in Specific Condition No. A.12. (or approved alternatives as included in the facility Title V operation permit)*. Then report shall also include any periods when the engine was operated firing LFG that was not processed by the LFG Gas Treatment System (i.e., the engine was operating when the LFG gas Treatment System was out of service). The report shall include the reasons for the exceedance(s) and the actions taken to address and correct it.
[Rules 62-4.070(3)m, 62-210.650 (Circumvention), 62-204.800(8)(b) and 62-204.800(11)(b), F.A.C.; NSPS Subpart WWW 40 CFR 60.758(c) and 60.757(f); NESHAP Subpart AAAA 40 CFR 63.1960 and 63.1980]

*(* Permitting Note – This report shall be included as part of the semi-annual exceedance report submitted for the landfill (EU No. 003) in accordance with Subpart WWW 40 CFR 60.757(f).)*