


# Florida Department of Environmental Protection

## Memorandum

To: Jeff Koerner, Program Administrator, Office of Permitting and Compliance   
Through Syed Arif, Office of Permitting and Compliance SA 8/19  
From: Christy DeVore, Office of Permitting and Compliance CD  
Date: August 19, 2011  
Subject: Draft Air Construction Permit Project No. 0310358-012-AC/PSD374C  
Draft Air Title V Permit Revision No. 0310358-013-AV  
City of Jacksonville Trail Ridge Landfill, Trail Ridge Energy  
Landfill Gas-to-Energy Expansion

The Trail Ridge Landfill is an existing municipal solid waste landfill. The applicant proposes to install and operate four lean-burn reciprocating internal combustion engine/generator sets as part of the existing landfill gas-to-energy plant at the Trail Ridge Landfill. In addition, the applicant has requested a modification to the CO emissions standard as Best Available Control Technology (BACT) for the existing engine/generator sets. The landfill gas will be used to fuel the proposed four and existing six lean-burn reciprocating internal combustion engine/generator sets. The plant will have the potential to generate an additional 6.4 megawatts (MW) of electricity for a combined nominal 16 MW of power to the electrical grid. The two existing flares will be retained as additional combustion devices for the landfill gas. The landfill gas will be routed through a landfill gas treatment system and then to the engines. As necessary, residual landfill gas will be routed to the flares. The project will result in the following potential emissions increases at the existing landfill: 284.7 tons/year of carbon monoxide (CO); 51.7 tons/year of nitrogen oxides (NO<sub>x</sub>); 20.7 tons/year of particulate matter (PM), particulate matter with a mean particle diameter of 10 microns or less (PM<sub>10</sub>) and particulate matter with a mean particle diameter of 2.5 microns or less (PM<sub>2.5</sub>); 16.6 tons/year of sulfur dioxide (SO<sub>2</sub>); and 24.2 tons/year of volatile organic compounds (VOC).

The proposed project is subject to preconstruction review pursuant to Rule 62-212.400, Florida Administrative Code (F.A.C.) for the Prevention of Significant Deterioration (PSD) of Air Quality for emissions of CO, NO<sub>x</sub>, PM and PM<sub>10</sub>. In accordance with this rule, the Department is required to make a determination of the Best Available Control Technology (BACT) for CO, NO<sub>x</sub>, PM and PM<sub>10</sub> emissions. The draft permit includes the following preliminary BACT determinations: emissions of CO and NO<sub>x</sub> will be minimized by the lean-burn combustion design combined with good operating and maintenance practices; and emissions of PM/PM<sub>10</sub> will be controlled by filtration in the landfill gas treatment system prior to combustion. In addition, the applicant requested a concurrent revision of the Title V air operation permit. The attached Technical Evaluation and Preliminary Determination provides a detailed description of the project and the rationale for permit issuance. The project is considered a new source review reform project. Day 60 of the permitting time clock is August 19, 2011. I recommend your approval of the attached draft permit package.

Attachments

JFK/scd

P.E. CERTIFICATION STATEMENT

PERMITTEE

City of Jacksonville  
Public Works Department  
117 West Duval Street, St. James Building, 4<sup>th</sup> Floor  
Jacksonville, FL 32202

Draft Construction Permit No. 0310358-012-AC/PSD-374C  
Draft Title V Permit No. 0310358-013-AV  
Trail Ridge Energy  
Landfill Gas-to-Energy Expansion  
Duval County, Florida

PROJECT DESCRIPTION

The Trail Ridge Landfill is an existing municipal solid waste landfill. The applicant proposes to install and operate four lean-burn reciprocating internal combustion engine/generator sets as part of the existing landfill gas-to-energy plant at the Trail Ridge Landfill. In addition, the applicant has requested a modification to the CO emissions standard as Best Available Control Technology (BACT) for the existing engine/generator sets. The landfill gas will be used to fuel the proposed four and existing six lean-burn reciprocating internal combustion engine/generator sets. The plant will have the potential to generate an additional 6.4 megawatts (MW) of electricity for a combined nominal 16 MW of power to the electrical grid. The two existing flares will be retained as additional combustion devices for the landfill gas. The landfill gas will be routed through a landfill gas treatment system and then to the engines. As necessary, residual landfill gas will be routed to the flares. The project will result in the following potential emissions increases at the existing landfill: 284.7 tons/year of carbon monoxide (CO); 51.7 tons/year of nitrogen oxides (NO<sub>x</sub>); 20.7 tons/year of particulate matter (PM), particulate matter with a mean particle diameter of 10 microns or less (PM<sub>10</sub>) and particulate matter with a mean particle diameter of 2.5 microns or less (PM<sub>2.5</sub>); 16.6 tons/year of sulfur dioxide (SO<sub>2</sub>); and 24.2 tons/year of volatile organic compounds (VOC).

The proposed project is subject to preconstruction review pursuant to Rule 62-212.400, Florida Administrative Code (F.A.C.) for the Prevention of Significant Deterioration (PSD) of Air Quality for emissions of CO, NO<sub>x</sub>, PM and PM<sub>10</sub>. In accordance with this rule, the Department is required to make a determination of the Best Available Control Technology (BACT) for CO, NO<sub>x</sub>, PM and PM<sub>10</sub> emissions. The draft permit includes the following preliminary BACT determinations: emissions of CO and NO<sub>x</sub> will be minimized by the lean-burn combustion design combined with good operating and maintenance practices; and emissions of PM/PM<sub>10</sub> will be controlled by filtration in the landfill gas treatment system prior to combustion.

*I HEREBY CERTIFY that the air pollution control engineering features described in the above referenced application and subject to the proposed permit conditions provide reasonable assurance of compliance with applicable provisions of Chapter 403, Florida Statutes, and Florida Administrative Code Chapters 62-4 and 62-204 through 62-297. However, I have not evaluated and I do not certify any other aspects of the proposal (including, but not limited to, the electrical, civil, mechanical, structural, hydrological, geological, and meteorological features).*



S. Christine DeVore, P.E.  
Registration Number 63119

8-19-11

(Date)



# Florida Department of Environmental Protection

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

Rick Scott  
Governor

Jennifer Carroll  
Lt. Governor

Herschel T. Vinyard Jr.  
Secretary

August 19, 2011

*Sent by Electronic mail – Received Receipt Requested*

Ms. Kerri Stewart, Chief Administrative Officer  
City of Jacksonville  
Public Works Department  
117 West Duval Street, St. James Building, 4<sup>th</sup> Floor  
Jacksonville, FL 32202

Re: Trail Ridge Landfill, Trail Ridge Energy, LLC  
Landfill Gas-to-Energy Expansion  
Draft Permit No. No. 0310358-012-AC/PSD-FL-374C, Air Construction Permit Revision  
Draft Permit No. 0310358-013-AV, Title V Air Operation Permit Revision

Dear Ms. Stewart:

On March 17, 2011 you submitted an application and on June 20, 2011, you submitted additional information requesting authorization for installation and operation of four new Caterpillar Model No. G3520C engine generator sets and to modify the CO emissions standard as Best Available Control Technology (BACT) for the proposed and existing engine/generator sets. In addition, you requested a concurrent revision of the Title V air operation permit. The existing facility is located in Duval County at 5110 US Highway 301 South, Baldwin, Florida. The permit package includes the following documents:

- The Written Notice of Intent to Issue Air Permits provides important information regarding: the Permitting Authority's intent to issue air permits for the proposed project; the requirements for publishing a Public Notice of the Permitting Authority's intent to issue air permits; the procedures for submitting comments on the draft Title V air operation permit revision and the draft air construction permit revision; the process for filing a petition for an administrative hearing; and, the availability of mediation.
- The Public Notice of Intent to Issue Air Permits is the actual notice that you must have published in the legal advertisement section of a newspaper of general circulation in the area affected by this project. The Public Notice of Intent to Issue Air Permits must be published as soon as possible and the proof of publication must be provided to the Department within seven days of the date of publication. Because this permit is being processed a combined draft permit in order to reduce processing time, a duplicate copy of the proof of publication must also be transmitted by electronic mail within seven days of the date of publication to Ms. Ana Oquendo at EPA Region 4 at the following address: [oquendo.ana@epamail.epa.gov](mailto:oquendo.ana@epamail.epa.gov).
- The Statement of Basis, which summarizes the facility, the equipment, and the primary rule applicability.
- The draft Title V air operation permit revision, which includes the specific permit conditions that regulate the emissions units covered by the proposed project. Only the appendices that were changed are included, all of the remaining appendices will be provided in the final permit.
- The Technical Evaluation and Preliminary Determination, which explains the revisions to underlying construction permit conditions.
- The draft air construction permit revision.

Please submit any written comments you wish to have considered concerning the permitting authority's proposed action to Mr. Syed Arif, P.E., Environmental Administrator, at the above letterhead address. If you have any questions, please contact the project engineer, Christy DeVore, by telephone at 850/717-9085 or by email at [christy.devore@dep.state.fl.us](mailto:christy.devore@dep.state.fl.us).

Sincerely,

Jeffery F. Koerner, P.E., Program Administrator  
Office of Permitting and Compliance  
Division of Air Resource Management

Enclosures

JFK/scd

## WRITTEN NOTICE OF INTENT TO ISSUE AIR PERMIT

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*In the Matter of an  
Application for Air Permit by:*

City of Jacksonville  
Public Works Department  
117 West Duval Street, St. James Building, 4<sup>th</sup> Floor  
Jacksonville, FL 32202

Draft Construction Permit No. 0310358-012-AC/PSD-374C  
Draft Title V Permit No. 0310358-013-AV  
Trail Ridge Energy, LLC  
Landfill Gas-to-Energy Expansion  
Duval County, Florida

*Authorized Representative:*

Ms. Kerri Stewart, Chief Administrative Officer

**Facility Location:** City of Jacksonville operates the existing Trail Ridge Landfill where Trail Ridge Energy is located. The landfill is located in Duval County at 5110 US Highway 301 South, Baldwin, Florida.

**Project:** The Trail Ridge Landfill is an existing municipal solid waste landfill. The applicant proposes to install and operate four lean-burn reciprocating internal combustion engine/generator sets as part of the existing landfill gas-to-energy plant at the Trail Ridge Landfill. In addition, the applicant has requested a modification to the CO emissions standard as Best Available Control Technology (BACT) for the existing engine/generator sets. The landfill gas will be used to fuel the proposed four and existing six lean-burn reciprocating internal combustion engine/generator sets. The plant will have the potential to generate an additional 6.4 megawatts (MW) of electricity for a combined nominal 16 MW of power to the electrical grid. In addition, the applicant requested a concurrent revision of the Title V air operation permit. The two existing flares will be retained as additional combustion devices for the landfill gas. The landfill gas will be routed through a landfill gas treatment system and then to the engines. As necessary, residual landfill gas will be routed to the flares. The project is subject to the preconstruction review requirements of Rule 62-212.400, Florida Administrative Code (F.A.C.) for the Prevention of Significant Deterioration (PSD) of Air Quality for the following pollutants: carbon monoxide (CO), nitrogen oxides (NO<sub>x</sub>), total particulate matter (PM) and particulate matter with a mean particle diameter of 10 microns or less (PM<sub>10</sub>). Details of the project are provided in the application and the enclosed Technical Evaluation and Preliminary Determination.

**Permitting Authority:** Applications for air construction permits and Title V air operation permits are subject to review in accordance with the provisions of Chapter 403, Florida Statutes (F.S.) and Chapters 62-4, 62-210, 62-212 and 62-213 of the Florida Administrative Code (F.A.C.). The proposed project is not exempt from air permitting requirements and an air permit is required to perform the proposed work. The Office of Permitting and Compliance is the Permitting Authority responsible for making a permit determination for this project. The Permitting Authority's physical address is: 111 South Magnolia Drive, Suite #4, Tallahassee, Florida. The Permitting Authority's mailing address is: 2600 Blair Stone Road, MS #5505, Tallahassee, Florida 32399-2400. The Permitting Authority's telephone number is 850/717-9000.

**Project File:** A complete project file is available for public inspection during the normal business hours of 8:00 a.m. to 5:00 p.m., Monday through Friday (except legal holidays), at address indicated above for the Permitting Authority. The complete project file includes the draft Title V air operation permit revision, the Statement of Basis, the draft construction permit, the Technical Evaluation and Preliminary Determination, the application, and the information submitted by the applicant, exclusive of confidential records under Section 403.111, F.S. Interested persons may contact the Permitting Authority's project review engineer for additional information at the address or phone number listed above.

**Notice of Intent to Issue Permit:** The Permitting Authority gives notice of its intent to issue an air construction permit and concurrent draft Title V to the applicant for the project described above. The applicant has provided reasonable assurance that operation of the proposed equipment will not adversely impact air quality and that the project will comply with all appropriate provisions of Chapters 62-4, 62-204, 62-210, 62-212, 62-213, 62-296 and 62-297, F.A.C. The Permitting Authority will issue a Final Permit in accordance with the conditions of the

## WRITTEN NOTICE OF INTENT TO ISSUE AIR PERMIT

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proposed Draft Permit unless a timely petition for an administrative hearing is filed under Sections 120.569 and 120.57, F.S. or unless public comment received in accordance with this notice results in a different decision or a significant change of terms or conditions.

**Public Notice:** Pursuant to Section 403.815, F.S. and Rules 62-110.106 and 62-210.350, F.A.C., you (the applicant) are required to publish at your own expense the enclosed Public Notice of Intent to Issue Air Permit (Public Notice). The Public Notice shall be published one time only as soon as possible in the legal advertisement section of a newspaper of general circulation in the area affected by this project. The newspaper used must meet the requirements of Sections 50.011 and 50.031, F.S. in the county where the activity is to take place. If you are uncertain that a newspaper meets these requirements, please contact the Permitting Authority at above address or phone number. Pursuant to Rule 62-110.106(5) and (9), F.A.C., the applicant shall provide proof of publication to the Permitting Authority at the above address within 7 days of publication. Failure to publish the notice and provide proof of publication may result in the denial of the permit pursuant to Rule 62-110.106(11), F.A.C.

**Comments:** The Permitting Authority will accept written comments concerning the draft Title V air operation permit revision and the draft air construction permit revision for a period of 30 days from the date of publication of the Public Notice. Written comments must be received by the close of business (5:00 p.m.), on or before the end of this 30-day period by the Permitting Authority at the above address. If timely received written comments result in a significant change to the draft Title V air operation permit revision or the draft air construction permit revision, the Permitting Authority shall issue a revised draft Title V air operation permit revision or a revised draft air construction permit and require, if applicable, another Public Notice. All comments filed will be made available for public inspection. For additional information, contact the Permitting Authority at the above address or phone number.

**Petitions:** A person whose substantial interests are affected by the proposed permitting decision may petition for an administrative hearing in accordance with Sections 120.569 and 120.57, F.S. The petition must contain the information set forth below and must be filed with (received by) the Department's Agency Clerk in the Office of General Counsel of the Department of Environmental Protection, 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000. Petitions filed by the applicant or any of the parties listed below must be filed within 14 days of receipt of this Written Notice of Intent to Issue Air Permit. Petitions filed by any persons other than those entitled to written notice under Section 120.60(3), F.S., must be filed within 14 days of publication of the attached Public Notice or within 14 days of receipt of this Written Notice of Intent to Issue Air Permit, whichever occurs first. Under Section 120.60(3), F.S., however, any person who asked the Permitting Authority for notice of agency action may file a petition within 14 days of receipt of that notice, regardless of the date of publication. A petitioner shall mail a copy of the petition to the applicant at the address indicated above, at the time of filing. The failure of any person to file a petition within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under Sections 120.569 and 120.57, F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention (in a proceeding initiated by another party) will be only at the approval of the presiding officer upon the filing of a motion in compliance with Rule 28-106.205, F.A.C.

A petition that disputes the material facts on which the Permitting Authority's action is based must contain the following information: (a) The name and address of each agency affected and each agency's file or identification number, if known; (b) The name, address, and telephone number of the petitioner; the name, address and telephone number of the petitioner's representative, if any, which shall be the address for service purposes during the course of the proceeding; and an explanation of how the petitioner's substantial interests will be affected by the agency determination; (c) A statement of when and how each petitioner received notice of the agency action or proposed decision; (d) A statement of all disputed issues of material fact. If there are none, the petition must so state; (e) A concise statement of the ultimate facts alleged, including the specific facts the petitioner contends warrant reversal or modification of the agency's proposed action; (f) A statement of the specific rules or statutes

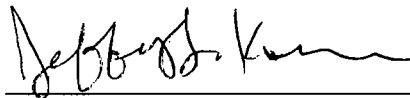
**WRITTEN NOTICE OF INTENT TO ISSUE AIR PERMIT**

the petitioner contends require reversal or modification of the agency's proposed action including an explanation of how the alleged facts relate to the specific rules or statutes; and, (g) A statement of the relief sought by the petitioner, stating precisely the action the petitioner wishes the agency to take with respect to the agency's proposed action. A petition that does not dispute the material facts upon which the Permitting Authority's action is based shall state that no such facts are in dispute and otherwise shall contain the same information as set forth above, as required by Rule 28-106.301, F.A.C.

Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the Permitting Authority's final action may be different from the position taken by it in this Written Notice of Intent to Issue Air Permit. Persons whose substantial interests will be affected by any such final decision of the Permitting Authority on the application have the right to petition to become a party to the proceeding, in accordance with the requirements set forth above.

**Mediation:** Mediation is not available in this proceeding.

Executed in Tallahassee, Florida.



Jeffery F. Koerner, P.E., Program Administrator  
Office of Permitting and Compliance  
Division of Air Resource Management

**CERTIFICATE OF SERVICE**

The undersigned duly designated deputy agency clerk hereby certifies that this Written Notice of Intent to Issue Permits package (including the Public Notice, the Statement of Basis, the Draft Title V Permit, the Technical Evaluation and Preliminary Determination and the Draft Construction Permit with Appendices) was sent by electronic mail, or a link to these documents made available electronically on a publicly accessible server, with received receipt requested before the close of business on 8-19-11 to the persons listed below.

- Ms. Kerri Stewart, City of Jacksonville(kstewart@coj.net)
- Mr. Scott Salisbury, Trail Ridge Energy, LLC (scott.salisbury@landfillenergy.com)
- Mr. Robert Harvey, P.E., Derenzo and Associates, Inc. (rharvey@derenzo.com)
- Mr. Chris Kirts, Northeast District (christopher.kirts@dep.state.fl.us)
- Mr. Richard Robinson, Duval County Environmental Resources Management (robinson@coj.net)
- Ms. Kathleen Forney, EPA Region 4 (forney.kathleen@epa.gov)
- Ms. Heather Abrams, EPA Region 4 (abrams.heather@epa.gov)
- Ms. Ana Oquendo, US EPA Region 4 (oquendo.ana@epa.gov)
- Ms. Barbara Friday, DEP OPC (barbara.friday@dep.state.fl.us) (for posting with U.S. EPA, Region 4)
- Ms. Lynn Scarce, DEP OPC Reading File (lynn.scarce@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.

Lynn Scarce (Clerk)      August 19, 2011 (Date)

## PUBLIC NOTICE OF INTENT TO ISSUE AIR PERMITS

Florida Department of Environmental Protection  
Division of Air Resource Management, Office of Permitting and Compliance  
Draft Permit No. 0310358-012-AC/PSD-FL-374C, Air Construction Permit Revision  
Draft Permit No. 0310358-013-AV, Title V Air Operation Permit Revision  
Trail Ridge Landfill, Trail Ridge Energy  
Duval County, Florida

**Applicant:** The applicant for this project is the City of Jacksonville. The applicant's authorized representative and mailing address is: Ms. Kerri Stewart, Chief Administrative Officer, City of Jacksonville, Public Works Department, 117 West Duval Street, St. James Building, 4<sup>th</sup> Floor, Jacksonville, FL 32202.

**Facility Location:** City of Jacksonville operates the existing Trail Ridge Landfill where Trail Ridge Energy is located. The landfill is located in Duval County at 5110 US Highway 301 South, Baldwin, Florida.

**Project:** The Trail Ridge Landfill is an existing municipal solid waste landfill. The applicant proposes to install and operate four lean-burn reciprocating internal combustion engine/generator sets as part of the existing landfill gas-to-energy plant at the Trail Ridge Landfill. In addition, the applicant has requested a modification to the CO emissions standard as Best Available Control Technology (BACT) for the existing engine/generator sets. The landfill gas will be used to fuel the proposed four and existing six lean-burn reciprocating internal combustion engine/generator sets. The plant will have the potential to generate an additional 6.4 megawatts (MW) of electricity for a combined nominal 16 MW of power to the electrical grid. In addition, the applicant requested a concurrent revision of the Title V air operation permit. The two existing flares will be retained as additional combustion devices for the landfill gas. The landfill gas will be routed through a landfill gas treatment system and then to the engines. As necessary, residual landfill gas will be routed to the flares. The project will result in the following potential emissions increases at the existing landfill: 284.7 tons/year of carbon monoxide (CO); 51.7 tons/year of nitrogen oxides (NO<sub>x</sub>); 20.7 tons/year of particulate matter (PM), particulate matter with a mean particle diameter of 10 microns or less (PM<sub>10</sub>) and particulate matter with a mean particle diameter of 2.5 microns or less (PM<sub>2.5</sub>); 16.6 tons/year of sulfur dioxide (SO<sub>2</sub>); and 24.2 tons/year of volatile organic compounds (VOC).

The proposed project is subject to preconstruction review pursuant to Rule 62-212.400, Florida Administrative Code (F.A.C.) for the Prevention of Significant Deterioration (PSD) of Air Quality for emissions of CO, NO<sub>x</sub>, PM and PM<sub>10</sub>. In accordance with this rule, the Department is required to make a determination of the Best Available Control Technology (BACT) for CO, NO<sub>x</sub>, PM and PM<sub>10</sub> emissions. The draft permit includes the following preliminary BACT determinations: emissions of CO and NO<sub>x</sub> will be minimized by the lean-burn combustion design combined with good operating and maintenance practices; and emissions of PM/PM<sub>10</sub> will be controlled by filtration in the landfill gas treatment system prior to combustion.

The Department reviewed the air quality analysis prepared by the applicant. The project has no predicted significant impact for any pollutants in the nearest PSD Class I area (Okefenokee National Wildlife Refuge). Therefore, a multi-source modeling analysis for PSD Class I increment was not required. The predicted impacts of CO, PM<sub>10</sub>, and SO<sub>2</sub> are well below the corresponding PSD Class II significant impact level and no further analysis is required. The 24-hour PM<sub>2.5</sub> and the 1-hour predicted impacts of NO<sub>x</sub> are greater than the corresponding PSD Class II significant impact levels; therefore, a full impact analysis for these pollutants was conducted, including an increment analysis.

The PSD increment represents the amount that new sources in an area may increase ambient ground level concentrations of a pollutant from a regulatory baseline concentration. The emission values input into the model for predicting increment consumption are based on the maximum emissions rates from increment-consuming sources at the facility as well as all other increment-consuming sources in the vicinity of the facility. The following table summarizes the results of the PSD Class II increment analysis.

(Public Notice to be Published in the Newspaper)

PSD Class II Increment Analysis				
Pollutant	Averaging Time	Maximum Predicted Impacts ( $\mu\text{g}/\text{m}^3$ )	Allowable Increment ( $\mu\text{g}/\text{m}^3$ )	Greater than PSD Class II Allowable Increment?
PM <sub>2.5</sub>	24-hour	3.5	4	NO

As shown above, the maximum predicted impacts are less than the allowable PSD Class II increments.

**Permitting Authority:** Applications for air construction permits and for Title V air operation permits are subject to review in accordance with the provisions of Chapter 403, Florida Statutes (F.S.) and Chapters 62-4, 62-210, 62-212 and 62-213 of the F.A.C. The proposed project is not exempt from air permitting requirements and an air permit is required to perform the proposed work. The Permitting Authority responsible for making a permit determination for this project is the Office of Permitting and Compliance in the Department of Environmental Protection's Division of Air Resource Management. The Permitting Authority's physical address is: 111 South Magnolia Drive, Suite #4, Tallahassee, Florida. The Permitting Authority's mailing address is: 2600 Blair Stone Road, MS #5505, Tallahassee, Florida 32399-2400. The Permitting Authority's telephone number is 850/717-9000.

**Project File:** A complete project file is available for public inspection during the normal business hours of 8:00 a.m. to 5:00 p.m., Monday through Friday (except legal holidays), at the physical address indicated above for the Permitting Authority. The complete project file includes the draft Title V air operation permit revision, the Statement of Basis, the draft construction permit, the Technical Evaluation and Preliminary Determination, the application and information submitted by the applicant (exclusive of confidential records under Section 403.111, F.S.). Interested persons may contact the Permitting Authority's project engineer for additional information at the address and phone number listed above. In addition, electronic copies of these documents are available on the following web site: <http://approd.dep.state.fl.us/air/emission/apds/default.asp>.

**Notice of Intent to Issue Air Permit:** The Permitting Authority gives notice of its intent to issue an air construction permit and concurrent draft Title V air operation permit revision to the applicant for the project described above. The applicant has provided reasonable assurance that operation of proposed equipment will not adversely impact air quality and that the project will comply with all appropriate provisions of Chapters 62-4, 62-204, 62-210, 62-212, 62-213, 62-296 and 62-297, F.A.C. The Permitting Authority will issue a Final Permit in accordance with the conditions of the draft Title V air operation permit revisions and the draft air construction permit revision unless a timely petition for an administrative hearing is filed under Sections 120.569 and 120.57, F.S. or unless public comment received in accordance with this notice results in a different decision or a significant change of terms or conditions.

**Comments:** The Permitting Authority will accept written comments concerning the draft Title V air operation permit revision and the draft air construction permit revision for a period of 30 days from the date of publication of the Public Notice. Written comments must be received by the close of business (5:00 p.m.), on or before the end of this 30-day period by the Permitting Authority at the above address. If timely received written comments result in a significant change to the draft Title V air operation permit revision or the draft air construction permit revision, the Permitting Authority shall issue a revised draft Title V air operation permit revision or a revised draft air construction permit and require, if applicable, another Public Notice. All comments filed will be made available for public inspection. For additional information, contact the Permitting Authority at the above address or phone number.

**Petitions:** A person whose substantial interests are affected by the proposed permitting decision may petition for an administrative hearing in accordance with Sections 120.569 and 120.57, F.S. The petition must contain the information set forth below and must be filed with (received by) the Department's Agency Clerk in the Office of General Counsel of the Department of Environmental Protection at 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000. Petitions filed by any persons other than those entitled to written notice under Section 120.60(3), F.S. must be filed within 14 days of publication of this Public Notice or receipt of a written notice, whichever occurs first. Under Section 120.60(3), F.S., however, any person who asked the Permitting Authority for notice of agency action may file a petition within 14 days of receipt of that notice,

(Public Notice to be Published in the Newspaper)



regardless of the date of publication. A petitioner shall mail a copy of the petition to the applicant at the address indicated above, at the time of filing. The failure of any person to file a petition within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under Sections 120.569 and 120.57, F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention (in a proceeding initiated by another party) will be only at the approval of the presiding officer upon the filing of a motion in compliance with Rule 28-106.205, F.A.C.

A petition that disputes the material facts on which the Permitting Authority's action is based must contain the following information: (a) The name and address of each agency affected and each agency's file or identification number, if known; (b) The name, address and telephone number of the petitioner; the name address and telephone number of the petitioner's representative, if any, which shall be the address for service purposes during the course of the proceeding; and an explanation of how the petitioner's substantial rights will be affected by the agency determination; (c) A statement of when and how the petitioner received notice of the agency action or proposed decision; (d) A statement of all disputed issues of material fact. If there are none, the petition must so state; (e) A concise statement of the ultimate facts alleged, including the specific facts the petitioner contends warrant reversal or modification of the agency's proposed action; (f) A statement of the specific rules or statutes the petitioner contends require reversal or modification of the agency's proposed action including an explanation of how the alleged facts relate to the specific rules or statutes; and, (g) A statement of the relief sought by the petitioner, stating precisely the action the petitioner wishes the agency to take with respect to the agency's proposed action. A petition that does not dispute the material facts upon which the Permitting Authority's action is based shall state that no such facts are in dispute and otherwise shall contain the same information as set forth above, as required by Rule 28-106.301, F.A.C.

Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the Permitting Authority's final action may be different from the position taken by it in this Public Notice of Intent to Issue Air Permit. Persons whose substantial interests will be affected by any such final decision of the Permitting Authority on the application have the right to petition to become a party to the proceeding, in accordance with the requirements set forth above.

**Mediation:** Mediation is not available for this proceeding.

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## STATEMENT OF BASIS

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### Title V Air Operation Permit Revision

Permit No. 0310358-013-AV

#### APPLICANT

The applicant for this project is the City of Jacksonville. The applicant's responsible official and mailing address are: Ms. Kerri Stewart, Chief Administrative Officer, City of Jacksonville Public Works Department, 117 West Duval Street, St. James Building, 4<sup>th</sup> Floor, Jacksonville, FL 32202.

#### FACILITY DESCRIPTION

The existing Trail Ridge Landfill facility is located at 5110 U.S. Highway 301 South in Baldwin, Duval County, Florida. The Trail Ridge Energy, LLC facility is located at the existing Trail Ridge Landfill facility. The Trail Ridge Energy, LLC facility includes six lean-burn spark-ignition reciprocating internal combustion engine (RICE)-generator sets firing landfill gas, is categorized under Standard Industrial Classification (SIC) Code No. 4953, Refuse Systems. The UTM coordinates are Zone 17, 399.873 km East, and 3344.309 km North.

Trail Ridge Landfill is a Class I Municipal Solid Waste (MSW) Landfill consisting of 176 acres. This landfill commenced construction in 1992. Trail Ridge Landfill receives approximately 2,500 - 3,000 tons of waste daily. The site totals 977 acres of land and currently has a 148-acre "footprint" which serves residential and commercial customers.

The nonmethane organic compounds (NMOC) emissions are greater than 50 megagrams per year. Landfill gas (LFG) is directed to an enclosed flare where methane, NMOC and HAPs contained in the gas are destroyed at high temperatures. The facility currently operates two flares – one 5,000 standard cubic feet per minute (scfm) open flare and one 1,600 scfm open flare.

In order to reduce the amount of LFG wasted by flaring, all available LFG from the landfill is supplied to Trail Ridge Energy for use as fuel to power the proposed internal combustion (IC) engine electricity generation plant.

#### PROJECT DESCRIPTION

The purpose of this permitting project is to revise the existing Title V permit for the above referenced facility to add the installation and operation of four new Caterpillar Model No. G3520C engine generator sets and to modify the CO emissions standard as Best Available Control Technology (BACT) for the proposed and existing engine/generator sets.

#### PROCESSING SCHEDULE AND RELATED DOCUMENTS

March 17, 2011 Department received the application for an air pollution construction permit and Title V revision permit.

April 8, 2011 Department requested additional information.

June 20, 2011 Department received additional information; application complete.

#### PRIMARY REGULATORY REQUIREMENTS

Title III: The facility is not identified as a major source of hazardous air pollutants (HAP).

Title V: The facility is a Title V major source of air pollution in accordance with Chapter 62-213, Florida Administrative Code (F.A.C.).

PSD: The facility is a Prevention of Significant Deterioration (PSD)-major source of air pollution in accordance with Rule 62-212.400, F.A.C.

## STATEMENT OF BASIS

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**NSPS:** The facility does operate units subject to the New Source Performance Standards (NSPS) of 40 Code of Federal Regulations (CFR) 60.

**NESHAP:** The facility does operate units subject to the National Emissions Standards for Hazardous Air Pollutants (NESHAP) of 40 CFR 63.

**CAIR:** The facility is not subject to the Clean Air Interstate Rule (CAIR) set forth in Rule 62-296.470, F.A.C.

### PROJECT REVIEW

To incorporate the provisions of permit No. 0310358-012-AC, which authorized the construction of four lean-burn reciprocating internal combustion engine/generator sets as part of the existing landfill gas-to-energy plant at the Trail Ridge Landfill. In addition, the permittee requested a modification to the CO emissions standard as Best Available Control Technology (BACT) for the existing engine/generator sets. The landfill gas will be used to fuel the proposed four and existing six lean-burn reciprocating internal combustion engine/generator sets. The plant will have the potential to generate an additional 6.4 megawatts (MW) of electricity for a combined nominal 16 MW of power to the electrical grid. In addition, the applicant requested a concurrent revision of the Title V air operation permit. The two existing flares will be retained as additional combustion devices for the landfill gas. The landfill gas will be routed through a landfill gas treatment system and then to the engines. As necessary, residual landfill gas will be routed to the flares. The project will result in the following potential emissions increases at the existing landfill: 284.7 tons/year of carbon monoxide (CO); 51.7 tons/year of nitrogen oxides (NO<sub>x</sub>); 20.7 tons/year of particulate matter (PM), particulate matter with a mean particle diameter of 10 microns or less (PM<sub>10</sub>) and particulate matter with a mean particle diameter of 2.5 microns or less (PM<sub>2.5</sub>); 16.6 tons/year of sulfur dioxide (SO<sub>2</sub>); and 24.2 tons/year of volatile organic compounds (VOC).

AC/PSD Permit Revisions. The applicant requested the concurrent processing of an air construction permit revision to change air construction/PSD permit conditions. See Permit No. 0310358-012-AC/PSD-FL-374C for the changes made. The Technical Evaluation and Preliminary Determination summarizes the requested changes, the Department's responses and identifies the changes made to the underlying air construction permit conditions. These changes have been reflected within the Title V air operation permit.

Changes are shown in the condition with a ~~striketrough format~~ for deletions and a double underline format for additions. Only the appendices that were changed are included, all of the remaining appendices will be provided in the final permit.

### CONCLUSION

This project revises Title V air operation permit No. 0310358-010-AV, which was issued on May 5, 2011. This Title V air operation permit revision is issued under the provisions of Chapter 403, Florida Statutes (F.S.), and Chapters 62-4, 62-210 and 62-213, F.A.C.

***DRAFT PERMIT***

**City of Jacksonville  
Trail Ridge Municipal Solid Waste (MSW) Landfill  
Facility ID No.: 0310358  
Duval County**

**Title V Air Operation Permit Revision**

**DRAFT Permit No.: 0310358-013-AV**



**Permitting Authority:**

State of Florida  
Department of Environmental Protection  
Division of Air Resource Management  
Office of Permitting and Compliance  
2600 Blair Stone Road, MS#5505  
Tallahassee, Florida 32399-2400  
Telephone: (850) 717-9000  
Fax: (850) 717-9001

***DRAFT PERMIT***

**Title V Air Operation Permit Revision**

**Permit No.: 0310358-013-AV**

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# ***DRAFT PERMIT***

**PERMITTEE:**

City of Jacksonville  
Solid Waste Division  
1031 Superior Street  
Jacksonville, Florida 32254

Permit No.: 0310358-013-AV  
Trail Ridge Energy, LLC  
Facility Id No.: 0310358  
Title V Air Operation Permit Revision

The purpose of this permit is to: 1) revise the Title V Air Operation Permit No. 0310358-010-AV; 2) incorporate the terms and conditions of Construction Permit 0310358-012-AC and 3) incorporate the terms and conditions of Construction Permit 0310358-007-AC. The existing facility is located at 5110 U.S. Highway 301, Baldwin, Duval County, Florida, UTM Coordinates: Zone 17, 399.765 km East and 3344.919 km North; Latitude: 30° 14' 00" North and Longitude: 82° 02' 30" West.

This Title V Air Operation Permit Revision is issued under the provisions of Chapter 403, Florida Statutes (F.S.) and Florida Administrative Code (F.A.C.) Chapters 62-4, 62-210 and 62-213. The above named permittee is hereby authorized to operate the facility shown on the application and approved drawing(s), plans and other documents, attached hereto or on file with the permitting authority, in accordance with the terms and conditions of this permit.

Effective Date:  
Renewal Application Due Date:  
Expiration Date:

Executed in Tallahassee, Florida  
For the Division of Air Resource Management

\_\_\_\_\_  
(Date) (Signature)

\_\_\_\_\_  
(Printed Name of Above Designee)

JH/scd

**SECTION I. FACILITY INFORMATION.**

**Subsection A. Facility Description.**

This facility an active, Class I municipal solid waste (MSW) landfill consisting of 176 acres that is operated by Trail Ridge Landfill, Inc. and owned by the City of Jacksonville. The landfill has an overall design capacity of 24,332,000 cubic yards (18,249,113 tons) according to the Gas Collection and Control System Design Plan received June 10, 1997.

The Class I landfill was constructed in sixteen (16) phases: Phases IA, IB, IC, IIA, IIB, IIC, IIIA, IIIB, IVA, IVB, IIIC, IVC, VA, VB, VC, and VD. Each of the phases is constructed and authorized to accept waste in accordance with the Solid Waste Permit. MSW received by the facility is placed in active cells where it is compacted and covered. The MSW undergoes anaerobic decomposition releasing landfill gas that consists of carbon dioxide, methane (approximately 40-60%), water vapor, and greater than 50 MG/year of non-methane organic compounds (NMOC).

The landfill gas is produced from both active and capped cells. This gas is collected by an active, landfill gas collection system (a series of vertical and/or horizontal collection piping, blower system) and routed to a treatment system that treats the landfill gas for subsequent use as fuel to power the reciprocating internal combustion engines (RICE)-generator sets at the Trail Ridge Energy, LLC electricity generation plant. Trail Ridge Energy, LLC is located on a parcel of land segregated from the Trail Ridge Landfill, Inc. operations. Any excess landfill gas that exceeds the volume Trail Ridge Energy LLC is able to accept is diverted to the 5,000 scfm or the de-rated 1,600 scfm open flares for control.

**Subsection B. Summary of Emissions Units.**

EU No.	Brief Description
<i>Regulated Emissions Units</i>	
001	Municipal Solid Waste Landfill (Active, Landfill Gas Collection System which consists of a series of vertical and/or horizontal collection piping, blower system that includes two 2,500 scfm centrifugal exhaust type LFG blowers designed at a minimum of -60"wc inlet suction and 10" wc discharge pressure and currently 89 NSPS gas extraction wells. The number of gas extraction wells to be installed will change dependent on compliance with the 40 CFR 60 WWW Standards.)
010	5,000 scfm Open, Non-Assisted Flare manufactured by Parnel Biogas, Inc. Two centrifugal exhaust landfill gas blowers with a maximum design of 2,500 cfm each, with a minimum of -60 "w.c. inlet suction and 10" w.c. discharge pressure.
011	A de-rated 1,600 scfm Open, Non-Assisted Flare manufactured by Landfill Gas Specialties. A centrifugal exhaust landfill gas blower with a maximum design of 1,600 cfm, a minimum of -60 "w.c. inlet suction and 10" w.c. discharge pressure.
002	Fugitive Dust Emissions from unpaved roads and landfill work areas.
004 – 009 and 012-015	<del>Ten Six</del> Caterpillar Model G3520C landfill gas fueled internal combustion engines and electricity generators. Each engine has a power generation rating of 2,233 brake horsepower at 100 percent load. The generator has a power output rating of 1,600 kilowatt. The engines will be fueled exclusively with landfill gas generated by and received from the Trail Ridge landfill facility.

**Subsection C. Applicable Regulations.**

The Trail Ridge Landfill is a Major/Title V source of air pollution pursuant to Chapter 62-210, FAC and Rule 2.301, Jacksonville Environmental Protection Board (JEPB), because the potential emissions of at

## SECTION I. FACILITY INFORMATION.

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least one regulated air pollutant, such as particulate matter (PM/PM10), sulfur dioxide (SO<sub>2</sub>), nitrogen oxides (NO<sub>x</sub>), carbon monoxide (CO), or volatile organic compounds (VOC) exceed 100 tons per year. The landfill is also an EPA designated Title V source in accordance with the standards of 40 CFR 60 Subpart WWW, Standards of Performance for Municipal Solid Waste Landfills (40 CFR 60.752(c)), because the design capacity of the landfill is greater than 2.5 million cubic meters and megagrams.

The landfill is located in an area unclassifiable for the air pollutant particulate matter (PM) less than or equal to ten (10) micrometers, in the area of influence of an air quality maintenance area for PM and in an air quality maintenance area for ozone pursuant to Chapter 62-204, Florida Administrative Code (FAC) and Jacksonville Environmental Protection Board (JEPB), Rule 2.201.

The landfill commenced construction after May 30, 1991 and therefore is subject to the provisions of 40 CFR 60, Subpart A, General Provisions, Subpart WWW, Standards of Performance for Municipal Solid Waste Landfills in accordance with 40 CFR 60.750(a). The landfill is subject to the provisions of 40 CFR 63, Subpart A, General Provisions and 40 CFR 63 Subpart AAAA, National Emissions Standards for Hazardous Air Pollutants (NESHAP) for Municipal Solid Waste Landfills in accordance with 40 CFR 63.1935. The landfill is also subject to the provisions of 40 CFR 61, Subpart A, General Provisions and 40CFR Part 61 Subpart M (Asbestos).

The Department has presumed that the Trail Ridge Landfill facility has a control relationship over the Trail Ridge Energy LLC electricity generation operations since the Trail Ridge Energy LLC electricity generation operations are under contract with the landfill and the operations will be fueled exclusively with methane-rich landfill gas provided by the landfill. The Trail Ridge Energy LLC engine plant project is permitted under Permit No. 0310358-004-AC/PSD-FL-374. The facility is therefore a major stationary source in accordance with Rule 62-212.400(PSD), F.A.C

Prior to the landfill gas being sent to the Trail Ridge Energy LLC engine plant for re-use, the landfill gas is sent to a treatment system. The treatment system is subject to the provisions of 40 CFR 60, Subpart A- General Provisions, Subpart WWW-Standards of Performance for Municipal Solid Waste Landfills, 40 CFR 63, Subpart A- General Provisions and Subpart AAAA- National Emission Standards for Hazardous Air Pollutants- Municipal Solid Waste Landfills. In addition, the proposed four engine/generator sets, Emission Unit ID Nos. 012-015, are also subject to 40 CFR60 Subpart JJJJ and 40 CFR 63 Subpart ZZZZ.

Also, included in this permit are miscellaneous insignificant emission units and/or activities. Compliance Assurance Monitoring (CAM) requirements are not applicable to this facility. Based upon the Title V air operation permit revision application received March 7, 2011:

- The facility is a Title V source
- An Area source of hazardous air pollutants (HAPs)
- Major source of air pollutants, other than HAPs
- One or more emissions units subject to NSPS (40 CFR 60)
- One or more emissions units subject to NESHAP (40 CFR Part 61 and Part 63)

These documents are on file with the permitting authority:

Application for Title V Air Operation Permit Revision received March 7, 2011

Request for Additional Information dated April 8, 2011

Comments from Trail Ridge Energy LLC received June 20, 2011



## SECTION II. FACILITY-WIDE CONDITIONS.

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### Section II. Facility-Wide Conditions.

#### The following conditions apply facility-wide:

- FW1.** APPENDIX TV, TITLE V CONDITIONS, is a part of this permit.  
{Permitting note: APPENDIX TV, TITLE V CONDITIONS, is distributed to the permittee only. Other persons requesting copies of these conditions shall be provided a copy when requested or otherwise appropriate.}
- FW2.** General Pollutant Emission Limiting Standards. Objectionable Odor Prohibited. No person shall cause, suffer, allow, or permit the discharge of air pollutants which cause or contribute to an objectionable odor. [Rule 62-296.320(2), F.A.C.; and Rule 2.1001, JEPB; Construction Permit No. 0310358-004-AC/PSD-FL-374]
- FW3.** **Not federally enforceable.** The facility shall be subject to City of Jacksonville Ordinance Code, Title X, Chapter 360 [Environmental Regulation], Chapter 362 [Air and Water Pollution], Chapter 376 [Odor Control] and JEPB, Rule 1. [Final Rules with Respect to Organization, Procedure and Practice].
- FW4.** **Not federally enforceable.** The facility shall be subject to JEPB Rule 2, Part Nos. I through VII and Part Nos. IX through XIII.

#### Emissions and Controls

- FW5.** General Particulate Emission Limiting Standards. General Visible Emissions Standard. Except for emissions units that are subject to a particulate matter or opacity limit set forth or established by rule and reflected by conditions in this permit, no person shall cause, let, permit, suffer or allow to be discharged into the atmosphere the emissions of air pollutants from any activity, the density of which is equal to or greater than that designated as Number 1 on the Ringelmann Chart (20 percent opacity). EPA Method 9 is the method of compliance pursuant to Chapter 62-297, F.A.C. [Rules 62-296.320(4)(b)1. & 4., F.A.C.; Rule 2.1001, JEPB and Rule 2.1101, JEPB]
- FW6.** Open Burning Prohibition. Open burning is prohibited, except when determined by the Department to be the only feasible method of operation and authorized by this permit or an emergency exists which requires immediate action to protect human health and safety. [Rule 62-296.320(3)(a)&(b), F.A.C.]
- FW7.** Prevention of Accidental Releases (Section 112(r) of CAA). If, and when, the facility becomes subject to 112(r), the permittee shall:
- 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.
  - Submit to the permitting authority Title V certification forms or a compliance schedule in accordance with Rule 62-213.440(2), F.A.C.  
[40 CFR 68]
- FW8.** Insignificant Emissions Units and/or Activities. Appendix I-1, List of Insignificant Emissions Units and/or Activities, is a part of this permit. [Rules 62-213.440(1), 62-213.430(6) and 62-4.040(1)(b), FAC and Rules 2.501 and 2.1301, JEPB]

## SECTION II. FACILITY-WIDE CONDITIONS.

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**FW9.** General Pollutant Emission Limiting Standards. 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 (VOC) or organic solvents (OS) without applying known and existing vapor emission control devices or systems deemed necessary and ordered by the Department. [Rule 62-296.320(1)(a), FAC and Rule 2.1001, JEPB]

**FW10.** Emissions of Unconfined Particulate Matter. Pursuant to Rules 62-296.320(4)(c)1., 3. & 4., F.A.C., reasonable precautions to prevent emissions of unconfined particulate matter at this facility include the following requirements:

i. The following requirements are “not federally enforceable”:

Waste is placed in lifts in the landfill in a manner to prevent windblown litter and dust. The working face is kept as small as practicable to further reduce windblown dust and litter;

Portable fences are used around and near the working face to keep windblown litter in the work area;

Waste is covered daily to prevent windblown litter after operation hours;

Paved Roads: During hours of operation, the frequency of vehicle traffic may warrant dust control measures. Roadway sweeping is performed as needed, especially during the time periods during the year when there is typically less rainfall. Roadway washing takes place as needed to prevent carryout of dirt and mud to adjoining roadways;

Unpaved Roads: Roadways in the active areas of the landfill will be graded and compacted to allow safe passage of vehicles and to prevent carry out of dirt and mud. Dust control will be managed using a water truck as needed;

Roads General: the type and frequency of the dust control operations will vary according to the weather conditions. Maintenance of the paved and unpaved roads will be performed on an as needed basis.

[Rule 62-296.320(4)(c)2., F.A.C.; and, proposed by the applicant in the Renewal Title V permit application received February 29, 2008]

### Excess Emissions

*{Permitting Note: The Excess Emissions Rule at Rule 62-210.700, F.A.C., cannot vary any requirement of a NSPS or NESHAP provision}*

**FW11.** Minimization of Emissions. At all times, including periods of startup, shutdown and malfunction, owners and operators shall, to the extent practicable, maintain and operate any affected facility including associated air pollution control equipment in a manner consistent with good air pollution control practice for minimizing emissions.

Determination of whether acceptable operating 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, opacity observations, review of operating and maintenance procedures and inspection of the source. [40 CFR 60.11(d); Rule 2.201, JEPB]

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## SECTION II. FACILITY-WIDE CONDITIONS.

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- FW12.** 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.; Rule 2.201, JEPB]
- FW13.** Considering operational variations in types of industrial equipment operations affected by this rule, the Department may adjust maximum and minimum factors to provide reasonable and practical regulatory controls consistent with the public interest. [Rule 62-210.700(5), F.A.C.; Rule 2.201, JEPB]
- FW14.** Startup, Shutdown, Malfunction Plan. The Permittee shall adopt and implement a written startup, shutdown and malfunction (SSM) plan that describes, in detail, procedures for operating and maintaining the source during periods of startup, shutdown and malfunction. The plan shall meet the requirements of 40 CFR 63.6(e)(3) including containing a program of corrective action for malfunctioning processes and the air pollution control and monitoring equipment used to comply with the relevant standards of 40 CFR Part 63. The current SSM Plan shall be maintained at the facility and be available for inspection and copying by the Administrator upon request. If the SSM Plan is subsequently revised pursuant to 40 CFR 63.6(e)(3)(viii), the Permittee shall maintain at the facility each previous (i.e., superseded) version of the SSM Plan and shall make each such previous version available for inspection and copying by the Administrator for a period of 5 years after revision of the plan. Any revisions made to the startup, shutdown and malfunction plan in accordance with the procedures established by 40 CFR 63.6(e), shall not be deemed to constitute a Part 70 or 71 permit revision. Moreover, none of the procedures specified by the startup, shutdown and malfunction plan for an affected source shall be deemed to fall within the permit shield. [40 CFR 63.6(e)]
- FW15.** When appropriate, any recording, monitoring, or reporting requirements that are time-specific shall be in accordance with the effective date of the permit, which defines day one. [Rule 62-213.440, F.A.C.; and Rule 2.501, JEPB]

### Annual Reports and Fees

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

- FW16.** Statement of Compliance. The annual statement of compliance pursuant to Rule 62-213.440(3)(a)2., FAC and Rule 2.501, JEPB shall be submitted to the Department and EPA within sixty (60) days after the end of the calendar year using DEP form No. 62-213.900(7), FAC.  
{Permitting Note: This condition implements the requirements of Rules 62-213.440(3)(a)2. & 3., FAC. (see Condition RR.7. of APPENDIX RR – FACILITY-WIDE REPORTING REQUIREMENTS)} [40 CFR 70.6, Rule 62-213.440, FAC and Rule 2.501, JEPB]
- FW17.** The permittee shall submit all compliance related notifications and reports required of this permit to the Department's North East District Office:

Department of Environmental Protection  
Northeast District Office  
7825 Baymeadows Way, Suite B-200  
Jacksonville, Florida 32256  
Telephone: 904/807-3300, Fax: 904/448-4363

**SECTION II. FACILITY-WIDE CONDITIONS.**

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**FW18.** 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

**FW19.** Annual Emissions Fee Form and Fee. The annual Title V emissions fees are due (postmarked) by March 1<sup>st</sup> 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/permitting/tvfee.htm>.  
[Rule 62-213.205, F.A.C.]

**FW20.** 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. and Rule 2.501, JEPB]

**FW21.** Compliance Plan: CP-1. Under Air Construction Permit No. 0310358-007-AC, the permittee is authorized to de-rate and re-install the open, non-assisted flare manufactured by Landfill Gas Specialties (formerly permitted under Construction Permit No. 0310358-001-AC, Emissions Unit 001). The flare shall be de-rated to a maximum capacity of 1,600 scfm of landfill gas. The flare is subject to 40 CFR 60, Subpart WWW and 60.18. Appendix CP-1 is a part of this permit.  
[Rule 62-213.440(2), F.A.C.]

Trail Ridge Landfill, Inc.  
5110 US Highway 301 South  
Baldwin, Florida 32234

Facility Identification Code (SIC):

Major Group No. 40, Industry Group No. 4953

Primary Responsible Official: Kerri Stewart, City of Jacksonville Chief Administrative Officer  
Facility ID No.: 0310358  
Duval County

*The primary responsible official is responsible for all appropriate reporting and compliance certifications for the entire facility (Trail Ridge Landfill, Inc. and Trail Ridge Energy, LLC).*

**SECTION III. EMISSIONS UNITS AND SPECIFIC CONDITIONS.**

**Subsection A. Emissions Unit 001**

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

<b>Emission Unit</b>	<b>Brief Description</b>
001	Municipal Solid Waste Landfill (Active, Landfill Gas Collection System which consists of a series of vertical and/or horizontal collection piping, blower system that includes two 2,500 scfm centrifugal exhauster type LFG blowers designed at a minimum of -60"wc inlet suction and 10" wc discharge pressure and currently 89 NSPS gas extraction wells. The number of gas extraction wells to be installed will change dependent on compliance with the 40 CFR 60 WWS Standards.)

A Municipal Solid Waste Landfill consisting of 176 acres.

Landfill gas is collected by an active, landfill gas collection system that currently includes 89 gas extraction wells. The number of gas extraction wells to be installed will change dependent on compliance with the 40 CFR 60 WWS Standards. The extracted landfill gas is routed through lateral piping to a header pipe which runs along the outer edge of the landfill. Two blowers pull the extracted gas through the header pipe to a gas treatment system for subsequent use as fuel to power the internal combustion (IC) engines at the City of Jacksonville Trail Ridge Energy, LLC Plant and/or a physically limited 1,600 scfm open flare (reinstalled 3,200 scfm flare) and/or a 5,000 scfm open flare for destruction by combustion.

The primary mode of operation is the fueling of the internal combustion engines at the Trail Ridge Energy LLC Plant. Any excess landfill gas that exceeds the volume the Trail Ridge Energy LLC Plant is able to accept is to be diverted to the 5,000 scfm or 1,600 scfm open flares for control.

**Permitting Note:** This emissions unit is subject to 40 CFR Part 60, Subpart WWS adopted by reference in Rule 62-204.800(8)(b)72, F.A.C.; 40 CFR, Part 61, Subpart M-National Emission Standard for Asbestos; and 40 CFR Part 63, Subpart AAAA adopted by reference in Rule 62-204.800(11)(b)58, F.A.C.

**Essential Potential to Emit (PTE) Parameters**

- A.1. **Landfill Design Capacity:** The overall design capacity of the landfill is 24,332,000 cubic yards (18,249,113 tons). [Rule 62-210.200(PTE), FAC and Rule 2.301, JEPB, Gas Collection and Control System Design Plan received June 10, 1997; FINAL Title V Permit No. 0310358-003-AV; Initial Title V Permit Application received March 12, 1997]
- A.2. **Landfill Gas Collection System-Design:** The LFG collection system at this facility is an active collection system. The system shall be designed as follows:
  - (1) To handle the maximum expected gas flow rate from the entire area of the landfill that warrants control over the intended use period of the gas control or treatment system equipment;
  - (2) Collect gas from each area, cell, or group of cells in the landfill in which the initial solid waste has been placed for a period of:
    - (i) 5 years or more if active; or

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- (ii) 2 years or more if closed or at final grade;
- (3) Collects gas at a sufficient extraction rate;
- (4) Designed to minimize off-site migration of subsurface gas.

[40 CFR 60.752(b)(2)(ii)(A)]

**A.3. Method of Operation -Landfill Gas Collection System:** The LFG collection system shall be operated such that gas is collected from each area, cell, or group of cells in the MSW landfill in which solid waste has been in place for:

- (1) 5 years or more if active; or
- (2) 2 years or more if closed or at final grade;

[40 CFR 60.753(a)]

**A.4. Landfill Gas Collection (LFG) System Hours of Operation:** The hours of operation are not restricted, i.e., 8760 hours per year. [Rule 62-210.200(PTE), FAC and Rule 2.301, JEPB]

**A.5. Landfill Gas Collection System:** LFG Control: Any excess landfill gas that exceeds the volume the Trail Ridge Energy LLC Plant is able to accept shall be diverted to the 5,000 scfm or the de-rated 1,600 scfm open flares for control. Collected LFG shall not be vented to the atmosphere. In the event the collection or control system is inoperable, the gas mover system shall be shut down and all valves in the collection and control system contributing to venting of the gas to the atmosphere shall be closed within 1 hour.

Subsections B and C address the open flares and Subsection E addresses the internal combustion engines at the Trail Ridge Energy, LLC Plant.

[40 CFR 60.753(a); 40 CFR 60.752(b)(2)(iii)(A); 40 CFR 60.753(e); Construction Permit No. 0310358-004-AC/PSD-FL-374]

**A.6. Method of Operation- LFG Treatment System/Flares:** The control or treatment system shall be operated at all times when the collected gas is routed to the system. [40 CFR 60.753(f)]

**A.7. Landfill Gas Collection or Control System- Inoperable:** In the event the collection or control system is inoperable, the gas mover system shall be shut down and all valves in the collection and control system contributing to venting of the gas to the atmosphere shall be closed within 1 hour. [40 CFR 60.753(e)]

#### **Landfill Gas Collection System Operation Requirements**

**A.8. Wellhead Operation- Pressure:** The collection system shall be operated with negative pressure at each wellhead except under the following conditions:

- (1) A fire or increased well temperature. The owner or operator shall record instances when positive pressure occurs in efforts to avoid a fire. These records shall be submitted with the annual reports as provided in Condition A.21.(1);

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- (2) Use of a geomembrane or synthetic cover. The owner or operator shall develop acceptable pressure limits in the design plan;
- (3) A decommissioned well. A well may experience a static positive pressure after shut down to accommodate for declining flows. All design changes shall be approved by the Administrator.

[40 CFR 60.753(b)]

**A.9.** Wellhead Operation-Temperature, Nitrogen or Oxygen Level: Each interior wellhead in the collection system shall be operated with a landfill gas temperature less than 55° C (131° F) and with either a nitrogen level less than 20 percent or an oxygen level less than 5 percent.

- (1) The nitrogen level shall be determined using Method 3C.
- (2) The oxygen shall be determined by an oxygen meter using Method 3A or 3C except that:
  - (i) The span shall be set so that the regulatory limit is between 20 and 50 percent of the span;
  - (ii) A data recorder is not required;
  - (iii) Only two calibration gases are required, a zero and span and ambient air may be used as the span;
  - (iv) A calibration error check is not required;
  - (v) The allowable sample bias, zero drift and calibration drift are ±10 percent.

[40 CFR 60.753(c)]

**A.10.** Wellhead Operation-Temperature, Nitrogen or Oxygen Level- Higher Operating Value: The owner or operator may establish a higher operating temperature, nitrogen, or oxygen value at a particular well after obtaining approval from the Department.

A higher operating value demonstration shall show supporting data that the elevated parameter does not cause fires or significantly inhibit anaerobic decomposition by killing methanogens.

All such higher operating values shall be approved by the Department in accordance with the requirements of Rule 62-297.620, F.A.C.

[40 CFR 60.753(c); EPA Determination dated August 26, 2008; Rule 62-4.070, F.A.C.. Rule 62-204.800(8)(a), F.A.C.]

**A.11.** Landfill Gas Collection System – Methane Concentration @ Surface of Landfill: The collection system shall be operated so that the methane concentration is less than 500 parts per million above background at the surface of the landfill.

To determine if this level is exceeded, the owner or operator shall conduct surface testing around the perimeter of the collection area and along a pattern that traverses the landfill at 30 meter intervals and where visual observations indicate elevated concentrations of landfill gas, such as distressed vegetation and cracks or seeps in the cover.



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The owner or operator may establish an alternative traversing pattern that ensures equivalent coverage. A surface monitoring design plan shall be developed that includes a topographical map with the monitoring route and the rationale for any site-specific deviations from the 30 meter intervals. Areas with steep slopes or other dangerous areas may be excluded from the surface testing.

[40 CFR 60.753(d)]

#### Monitoring Of Operations

**A.12. Landfill Gas Collection System – Temperature, Pressure, Nitrogen or Oxygen:** A sampling port and a thermometer, other temperature measuring device, or an access port for temperature measurements shall be installed at each wellhead and:

- (1) The gauge pressure in the gas collection header shall be measured on a monthly basis as provided in Condition A.15.(3); and
- (2) The nitrogen or oxygen concentration in the landfill gas shall be monitored on a monthly basis as provided in Condition A.15.(5); and
- (3) The temperature of the landfill gas shall be on a monthly basis as provided in Condition A.15.(5).

[40 CFR 60.756(a)]

**A.13. Landfill Surface Methane Concentration Monitoring:** The owner or operator seeking to demonstrate compliance with Condition A.17. shall monitor surface concentrations of methane according to the instrument specifications and procedures provided in Condition A.18.

Any closed landfill that has no monitored exceedances of the operational standard in three consecutive quarterly monitoring periods may skip to annual monitoring. Any methane reading of 500 ppm or more above background detected during the annual monitoring returns the frequency for that landfill to quarterly monitoring. [40 CFR 60.756(f)]

#### Landfill Gas Collection System corrective action requirements

**A.14. Landfill Gas Collection System - Corrective Action.** If monitoring demonstrates that the operational requirements in Conditions A.8., A.9. and A.11., are not met, corrective action shall be taken as specified in Condition A.15.(3) through (5) or Condition A.17. If corrective actions are taken as specified in Condition A.15. through A.17., the monitored exceedance is not a violation of the operational requirements in this section. [40 CFR 60.753(g)]

#### Compliance Provisions

**A.15. Compliance Determination for Gas Collection System:** The specified methods in paragraphs (1) through (6) of this condition shall be used to determine whether the gas collection system is in compliance with Condition A.2.

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(1) For the purposes of calculating the maximum expected gas generation flow rate from the landfill to determine compliance with Condition A.2.(1), one of the following equations shall be used. The  $k$  and  $L_o$  kinetic factors should be those published in the most recent Compilation of Air Pollutant Emission Factors (AP-42) or other site specific values demonstrated to be appropriate and approved by the Administrator. If  $k$  has been determined as specified in § 60.754(a)(4), the value of  $k$  determined from the test shall be used. A value of no more than 15 years shall be used for the intended use period of the gas mover equipment. The active life of the landfill is the age of the landfill plus the estimated number of years until closure.

(i) For sites with unknown year-to-year solid waste acceptance rate:

$$Q_m = 2L_o R (e^{-kc} - e^{-kt})$$

where,

$Q_m$  = maximum expected gas generation flow rate, cubic meters per year

$L_o$  = methane generation potential, cubic meters per megagram solid waste

$R$  = average annual acceptance rate, megagrams per year

$k$  = methane generation rate constant, year<sup>-1</sup>

$t$  = age of the landfill at equipment installation plus the time the owner or operator intends to use the gas mover equipment or active life of the landfill, whichever is less. If the equipment is installed after closure,  $t$  is the age of the landfill at installation, years

$c$  = time since closure, years (for an active landfill  $c = 0$  and  $e^{-kc} = 1$ )

(ii) For sites with known year-to-year solid waste acceptance rate:

where,

$Q_M$  = maximum expected gas generation flow rate, cubic meters per year

$k$  = methane generation rate constant, year<sup>-1</sup>

$L_o$  = methane generation potential, cubic meters per megagram solid waste

$M_i$  = mass of solid waste in the  $i^{\text{th}}$  section, megagrams

$t_i$  = age of the  $i^{\text{th}}$  section, years

(iii) Actual flow data may be used to project the maximum expected gas generation flow rate instead of, or in conjunction with, the equations in paragraphs (1) (i) and (ii) of this Condition.

(2) For the purposes of determining sufficient density of gas collectors for compliance with Condition A.2.(2), the owner or operator shall design a system of vertical wells, horizontal collectors, or other collection devices, satisfactory to the Administrator, capable of controlling and extracting gas from all portions of the landfill sufficient to meet all operational and performance standards.

(3) For the purpose of demonstrating whether the gas collection system flow rate is sufficient to determine compliance with Condition A.2.(3), the owner or operator shall measure gauge pressure in the gas collection header at each individual well, monthly. If a positive pressure

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#### Subsection A. Emissions Unit 001

exists, action shall be initiated to correct the exceedance within 5 calendar days, except for the three conditions allowed under Condition A.8. If negative pressure cannot be achieved without excess air infiltration within 15 calendar days of the first measurement, the gas collection system shall be expanded to correct the exceedance within 120 days of the initial measurement of positive pressure. Any attempted corrective measure shall not cause exceedances of other operational or performance standards. An alternative timeline for correcting the exceedance may be submitted to the Administrator for approval.

- (4) Owners or operators are not required to expand the system as required in paragraph (3) of this Condition during the first 180 days after gas collection system startup.
- (5) For the purpose of identifying whether excess air infiltration into the landfill is occurring, the owner or operator shall monitor each well monthly for temperature and nitrogen or oxygen as provided in Condition A.9. If a well exceeds one of these operating parameters, action shall be initiated to correct the exceedance within 5 calendar days. If correction of the exceedance cannot be achieved within 15 calendar days of the first measurement, the gas collection system shall be expanded to correct the exceedance within 120 days of the initial exceedance. Any attempted corrective measure shall not cause exceedances of other operational or performance standards. An alternative timeline for correcting the exceedance may be submitted to the Administrator for approval.
- (6) N/A - the collection system conforms with the specifications provided in § 60.759.

[40 CFR 60.755(a)]

**A.16.** For purposes of compliance with Condition A.3., each well or design component shall be placed as specified in the approved design plan as provided in § 60.752(b)(2)(i). Each well shall be installed no later than 60 days after the date on which the initial solid waste has been in place for a period of:

- (1) 5 years or more if active; or
- (2) 2 years or more if closed or at final grade.

[40 CFR 60.755(b)]

**A.17.** Compliance Determination with Surface Methane Operational Standard: The following procedures shall be used for compliance with the surface methane operational standard as provided in Condition A.11.

- (1) After installation of the collection system, the owner or operator shall monitor surface concentrations of methane along the entire perimeter of the collection area and along a pattern that traverses the landfill at 30 meter intervals (or a site-specific established spacing) for each collection area on a quarterly basis using an organic vapor analyzer, flame ionization detector, or other portable monitor meeting the specifications provided in Condition A.18.
- (2) The background concentration shall be determined by moving the probe inlet upwind and downwind outside the boundary of the landfill at a distance of at least 30 meters from the perimeter wells.
- (3) Surface emission monitoring shall be performed in accordance with section 4.3.1 of Method 21 of appendix A of Part 60, except that the probe inlet shall be placed within 5 to 10

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centimeters of the ground. Monitoring shall be performed during typical meteorological conditions.

- (4) Any reading of 500 parts per million or more above background at any location shall be recorded as a monitored exceedance and the actions specified in paragraphs (4) (i) through (v) of this Condition shall be taken. As long as the specified actions are taken, the exceedance is not a violation of the operational requirements of Condition A.11.
- (i) The location of each monitored exceedance shall be marked and the location recorded.
  - (ii) Cover maintenance or adjustments to the vacuum of the adjacent wells to increase the gas collection in the vicinity of each exceedance shall be made and the location shall be re-monitored within 10 calendar days of detecting the exceedance.
  - (iii) If the re-monitoring of the location shows a second exceedance, additional corrective action shall be taken and the location shall be monitored again within 10 days of the second exceedance. If the re-monitoring shows a third exceedance for the same location, the action specified in paragraph (4)(v) of this Condition shall be taken and no further monitoring of that location is required until the action specified in paragraph (4)(v) has been taken.
  - (iv) Any location that initially showed an exceedance but has a methane concentration less than 500 ppm methane above background at the 10-day re-monitoring specified in paragraph (4) (ii) or (iii) of this Condition shall be re-monitored 1 month from the initial exceedance. If the 1-month re-monitoring shows a concentration less than 500 parts per million above background, no further monitoring of that location is required until the next quarterly monitoring period. If the 1-month re-monitoring shows an exceedance, the actions specified in paragraph (4) (iii) or (v) shall be taken.
  - (v) For any location where monitored methane concentration equals or exceeds 500 parts per million above background three times within a quarterly period, a new well or other collection device shall be installed within 120 calendar days of the initial exceedance. An alternative remedy to the exceedance, such as upgrading the blower, header pipes or control device and a corresponding timeline for installation may be submitted to the Administrator for approval.

(5) The owner or operator shall implement a program to monitor for cover integrity and implement cover repairs as necessary on a monthly basis.

[40 CFR 60.755(c)]

**A.18. Instrumentation Specifications and Procedures for Surface Emissions Monitoring Device:** The owner or operator shall comply with the following instrumentation specifications and procedures for surface emission monitoring devices:

- (1) The portable analyzer shall meet the instrument specifications provided in Section 3 of Method 21 of Appendix A of Part 63, except that "methane" shall replace all references to VOC.
- (2) The calibration gas shall be methane, diluted to a nominal concentration of 500 parts per million in air.

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- (3) To meet the performance evaluation requirements in Section 3.1.3 of Method 21 of Appendix A of Part 63, the instrument evaluation procedures of Section 4.4 of Method 21 of Appendix A of Part 63 shall be used.
- (4) The calibration procedures provided in Section 4.2 of Method 21 of Appendix A of Part 63 shall be followed immediately before commencing a surface monitoring survey.

[40 CFR 60.755(d)]

- A.19.** The provisions 40 CFR 63 Subpart WWW apply at all times, except during periods of start-up, shutdown, or malfunction, provided that the duration of start-up, shutdown, or malfunction shall not exceed 5 days for collection systems and shall not exceed 1 hour for treatment or control devices.

[40 CFR 60.755(e); 40 CFR 60.11(c)]

#### **Reporting Requirements**

- A.20.** Landfill Closure Notification: If the landfill is permanently closed, a closure report shall be submitted to the Administrator within 30 days of waste acceptance cessation. The Administrator may request additional information as may be necessary to verify that permanent closure has taken place in accordance with the requirements of 40 CFR 258.60. If a closure report has been submitted to the Administrator, no additional wastes may be placed into the landfill without filing a notification of modification as described under 40 CFR 60.7(a)(4). [40 CFR 60.757(d)]
- A.21.** Equipment Removal Report: The owner or operator of a controlled landfill shall submit an equipment removal report to the Administrator 30 days prior to removal or cessation of operation of the control equipment.

- (1) The equipment removal report shall contain all of the following items:

- (i) A copy of the closure report submitted in accordance with Condition A.20.;
- (ii) A copy of the initial performance test report demonstrating that the 15 year minimum control period has expired; and
- (iii) Dated copies of three successive NMOC emission rate reports demonstrating that the landfill is no longer producing 50 megagrams or greater of NMOC per year.

- (2) The Administrator may request such additional information as may be necessary to verify that all of the conditions for removal in Condition A.33. have been met.

[40 CFR 60.757(e)]

- A.22.** Collection and Control System Monitoring Report: The owner or operator shall submit to the Administrator semi-annual reports<sup>1</sup> of the recorded information in (1) through (6) of this Condition.

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### Subsection A. Emissions Unit 001

- (1) Value and length of time for exceedance of applicable parameters monitored under Conditions A.12., B.11. and C.11.
- (2) N/A – The flares are not equipped with a bypass system
- (3) Description and duration of all periods when the control device was not operating for a period exceeding 1 hour and length of time the control device was not operating.
- (4) All periods when the collection system was not operating in excess of 5 days.
- (5) The location of each exceedance of the 500 parts per million methane concentration as provided in Condition A.11. and the concentration recorded at each location for which an exceedance was recorded in the previous month.
- (6) The date of installation and the location of each well or collection system expansion added pursuant to Conditions A.15.(3), A.16. and A.17.(4).

<sup>1</sup> The provisions of 40 CFR 63 Subpart AAAA requires this submittal on a semi-annual basis instead of the annual basis required in 40 CFR 60 Subpart WWW. Refer to Condition A.53.

[40 CFR 60.757(f); 40 CFR 63.1980(a)]

#### **Recordkeeping Requirements**

**A.23.** The owner or operator of an MSW landfill shall keep for at least 5 years up-to-date, readily accessible, on-site records of the design capacity report which triggered 40 CFR 60.752(b), the current amount of solid waste in-place and the year-by-year waste acceptance rate. Off-site records may be maintained if they are retrievable within 4 hours. Either paper copy or electronic formats are acceptable.

[40 CFR 60.758(a)]

**A.24.** Testing & Monitoring Records Retention: The owner or operator shall keep up-to-date, readily accessible records for the life of the control equipment of the data listed in paragraphs (1) through (4) of this Condition as measured during the initial performance test or compliance determination. Records of subsequent tests or monitoring shall be maintained for a minimum of 5 years. Records of the control device vendor specifications shall be maintained until removal.

- (1) Where an owner or operator subject to the provisions of this subpart seeks to demonstrate compliance with Condition A.2.:
  - (i) The maximum expected gas generation flow rate as calculated in Condition A.15.(1). The owner or operator may use another method to determine the maximum gas generation flow rate, if the method has been approved by the Administrator.
  - (ii) The density of wells, horizontal collectors, surface collectors, or other gas extraction devices determined using the procedures specified in Condition A.30.(1).

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- (2) N/A – Control Device is not an enclosed combustor
- (3) N/A – control device is not a boiler or process heater
- (4) Where an owner or operator seeks to demonstrate compliance with Condition A.5. through use of an open flare, the flare type (i.e., nonassisted), all visible emission readings, heat content determination, flow rate measurements and exit velocity determinations made during the performance test as specified in § 60.18; continuous records of the flare pilot flame or flare flame monitoring and records of all periods of operations during which the pilot flame of the flare flame is absent.

[40 CFR 60.758(b)]

**A.25. Equipment Continuous Operating Parameter Records:** The owner or operator of a controlled landfill shall keep for 5 years up-to-date, readily accessible continuous records of the equipment operating parameters specified to be monitored in Conditions A.12. and A.13., as well as up-to-date, readily accessible records for periods of operation during which the parameter boundaries established during the most recent performance test are exceeded.

- (1) Each owner or operator shall keep up-to-date, readily accessible continuous records of the indication of flow to the control devices specified under Conditions B.11. and C.12;
- (2) Each owner or operator shall keep up-to-date, readily accessible continuous records of the flame or flare pilot flame monitoring specified under Conditions B.11. and C.11. and up-to-date, readily accessible records of all periods of operation in which the flame or flare pilot flame is absent.

[40 CFR 60.758(c), (c)(2) and (4); EPA Office of Air Quality Planning and Standards' Municipal Solid Waste Landfill New Source Performance Standards (NSPS and Emission Guidelines (EG) Questions and Answers document revised in May 2002]

**A.26. Landfill Collection System Records:** The owner or operator shall keep for the life of the collection system an up-to-date, readily accessible plot map showing each existing and planned collector in the system and providing a unique identification location label for each collector.

- (1) Up-to-date, readily accessible records of the installation date and location of all newly installed collectors as specified under Condition A.16., shall be kept.
- (2) Readily accessible documentation of the nature, date of deposition, amount and location of asbestos-containing or nondegradable waste excluded from collection as provided in Condition A.30.(3)(i) as well as any nonproductive areas excluded from collection as provided in Condition A.30.(3)(ii) shall be kept.

[40 CFR 60.758(d)]

**A.27. Landfill Gas Collection and Control System – Exceedance Records:** Except as provided in 40 CFR 60.752(b)(2)(i)(B), the owner or operator subject to the provisions of this subpart shall keep for at least 5 years up-to-date, readily accessible records of all collection and control system exceedances of the operational standards in Conditions A.8. through A.11., the reading in the subsequent month whether or not the second reading is an exceedance and the location of each exceedance.

*Permitting Note: 40 CFR 60.752(b)(2)(i)(B) states the collection and control system design plan shall include any alternatives to the operational standards, test methods, procedures, compliance measures, monitoring, recordkeeping or reporting provisions of §§60.753 through 60.758 proposed by the owner or operator. 40 CFR 60.752(b)(2)(i)(D) states that the Administrator shall review the information submitted*

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under paragraphs (A), (B) and (C) of this section and either approve it, disapprove it, or request that additional information be submitted.

[40 CFR 60.758(e)]

#### Test Methods and Procedures

**A.28. NMOC Emission Rate Calculation.** The NMOC emission rate shall be calculated using either the equation provided in paragraph (i) of this Condition or the equation provided in paragraph (ii) of this Condition.

Both equations may be used if the actual year-to-year solid waste acceptance rate is known, as specified in paragraph (i), for part of the life of the landfill and the actual year-to-year solid waste acceptance rate is unknown, as specified in paragraph (ii), for part of the life of the landfill. The values to be used in both equations are 0.05 per year for k, 170 cubic meters per megagram for  $L_o$  and 4,000 parts per million by volume as hexane for the  $C_{NMOC}$ . For landfills located in geographical areas with a thirty year annual average precipitation of less than 25 inches, as measured at the nearest representative official meteorologic site, the k value to be used is 0.02 per year.

(i) The following equation shall be used if the actual year-to-year solid waste acceptance rate is known.

where:

$$M_{NMOC} = \sum_{i=1}^n 2kL_oM_i(e^{-kt_i})(C_{NMOC})(3.6 \times 10^{-9})$$

$M_{NMOC}$  = Total NMOC emission rate from the landfill, megagrams per year

k = methane generation rate constant, year<sup>-1</sup>

$L_o$  = methane generation potential, cubic meters per megagram solid waste

$M_i$  = mass of solid waste in the  $i^{th}$  section, megagrams

$t_i$  = age of the  $i^{th}$  section, years

$C_{NMOC}$  = concentration of NMOC, parts per million by volume as hexane

$3.6 \times 10^{-9}$  = conversion factor

The mass of nondegradable solid waste may be subtracted from the total mass of solid waste in a particular section of the landfill when calculating the value for  $M_i$  if documentation of the nature and amount of such wastes is maintained.

(ii) The following equation shall be used if the actual year-to-year solid waste acceptance rate is unknown.

$$M_{NMOC} = 2L_o R (e^{-kc} - e^{-kt}) (C_{NMOC}) (3.6 \times 10^{-9})$$

Where:

$M_{NMOC}$  = mass emission rate of NMOC, megagrams per year

$L_o$  = methane generation potential, cubic meters per megagram solid waste

R = average annual acceptance rate, megagrams per year

k = methane generation rate constant, year<sup>-1</sup>

t = age of landfill, years

$C_{NMOC}$  = concentration of NMOC, parts per million by volume as hexane

c = time since closure, years. For active landfill c = 0 and  $e^{-kc}=1$



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$3.6 \times 10^{-9}$  = conversion factor

The mass of nondegradable solid waste may be subtracted from the total mass of solid waste in a particular section of the landfill when calculating a value for R, if documentation of the nature and amount of such wastes is maintained.

[40 CFR 60.754(a)(1)]

- A.29. NMOC Emission Rate -Landfill Gas Collection System Removal:** The NMOC emission rate shall be calculated for purposes of determining when the system can be removed as provided in Condition A.33., using the following equation:

$$M_{\text{NMOC}} = 1.89 \times 10^{-3} Q_{\text{LFG}} C_{\text{NMOC}}$$

where,

$M_{\text{NMOC}}$  = mass emission rate of NMOC, megagrams per year

$Q_{\text{LFG}}$  = flow rate of landfill gas, cubic meters per minute

$C_{\text{NMOC}}$  = NMOC concentration, parts per million by volume as hexane

- (1) The flow rate of landfill gas,  $Q_{\text{LFG}}$ , shall be determined by measuring the total landfill gas flow rate at the common header pipe that leads to the control device using a gas flow measuring device calibrated according to the provisions of section 4 of Method 2E of Appendix A of Part 60.
- (2) The average NMOC concentration,  $C_{\text{NMOC}}$ , shall be determined by collecting and analyzing landfill gas sampled from the common header pipe before the gas moving or condensate removal equipment using the procedures in Method 25C or Method 18 of Appendix A of Part 60. If using Method 18 Appendix A of Part 60, the minimum list of compounds to be tested shall be those published in the most recent Compilation of Air Pollutant Emission Factors (AP-42). The sample location on the common header pipe shall be before any condensate removal or other gas refining units. The landfill owner or operator shall divide the NMOC concentration from Method 25C of Appendix A of Part 60 by six to convert from  $C_{\text{NMOC}}$  as carbon to  $C_{\text{NMOC}}$  as hexane.
- (3) The owner or operator may use another method to determine landfill gas flow rate and NMOC concentration if the method has been approved by the Administrator.

[40 CFR 60.754(b)]

#### **Specifications for active collection systems**

- A.30.** Each owner or operator seeking to comply with 40 CFR 60.752(b)(2)(i) shall site active collection wells, horizontal collectors, surface collectors, or other extraction devices at a sufficient density throughout all gas producing areas using the following procedures unless alternative procedures have been approved by the Administrator as provided in § 60.752(b)(2)(i)(C) and (D):

- (1) The collection devices within the interior and along the perimeter areas shall be certified to achieve comprehensive control of surface gas emissions by a professional engineer. The

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following issues shall be addressed in the design: depths of refuse, refuse gas generation rates and flow characteristics, cover properties, gas system expandability, leachate and condensate management, accessibility, compatibility with filling operations, integration with closure end use, air intrusion control, corrosion resistance, fill settlement and resistance to the refuse decomposition heat.

- (2) The sufficient density of gas collection devices determined in paragraph (1) of this Condition shall address landfill gas migration issues and augmentation of the collection system through the use of active or passive systems at the landfill perimeter or exterior.
- (3) The placement of gas collection devices determined in paragraph (1) of this Condition shall control all gas producing areas, except as provided by paragraphs (3)(i) and (3)(ii) of this Condition.

- (i) Any segregated area of asbestos or nondegradable material may be excluded from collection if documented as provided under Condition A.26. The documentation shall provide the nature, date of deposition, location and amount of asbestos or nondegradable material deposited in the area and shall be provided to the Administrator upon request.
- (ii) Any nonproductive area of the landfill may be excluded from control, provided that the total of all excluded areas can be shown to contribute less than 1 percent of the total amount of NMOC emissions from the landfill. The amount, location and age of the material shall be documented and provided to the Administrator upon request. A separate NMOC emissions estimate shall be made for each section proposed for exclusion and the sum of all such sections shall be compared to the NMOC emissions estimate for the entire landfill. Emissions from each section shall be computed using the following equation:

$$Q_i = 2 k L_o M_i (e^{-kt_i}) (C_{NMOC}) (3.6 \times 10^{-9})$$

where,

$Q_i$  = NMOC emission rate from the  $i^{th}$  section, megagrams per year

$k$  = methane generation rate constant, year<sup>-1</sup>

$L_o$  = methane generation potential, cubic meters per megagram solid waste

$M_i$  = mass of the degradable solid waste in the  $i^{th}$  section, megagram

$t_i$  = age of the solid waste in the  $i^{th}$  section, years

$C_{NMOC}$  = concentration of nonmethane organic compounds, parts per million by volume

$3.6 \times 10^{-9}$  = conversion factor

- (iii) The values for  $k$  and  $C_{NMOC}$  determined in field testing shall be used if field testing has been performed in determining the NMOC emission rate or the radii of influence (this distance from the well center to a point in the landfill where the pressure gradient applied by the blower or compressor approaches zero). If field testing has not been performed, the default values for  $k$ ,  $L_o$  and  $C_{NMOC}$  provided in Condition A.28. or the alternative values from §60.754(a)(5) shall be used. The mass of nondegradable solid waste contained within the given section may be subtracted from the total mass of the section when estimating emissions provided the nature, location, age and amount of the nondegradable material is documented as provided in paragraph (3)(i) of this Condition.

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**SECTION III. EMISSIONS UNITS AND SPECIFIC CONDITIONS.**

**Subsection A. Emissions Unit 001**

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[40 CFR 60.759(a)]

- A.31.** The gas collection devices shall be constructed using the following equipment or procedures:
- (1) The landfill gas extraction components shall be constructed of polyvinyl chloride (PVC), high density polyethylene (HDPE) pipe, fiberglass, stainless steel, or other nonporous corrosion resistant material of suitable dimensions to: convey projected amounts of gases; withstand installation, static and settlement forces; and withstand planned overburden or traffic loads. The collection system shall extend as necessary to comply with emission and migration standards. Collection devices such as wells and horizontal collectors shall be perforated to allow gas entry without head loss sufficient to impair performance across the intended extent of control. Perforations shall be situated with regard to the need to prevent excessive air infiltration.
  - (2) Vertical wells shall be placed so as not to endanger underlying liners and shall address the occurrence of water within the landfill. Holes and trenches constructed for piped wells and horizontal collectors shall be of sufficient cross-section so as to allow for their proper construction and completion including, for example, centering of pipes and placement of gravel backfill. Collection devices shall be designed so as not to allow indirect short circuiting of air into the cover or refuse into the collection system or gas into the air. Any gravel used around pipe perforations should be of a dimension so as not to penetrate or block perforations.
  - (3) Collection devices may be connected to the collection header pipes below or above the landfill surface. The connector assembly shall include a positive closing throttle valve, any necessary seals and couplings, access couplings and at least one sampling port. The collection devices shall be constructed of PVC, HDPE, fiberglass, stainless steel, or other nonporous material of suitable thickness.

[40 CFR 60.759(b)]

- A.32.** The landfill gas shall be conveyed to a control system in compliance with Condition A.5., through the collection header pipe(s). The gas mover equipment shall be sized to handle the maximum gas generation flow rate expected over the intended use period of the gas moving equipment using the following procedures:
- (1) For existing collection systems, the flow data shall be used to project the maximum flow rate. If no flow data exists, the procedures in paragraph (2) of this Condition shall be used.
  - (2) For new collection systems, the maximum flow rate shall be in accordance with Condition A.15.(1).

[40 CFR 60.759(c)]

- A.33.** Collection & Control System Capping or Closure: The collection and control system may be capped or removed provided that all the conditions of the following paragraphs are met:
- (A) The landfill shall be a closed landfill as defined in 40 CFR 60.751. A closure report shall be submitted to the Administrator as provided in Condition A.20.;
  - (B) The collection and control system shall have been in operation a minimum of 15 years; and

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### SECTION III. EMISSIONS UNITS AND SPECIFIC CONDITIONS.

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#### Subsection A. Emissions Unit 001

(C) Following the procedures specified in Condition A.29., the calculated NMOC gas produced by the landfill shall be less than 50 megagrams per year on three successive test dates. The test dates shall be no less than 90 days apart and no more than 180 days apart.

[40 CFR 60.752(b)(2)(v)]

**A.34. MSW Landfill Closure.** When a MSW landfill subject to 40 CFR 60 Subpart WWW is closed, the owner or operator is no longer subject to the requirement to maintain a Title V operating permit for the landfill if the landfill is not otherwise subject to the requirements of either part 70 or 71 and if either of the following conditions are met:

(1) N/A - the landfill is subject to the requirement for a control system under 60.752(b)(2); or

(2) The owner or operator meets the conditions for control system removal specified in Condition A.33.

[40 CFR 60.752(d)]

#### **40 CFR 61 Subpart M Standards**

**A.35.** Each owner or operator of an active waste disposal site that receives asbestos-containing waste material from a source covered under 40 CFR 61.149, 61.150, or 61.155 shall meet the requirements as stated below.

**A.36. Visible Emissions.** There shall be no visible emissions to the outside air from any active waste disposal site where asbestos-containing waste material has been deposited, or the requirements of Condition A.39. or A.40. must be met.

[40 CFR 61.154(a)]

**A.37. Natural Barrier.** The facility shall use a natural barrier to adequately deter access by the general public or warning signs and fencing must be installed and maintained as stated in Condition A.38., or the requirements of Condition A.39.(1) must be met.

[40 CFR 61.154(b)]

**A.38. Warning Signs and Fencing.** Warning signs and fencing must be installed and maintained as follows:

(1) Warning signs must be displayed at all entrances and at intervals of 100 m (330 ft) or less along the property line of the site or along the perimeter of the sections of the site where asbestos-containing waste material is deposited. The warning signs must:

(i) Be posted in such a manner and location that a person can easily read the legend; and

(ii) Conform to the requirements of 51 cm × 36 cm (20&inch;×14&inch;) upright format signs specified in 29 CFR 1910.145(d)(4) and this paragraph; and

(iii) Display the following legend in the lower panel with letter sizes and styles of a visibility at least equal to those specified in this paragraph.

**SECTION III. EMISSIONS UNITS AND SPECIFIC CONDITIONS.**

**Subsection A. Emissions Unit 001**

<b>Legend</b>	<b>Notation</b>
Asbestos Waste Disposal Site	2.5 cm (1 inch) Sans Serif, Gothic or Block.
Do Not Create Dust	1.9 cm (3/4 inch) Sans Serif, Gothic or Block.
Breathing Asbestos is Hazardous to Your Health	14 Point Gothic.

Spacing between any two lines must be at least equal to the height of the upper of the two lines.

- (2) The perimeter of the disposal site must be fenced in a manner adequate to deter access by the general public.

[40 CFR 61.154(b)(1) and (2)]

**A.39. Cover.** Rather than meet the no visible emission requirement of Condition A.36., at the end of each operating day, or at least once every 24-hour period while the site is in continuous operation, the asbestos-containing waste material that has been deposited at the site during the operating day or previous 24-hour period shall:

- (1) Be covered with at least 15 centimeters (6 inches) of compacted nonasbestos-containing material, or
- (2) Be covered with a resinous or petroleum-based dust suppression agent that effectively binds dust and controls wind erosion. Such an agent shall be used in the manner and frequency recommended for the particular dust by the dust suppression agent manufacturer to achieve and maintain dust control. Other equally effective dust suppression agents may be used upon prior approval by the Administrator.

For purposes of this Condition, any used, spent, or other waste oil is not considered a dust suppression agent.

[40 CFR 61.154(c)(1) and (2)]

**A.40. Alternative Emissions Control Method.** Rather than meet the no visible emission requirement of Condition A.36., use an alternative emissions control method that has received prior written approval by the Administrator according to following procedures:

- (i) To obtain approval for an alternative method, a written application must be submitted to the Administrator demonstrating that the following criteria are met:
- (ii) The alternative method will control asbestos emissions equivalent to currently required methods.
- (iii) The suitability of the alternative method for the intended application.
- (iv) The alternative method will not violate other regulations.
- (v) The alternative method will not result in increased water pollution, land pollution, or occupational hazards.

### SECTION III. EMISSIONS UNITS AND SPECIFIC CONDITIONS.

#### Subsection A. Emissions Unit 001

[40 CFR 61.154(d); 40 CFR 61.149(c)(2)]

#### Recordkeeping

**A.41. Records.** For all asbestos-containing waste material received, the owner or operator of the active waste disposal site shall:

- (1) Maintain waste shipment records, using a form similar to that shown in Figure 4 and include the following information:
  - (i) The name, address and telephone number of the waste generator.
  - (ii) The name, address and telephone number of the transporter(s).
  - (iii) The quantity of the asbestos-containing waste material in cubic meters (cubic yards).
  - (iv) The presence of improperly enclosed or uncovered waste, or any asbestos-containing waste material not sealed in leak-tight containers. Report in writing to the local, State, or EPA Regional office responsible for administering the asbestos NESHAP program for the waste generator (identified in the waste shipment record) and, if different, the local, State, or EPA Regional office responsible for administering the asbestos NESHAP program for the disposal site, by the following working day, the presence of a significant amount of improperly enclosed or uncovered waste. Submit a copy of the waste shipment record along with the report.
  - (v) The date of the receipt.
- (2) As soon as possible and no longer than 30 days after receipt of the waste, send a copy of the signed waste shipment record to the waste generator.
- (3) Upon discovering a discrepancy between the quantity of waste designated on the waste shipment records and the quantity actually received, attempt to reconcile the discrepancy with the waste generator. If the discrepancy is not resolved within 15 days after receiving the waste, immediately report in writing to the local, State, or EPA Regional office responsible for administering the asbestos NESHAP program for the waste generator (identified in the waste shipment record) and, if different, the local, State, or EPA Regional office responsible for administering the asbestos NESHAP program for the disposal site. Describe the discrepancy and attempts to reconcile it and submit a copy of the waste shipment record along with the report.
- (4) Retain a copy of all records and reports required by this paragraph for at least 2 years.

For Figure 4 (refer to Appendix F)

[40 CFR 61.154(e)]

**A.42. Records.** Maintain, until closure, records of the location, depth and area and quantity in cubic meters (cubic yards) of asbestos-containing waste material within the disposal site on a map or diagram of the disposal area.

[40 CFR 61.154(f)]

**A.43. Records – Inspections.** Furnish upon request and make available during normal business hours for inspection by the Administrator, all records required under 40 CFR 61.154.

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## SECTION III. EMISSIONS UNITS AND SPECIFIC CONDITIONS.

### Subsection A. Emissions Unit 001

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[40 CFR 61.154(i)]

#### **Reporting Requirements**

- A.44.** Closure- Disposal Locations/Quantities. Submit to the Administrator, upon closure of the facility, a copy of records of asbestos waste disposal locations and quantities. [40 CFR 61.154(h)]
- A.45.** Notification of Excavation. Notify the Administrator in writing at least 45 days prior to excavating or otherwise disturbing any asbestos-containing waste material that has been deposited at a waste disposal site and is covered. If the excavation will begin on a date other than the one contained in the original notice, notice of the new start date must be provided to the Administrator at least 10 working days before excavation begins and in no event shall excavation begin earlier than the date specified in the original notification. Include the following information in the notice:
- (1) Scheduled starting and completion dates.
  - (2) Reason for disturbing the waste.
  - (3) Procedures to be used to control emissions during the excavation, storage, transport and ultimate disposal of the excavated asbestos-containing waste material. If deemed necessary, the Administrator may require changes in the emission control procedures to be used.
  - (4) Location of any temporary storage site and the final disposal site. (Secs. 112 and 301(a) of the Clean Air Act as amended (42 U.S.C. 7412, 7601(a))

[40 CFR 61.154(j)]

#### **Landfill Closure Requirements**

- A.46.** Upon closure, the owner or operator shall comply with all the following conditions for inactive waste disposal sites.
- [40 CFR 61.154(g)]
- A.47.** The owner or operator shall comply with one of the following:
- (1) Either discharge no visible emissions to the outside air from an inactive waste disposal site subject to this Condition; or
  - (2) Cover the asbestos-containing waste material with at least 15 centimeters (6 inches) of compacted nonasbestos-containing material and grow and maintain a cover of vegetation on the area adequate to prevent exposure of the asbestos-containing waste material. In desert areas where vegetation would be difficult to maintain, at least 8 additional centimeters (3 inches) of well-graded, nonasbestos crushed rock may be placed on top of the final cover instead of vegetation and maintained to prevent emissions; or
  - (3) Cover the asbestos-containing waste material with at least 60 centimeters (2 feet) of compacted nonasbestos-containing material and maintain it to prevent exposure of the asbestos-containing waste; or
  - (4) For inactive waste disposal sites for asbestos tailings, a resinous or petroleum-based dust suppression agent that effectively binds dust to control surface air emissions may be used

**SECTION III. EMISSIONS UNITS AND SPECIFIC CONDITIONS.**

**Subsection A. Emissions Unit 001**

instead of the methods in paragraphs (1), (2) and (3) of this Condition. Use the agent in the manner and frequency recommended for the particular asbestos tailings by the manufacturer of the dust suppression agent to achieve and maintain dust control. Obtain prior written approval of the Administrator to use other equally effective dust suppression agents. For purposes of this paragraph, any used, spent, or other waste oil is not considered a dust suppression agent.

[40 CFR 61.151(a)]

**A.48. Warning Signs.** Unless a natural barrier adequately deters access by the general public, install and maintain warning signs and fencing as follows, or comply with paragraph (2) or (3).

- (1) Display warning signs at all entrances and at intervals of 100 m (328 ft) or less along the property line of the site or along the perimeter of the sections of the site where asbestos-containing waste material was deposited. The warning signs must:
  - (i) Be posted in such a manner and location that a person can easily read the legend; and
  - (ii) Conform to the requirements for 51 cm×36 cm (20&inch;×14&inch;) upright format signs specified in 29 CFR 1910.145(d)(4) and this paragraph; and
  - (iii) Display the following legend in the lower panel with letter sizes and styles of a visibility at least equal to those specified in this paragraph.

<b>Legend</b>	<b>Notation</b>
Asbestos Waste Disposal Site	2.5 cm (1 inch) Sans Serif, Gothic or Block
Do Not Create Dust	1.9 cm ( 3/4 inch) Sans Serif, Gothic or Block
Breathing Asbestos is Hazardous to Your Health	14 Point Gothic.

Spacing between any two lines must be at least equal to the height of the upper of the two lines.

- (2) Fence the perimeter of the site in a manner adequate to deter access by the general public.
- (3) When requesting a determination on whether a natural barrier adequately deters public access, supply information enabling the Administrator to determine whether a fence or a natural barrier adequately deters access by the general public.

[40 CFR 61.151(b)]

**A.49. Alternative Control Methods.** The owner or operator may use an alternative control method that has received prior approval of the Administrator rather than comply with the requirements of Conditions A.47. and A.48.

[40 CFR 61.151(c)]



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## SECTION III. EMISSIONS UNITS AND SPECIFIC CONDITIONS.

### Subsection A. Emissions Unit 001

**A.50. Excavation.** Notify the Administrator in writing at least 45 days prior to excavating or otherwise disturbing any asbestos-containing waste material that has been deposited at a waste disposal site under this section and follow the procedures specified in the notification. If the excavation will begin on a date other than the one contained in the original notice, notice of the new start date must be provided to the Administrator at least 10 working days before excavation begins and in no event shall excavation begin earlier than the date specified in the original notification. Include the following information in the notice:

- (1) Scheduled starting and completion dates.
- (2) Reason for disturbing the waste.
- (3) Procedures to be used to control emissions during the excavation, storage, transport and ultimate disposal of the excavated asbestos-containing waste material. If deemed necessary, the Administrator may require changes in the emission control procedures to be used.
- (4) Location of any temporary storage site and the final disposal site.

[40 CFR 61.151(d)]

**A.51. Deed Notation.** Within 60 days of a site becoming inactive and after the effective date of Conditions A.46. through A.50., record, in accordance with State law, a notation on the deed to the facility property and on any other instrument that would normally be examined during a title search; this notation will in perpetuity notify any potential purchaser of the property that:

- (1) The land has been used for the disposal of asbestos-containing waste material;
- (2) The survey plot and record of the location and quantity of asbestos-containing waste disposed of within the disposal site required in Condition A.42. have been filed with the Administrator; and
- (3) The site is subject to 40 CFR Part 61, Subpart M.

[40 CFR 61.151(e)]

### **40 CFR 63 Subpart AAAA Standards**

**A.52.** The facility is no longer required to comply with the requirements of Conditions A.52 through A.56. when the facility is no longer required to apply controls as specified in Condition A.33.

[40 CFR 63.1950]

**A.53. Collection and Control System Alternatives.** All affected sources must comply with the SSM requirements in Subpart A of Part 63 as specified in Table 1 of 40 CFR 63 Subpart AAAA and all affected sources must submit compliance reports every 6 months as specified in Condition A.56.(a) and (b), including information on all deviations that occurred during the 6-month reporting period. Deviations for continuous emission monitors or numerical continuous parameter monitors must be determined using a 3-hour monitoring block average.

[40 CFR 63.1955(c)]

### **Compliance Demonstration**

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### SECTION III. EMISSIONS UNITS AND SPECIFIC CONDITIONS.

#### Subsection A. Emissions Unit 001

- A.54.** Compliance is determined in the same way it is determined for 40 CFR Part 60, Subpart WWW, including performance testing, monitoring of the collection system, continuous parameter monitoring and other credible evidence.

In addition, continuous parameter monitoring data, collected under Conditions B.11.(1) and C.11.(1), is used to demonstrate compliance with the operating conditions for control systems. If a deviation occurs, you have failed to meet the control device

operating conditions described in this Subsection and have deviated from the requirements of this Subsection.

Finally, you must develop and implement a written SSM plan according to the provisions in 40 CFR 63.6(e)(3). A copy of the SSM plan must be maintained on site. Failure to write, implement, or maintain a copy of the SSM plan is a deviation from the requirements of 40 CFR 63 Subpart AAAA.

[40 CFR 63.1960]

#### What is a Deviation

- A.55.** A deviation is defined in 40 CFR 63.1990. For the purposes of the landfill monitoring and SSM plan requirements, deviations include the items in paragraphs (a) through (c) of this Condition.

(a) N/A – TRL uses open flares.

(b) N/A – TRL uses open flares.

(c) A deviation occurs when a SSM plan is not developed or maintained on site.

[40 CFR 63.1965]

#### Recordkeeping and Reporting Requirements

- A.56.** (a) The Permittee shall keep records and reports as specified in 40 CFR Part 60, Subpart WWW, with one exception: The report described in Condition A.22., B.12. and C.17., shall be submitted every 6 months.
- (b) The Permittee shall also keep records and reports as specified in the General Provisions of 40 CFR Part 60 and Part 63 as shown in Table 1 of Subpart AAAA. Applicable records in the general provisions include items such as SSM plans and the SSM plan reports.
- (c) N/A – Landfill does not operate a bioreactor.
- (d) N/A – Landfill does not operate a bioreactor.
- (e) N/A – Landfill does not operate a bioreactor.
- (f) N/A – Landfill does not operate a bioreactor
- (g) If any liquids other than leachate is added in a controlled fashion to the waste mass and the facility does not comply with the bioreactor requirements in 40 CFR 63.1947, Condition A.53. and Condition A.56.(c) through (f), a record of calculations showing that the percent moisture by weight expected in the waste mass to which liquid is added is less than 40 percent shall be kept. The calculation must consider the waste mass, moisture content of the incoming waste, mass of water added to the waste including leachate recirculation and other liquids addition and precipitation and the mass of water removed through leachate or other water losses. Moisture level sampling or mass balances calculations can be used. The

## SECTION III. EMISSIONS UNITS AND SPECIFIC CONDITIONS.

### Subsection A. Emissions Unit 001

calculations and the basis of any assumptions must be documented. A record of the calculations shall be kept until liquids addition has been ceased.

- (h) If moisture content is calculated to establish the date the bioreactor is required to begin operating the collection and control system under 40 CFR 63.1947(a)(2) or (c)(2), a record of the calculations including the information specified in paragraph (g) of this Condition shall be kept for 5 years. Within 90 days after the bioreactor achieves 40 percent moisture content, report the results of the calculation, the date the bioreactor achieved 40 percent moisture content by weight and the date you plan to begin collection and control system operation.

[40 CFR 63.1980]

#### **40 CFR 63 Subpart AAAA Definitions**

Terms used in this Subsection are defined in the Clean Air Act, 40 CFR Part 60, Subparts A, Cc and WWW; 40 CFR Part 62, Subpart GGG and Subpart A of Part 63 and this Subsection that follows:

*Bioreactor* means a MSW landfill or portion of a MSW landfill where any liquid other than leachate (leachate includes landfill gas condensate) is added in a controlled fashion into the waste mass (often in combination with recirculating leachate) to reach a minimum average moisture content of at least 40 percent by weight to accelerate or enhance the anaerobic (without oxygen) biodegradation of the waste.

*Deviation* means any instance in which an affected source subject to this subpart, or an owner or operator of such a source:

- (1) Fails to meet any requirement or obligation established by this subpart, including, but not limited to, any emissions limitation (including any operating limit) or work practice standard;
- (2) Fails to meet any term or condition that is adopted to implement an applicable requirement in this subpart and that is included in the operating permit for any affected source required to obtain such a permit; or
- (3) Fails to meet any emission limitation, (including any operating limit), or work practice standard in this subpart during SSM, regardless of whether or not such failure is permitted by this subpart.

*Emissions limitation* means any emission limit, opacity limit, operating limit, or visible emissions limit.

*Municipal solid waste landfill or MSW landfill* means an entire disposal facility in a contiguous geographical space where household waste is placed in or on land. A municipal solid waste landfill may also receive other types of RCRA Subtitle D wastes (see Sec. 257.2 of this chapter) such as commercial solid waste, nonhazardous sludge, conditionally exempt small quantity generator waste and industrial solid waste. Portions of a municipal solid waste landfill may be separated by access roads. A municipal solid waste landfill may be publicly or privately owned. A municipal solid waste landfill may be a new municipal solid waste landfill, an existing municipal solid waste landfill, or a lateral expansion.

*Work practice standard* means any design, equipment, work practice, or operational standard, or combination thereof, that is promulgated pursuant to section 112(h) of the Clean Air Act.

[40 CFR 63.1990]

#### **Common Conditions**

**SECTION III. EMISSIONS UNITS AND SPECIFIC CONDITIONS.**

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**Subsection A. Emissions Unit 001**

- A.57.** This emissions unit is also subject to the applicable General Provisions of 40 CFR 60 Subpart A.
- A.58.** This emissions unit is also subject to the applicable General Provisions of 40 CFR Part 61 Subpart A.
- A.59.** This emissions unit is subject to the applicable requirements in 40 CFR Part 63, Subpart A, as Specified in Table 1 - Applicability of NESHAP General Provisions to Subpart AAAA .  
[40 CFR 63.1955(b)]

**SECTION III. EMISSIONS UNITS AND SPECIFIC CONDITIONS.**

**Subsection A. Emissions Unit 001**

**Table 1 to Subpart AAAA of Part 63—Applicability of NESHAP General Provisions to Subpart AAAA**

<b>Part 63 Citation</b>	<b>Description</b>	<b>Explanation</b>
63.1(a)	Applicability: general applicability of NESHAP in this part	Affected sources are already subject to the provisions of paragraphs (a)(10)–(12) through the same provisions under 40 CFR, part 60 subpart A.
63.1(b)	Applicability determination for stationary sources	
63.1(e)	Title V permitting	
63.2	Definitions	
63.4	Prohibited activities and circumvention	Affected sources are already subject to the provisions of paragraph (b) through the same provisions under 40 CFR, part 60 subpart A.
63.5(b)	Requirements for existing, newly constructed and reconstructed sources	
63.6(e)	Operation and maintenance requirements, startup, shutdown and malfunction plan provisions	
63.6(f)	Compliance with nonopacity emission standards	Affected sources are already subject to the provisions of paragraphs (f)(1) and (2)(i) through the same provisions under 40 CFR, part 60 subpart A.
63.10(b)(2)(i)–(b)(2)(v)	General recordkeeping requirements	
63.10(d)(5)	If actions taken during a startup, shutdown and malfunction plan are consistent with the procedures in the startup, shutdown and malfunction plan, this information shall be included in a semi-annual startup, shutdown and malfunction plan report. Any time an action taken during a startup, shutdown and malfunction plan is not consistent with the startup, shutdown and malfunction plan, the source shall report actions taken within 2 working days after commencing such actions, followed by a letter 7 days after the event	
63.12(a)	These provisions do not preclude the State from adopting and enforcing any standard, limitation, etc., requiring permits, or requiring emissions reductions in excess of those specified	
63.15	Availability of information and confidentiality	

**SECTION III. EMISSIONS UNITS AND SPECIFIC CONDITIONS.**

**Subsection B. Emissions Unit 010**

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

Emission Unit	Brief Description
010	<p>5,000 scfm Open, Non-Assisted Flare manufactured by Parnel Biogas, Inc. Two centrifugal exhaust landfill gas blowers with a maximum design of 2,500 cfm each, with a minimum of -60 "w.c. inlet suction and 10" w.c. discharge pressure.</p> <p>The flare is currently equipped with a temperature monitoring system manufactured by Yokagawa, that records temperature, flare on and off time and blower run time.</p> <p>Flare Stack Height..... 51'</p> <p>Exit Diameter..... 14"</p> <p>Outlet Gas Temperature..... 1,200 °F (typically; in the combustion zone within the flame which cannot be monitored)</p> <p>Maximum LFG Flow Rate..... 5,000 scfm</p> <p>Minimum LFG Flow Rate..... 500 scfm</p> <p>Starter Fuel Type..... Propane</p> <p>Destruction efficiency..... 98% NMOCs @ CH<sub>4</sub> content of 40-60%</p>

**Permitting Note:** This emissions unit is subject to 40 CFR Part 60, Subpart WWW adopted by reference in Rule 62-204.800(8)(b)72, F.A.C.; and 40 CFR Part 63, Subpart AAAA adopted by reference in Rule 62-204.800(11)(b)58, F.A.C.

The following specific conditions apply to the emissions unit(s) listed above:

**Essential Potential to Emit (PTE) Parameters**

- B.1. Permitted Capacity – Flare:** The maximum landfill gas flowrate shall not exceed 5,000 cubic feet per minute of landfill gas. [Rule 62-210.200(PTE), FAC and Rule 2.301, JEPB.; Construction Permit No. 0310358-005-AC]
- B.2. Hours of Operation -Flare:** The hours of operation are not restricted, i.e., 8760 hours per year. [Rule 62-210.200(PTE), FAC and Rule 2.301, JEPB.; Construction Permit No. 0310358-005-AC]

**Method of Flare Operation**

- B.3. Method of Operation.** All LFG collected by the gas collection system shall be directed to the landfill gas treatment system for subsequent use as fuel at the Trail Ridge Energy LLC Plant. Any excess landfill gas that exceeds the volume the Trail Ridge Energy LLC Plant is able to accept shall be diverted to the 5,000 scfm or the de-rated 1,600 scfm open flares for control. Collected LFG shall not be vented to the atmosphere. [Rules 62-4.160(2), 62-4.070(3), 62-210.200(PTE), F.A.C.; Rule 2.301, JEPB; CFR 60.752(b)(2)(iii)(A); CFR 60.752(b)(2)(iii)(C); 40 CFR 60.753(e); Construction Permit No. 0310358-004-AC/PSD-FL-374]

### SECTION III. EMISSIONS UNITS AND SPECIFIC CONDITIONS.

#### Subsection B. Emissions Unit 010

- B.4. Method of Operation-Flare Pilot Fuel:** The flare shall fire propane gas as its pilot fuel. [Rules 62-4.160(2), 62-210.200(PTE), F.A.C.; Rule 2.301, JEPB]
- B.5. Method of Operation.** The control system shall be operated at all times when the collected gas is routed to the system. [40 CFR 60.18(e); 40 CFR 60.753(f)]
- B.6. Method of Operation – Flare Flame:** The flare shall be operated with a flame present at all times, as determined by the methods specified in Conditions B.11., B.16., B.17., B.18. and B.19. [Rule 62-296.800, F.A.C.; 40 CFR 60.18(c)(2)]
- B.7. Method of Operation – LFG Heat Content & Flare Exit Velocity:** The permittee shall comply with the heat content specifications stated in paragraph (a) and the maximum tip velocity specifications in paragraph (b):
- (a) The flare shall be used only with the net heating value of the gas being combusted being 7.45 MJ/scm (200 Btu/scf) or greater. The net heating value of the gas being combusted shall be determined by the methods specified in Condition B.17.
  - (b) The flare shall be designed for and operated as follows:
    - (i) An exit velocity, as determined by the methods specified in Condition B.18., less than 18.3 m/sec (60 ft/sec), except as provided in (ii) and (iii).
    - (ii) An exit velocity, as determined by the methods specified in Condition B.18., equal to or greater than 18.3 m/sec (60 ft/sec) but less than 122 m/sec (400 ft/sec) is allowed if the net heating value of the gas being combusted is greater than 37.3 MJ/scm (1,000 Btu/scf).
    - (iii) An exit velocity, as determined by the methods specified in Condition B.18. less than the velocity,  $V_{max}$ , as determined by the method specified in Condition B.19. and less than 122 m/sec (400 ft/sec) is allowed.
- [Rule 62-296.800, F.A.C.; 40 CFR 60.18(c)(3)(ii); 40 CFR 60.18(c)(4) and Rule 2.201, JEPB]
- B.8. Landfill Gas Collection or Control System- Inoperable:** In the event the collection or control system is inoperable, the gas mover system shall be shut down and all valves in the collection and control system contributing to venting of the gas to the atmosphere shall be closed within 1 hour. [40 CFR 60.753(e)]

#### **Emission Limitations and Performance Standards**

*{Permitting note: Table 1-1, Summary of Air Pollutant Standards and Terms, summarizes information for convenience purposes only. This table does not supersede any of the terms or conditions of this permit.}*

*{Permitting Note: Unless otherwise specified, the averaging time for these conditions is based on the specified averaging time of the applicable test method.}*

- B.9. Visible Emissions:** The flare shall be designed for and operated with no visible emissions as determined by the methods specified in Conditions B.11., B.16., B.17., B.18. and B.19., except for periods not to exceed a total of 5 minutes during any 2 consecutive hours. [Rule 62-296.800, F.A.C.; Rule 62-296.320(4)(b), F.A.C., 40 CFR 60.18(c)(1); Construction Permit No. 0310358-005-AC].

## SECTION III. EMISSIONS UNITS AND SPECIFIC CONDITIONS.

### Subsection B. Emissions Unit 010

#### Compliance Provisions

- B.10.** The provisions 40 CFR 63 Subpart WWW apply at all times, except during periods of start-up, shutdown, or malfunction, provided that the duration of start-up, shutdown, or malfunction shall not exceed 5 days for collection systems and shall not exceed 1 hour for treatment or control devices (i.e. the flare). [40 CFR 60.755(e); 40 CFR 60.11(c)]

#### Monitoring Of Operations

- B.11. Landfill Gas Collection System – Flare:** The flare shall be monitored to ensure that it is operated and maintained in conformance with its design. The following equipment shall be installed, calibrated, maintained and operated according to the manufacturer's specifications:

- (1) A heat sensing device, such as an ultraviolet beam sensor or thermocouple, at the pilot light or the flame itself to indicate the continuous presence of a flame.
- (2)(i) A device that records flow to the control device. The owner or operator shall install, calibrate and maintain a gas flow rate measuring device that shall record the flow to the control device at least every 15 minutes; or
- (ii) N/A – The flare is not equipped with a bypass system.

[40 CFR 60.18(d); 40 CFR 60.756(c); 40 CFR 60.18(f)(2); EPA Office of Air Quality Planning and Standards' Municipal Solid Waste Landfill New Source Performance Standards (NSPS and Emission Guidelines (EG) Questions and Answers document revised in May 2002]

#### Notifications, Recordkeeping and Reporting Requirements

- B.12. Control System Monitoring Report:** The owner or operator shall submit to the Administrator semi-annual reports<sup>1</sup> of the following recorded information:

- (1) Value and length of time for exceedance of applicable parameters monitored under Condition B.11.
- (2) N/A – The flare is not equipped with a bypass system;
- (3) Description and duration of all periods when the control device was not operating for a period exceeding 1 hour and length of time the control device was not operating.

<sup>1</sup> The provisions of 40 CFR 63 Subpart AAAA requires this submittal on a semi-annual basis instead of the annual basis required in 40 CFR 60 Subpart WWW. Refer to Conditions A.52.

[40 CFR 60.757(f)(1),(2) and (3); 40 CFR 63.1980(a); EPA Office of Air Quality Planning and Standards' Municipal Solid Waste Landfill New Source Performance Standards (NSPS and Emission Guidelines (EG) Questions and Answers document revised in May 2002]

- B.13. Testing & Monitoring Records Retention:** The owner or operator shall keep up-to-date, readily accessible records for the life of the control equipment of the data listed below as measured during the initial performance test or compliance determination. Records of subsequent tests or monitoring shall be maintained for a minimum of 5 years. Records of the control device vendor specifications shall be maintained until removal.

- (1) The flare type (i.e., nonassisted);
- (2) All visible emission readings;



## SECTION III. EMISSIONS UNITS AND SPECIFIC CONDITIONS.

### Subsection B. Emissions Unit 010

- (3) Heat content determination;
- (4) Flow rate measurements;
- (5) Exit velocity determinations made during the performance test as specified in 40 CFR 60.118;
- (6) Continuous records of the flare pilot flame or flare flame monitoring and records of all periods of operations during which the pilot flame of the flare flame is absent.

[40 CFR 60.758(b)]

**B.14. Recordkeeping of Operating Parameters:** The owner or operator of a controlled landfill shall keep for 5 years up-to-date, readily accessible continuous records of the equipment operating parameters specified to be monitored in Condition B.11., as well as up-to-date, readily accessible records for periods of operation during which the parameter boundaries established during the most recent performance test are exceeded.

- (1) Each owner or operator shall keep up-to-date, readily accessible continuous records of the indication of flow to the control device specified under Condition B.11;
- (2) Each owner or operator shall keep up-to-date, readily accessible continuous records of the flame or flare pilot flame monitoring specified under Condition B.11. and up-to-date, readily accessible records of all periods of operation in which the flame or flare pilot flame is absent.

[40 CFR 60.758(c), (c)(2) and (4); EPA Office of Air Quality Planning and Standards' Municipal Solid Waste Landfill New Source Performance Standards (NSPS and Emission Guidelines (EG) Questions and Answers document revised in May 2002]

**B.15. Collection & Control System Operational Standard Exceedance Records.** Except as provided in 40 CFR 60.752(b)(2)(i)(B), the owner or operator shall keep for at least 5 years up-to-date, readily accessible records of all collection and control system exceedances of the operational standards in Conditions B.3, B.5. and B.8., the reading in the subsequent month whether or not the second reading is an exceedance and the location of each exceedance.

*Permitting Note: 40 CFR 60.752(b)(2)(i)(B) states the collection and control system design plan shall include any alternatives to the operational standards, test methods, procedures, compliance measures, monitoring, recordkeeping or reporting provisions of §§60.753 through 60.758 proposed by the owner or operator. 40 CFR 60.752(b)(2)(i)(D) states that the Administrator shall review the information submitted under paragraphs (A), (B) and (C) of this section and either approve it, disapprove it, or request that additional information be submitted.*

[40 CFR 60.758(e)]

### **Test Methods and Procedures**

**B.16. Visible Emissions –Flare.** The test method for visible emissions shall be in accordance with EPA Method 22 of 40 CFR 60 Appendix A, adopted and incorporated by reference in Rule 62-204.800, F.A.C. The required observation period shall be 2 hours and shall be used according to Method 22.

Pursuant to Method 22, the observer, at a minimum must be trained and knowledgeable regarding the effects of background contrast, ambient lighting, observer position relative to lighting, wind and the presence of uncombined water (condensing water vapor) on the visibility of emissions. This training is to be obtained from written materials found in References 1 and 2 or from the lecture portion of the Method 9 certification course.

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**SECTION III. EMISSIONS UNITS AND SPECIFIC CONDITIONS.**

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**Subsection B. Emissions Unit 010**

A compliance test shall be conducted on an annual basis, once each federal fiscal year (October 1 – September 30).

[Rules 62-297.310(7)(a)4.a., 62-297.401(22),F.A.C.; 40 CFR 60.8(a); 40 CFR 60.11(e)(1); 40 CFR 60.18(f)(1)]

- B.17. Net Heating Value – Flare.** The net heating value of the gas being combusted in a flare shall be calculated using the following equation:

$$H_T = K \sum_{i=1}^n C_i H_i$$

where:

$H_T$ = Net heating value of the sample, MJ/scm; where the net enthalpy per mole of offgas is based on combustion at 25 °C and 760 mm Hg, but the standard temperature for determining the volume corresponding to one mole is 20 °C;

$K$  = Constant,  $1.740 \times 10^{-7}$  (1/ppm) (g mole/scm) (MJ/kcal) where the standard temperature for (g mole/scm) is 20°C;

$C_i$ = the concentration of methane in the landfill gas as measured by Method 3C. A minimum of three 30-minute Method 3C samples are determined. The measurement of other organic components, hydrogen and carbon monoxide is not applicable; and

$H_i$ = Net heat of combustion of sample component  $i$ , kcal/g mole at 25 °C and 760 mm Hg. The heats of combustion may be determined using ASTM D2382–76 or 88 or D4809–95 (incorporated by reference as specified in §60.17) if published values are not available or cannot be calculated.

The calculation and testing shall be conducted no less than on a 5 year basis, prior to permit renewal.

[40 CFR 60.18(f)(3); 40 CFR 60.754(e); Rule 62-4.070 & Rule 62-297.310(7)(a)3., F.A.C.]

- B.18. Exit Velocity- Flare.** The actual exit velocity of the flare shall be determined by dividing the volumetric flowrate (in units of standard temperature and pressure), as determined by Reference Methods 2, 2A, 2C, or 2D as appropriate; by the unobstructed (free) cross sectional area of the flare tip. Method 3C may be used to determine the landfill gas molecular weight for calculating the flare gas exit velocity under this condition.

The calculation and testing shall be conducted no less than on a 5 year basis, prior to permit renewal.

[40 CFR 60.18(f)(4) ; 40 CFR 60.754(e); Rule 62-4.070 & Rule 62-297.310(7)(a)3., F.A.C.]

- B.19. Maximum Permitted Velocity – Flare.** The maximum permitted velocity,  $V_{max}$ , for flares complying with Condition B.7.(b)(iii) shall be determined by the following equation.

$$\text{Log}_{10} (V_{max}) = (H_T + 28.8) / 31.7$$

$V_{max}$  = Maximum permitted velocity, M/sec  
28.8 = Constant

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**SECTION III. EMISSIONS UNITS AND SPECIFIC CONDITIONS.**

**Subsection B. Emissions Unit 010**

31.7=Constant

H<sub>1</sub>=The net heating value as determined in Condition B.17.

The calculation and testing shall be conducted no less than on a 5 year basis, prior to permit renewal.

[40 CFR 60.18(f)(5); Rule 62-4.070, & Rule 62-297.310(7)(a)3., F.A.C.]

**Common Conditions**

- B.20.** This emissions unit is also subject to the applicable General Provisions of 40 CFR 60 Subpart A.
- B.21.** This emissions unit is subject to the applicable requirements in 40 CFR Part 63, Subpart A, as Specified in Table 1 - Applicability of NESHAP General Provisions to Subpart AAAA (refer to Condition E.9.) and the requirements of 40 CFR 63.1960 through 63.1985 of 40 CFR 63 Subpart AAAA as specified in Subsection E. [40 CFR 63.1955(b)]

**SECTION III. EMISSIONS UNITS AND SPECIFIC CONDITIONS.**

**Subsection C. Emissions Unit 011**

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

Emission Unit	Brief Description
011	<p>A de-rated 1,600 scfm Open, Non-Assisted Flare manufactured by Landfill Gas Specialties. A centrifugal exhaust landfill gas blower with a maximum design of 1,600 cfm, a minimum of -60 "w.c. inlet suction and 10" w.c. discharge pressure.</p> <p>The flare is currently equipped with a digital recorder manufactured by Yokagawa.</p> <p>Flare Stack Height..... 31'</p> <p>Exit Diameter..... 9"</p> <p>Outlet Gas Temperature..... 1400-2000°F (typically; in the combustion zone within the flame which cannot be monitored)</p> <p>Maximum LFG Flow Rate..... 1,600 scfm</p> <p>Minimum LFG Flow Rate..... 160 scfm</p> <p>Starter Fuel Type..... Propane</p> <p>Destruction efficiency..... 98% NMOCs @ CH<sub>4</sub> content of 40-60%</p>

**Permitting Note:** This emissions unit is subject to 40 CFR Part 60, Subpart WWW adopted by reference in Rule 62-204.800(8)(b)72, F.A.C.; and 40 CFR Part 63, Subpart AAAA adopted by reference in Rule 62-204.800(11)(b)58, F.A.C.

The following specific conditions apply to the emissions unit(s) listed above:

**C.0. Upon demonstration of compliance with Air Construction Permit No. 0310358-007-AC and the milestones identified in Compliance Plan, Appendix CP-1, the permittee shall operate the referenced emissions unit in accordance with the conditions specified below.**

**Operational Parameters**

**C.1. Permitted Capacity - Flare:** The maximum landfill gas flowrate shall not exceed 1,600 standard cubic feet per minute of landfill gas, averaged hourly. [Rule 62-210.200(PTE), FAC, Rule 62-4.070, F.A.C.; and Rule 2.301, JEPB.; Construction Permit No. 0310358-007-AC]

**C.2. Hours of Operation- Flare.** The hours of operation of the flare are not restricted, i.e. 8760 hours per year of operation. [Rules 62-4.160(2) and 62-210.200(PTE), F.A.C.; Rule 2.301, JEPB]

**Method of Flare Operation**

**C.3. Method of Operation.** All LFG collected by the gas collection system shall be directed to the landfill gas treatment system for subsequent use as fuel at the Trail Ridge LLC Plant. Any excess landfill gas that exceeds the volume the Trail Ridge Energy LLC Plant is able to accept shall be diverted to the 5,000 scfm or the de-rated 1,600 scfm open flares for control. Collected LFG shall not be vented to the atmosphere.

*Permitting Note: The 1,600 scfm non-assisted, open flare shall not be operated as the sole control device as the current landfill gas flow exceeds the maximum capacity of this flare.*

### SECTION III. EMISSIONS UNITS AND SPECIFIC CONDITIONS.

#### Subsection C. Emissions Unit 011

[Rules 62-4.160(2), 62-4.070(3), 62-210.200(PTE), F.A.C.; Rule 2.301, JEPB; CFR 60.752(b)(2)(iii)(A); CFR 60.752(b)(2)(iii)(C); 40 CFR 60.753(e); Construction Permit No. 0310358-004-AC/PSD-FL-374]

- C.4. Method of Operation – Flare Pilot Fuel. The flare shall fire propane gas as its pilot fuel. Propane shall be used only for the purpose of igniting the flare and not be utilized as a supplemental fuel. [Rules 62-4.160(2), 62-4.070(3), 62-210.200(PTE), F.A.C.; Rule 2.301, JEPB]
- C.5. Method of Operation. The control system shall be operated at all times when the collected gas is routed to the system. [40 CFR 60.18(e); 40 CFR 60.753(f)]
- C.6. Method of Operation –Flame Flame. The flare shall be operated with a flame present at all times, as determined by the methods specified in Conditions C.11., C.12., C.13., C.14. and C.15. [Rule 62-296.800, F.A.C.; 40 CFR 60.18(c)(2)]
- C.7. Method of Operation – LFG Heat Content & Exit Velocity. The permittee shall comply with the heat content specifications stated in paragraph (a) and the maximum tip velocity specifications in paragraph (b):
- (a) The flare shall be used only with the net heating value of the gas being combusted being 7.45 MJ/scm (200 Btu/scf) or greater. The net heating value of the gas being combusted shall be determined by the methods specified in Condition C.13.
  - (b) The flare shall be designed for and operated as follows:
    - (i) An exit velocity, as determined by the methods specified in Condition C.14., less than 18.3 m/sec (60 ft/sec), except as provided in (ii) and (iii).
    - (ii) An exit velocity, as determined by the methods specified in Condition C.14., equal to or greater than 18.3 m/sec (60 ft/sec) but less than 122 m/sec (400 ft/sec) is allowed if the net heating value of the gas being combusted is greater than 37.3 MJ/scm (1,000 Btu/scf).
    - (iii) An exit velocity, as determined by the methods specified in Condition C.14. less than the velocity,  $V_{max}$ , as determined by the method specified in Condition C.17. and less than 122 m/sec (400 ft/sec) is allowed.
- [Rule 62-296.800, F.A.C.; 40 CFR 60.18(c)(3)(ii); 40 CFR 60.18(c)(4) and Rule 2.201, JEPB]
- C.8. Landfill Gas Collection or Control System- Inoperable: In the event the collection or control system is inoperable, the gas mover system shall be shut down and all valves in the collection and control system contributing to venting of the gas to the atmosphere shall be closed within 1 hour. [40 CFR 60.753(e)]

#### **Emission Limitations and Performance Standards**

*{Permitting note: Table 1-1, Summary of Air Pollutant Standards and Terms, summarizes information for convenience purposes only. This table does not supersede any of the terms or conditions of this permit.}*

*{Permitting Note: Unless otherwise specified, the averaging time for these conditions is based on the specified averaging time of the applicable test method.}*

## SECTION III. EMISSIONS UNITS AND SPECIFIC CONDITIONS.

### Subsection C. Emissions Unit 011

- C.9. Visible Emissions. The flare shall be designed for and operated with no visible emissions as determined by the methods specified in Conditions C.11., C.12., C.13., C.14. and C.15., except for periods not to exceed a total of 5 minutes during any 2 consecutive hours. [Rule 62-296.800, F.A.C.; 40 CFR 60.18(c)(1), Rule 2.201, JEPB; Construction Permit No. 0310358-007-AC]

#### Compliance Provisions

- C.10. The provisions 40 CFR 63 Subpart WWW apply at all times, except during periods of start-up, shutdown, or malfunction, provided that the duration of start-up, shutdown, or malfunction shall not exceed 5 days for collection systems and shall not exceed 1 hour for treatment or control devices (i.e. the flare). [40 CFR 60.755(e); 40 CFR 60.11(c)]

#### Monitoring Of Operations

- C.11. Landfill Gas Collection System – Flare: The flare shall be monitored to ensure that it is operated and maintained in conformance with its design. The following equipment shall be installed, calibrated, maintained and operated according to the manufacturer's specifications:
- (1) A heat sensing device, such as an ultraviolet beam sensor or thermocouple, at the pilot light or the flame itself to indicate the continuous presence of a flame.
  - (2)(i) A device that records flow to the control device. The owner or operator shall install, calibrate and maintain a gas flow rate measuring device that shall record the flow to the control device at least every 15 minutes; or
  - (ii) N/A – The flare is not equipped with a bypass system.
- [40 CFR 60.18(d); 40 CFR 60.756(c); 40 CFR 60.18(f)(2); EPA Office of Air Quality Planning and Standards' Municipal Solid Waste Landfill New Source Performance Standards (NSPS and Emission Guidelines (EG) Questions and Answers document revised in May 2002; Construction Permit No. 0310358-007-AC]

#### Test Methods and Procedures

- C.12. Visible Emissions –Flare. The test method for visible emissions shall be in accordance with EPA Method 22 of 40 CFR 60 Appendix A, adopted and incorporated by reference in Rule 62-204.800, F.A.C. The required observation period shall be 2 hours and shall be used according to Method 22.

Pursuant to Method 22, the observer, at a minimum must be trained and knowledgeable regarding the effects of background contrast, ambient lighting, observer position relative to lighting, wind and the presence of uncombined water (condensing water vapor) on the visibility of emissions. This training is to be obtained from written materials found in References 1 and 2 or from the lecture portion of the Method 9 certification course.

Compliance tests shall be conducted on an annual basis, once each federal fiscal year (October 1 – September 30).

[Rules 62-297.310(7)(a)4.a., 62-297.401(22),F.A.C.; 40 CFR 60.8(a); 40 CFR 60.11(e)(1); 40 CFR 60.18(f)(1)]

**SECTION III. EMISSIONS UNITS AND SPECIFIC CONDITIONS.**

**Subsection C. Emissions Unit 011**

- C.13. Net Heating Value – Flare.** The net heating value of the gas being combusted in a flare shall be calculated using the following equation:

$$H_T = K \sum_{i=1}^n C_i H_i$$

where:

$H_T$  = Net heating value of the sample, MJ/scm; where the net enthalpy per mole of offgas is based on combustion at 25 °C and 760 mm Hg, but the standard temperature for determining the volume corresponding to one mole is 20 °C;

$K$  = Constant,  $1.740 \times 10^{-7}$  (1/ppm) (g mole/scm) (MJ/kcal)

where the standard temperature for (g mole/scm) is 20°C;

$C_i$  = the concentration of methane in the landfill gas as measured by Method 3C. A minimum of three 30-minute Method 3C samples are determined. The measurement of other organic components, hydrogen and carbon monoxide is not applicable; and

$H_i$  = Net heat of combustion of sample component  $i$ , kcal/g mole at 25 °C and 760 mm Hg. The heats of combustion may be determined using ASTM D2382–76 or 88 or D4809–95 (incorporated by reference as specified in §60.17) if published values are not available or cannot be calculated.

The calculation and testing shall be conducted no less than on a 5 year basis, prior to permit renewal.

[40 CFR 60.18(f)(3); 40 CFR 60.754(e), Rules 62-4.070, & Rule 62-297.310(7)(a)3., F.A.C.]

- C.14. Exit Velocity- Flare.** The actual exit velocity of the flare shall be determined by dividing the volumetric flowrate (in units of standard temperature and pressure), as determined by Reference Methods 2, 2A, 2C, or 2D as appropriate; by the unobstructed (free) cross sectional area of the flare tip. Method 3C may be used to determine the landfill gas molecular weight for calculating the flare gas exit velocity under this condition.

The exit velocity shall be determined initially pursuant to Conditions C.6. and C.14. and then on an annual basis.

The calculation and testing shall be conducted no less than on a 5 year basis, prior to permit renewal.

[40 CFR 60.18(f)(4) ; 40 CFR 60.754(e), Rules 62-4.070, & Rule 62-297.310(7)(a)3., F.A.C.]

- C.15. Maximum Permitted Velocity – Flare.** The maximum permitted velocity,  $V_{max}$ , for flares complying with Specific Condition C.7.(b)(iii) shall be determined by the following equation.

$$\text{Log}_{10}(V_{max}) = (H_T + 28.8) / 31.7$$

$V_{max}$  = Maximum permitted velocity, M/sec

28.8 = Constant

31.7 = Constant

$H_T$  = The net heating value as determined in Condition C.13.

### SECTION III. EMISSIONS UNITS AND SPECIFIC CONDITIONS.

#### Subsection C. Emissions Unit 011

The calculation and testing shall be conducted no less than on a 5 year basis, prior to permit renewal.

[40 CFR 60.18(f)(5); Rules 62-4.070, & Rule 62-297.310(7)(a)3., F.A.C.]

- C.16. Flare Operation and Maintenance Plan.** The flare shall be maintained in accordance with recommendations provided by the vendor. At a minimum the following shall be performed:
- The flame arrestor leading to the flare shall be inspected on an annual basis and cleaned if a high differential pressure across it exists.
  - Replacement of thermocouples as needed
  - Pilot gas cylinders inspected to ensure sufficient gas is present to relight the flare

All activities shall be performed as scheduled and recorded. This information shall be retained for at least 5 years from the date of measurement or recording and be readily assessable for onsite review by the Department.

[Rule 62-4.070(3), F.A.C.; Rule 62-4.160(7), F.A.C., Rule 62-213.440(1)(b)2.b., F.A.C., Construction Permit No. 0310358-007-AC]

- C.17. Sulfur Dioxide- Sulfur Content of Landfill Gas.** For emissions reporting purposes, sulfur dioxide emissions from the 1,600 scfm flare shall be determined using the results of the landfill gas analysis for sulfur content required by Construction Permit No. 0310358-004-AC for Trail Ridge Energy, LLC. [Rule 62-4.070, F.A.C.]

- C.18. Hydrogen Chloride Content of Landfill Gas.** For emissions reporting purposes, hydrogen chloride emissions from the 1,600 scfm flare shall be determined using the results of the landfill gas analysis for sulfur content required by Construction Permit No. 0310358-004-AC for Trail Ridge Energy, LLC. [Rule 62-4.070, F.A.C.]

#### **Notifications, Recordkeeping and Reporting Requirements**

- C.19. Control System Monitoring Report:** The owner or operator shall submit to the Administrator semi-annual reports<sup>1</sup> of the following recorded information:

- (1) Value and length of time for exceedance of applicable parameters monitored under Condition C.11.
- (2) N/A – The flare is not equipped with a bypass system;
- (3) Description and duration of all periods when the control device was not operating for a period exceeding 1 hour and length of time the control device was not operating.

<sup>1</sup> The provisions of 40 CFR 63 Subpart AAAA requires this submittal on a semi-annual basis instead of the annual basis required in 40 CFR 60 Subpart WWW. Refer to Conditions A.52.

[40 CFR 60.757(f)(1),(2) and (3); 40 CFR 63.1980(a); EPA Office of Air Quality Planning and Standards' Municipal Solid Waste Landfill New Source Performance Standards (NSPS and Emission Guidelines (EG) Questions and Answers document revised in May 2002]

- C.20. Recordkeeping Information.** The permittee shall maintain the following records on a monthly basis. This information shall be retained at least five years from the date of the sample, measurement, or record:
- a. The date and time when landfill gas is directed to the open flares, denoted by which of the two available flares. This record shall also include the date and time when landfill gas is



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### SECTION III. EMISSIONS UNITS AND SPECIFIC CONDITIONS.

#### Subsection C. Emissions Unit 011

directed back to the Trail Ridge Energy LLC Plant;

b. The hours of operation, including any start-up, shutdown or malfunction in the operation of the flare;

c. The landfill gas flow rate to the open flares, denoted by which of the two available flares.  
[Rule 62-4.070, F.A.C.; Rule 62-213.440(1)(b)2.b., F.A.C.; Rule 62-213.410, F.A.C.;  
Construction Permit No. 0310358-007-AC]

**C.21. Testing & Monitoring Records Retention.** The owner or operator shall keep up-to-date, readily accessible records for the life of the control equipment of the data listed below as measured during the initial performance test or compliance determination. Records of subsequent tests or monitoring shall be maintained for a minimum of 5 years. Records of the control device vendor specifications shall be maintained until removal.

- (1) The flare type (i.e., nonassisted);
- (2) All visible emission readings;
- (3) Heat content determination;
- (4) Flow rate measurements;
- (5) Exit velocity determinations made during the performance test as specified in 40 CFR 60.18;
- (6) Continuous records of the flare pilot flame or flare flame monitoring and records of all periods of operations during which the pilot flame of the flare flame is absent.

[40 CFR 60.758(b); EPA Office of Air Quality Planning and Standards' Municipal Solid Waste Landfill New Source Performance Standards (NSPS and Emission Guidelines (EG) Questions and Answers document revised in May 2002]

**C.22. Equipment Continuous Operating Parameter Records:** The owner or operator of a controlled landfill shall keep for 5 years up-to-date, readily accessible continuous records of the equipment operating parameters specified to be monitored in Condition C.11., as well as up-to-date, readily accessible records for periods of operation during which the parameter boundaries established during the most recent performance test are exceeded.

- (1) Each owner or operator shall keep up-to-date, readily accessible continuous records of the indication of flow to the control device specified under Condition C.12;
- (2) Each owner or operator shall keep up-to-date, readily accessible continuous records of the flame or flare pilot flame monitoring specified under Condition C.11. and up-to-date, readily accessible records of all periods of operation in which the flame or flare pilot flame is absent.

[40 CFR 60.758(c), (c)(2) and (4); EPA Office of Air Quality Planning and Standards' Municipal Solid Waste Landfill New Source Performance Standards (NSPS and Emission Guidelines (EG) Questions and Answers document revised in May 2002]

**C.23. Collection & Control System Operational Standard Exceedance Records.** Except as provided in 40 CFR 60.752(b)(2)(i)(B), the Permittee shall keep for at least 5 years up-to-date, readily accessible records of all collection and control system exceedances of the operational standards in Conditions C.3., C.5. and C.8., the reading in the subsequent month whether or not the second reading is an exceedance and the location of each exceedance.

*Permitting Note: 40 CFR 60.752(b)(2)(i)(B) states the collection and control system design plan shall include any alternatives to the operational standards, test methods, procedures, compliance measures, monitoring, recordkeeping or reporting provisions of §§60.753 through 60.758 proposed by the owner or*

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**SECTION III. EMISSIONS UNITS AND SPECIFIC CONDITIONS.**

**Subsection C. Emissions Unit 011**

*operator. 40 CFR 60.752(b)(2)(i)(D) states that the Administrator shall review the information submitted under paragraphs (A), (B) and (C) of this section and either approve it, disapprove it, or request that additional information be submitted.*

[40 CFR 60.758(e)]

**Common Conditions**

- C.24.** This emissions unit is also subject to the applicable General Provisions of 40 CFR 60 Subpart A.
- C.25.** This emissions unit is subject to the applicable requirements in 40 CFR Part 63, Subpart A, as Specified in Table 1 - Applicability of NESHAP General Provisions to Subpart AAAA (refer to Condition E.9.) and the requirements of 40 CFR 63.1960 through 63.1985 of 40 CFR 63 Subpart AAAA as specified in Subsection E. [40 CFR 63.1955(b)]

**SECTION III. EMISSIONS UNITS AND SPECIFIC CONDITIONS.**

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**Subsection D. Emissions Unit 002**

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

Emission Unit	Brief Description
002	Fugitive Dust Emissions from unpaved roads and landfill work areas.

**The following specific conditions apply to the emissions unit(s) listed above:**

**Essential Potential to Emit (PTE) Parameters**

**D.1.** This emissions unit shall be subject to the requirements of Rule 62-296.320(4)(c), FAC and Rule 2.1001, JEPB.

**D.2.** Reasonable precautions for this emission unit shall be as follows:

- a. The application of water to unpaved roads to minimize the emission of unconfined PM
- b. Minimization of speeds on unpaved roads through the use of posted speed limits and enforcement
- c. Small phased work areas to minimize the amount of exposed area
- d. As practical and as needed, install grass cover for completed areas (phases) of work

[Rule 62-296.320, FAC and Rule 2.1001, JEPB]

Trail Ridge Energy, LLC  
29261 Wall Street  
Wixom, Michigan 48393

Facility Identification Code (SIC):

Major Group No. 40, Industry Group No. 4953

Responsible Official: Mr. Scott Salisbury,  
Facility ID No.: 0310358  
Duval County

*The Trail Ridge Energy, LLC, electricity generation plant is located on leased land at the Trail Ridge Landfill facility. The electricity generation equipment and processes are owned and operated by Trail Ridge Energy, LLC and not directly under the control of the Trail Ridge Landfill.*

*The City of Jacksonville, Trail Ridge Landfill facility has a control relationship over the Trail Ridge Energy electricity generation operations since the Trail Ridge Landfill facility provides landfill gas to the engine plant. The provision of landfill gas to Trail Ridge Energy is contingent on these gases being produced by the Trail Ridge Landfill. Trail Ridge Energy and Trail Ridge Landfill are two separate entities and have separate responsible officials.*

**SECTION III. EMISSIONS UNITS AND SPECIFIC CONDITIONS.**

**Subsection E. Emissions Units 004-009 and 012-015**

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

<u>Emission Unit</u>	<u>Brief Description</u>
<p align="center">004-009 and 012-015</p>	<ul style="list-style-type: none"> <li>• <u>Ten Caterpillar Model G3520C landfill gas fueled internal combustion engines and electricity generators for the generation of up to a total of 16 megawatts (nominal rating) of electricity. The engines will be fueled exclusively with landfill gas generated by and received from the Trail Ridge landfill facility.</u></li> <li>• <u>The landfill gas will go through a gas treatment system prior to combustion in the engines.</u> <ul style="list-style-type: none"> <li>• <u>The system shall consist of:</u> <ol style="list-style-type: none"> <li>1. <u>Initial two-stage inlet gas dewatering/filter vessels (the bottom chambers are used for moisture knock-out, top chambers are equipped with coalescing filter media to remove gas particles having diameters of 1-micron and larger.</u></li> <li>2. <u>A gas compressor/blower.</u></li> <li>3. <u>Air-to-gas coolers (chillers), which will be used to reduce the elevated temperatures of LFG received from compressor to approximately 10v°F above ambient temperatures.</u></li> <li>4. <u>Final two-stage gas dewatering/filter vessels (the bottom chambers are used for moisture knock-out, top chambers are equipped with coalescing filter media to remove gas particles having diameters of 1-micron or larger.</u></li> </ol> </li> </ul> </li> </ul>

**Permitting Note:** The landfill gas treatment system is subject to 40 CFR Part 60, Subpart WWW - Standards of Performance for Municipal Solid Waste Landfills adopted by reference in Rule 62-204.800(8)(b)72., F.A.C.; 40 CFR Part 63, Subpart AAAA- National Emission Standards for Hazardous Air Pollutants (NESHAP) for Municipal Solid Waste Landfills adopted by reference in Rule 62-204.800(11)(b)58., F.A.C; The emissions unit is subject to Prevention of Significant Deterioration (PSD) pursuant to Rule 62-210.200(164)(a)2, F.A.C. and BACT Determination for CO, NOx and PM<sub>10</sub> emissions. Emission Unit ID Nos. 012-015 are also subject to 40 CFR60 Subpart JJJJ and 40 CFR 63 Subpart ZZZZ.

**EQUIPMENT**

- E.1. Landfill Gas Engine/Generator Sets: The permittee is authorized to install and operate a total of ten (Caterpillar Model G3520C or equivalent) spark-ignited reciprocating internal combustion engines. Each engine is a 4-cylinder engine with a total displacement of 86.3 liters. Each engine has a maximum rating of 2,233 bhp and is coupled to a 1,600 kW generator (nominal rating) for the generation of up to a total of 16 MW of electricity. The maximum rating when coupled to the electrical generator is 2,233 bhp. Each engine will fire LFG. The LFG will pass through a gas treatment system prior to combustion in the engines.
- a. Each engine shall be equipped with an air-to-fuel ratio controller and ignition timing to maintain efficient fuel combustion.

### SECTION III. EMISSIONS UNITS AND SPECIFIC CONDITIONS.

#### Subsection E. Emissions Units 004-009 and 012-015

- b. Each engine shall be equipped with an automatic fail-safe block valve which must be designed to stop the flow of landfill gas in the event of an engine failure. Excess landfill gas not fired in the engines shall be flared in accordance with the requirements of Subpart WWW in 40 CFR 60.
- c. Each engine shall be equipped with a non-resettable elapsed time meter to indicate the elapsed engine operating time in cumulative hours.
- d. A gas flow meter shall be installed to monitor the total flow rate to all of the landfill gas engines.  
*{Permitting Note: The heat input rate is based on 100% load (2,233 bhp), a nominal landfill gas heating value of 500 British thermal units (Btu) per scf and an approximate landfill gas firing rate of 580 scfm per engine.}* [Application Nos. 0310358-004-AC and 0310358-012-AC; and Rules 62-4.070(3), 62-210.200(PTE) and 62-212.400(PSD), F.A.C.]
- E.2. LFG Treatment System: The permittee shall design, install, operate and maintain a LFG Treatment System including equipment for: gas compression (blowers/compressors), de-watering (knock-out and chilling system) and particulate removal (filtration). Specifically, the permittee shall design, install, maintain and operate 1 micron primary and polishing filters to remove particulate matter from the LFG prior to combustion in the engines. The LFG treatment system shall not be equipped with atmospheric vents. LFG shall be directed to the new engines, the existing flares or some other appropriate treatment or control system. [Application Nos. 0310358-004-AC and 0310358-012-AC; and Rule 62-212.400, F.A.C.]
- E.3. LFG Flaring: The permittee shall install and maintain an automatic fail-safe block valve on each engine. The fail-safe block valve must stop the flow of LFG in the event of an engine failure. Excess LFG not used as fuel in an engine must be flared or directed to some other appropriate treatment or control system in accordance with the requirements of NSPS Subpart WWW in 40 CFR 60. [Rule 62-4.070, F.A.C.]

#### **PERFORMANCE RESTRICTIONS**

- E.4. Permitted Capacity: Each landfill gas engine has a maximum power rating of 2,233 bhp at 100% load (approximately 17.6 MMBtu/hour). The electrical generator set has a nominal power rating of 1,600 kilowatts. [Rule 62-210.200(PTE), F.A.C.]
- E.5. Authorized Fuel: Each engine shall only fire landfill gas. [Application Nos. 0310358-004-AC and 0310358-012-AC and Rule 62-210.200(PTE), F.A.C.]
- E.6. Restricted Operation: The hours of operation are not limited (8760 hours per year). [Rules 62-4.070(3) and 62-210.200(PTE), F.A.C.]
- E.7. Operating Requirements (Emission Unit ID Nos. 004-009): The permittee shall set the air-to-fuel ratio for each engine based on the most recent emissions tests demonstrating compliance with the standards specified in this permit and other operating conditions. [Rule 62-212.400(BACT), F.A.C.]
- E.8. Operating Requirements (Emission Unit ID Nos. 012-015): The permittee shall set the air-to-fuel ratio for each engine based on the most recent emissions tests demonstrating compliance with the standards specified in this permit and other operating conditions identified in NSPS 40 CFR 60, Subpart JJJJ. [Rule 62-212.400(BACT), F.A.C. and NSPS Subpart JJJJ in 40 CFR 60]
- E.9. Applicable NSPS Provisions (Emission Unit ID Nos. 012-015): The landfill gas engines are subject to, and shall comply with, the applicable provisions in NSPS Subpart A (General Provisions) and NSPS Subpart JJJJ (Stationary Spark Ignition Internal Combustion Engines) of 40

### SECTION III. EMISSIONS UNITS AND SPECIFIC CONDITIONS.

#### Subsection E. Emissions Units 004-009 and 012-015

CFR 60, which are identified in Appendix ICE of this permit. [NSPS Subparts A and JJJJ in 40 CFR 60 and Rule 62-204.800, F.A.C.]

- E.10. Applicable NESHAP Provisions (Emission Unit ID Nos. 012-015): The landfill gas engines are subject to, and shall comply with, the applicable provisions in NESHAP Subpart A (General Provisions) and NESHAP Subpart ZZZZ (Reciprocating Internal Combustion Engines) of 40 CFR 63, which are identified in Appendix ICE of this permit. Pursuant to 40 CFR 63.6590, the landfill gas engines shall comply with NESHAP Subpart ZZZZ by complying with NSPS Subpart JJJJ. [NESHAP Subparts A and ZZZZ in 40 CFR 63 and Rule 62-204.800, F.A.C.]

#### EMISSIONS STANDARDS

- E.11. Nitrogen Oxides (NO<sub>x</sub>): The emission rate of NO<sub>x</sub> from each engine/generator set exhaust shall not exceed 0.6 gram per brake horsepower hour (g/bhp-hr) and a maximum of 3.0 pounds per hour (lb/hr). [Rule 62-212.400(12), F.A.C.]
- E.12. Carbon Monoxide (CO): The emission rate of CO from each engine/generator set exhaust shall not exceed 3.5 g/bhp-hr and a maximum of 17.2 lb/hr. [Rule 62-212.400(12), F.A.C.]
- E.13. Particulate Matter/Particulate Matter less than 10 microns (PM/PM<sub>10</sub>): Emissions of PM/PM<sub>10</sub> shall be minimized by the following work practice standards: installing, maintaining and operating the LFG Treatment System that meets the filtration specification; the firing of diesel/biodiesel that meets the maximum sulfur specification; and, as determined by EPA Method 9, visible emissions from each engine exhaust shall not exceed 10% opacity. {Permitting Note: Based on these work practice standards, the expected maximum PM/PM<sub>10</sub> emissions from each engine is 0.24 g/bhp-hr and a maximum of 1.2 lb/hr.} [Rule 62-212.400(BACT), F.A.C.]
- E.14. Volatile Organic Compounds (VOC): The emission rate of total VOC from each engine/generator set exhaust shall not exceed 1.0 g/bhp-hour 0.28 g/bhp-hr and a maximum of 1.4 lb/hr. {Permitting Note: 1.0 g/bhp-hour limit is the NSPS Subpart JJJJ standard for Emission Unit ID Nos. 012-015, however the "g/bhp-hour" and "lb/hour" limits allow the project to avoid PSD preconstruction review for VOC emissions.} [NESHAP Subparts A and JJJJ in 40 CFR 63 and Rules 62-204.800 and 62-212.400(12), F.A.C.]  
*{Permitting Note: Facility remains a minor source of HAP emissions based on permit limits.}*
- E.15. Sulfur Dioxide (SO<sub>2</sub>): Sulfur dioxide emissions from the ten engines shall not exceed 41.6 tons during any consecutive 12 months. Emissions shall be calculated based on the representative sulfur content of each fuel and the actual monthly fuel consumption rate of each fuel based on the following:  
a. LFG: The representative sulfur content for a given month shall be the sulfur content determined from sampling and analysis within the same semiannual period.  
b. Fuel Consumption: The monthly fuel consumption shall be determined from the fuel flow monitors.  
Compliance with the SO<sub>2</sub> emissions cap shall be determined by summing the calculated monthly SO<sub>2</sub> emissions from each fuel based on stoichiometry for a given 12-month period. {Permitting Note: The project avoids PSD review based on this emissions cap.} [Rule 62-212.400(12)(Source Obligation), F.A.C.]
- E.16. Hydrochloric Acid (HCl): Hydrochloric acid emissions from the facility shall not exceed 9.0 tons during any consecutive 12 months. Emissions shall be calculated based on the representative

### SECTION III. EMISSIONS UNITS AND SPECIFIC CONDITIONS.

#### Subsection E. Emissions Units 004-009 and 012-015

chlorine content of LFG and the actual monthly fuel consumption rate of the engines and the amount flared based on the following:

- a. LFG: The representative chlorine content for a given month shall be the chlorine content determined from sampling and analysis within the same semiannual period.
- b. Fuel Consumption: The monthly fuel consumption shall be determined from the fuel flow monitors on the engines as well as the flares.

Compliance with the HCl emissions cap shall be determined by summing the calculated monthly HCl emissions from LFG based on stoichiometry for a given 12-month period. {Permitting Note: This emissions cap ensures that the facility remains an area source of HAP emissions with regard to NESHAP Subpart ZZZZ in 40 CFR 63 (less than 10 tons per year of any single HAP and less than 25 tons per year for the combination of all HAP)}. [Applicant Request and Rule 62-4.070(3), F.A.C.]

E.17. Visible Emissions: Visible emissions from each engine/generator set exhaust shall not exceed 10% opacity. [Rule 62-212.400, F.A.C.]

#### **EXCESS EMISSIONS**

E.18. Excess Emissions Allowed: Excess CO and NO<sub>x</sub> emissions (as specified in this subsection) resulting from startup, shutdown or malfunction of any emissions unit shall be permitted providing best operational practices to minimize emissions are adhered to and:

- a. To the extent practicable, the operator shall strive to complete engines startups within 30 minutes;
- b. Upon completing startup, each engine shall operate with a LFG fraction at 90% or greater; and
- c. The duration of excess emissions due to malfunctions shall be minimized but in no case exceed two hours in any 24-hour period.

[Rule 62-210.700(1), F.A.C.]

#### **TESTING REQUIREMENTS**

E.19. Initial Compliance Test (Emission Unit ID Nos. 012-015): Each landfill gas engine shall be tested to demonstrate initial compliance with the emissions standards for CO, NO<sub>x</sub> and VOC under 40 CFR 60, Subpart JJJJ as well as the BACT standards of this permit. In addition, each unit shall be tested for opacity in accordance with EPA Method 9. The initial performance test must be conducted within 60 days after achieving permitted capacity, but not later than 180 days after initial startup of each unit. {Permitting Note: Since the BACT emission standards are more stringent than 40 CFR 60, Subpart JJJJ emission standards, compliance with the BACT emission standards will satisfy compliance with the 40 CFR 60, Subpart JJJJ emission standards.} [Rules 62-212.400(BACT), 62-297.310(7)(a)1, F.A.C. and NSPS Subpart JJJJ in 40 CFR 60]

E.20. Periodic Compliance Tests (Emission Unit ID Nos. 012-015): Every 8,760 engine hours or at least once every three years, whichever comes first, each landfill gas engine shall be tested to demonstrate compliance with the emissions standards for CO, NO<sub>x</sub> and VOC under 40 CFR 60, Subpart JJJJ as well as the BACT standards of this permit. During these periodic tests, at least one landfill gas engine shall also be tested for opacity in accordance with EPA Method 9. {Permitting Note: Since the BACT emission standards are more stringent than 40 CFR 60, Subpart JJJJ emission standards, compliance with the BACT emission standards will satisfy compliance with the 40 CFR 60, Subpart JJJJ emission standards.} [Rules 62-212.400(BACT), 62-297.310(7)(a)1 and 4, F.A.C., and NSPS Subpart JJJJ in 40 CFR 60]



### SECTION III. EMISSIONS UNITS AND SPECIFIC CONDITIONS.

#### Subsection E. Emissions Units 004-009 and 012-015

- E.21. Performance Tests (Emission Unit ID Nos. 004-009): Initial, annual and renewal compliance tests shall be conducted on only one of the six engines. A different engine shall be tested each year such that all engines are tested during the six year cycle.
- E.22. Test Requirements: During each required compliance stack test, the permittee shall operate a tested landfill gas engine at permitted capacity (90% to 100% of 2,233 bhp). The permittee shall notify the Compliance Authority in writing at least 15 days prior to any scheduled stack tests. Tests shall be conducted in accordance with the applicable requirements specified in Appendix D (Common Testing Requirements) of this permit. {Permitting Note: Although the NSPS provides for a 30-day test notification, a 15-day notice is sufficient in Florida.} [Rule 62-297.310(7)(a)9, F.A.C.]
- E.23. Test Methods: Tests required by this permit shall be performed in accordance with the following reference methods.

<u>Method</u>	<u>Description of Method and Comments</u>
<u>1 - 4</u>	<u>Traverse Points, Velocity and Flow Rate, Gas Analysis, and Moisture Content</u>
<u>7 or 7E</u>	<u>Determination of Nitrogen Oxide Emissions from Stationary Sources</u>
<u>9</u>	<u>Visual Determination of the Opacity of Emissions from Stationary Sources</u>
<u>10</u>	<u>Determination of Carbon Monoxide Emissions from Stationary Sources</u> <u>{Note: The method shall be based on a continuous sampling train.}</u>
<u>19</u>	<u>Determination of Sulfur Dioxide Removal Efficiency and Particulate Matter, Sulfur Dioxide, and Nitrogen Oxides Emission Rates (Optional F-factor method may be used to determine flow rate and gas analysis to calculate mass emissions in lieu of Methods 1-4.)</u>
<u>18</u>	<u>Measurement of Gaseous organic Compound Emissions by Gas Chromatography {Note: the emission standards are based on VOC measured as methane.}</u>
<u>25A</u>	<u>Determination of Total Gaseous Organic Concentration Using a Flame Ionization Analyzer {Note: the emission standards are based on VOC measured as methane.}</u>

The above methods are described in Appendix A of 40 CFR 60 and are 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 62-204.800, 62-212.400(BACT) and Appendix A of 40 CFR 60]

- E.24. LFG Composition Analysis: The following methods shall be used to satisfy the sampling/analysis of LFG:
- Lower Heating Value: ASTM Method D3588 or equivalent.
  - Sulfur Content: ASTM Method D5504-01 or equivalent.
  - Chlorine Content: Modified EPA Method TO-15 or equivalent.
  - The LFG shall be collected and transported in an appropriate canister (e.g. SUMMA®, Bottle-Vac Sampler or equivalent).

[Rule 62-4.070(3), F.A.C.]

#### **MONITORING REQUIREMENTS**

- E.25. Landfill Gas Sampling/Analysis: At least semiannually, the permittee shall obtain the following representative samples of landfill gas: a sample taken during each required compliance stack test;

**SECTION III. EMISSIONS UNITS AND SPECIFIC CONDITIONS.**

**Subsection E. Emissions Units 004-009 and 012-015**

and a sample taken during the next semiannual period. A representative sample shall be taken in each calendar semiannual period (January – June and July – December) approximately six months apart. Each gas sample shall be collected under normal operating conditions (i.e., with valves open for all operating cells) by appropriate canister (e.g. SUMMA®, Bottle-Vac Sampler or equivalent). Each sample shall have an ultimate analysis conducted for at least sulfur. For at least one sample each year, the analysis shall also report chlorine. Results shall also be reported as SO<sub>2</sub> and HCl emission factors in terms of lb/million standard cubic feet (lb/MMscf) of landfill gas. Based on the sampling results and Rule 62-297.310(7)(b)(Special Compliance Tests), F.A.C., the Compliance Authority may request additional gas sampling and analyses. [Rules 62-210.200 and 62-212.400, F.A.C.]

E.26. Monthly Records: Within ten calendar days following each month, the permittee shall observe and record the following information in a written log: number of hours of operation of each engine; total monthly landfill gas flow rate to all engines combined; and hydrochloric acid (HCl) and sulfur dioxide (SO<sub>2</sub>) emissions for the month and previous 12 months, rolling total. Emissions of HCl and SO<sub>2</sub> shall be calculated from the monthly fuel consumption as well as the analytical results for the chlorine and sulfur contents of the landfill gas representative of the given month of operation. [Rule 62-210.200 (232), F.A.C.]

**RECORDS AND REPORTS**

E.27. Test Reports: The required test report shall be filed with the Department as soon as practical but no later than 45 days after the last sampling run of each test is completed. The test report shall provide sufficient detail on the emissions unit tested and the test procedures used to allow the Department to determine if the test was properly conducted and the test results properly computed.

E.28. As a minimum, the test report, other than for an EPA test, shall provide the applicable information identified in Rule 62-297.310(8)(c). [Rule 62-297.310(8), F.A.C.]

**COMMON CONDITIONS**

E.29. This emissions unit is also subject to the applicable General Provisions of 40 CFR 63 Subpart A.

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

Emission Unit	Brief Description
004-009	<ul style="list-style-type: none"><li>● Six Caterpillar Model G3520C landfill gas-fueled internal combustion engines and electricity generators. Each engine has a power generation rating of 2,233 brake horsepower at 100 percent load. The generator has a power output rating of 1,600 kilowatt. The engines will be fueled exclusively with landfill gas generated by and received from the Trail Ridge landfill facility.</li><li>● The landfill gas will go through a gas treatment system prior to combustion in the engines.<ul style="list-style-type: none"><li>● The system shall consist of:<ol style="list-style-type: none"><li>1. Initial two-stage inlet gas dewatering/filter vessels (the bottom chambers are used for moisture knock-out, top chambers are equipped with coalescing filter media to remove gas particles</li></ol></li></ul></li></ul>

SECTION III. EMISSIONS UNITS AND SPECIFIC CONDITIONS.

Subsection E. Emissions Units 004-009 and 012-015

	<p>having diameters of 1 micron and larger.</p> <ol style="list-style-type: none"><li>2. A gas compressor/blower.</li><li>3. Air to gas coolers (chillers), which will be used to reduce the elevated temperatures of LFG received from compressor to approximately 10v°F above ambient temperatures.</li><li>4. Final two stage gas dewatering/filter vessels (the bottom chambers are used for moisture knock-out, top chambers are equipped with coalescing filter media to remove gas particles having diameters of 1 micron or larger.</li></ol>
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**Permitting Note:** The landfill gas treatment system is subject to 40 CFR Part 60, Subpart WWW—Standards of Performance for Municipal Solid Waste Landfills adopted by reference in Rule 62-204.800(8)(b)72., F.A.C.; 40 CFR Part 63, Subpart AAAA—National Emission Standards for Hazardous Air Pollutants (NESHAP) for Municipal Solid Waste Landfills adopted by reference in Rule 62-204.800(11)(b)58., F.A.C; The emissions unit is subject to Prevention of Significant Deterioration (PSD) pursuant to Rule 62-210.200(164)(a)2, F.A.C. and BACT Determination for CO, NOx and PM<sub>10</sub> emissions.

**Essential Potential to Emit (PTE) Parameters**

- ~~E.1. Permitted Capacity—Engines: The permitted capacity is as follows:~~
- ~~a. Six (6) engines for the generation of up to a total of 9.6 megawatts (nominal rating) of electricity.~~
  - ~~b. The power generation rating of each engine shall be 2,233 brake horsepower (bhp).  
(Permitting Note: The power generation rating of 2,233 bhp is based on a minimum fuel heating value requirement of 467 BTU/sef (HHV) and landfill gas usage of 580 sefm per engine.)  
[Rule 62-210.200(203), FAC and Rule 2.301, JEPB.; Rule 62-212.400, F.A.C.; Construction Permit Nos. 0310358-004-AC]~~
- ~~E.2. Hours of Operation: The hours of operation for each engine/generator are not restricted, i.e., 8760 hours per year. [Rule 62-210.200(203), FAC and Rule 2.301, JEPB.; Construction Permit No. 0310358-004-AC/PSD-FL-374]~~
- ~~E.3. Method of Operation—Authorized Engine Fuel: The fuel fired in the engines is limited to landfill gas. [Rules 62-4.160(2), 62-210.200(PTE), F.A.C.; 62-212.400, F.A.C.; Construction Permit No. 0310358-004-AC/PSD-FL-374]~~
- ~~E.4. Method of Operation—Excess Landfill Gas: Excess landfill gas not used as fuel in an engine shall be flared in the 5,000 sefm open flare or the de-rated 1,600 sefm open flare in accordance with the requirements of Subsections A, B and C of this permit. [Rule 62-4.070, F.A.C.; Construction Permit No. 0310358-004-AC/PSD-FL-374; Construction Permit No. 0310358-007-AC (pending)]~~
- ~~E.5. Method of Operation—Engine Air To Fuel Ratio: Each engine shall be operated at the air to fuel ratio operated at during the performance test required by Condition E.17. or the most recent subsequent performance test. [Rule 62-212.400, F.A.C.; Construction Permit No. 0310358-004-AC/PSD-FL-374]~~
- ~~E.6. Method of Operation—Oxygen Content in Engine Exhaust Gas: Each engine shall be operated within 0.5 percent of the oxygen content in the exhaust gas at the air to fuel ratio operated at during the performance test required by Condition E.17. or the most recent subsequent~~

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### SECTION III. EMISSIONS UNITS AND SPECIFIC CONDITIONS.

#### Subsection E. Emissions Units 004-009 and 012-015

performance test. [Rule 62-212.400, F.A.C.; Appendix F of Construction Permit Application; Construction Permit No. 0310358-004-AC/PSD-FL-374]

**E.7. Method of Operation Engine Automatic Fail Safe:** Each engine shall be installed with and maintain an automatic fail safe valve. The fail safe block valve must stop the flow of landfill gas in the event of an engine failure. [Rule 62-4.070, F.A.C.; Construction Permit No. 0310358-004-AC/PSD-FL-374]

**E.8. Landfill Gas Treatment System:** The installation of a landfill gas treatment system including gas compression (via blowers), liquids removal (via knock-out and chilling) and particulate removal (via 1 micro primary and polishing filters) is authorized by the terms of Construction Permit No. 0310358-004-AC.

Components of the landfill gas treatment system shall not be equipped with atmospheric vents<sup>†</sup>.

<sup>†</sup>In accordance with 40 CFR 60.752(b)(2)(iii)(C), all emissions from any atmospheric vent from the gas treatment system shall be routed to an open flare designed and operated in accordance with § 60.18.

[Rule 62-212.400, F.A.C.; Appendix J of Construction Permit Application; Construction Permit No. 0310358-004-AC/PSD-FL-374; 40 CFR 60.752(b)(2)(iii)(C)]

#### Emission Limitations and Performance Standards

*{Permitting note: Table 1-1, Summary of Air Pollutant Standards and Terms, summarizes information for convenience purposes only. This table does not supersede any of the terms or conditions of this permit.}*

**E.9. Nitrogen Oxides (NO<sub>x</sub>):** The emission rate of NO<sub>x</sub> from each engine/generator set exhaust shall not exceed 0.6 gram per brake horsepower hour (g/bhp-hr) and a maximum of 2.95 pounds per hour (lb/hr) and 12.94 tons per year (TPY).

[Rule 62-212.400(12), F.A.C.; Construction Permit No. 0310358-004-AC/PSD-FL-374; BACT Determination dated October 19, 2006]

**E.10. Carbon Monoxide (CO):** The emission rate of CO from each engine/generator set exhaust shall not exceed 2.75 g/bhp-hr and a maximum of 13.54 lb/hr and 59.30 TPY. [Rule 62-212.400(12), F.A.C.; Construction Permit No. 0310358-004-AC/PSD-FL-374; BACT Determination dated October 19, 2006]

**E.11. Particulate Matter less than 10 microns (PM<sub>10</sub>):** The emission rate of PM<sub>10</sub> from each engine/generator set exhaust shall not exceed 0.24 g/bhp-hr and a maximum of 1.18 lb/hr and 5.17 TPY.

[Rule 62-212.400(12), F.A.C.; Construction permit No. 0310358-004-AC/PSD-FL-374; BACT Determination dated October 19, 2006]

**E.12. Volatile Organic Compounds (VOC):** The emission rate of total VOC from each engine/generator set exhaust shall not exceed 0.28 g/bhp-hr and a maximum of 1.37 lb/hr and 5.99 TPY.

*{Permitting Note: Project avoids PSD review for VOC based on emission limits.}*

[Rule 62-212.400(12), F.A.C.; Construction permit No. 0310358-004-AC/PSD-FL-374]

**E.13. Hydrogen Chloride (HCl):** The emission rate of HCl from each engine/generator set shall not exceed 10.9 lb/MMscf and 1.66 TPY.

*{Permitting Note: Facility remains a minor source of HAP emissions based on permit limits.}*

[Rule 62-210.200(184), F.A.C.; Construction Permit No. 0310358-004-AC/PSD-FL-374]

SECTION III. EMISSIONS UNITS AND SPECIFIC CONDITIONS.

Subsection E. Emissions Units 004-009 and 012-015

~~E.14. Sulfur Dioxide (SO<sub>2</sub>): The emission rate of SO<sub>2</sub> from each engine/generator set shall not exceed 27.5 lb/MMsef.~~

~~{Permitting Note: Project avoids PSD review based on permit limits.}~~

~~[Rule 62-212.400(12), F.A.C.; Construction permit No. 0310358-004 AC/PSD-FL-374]~~

~~E.15. Visible Emissions: Visible emissions from each engine/generator set exhaust shall not exceed 10% opacity. [Rule 62-212.400, F.A.C.; Construction Permit No. 0310358-004 AC/PSD-FL-374]~~

**Test Methods and Procedures**

~~E.16. Sampling Facilities: The internal combustion engine stack shall be designed to accommodate adequate testing and sampling locations in order to determine compliance with the applicable emission limits specified by this permit. [Rule 62-297.310(6), F.A.C.; Construction permit No. 0310358-004 AC/PSD-FL-374]~~

~~E.17. Performance Test Methods: Performance tests shall be performed in accordance with the following reference methods as described in 40 CFR 60, Appendix A and 40 CFR 51 Appendix M, adopted by reference in Chapter 62-204.800, F.A.C.:~~

~~— EPA Method 7 or 7E— Determination of NO<sub>x</sub> Emissions from Stationary Sources;~~

~~(a) EPA Method 9— Visual Determination of the Opacity of Emissions from Stationary Sources;~~

~~(b) EPA Method 10— Determination of CO Emissions from Stationary Sources; and~~

~~(c) EPA Method 18, 25, 25A or 25C— Measurement of Gaseous Organic Compounds Emissions;~~

~~(d) EPA Method 26— Determination of HCl Emissions from Stationary Sources;~~

~~(e) The combination of EPA Methods 5 and 202— Determinations of PM<sub>10</sub> Emissions~~

~~— EPA Methods 1 through 4 shall be used as necessary to support other test methods. No other test methods may be used for compliance testing unless prior DEP approval is received, in writing, from the Department.~~

~~[Construction Permit No. 0310358-004 AC/PSD-FL-374; BACT Determination dated October 19, 2006 (NO<sub>x</sub>, PM<sub>10</sub>, CO, VE); Order on Request for Alternate Procedures and Requirements No. No. 09-B-AP]~~

~~E.18. Landfill Gas Sulfur and Chlorine Content: The permittee shall comply with the following requirements to monitor the sulfur and chlorine content of the landfill gas:~~

~~a. At least 180 days prior to commercial startup of the engines, the permittee shall sample and analyze the landfill gas for sulfur and chlorine content. The gas sample collected for the analyses shall be a composite sample and collected under normal operating conditions (i.e., with valves open for all operating cells). The gas sample collection and analyses for sulfur and chlorine content shall be done semi-annually. Based on the sampling results and Rule 62-297.310(7)(b), F.A.C., the Department may request additional gas sampling and analyses. Results shall be reported as SO<sub>2</sub> and HCl emission factors in terms of lb/MMsef~~

~~b. During each required compliance test conducted for HCl, the permittee shall sample and analyze the landfill gas for the chlorine content. Results for the compliance test shall be reported in terms of HCl emissions in lb/hr and the sample analysis result shall be reported as HCl emission factor in terms of lb/MMsef of landfill gas.~~

### SECTION III. EMISSIONS UNITS AND SPECIFIC CONDITIONS.

#### Subsection E. Emissions Units 004-009 and 012-015

~~c. Analysis of the chlorine content shall be used to track changes in the landfill gas. Based on the analysis, the Compliance Authority may require additional stack testing for HCl emissions to determine compliance with the emissions standard.~~

~~d. Compliance with the fuel sulfur specification shall be determined based on each analysis for the sulfur content of the landfill gas.~~

~~[Rules 62-210.200(Minor Facility), 62-210.200(245) and 62-212.400(12), F.A.C.; Construction Permit No. 0310358-004 AC/PSD-FL-374]~~

~~E.19. Initial Performance Testing: Within 60 days of achieving the permitted capacity, but no later than 180 days after initial startup, the subject emissions units shall be tested for compliance with the applicable emission limits using the test methods stated in Condition E.17. The compliance tests may be conducted on only one of the six engines. [Construction Permit No. 0310358-004 AC/PSD-FL-374]~~

~~E.20. Subsequent Performance Testing: The subject emissions units shall be tested for compliance with the applicable emissions limits using the test methods stated in Condition E.17. at the frequency stated below. The compliance tests may be conducted on only one of the six engines. A different engine shall be tested each year such that all engines are tested during the six year cycle:~~

~~On an annual basis:~~

- ~~(a) Determination of NO<sub>x</sub> Emissions from Stationary Sources (A);~~
- ~~(b) Visual Determination of the Opacity of Emissions from Stationary Sources (A);~~
- ~~(c) Determination of CO Emissions from Stationary Sources (A);~~
- ~~(d) Determination of HCl Emissions from Stationary Sources (A);~~
- ~~(e) Determinations of PM<sub>10</sub> Emissions (A)~~

~~At permit Renewal:~~

- ~~(f) Measurement of Gaseous Organic Compounds Emissions (R);~~

~~[Rule 62-297.310(7), F.A.C.; Construction permit No. 0310358-004 AC/PSD-FL-374]~~

~~E.21. Operation During Compliance Test. Unless otherwise stated in the applicable emission limiting standard rule, testing of emissions shall be conducted with the emissions unit operation at permitted capacity (as stated in Specific Condition E.1.). If it is impracticable to test at permitted capacity, an emissions unit may be tested at less than the minimum permitted capacity; in this case, subsequent emissions unit operation is limited to 110 percent of the test load until a new test is conducted. Once the unit is so limited, operation at higher capacities is allowed for no more than 15 consecutive days for the purpose of additional compliance testing to regain the authority to operate at the permitted capacity. Permitted capacity is defined as 90 to 100 percent of the maximum operation rate allowed by the permit. [Rule 62-297.310(2)(b), F.A.C.; Construction Permit No. 0310358-004 AC/PSD-FL-374]~~

#### Monitoring Requirements

~~E.22. Time Meter: Each engine/generator set shall be equipped with a non-resettable elapsed time meter to indicate, in cumulative hours, the elapsed engine operating time. [Rule 62-210.200(245), F.A.C.; Construction Permit No. 0310358-004 AC/PSD-FL-374]~~

~~E.23. Total Landfill Gas Flow: Total landfill gas flow to the engines shall be continuously measured and recorded. [Rule 62-210.200(245), F.A.C.; Construction Permit No. 0310358-004 AC/PSD-FL-374]~~

### SECTION III. EMISSIONS UNITS AND SPECIFIC CONDITIONS.

#### Subsection E. Emissions Units 004-009 and 012-015

~~E.24. Gross electrical power generation: Gross electrical power generation (kw-hrs) shall be continuously measured and recorded for each engine individually and for the six engines combined. [Rule 62-210.200(245), F.A.C.; Construction Permit No. 0310358-004 AC/PSD-FL-374]~~

#### Record Keeping Requirements

~~E.25. The permittee shall maintain the following records on a monthly basis:~~

- ~~a. The hours of operation of each engine/generator set, including any start-up, shutdown or malfunction in the operations of the engine/generator set.~~
- ~~b. The total landfill gas flow to each engine.~~
- ~~c. Gross electrical power generation in kw-hr for each engine and the six engines combined.~~

~~[Rule 62-210.200(245), F.A.C.; Construction Permit No. 0310358-004 AC/PSD-FL-374]~~

#### Reporting Requirements

~~E.26. Performance Test Notification: Written notification shall be provided to the Air Compliance Section of this office at least 15 days prior to the date on which each formal performance test is to begin, of the date, time and location of the 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 telephone number of the person conducting the test. [Rule 62-297.310(7)(a)9., F.A.C.]~~

~~E.27. SIP Excess Emissions Malfunction Notification: In case of excess emissions resulting from malfunctions, each source shall notify the Department or the appropriate Local Program 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, F.A.C.; Construction Permit No. 310358-004 AC/PSD-FL-374]~~

~~E.28. HCl & SO<sub>2</sub> Site Specific Emission Factor Report: The permittee shall submit the results and the corresponding data of the site specific HCl emission factor and the SO<sub>2</sub> emission factor within 45 days of gas sampling to the Bureau of Air Regulation. The results shall also be submitted to the Compliance Section of the Northeast District. [Rules 62-210.200(232) and 62-210.200(264), F.A.C.; Construction Permit No. 0310358-004 AC/PSD-FL-374]~~

#### Excess Emissions Requirements

*{Permitting Note: The Excess Emissions Rule at Rule 62-210.700, F.A.C., cannot vary any requirement of a NSPS or NESHAP provision.}*

~~E.29. SIP Excess Emissions Authorized during Startup, Shutdown, Malfunction: Excess emissions resulting from startup, shutdown or malfunction of any source shall be permitted providing (1) best operational practices to minimize emissions are adhered to, including permittee's return of LFG to the Trail Ridge Landfill flares and (2) 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, F.A.C.; Construction Permit No. 0310358-004 AC/PSD-FL-374]~~

~~E.30. SIP 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, F.A.C.; Construction Permit No. 0310358-004 AC/PSD-FL-374]~~

#### Common Conditions

E.31. This emissions unit is also subject to the applicable General Provisions of 40 CFR 63 Subpart A.

**Table 1-1, Summary of Air Pollutant Standards and Terms**

City of Jacksonville  
Trail Ridge Energy Plant

DRAFT Permit No.: 0310358-013-AV  
Facility ID No.: 0310358

This table summarizes information for convenience purposes only. This table does not supersede any of the terms or conditions of this permit.

**E.U. ID No.**      **Brief Description**  
 EU004-009      (6) CAT G3520C Engines  
 EU012-015      (4) CAT G3520C Engines

Pollutant Name**	Fuel(s)	Hours/Year	Allowable Emissions			Equivalent Emissions**		Regulatory Citation(s)	See permit condition(s)
			Standard(s)	lbs./hour	TPY	lbs./hour	TPY		
Visible Emissions		8760	<10% Opacity						III.E.15.
NOx			0.6 g/bhp-hr	3.0	12.9				III.E.7-9.
CO			2.75 <del>3.5</del> g/bhp-hr	<del>17.2</del> 43.54	<del>59.3</del>				III.E.8, 10.
PM10 ***			0.24 g/bhp-hr	1.2	5.1				III.E.10, 11.
VOC			0.28 g/bhp-hr	1.4	6				III.E.12.
HCl			<del>10.9</del> 5.9 lb/MMscf		1.66				III.E.14, 13.
SO <sub>2</sub> (all engines)			27.5 lb/MMscf		41.6				III.E.13, 14.

Notes:

\* The "Equivalent Emissions" listed are for informational purposes only.

\*\*Applicable to each engine except for SO<sub>2</sub>.

\*\*\*Expected maximum emissions. Emissions of PM/PM10 shall be minimized by the following work practice standards: installing, maintaining and operating the LFG Treatment System that meets the filtration specification; the firing of diesel/biodiesel that meets the maximum sulfur specification; and, as determined by EPA Method 9, visible emissions from each engine exhaust shall not exceed 10% opacity.



## Table 2-1, Summary of Compliance Requirements

City of Jacksonville  
Trail Ridge Municipal Solid Waste (MSW) Landfill

**DRAFT Permit No.:** 0310358-013-AV  
**Facility ID No.:** 0310358

This table summarizes information for convenience purposes only. This table does not supersede any of the terms or conditions of this permit.

### E.U. ID No. Brief Description

EU001 Municipal Solid Waste Landfill

Pollutant Name or Parameter	Fuel(s)	Compliance Method	Testing Time Frequency	Frequency Base Date *	Min. Compliance Test Duration	CMS**	
						CMS**	See permit condition(s)
Well Temp		Monitoring	Monthly				III.A.11.
Well Pressure		Monitoring	Monthly				III.A.11.
Well O2 or N2		Monitoring	Monthly				III.A.11.
Surface Methane		Scanning	Quarterly/Annually				III.A.12.

\* The frequency base date is established for planning purposes only; see Rule 62-297.310, F.A.C.

\*\*CMS [=] continuous monitoring system

## Appendix H-1, Permit History/ID Number Changes

City of Jacksonville  
Trail Ridge Municipal Solid Waste Landfill

DRAFT Title V Operation Permit No.: 0310358-013-AV  
Facility ID No.: 0310358

E.U. ID No.	Description	Permit No.	Effective Date	Expiration Date	Project Type
001	Municipal Solid Waste Landfill Open 2,800 scfm open Flare	0310358-001-AC	February 7, 1997	July 31, 1998	Construction
001 002 003	Municipal Solid Waste Landfill Open 2,800 scfm Flare Fugitive Emissions Diesel and Leachate Storage Tanks	0310358-002-AV	August 9, 1999	August 31, 2003	Initial Title V
001 002 003	Municipal Solid Waste Landfill Open 2,800 (now 3,100 scfm) Flare Fugitive Emissions Diesel and Leachate Storage Tanks	0310358-003-AV	May 3, 2004	August 31, 2008	Renewal Title V
004-009	(6) Reciprocating Internal Combustion Engines (Engine Plant)	0310358-004-AC	December 11, 2006	October 1, 2008	Construction
010	5,000 scfm open Flare	0310358-005-AC	November 1, 2006	March 30, 2008	Construction
001 002 003	Municipal Solid Waste Landfill Open 2,800 (now 3,100 scfm) Flare Fugitive Emissions Diesel and Leachate Storage Tanks	0310358-006-AV	December 4, 2006	August 31, 2008	Administrative Correction
011	1,600 scfm (de-rated) open flare	0310358-007-AC	March 2, 2010	March 2, 2011	Construction
004-009	(6) Reciprocating Internal Combustion Engines (Engine Plant)	0310358-008-AC	May 2, 2008	October 1, 2009	Time Extension of Permit No. 0310358-004- AC

## Appendix H-1, Permit History/ID Number Changes

City of Jacksonville  
Trail Ridge Municipal Solid Waste Landfill

DRAFT Title V Operation Permit No.: 0310358-013-AV  
Facility ID No.: 0310358

011	1,600 scfm (de-rated) open flare	0310358-009-AV	May 10, 2010	May 10, 2015	Title V Permit Revision to incorporate Construction Permit No. 0310358-007-AC. Will be incorporated in Title V Renewal, i.e. issued under No. 0310358-010-AV
001 002 004-009  010 011	Municipal Solid Waste Landfill Fugitive Emissions (6) Reciprocating Internal Combustion Engines (Engine Plant) 5,000 scfm open Flare 1,600 scfm (de-rated) open flare	0310358-010-AV	May 10, 2010	May 10, 2015	Title V Renewal
004-009	(6) Reciprocating Internal Combustion Engines (Engine Plant)	0310358-011-AC	January 22, 2009	October 1, 2009	Permit Revision to Construction permit No. 0310358-004-AC
004-009 and 012-015	Add (4) Reciprocating Internal Combustion Engines (Engine Plant) & Revise CO BACT	0310358-012-AC			Permit Revision to Construction permit No. 0310358-004-AC

SECTION 4. APPENDIX BD (DRAFT)  
BACT Determination for Trail Ridge Energy LLC

**Trail Ridge Energy, LLC**  
**Trail Ridge Landfill, City of Jacksonville**  
**PSD FL 374/0310358-004-AC**  
**Baldwin, Duval County**

Trail Ridge Energy, LLC has applied to modify Trail Ridge Landfill, owned by the city of Jacksonville, by installing six (6) lean burn internal combustion (IC) Caterpillar (CAT) Model G3520C gas IC engines and electricity generators. The electricity generation plant will also consist of landfill gas (LFG) treatment equipment (gas dewatering, filtration and compression equipment and processes) and ancillary equipment that supports the electricity generation operations (e.g., engine oil storage tanks and LFG temperature and moisture conditioning equipment).

The six lean burn IC engines will be connected to individual electricity generators. Each gas IC engine will be connected to a 1,600 kilowatt electricity generator. The plant will have the potential to generate 9.6 megawatts of electricity under base load operating conditions and will be interconnected to the Jacksonville Electric Authority distribution network through a nearby power line.

The LFG fueled IC engines will be housed in a single building constructed near the existing LFG collection system header and control system flare. A gas transmission line will be connected to the header of the existing LFG collection system and a dedicated gas blower/compressor will be used to draw methane rich gas (fuel) from the existing LFG collection system to the proposed electricity generation plant.

The Trail Ridge Landfill is a major source of air pollution or a Title V source based on Rule 62-210.200(184), Florida Administrative Code (F.A.C.). Additionally, based on this modification, potential emissions of carbon monoxide (CO) will be greater than 250 tons per year (TPY) making the facility a Major Stationary Source for Prevention of Significant Deterioration (PSD) review with respect to Rule 62-210.200(185)(a)2., F.A.C. The increases in emissions of nitrogen oxide (NOx) and particulate matter less than or equal to 10 microns (PM<sub>10</sub>) will exceed the significant emission rates listed in Rule 62-210.200(264), F.A.C. A Best Available Control Technology (BACT) determination is part of the review required for CO, NOx and PM<sub>10</sub> by Rule 62-210.200(39), F.A.C.

Descriptions of the process, project, BACT determination, air quality effects, and rule applicability are given in the Technical Evaluation and Preliminary Determination, accompanying the Department's Intent to Issue.

The Department proposes the following as BACT for each engine:

<b>POLLUTANT</b>	<b>EMISSION LIMIT</b>	<b>CONTROL TECHNOLOGY</b>
CO	2.75 g/bhp-hr and 13.54 lb/hr and 59.30 TPY	Combustor design and good combustion practices
NOx	0.6 g/bhp-hr and 2.95 lb/hr and 12.94 TPY	Combustor design and good combustion practices
PM <sub>10</sub>	0.24 g/bhp-hr and 1.18 lb/hr and 5.17 TPY	Pretreatment of landfill gas and proper engine maintenance

Compliance with the emission limits shall be in accordance with the following EPA Reference Methods as contained in 40 CFR 60, Appendix A or as otherwise approved by the Department:

**SECTION 4. APPENDIX BD (DRAFT)**  
**BACT Determination for Trail Ridge Energy LLC**

<b>EMISSION UNIT</b>	<b>POLLUTANT</b>	<b>EPA REFERENCE METHOD</b>
Six (6) Caterpillar Model G-3520C Landfill gas fueled Internal Combustion Engines	PM <sub>10</sub>	201
	NO <sub>x</sub>	7 or 7E
	CO	10
	VE	9

**Trail Ridge Energy, LLC**  
**Trail Ridge Landfill, City of Jacksonville**  
**PSD-FL-374C/0310358-012-AC**  
**Baldwin, Duval County**

**PROJECT DESCRIPTION**

<b>EU No.</b>	<b>Emission Unit Description</b>
004-009 and 012-015	Ten Caterpillar Model G3520C lean-burn reciprocating internal combustion engine/generator sets

The City of Jacksonville operates the existing Trail Ridge Landfill, which is a municipal solid waste landfill located in Duval County at 5110 US Highway 301 South, Baldwin, Florida. Trail Ridge Energy proposes to install and operate four new Caterpillar Model No. G3520C engine generator sets and to modify the CO emissions standard as Best Available Control Technology (BACT) for the four proposed and six existing engine generator sets. Landfill gas will be used to fuel the ten lean-burn Caterpillar Model No. CAT G3520C engine/generator sets capable of producing a combined nominal 16 megawatts (MW) of power to the electrical grid. The two existing flares will be retained as additional combustion devices for the landfill gas. The landfill gas will be routed through a landfill gas treatment system and then to the landfill gas engines. If necessary, residual landfill gas will be routed to the flares. The landfill gas treatment system includes initial gas de-watering (moisture knock-out vessel), gas compressors and blowers, air-to-gas coolers and particulate filtration.

Exhaust gas from each engine will exit an individual stack (23 feet tall) equipped with a noise muffler. The six existing engines are housed in an enclosed building and the four proposed engines will be housed adjacent in an enclosed building. In accordance with Rule 62-212.400, F.A.C., the proposed project is subject to PSD major stationary source preconstruction review for emissions of CO, NO<sub>x</sub> and PM/PM<sub>10</sub>.

**FINAL BACT DETERMINATIONS**

In accordance with Rule 62-212.400, F.A.C., the Department specifies the following BACT determinations for each engine.

<b>Pollutant</b>	<b>BACT Standard</b>	<b>Control Technology</b>	<b>Compliance Method</b>
CO	<u>3.5 g/bhp-hour and 17.2 lb/hour</u>	<u>Combustion design combined with good combustion and maintenance practices.</u>	<u>EPA Method 10</u>
NO <sub>x</sub>	<u>0.6 g/bhp-hour and 3.0 lb/hour</u>		<u>EPA Method 7 or 7E</u>
PM/PM <sub>10</sub>	<u>Work Practice Standard: The landfill gas pretreatment system shall include a filtration system to remove particulate down to 1 micron.</u>		<u>Design and maintenance records</u>
	<u>Work Practice Standard: Visible emissions from each engine exhaust stack shall not exceed 10% opacity, based on a six-minute average.</u>		<u>EPA Method 9</u>

**APPENDIX CP-2**  
**COMPLIANCE PLAN**

**CP2.1. Compliance Schedule.** The facility has been issued Construction Permit No. 0310358-012-AC which authorizes the installation of four Caterpillar (CAT) Model G3520C gas IC engines and electricity generators.

Because the applicant included these engine/generator sets in the Title V Operation Permit Revision application, a Compliance Plan has been incorporated into this Title V Operation Permit Revision to address the requirements of the air construction permit. The permittee shall meet the following milestones:

<b><u>E.U. ID. No.</u></b>	<b><u>Milestone</u></b>	<b><u>Milestone Date</u></b>
<u>012-015</u>	<u>Installation of four Caterpillar (CAT) Model G3520C gas IC engines and electricity generators</u>	<u>Pursuant to the timeframes established in the air construction permit.</u>
<u>012-015</u>	<u>Compliance Testing conducted and test reports submitted pursuant to requirements of air construction permit</u>	<u>Pursuant to the timeframes established in the air construction permit.</u>
<u>012-015</u>	<u>Responsible Official to submit “Certification of Compliance”, addressing these emissions units, indicating what is not in compliance, when non-compliance started, the degree or amount of non-compliance, the duration of non-compliant operations, steps taken to identify and correct non-compliant conditions, and actions (with time table), to correct any current non-compliant conditions and achieve compliance.</u>	<u>No later 180 after the emissions units commences operation</u>

**APPENDIX ICE**

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This Title V facility contains stationary internal combustion engines that are stated by the applicant not to be subject to the following federal rules:

- 40 CFR 60, Subpart IIII – Standards of Performance for Stationary Compression Ignition Internal Combustion Engines.
- 40 CFR 60, Subpart JJJJ – Standards of Performance for Stationary Spark Ignition Internal Combustion Engines.

However, the Title V facility included the federal rules in the list of Applicable Regulations, Title V Core List

Pursuant to Rule 62-213.460, F.A.C. – Permit Shield, the stationary internal combustion engines are stated below:

<b>EU No.</b>	<b>Emission Unit Description</b>
004-009	Six Caterpillar Model G3520C (CAT 3520) lean burn internal combustion engines

**Description of the (6) Engines at the Trail Ridge Energy Plant**

<b>Engine Number</b>	1	2	3	4	5	6
<b>Serial Number</b>	GZJ00276	GZJ00272	GZJ00264	GZJ00263	GZJ00261	GZJ00258
<b>Sales Model</b>	3520	3520	3520	3520	3520	3520
<b>Built Date</b>	2006-09-20	2006-09-15	2006-08-08	2006-08-08	2006-08-02	2006-08-01

- Each engine is a Caterpillar (CAT®) Model G3520C Internal Combustion Engine
- Each engine has a mechanical output rating of 2,233 brake horsepower
- Each engine is fuel by landfill gas only
- Each engine has a spark ignition

The Title V facility has stated the manufacture date of each of the specified G3520C Internal Combustion Engines is prior to the applicable effective date of 40 CFR 60, Subpart JJJJ. As such the engines are not subject to the provisions of this subpart. The provisions of 40 CFR 60 Subpart IIII applies to stationary compression-ignited engines, therefore these engines are not subject to the provisions of this subpart.

**APPENDIX ICE**

This section identifies the federal New Source Performance Standards (NSPS) in 40 CFR 60 that may be applicable to emissions units regulated by this project.

**NSPS SUBPART A - GENERAL PROVISIONS**

The following emission units are subject to applicable NSPS in 40 CFR 60, which are adopted by reference in Rule 62-204.800(8), F.A.C.

<b><u>EU No.</u></b>	<b><u>Emission Unit Description</u></b>
<u>012-015</u>	Four Caterpillar Model G3520C (CAT 3520) lean burn internal combustion engines

The affected emission units are subject to the applicable General Provisions in Subpart A of the New Source Performance Standards including: §60.1 (Applicability); §60.2 (Definitions); §60.3 (Units and Abbreviations); §60.4 (Address); §60.5 (Determination of Construction or Modification); §60.6 (Review of Plans); §60.7 (Notification and Record Keeping); §60.8 (Performance Tests); §60.9 (Availability of Information); §60.10 (State Authority); §60.11 (Compliance with Standards and Maintenance Requirements); §60.12 (Circumvention); §60.13 (Monitoring Requirements); §60.14 (Modification); §60.15 (Reconstruction); §60.16 (Priority List); §60.17 (Incorporations by Reference); §60.18 (General Control Device Requirements); §60.19 (General Notification and Reporting Requirements). The General Provisions are not included in this permit, but can be obtained from the Department upon request.

**40 CFR PART 60, SUBPART JJJJ - Standards of Performance for Stationary Spark Ignition Internal Combustion Engines**

Source: 73 FR 3591, Jan. 18, 2008, unless otherwise noted.

<b><u>Emission limitations in 40 CFR 60 Subpart JJJJ</u></b>					
<b><u>NOx</u></b> <b><u>(g/HP-hr)</u></b>	<b><u>CO</u></b> <b><u>(g/HP-hr)</u></b>	<b><u>VOC</u></b> <b><u>(g/HP-hr)</u></b>	<b><u>NOx</u></b> <b><u>(ppmvd at 15% O2)</u></b>	<b><u>CO</u></b> <b><u>(ppmvd at 15% O2)</u></b>	<b><u>VOC</u></b> <b><u>(ppmvd at 15% O2)</u></b>
<u>2</u>	<u>5</u>	<u>1</u>	<u>150</u>	<u>610</u>	<u>80</u>

<b><u>Emission limitations or</u></b>	<b><u>Compliance</u></b>	<b><u>Testing</u></b>
<p><u>**May certify to the emission standards for new nonroad SI engines in 40 CFR part 1048 if you have a lean burn engine that uses LPG.</u></p> <p><u>**May certify to the emission standards for new nonroad SI engines in 40 CFR part 1048 applicable to engines that are not severe duty engines if you have an engine:</u></p> <p><u>a. 75 &lt; x &lt; 373 KW (100 &lt; x &lt; 500 HP) manufactured prior to January 1, 2011; or</u></p> <p><u>b. x &gt; 373 KW (500 HP) manufactured prior to July 1, 2010.</u></p>	<p><u>(1) Comply by purchasing an engine certified according to procedures specified in this subpart, for the same model year and demonstrating compliance according to one of the methods specified above in (1-3) (a-b) (i-iii).</u></p> <p><u>(2) Purchase a non-certified engine and demonstrate compliance with the emission standards according to testing requirement in this subpart and according to:</u></p> <p><u>a. Engines 25 HP &lt; x &lt; 500 HP, must keep a maintenance plan and records of conducted maintenance and must maintain and operate the engine in a manner consistent with good air pollution control practice for minimizing emissions. In addition, you must conduct an initial performance test.</u></p> <p><u>b. Engines greater than 500 HP, same as above in item a. In addition, you must conduct subsequent performance testing every 8,760 hours or 3 years, whichever comes first.</u></p> <p><u>or Engines that are less than or equal to 500 HP and you purchase a non-certified engine or do not operate and maintain your certified engine:</u></p> <p><u>Perform initial performance testing as indicated in this section, but are not required to conduct subsequent performance testing unless the engine is rebuilt (defined in 40 CFR 94.11(a)) or undergoes major repair or maintenance.</u></p>	<p><u>(1) Must be conducted within 10% of 100% peak (or the highest achievable) load and according to the requirements in §60.8 and under the specific conditions that are specified by Table 2 to this subpart.</u></p> <p><u>(2) Cannot conduct performance tests during periods of startup, shutdown, or malfunction as specified in §60.8. If the 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.</u></p> <p><u>(3) Conduct 3 separate test runs for each performance test required, as specified in §60.8(f). Each test run must be conducted within 10% of 100% peak (or the highest achievable) load and last at least 1 hour.</u></p> <p><u>(4) Follow 40 CFR 60.4244 (d-g) to determine compliance with specific pollutants.</u></p>



**APPENDIX ICE**

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**40 CFR PART 63, SUBPART ZZZZ - National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines**

In accordance with Rule 62-204.800, F.A.C., the following federal regulations in Part 63 of Title 40 of the Code of Federal Regulations were adopted by reference. The original federal rule numbering has been retained.

*{Permitting Note: The engines covered by this permit, EU012– EU-015, are regulated as shown in the following table. Only the Section §63.6590 of Subpart ZZZZ is included because of the limited applicability and requirements.}*

<b><u>EU No.</u></b>	<b><u>Engine</u></b>	<b><u>Rule Applicability</u></b>
<u>012-015</u>	<u>Four lean burn internal combustion engine/generator sets (Caterpillar Model No. G3520C) that combust landfill or digester gas equivalent to 10% or more of the gross heat input on an annual basis</u>	<u>As defined in 40 CFR 63 NESHAP Subpart ZZZZ, the proposed engines are defined as “new units located at an area source”. To comply with the 40 CFR 63 NESHAP Subpart ZZZZ requirements, the installed engines must meet the 40 CFR 60 NSPS Subpart JJJJ requirements for spark ignition engines. No further requirements apply for such engines under 40 CFR 63 NESHAP Subpart ZZZZ.</u>

APPENDIX U

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**LIST OF UNREGULATED EMISSIONS UNITS AND/OR ACTIVITIES.**

Unregulated Emissions Units and/or Activities. An emissions unit which emits no “emissions-limited pollutant” and which is subject to no unit-specific work practice standard, though it may be subject to regulations applied on a facility-wide basis (e.g., unconfined emissions, odor, general opacity) or to regulations that require only that it be able to prove exemption from unit-specific emissions or work practice standards.

The below listed emissions units and/or activities are neither ‘regulated emissions units’ nor ‘insignificant emissions units’.

<b><u>E.U. ID No.</u></b>	<b><u>Brief Description of Emissions Units and/or Activity</u></b>
N/A	A stand-alone fan-cooled radiator for each IC engine.
N/A	Drums for the engine radiator coolant.
N/A	One used lube oil tank (approximately 1,000 gallons) and moisture conditioning equipment.
N/A	One new lube oil tank (approximately 2,000 gallons) and moisture conditioning equipment.

## Scearce, Lynn

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**From:** Scearce, Lynn  
**Sent:** Friday, August 19, 2011 4:13 PM  
**To:** 'kstewart@coj.net'  
**Cc:** 'scott.salisbury@landfillenergy.com'; 'rharvey@derenzo.com'; 'christopher.kirts@dep.state.fl.us'; 'robinson@coj.net'; 'forney.kathleen@epa.gov'; 'abrams.heather@epa.gov'; DeVore, Christy; Arif, Syed; Friday, Barbara; 'Scearce, Lynn'  
**Subject:** Trail Ridge Landfill, 0310358-012-AC and 0310358-013-AV - Draft Permit  
**Attachments:** Trail\_Ridge\_Energy, 0310358-012-AC\_and\_0310358-013-AV\_Draft signature\_page.pdf

Tracking:	Recipient	Delivery	Read
	'kstewart@coj.net'	✓	✓
	'scott.salisbury@landfillenergy.com'	✓	✓
	'rharvey@derenzo.com'		✓
	'christopher.kirts@dep.state.fl.us'	Delivered: 8/19/2011 4:13 PM	✓
	'robinson@coj.net'	✓	
	'forney.kathleen@epa.gov'		
	'abrams.heather@epa.gov'		
	DeVore, Christy	Delivered: 8/19/2011 4:13 PM	Read: 8/19/2011 4:19 PM
	Arif, Syed	Delivered: 8/19/2011 4:13 PM	
	Friday, Barbara	Delivered: 8/19/2011 4:13 PM	Read: 8/22/2011 7:27 AM
	'Scearce, Lynn'		Read: 8/19/2011 4:14 PM
	Scearce, Lynn	Delivered: 8/19/2011 4:13 PM	

Dear Ms. Stewart:

Attached is the official **Notice of Draft Permit** for the project referenced below. Click on the link displayed below to access the permit project documents and send a "reply" message verifying receipt of the document(s) provided in the link; this may be done by selecting "Reply" on the menu bar of your e-mail software, noting that you can view the documents, and then selecting "Send".

**Note: We must receive verification that you are able to access the documents. Your immediate reply will preclude subsequent e-mail transmissions to verify accessibility of the document(s).**

Attention: Christy

Owner/Company Name: CITY OF JACKSONVILLE  
Facility Name: TRAIL RIDGE LANDFILL  
Project Number: 0310358-012-AC and 0310358-013-AV  
Permit Status: DRAFT  
Permit Activity: CONSTRUCTION  
Facility County: DUVAL

Click on the following link to access the permit project documents:

[http://ARM-PERMIT2K.dep.state.fl.us/adh/prod/pdf\\_permit\\_zip\\_files/0310358.012.AC.D\\_pdf.zip](http://ARM-PERMIT2K.dep.state.fl.us/adh/prod/pdf_permit_zip_files/0310358.012.AC.D_pdf.zip)

Click on the following link to access the permit project documents:

[http://ARM-PERMIT2K.dep.state.fl.us/adh/prod/pdf\\_permit\\_zip\\_files/0310358.013.AV.D\\_pdf.zip](http://ARM-PERMIT2K.dep.state.fl.us/adh/prod/pdf_permit_zip_files/0310358.013.AV.D_pdf.zip)

## Scearce, Lynn

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**From:** Robert Harvey [rharvey@derenzo.com]  
**Sent:** Monday, August 22, 2011 8:31 AM  
**To:** Scearce, Lynn  
**Subject:** RE: Trail Ridge Landfill, 0310358-012-AC and 0310358-013-AV - Draft Permit

I have received this message and can access the on-line documents.

Rob Harvey  
Derenzo and Associates, Inc.  
[RHarvey@derenzo.com](mailto:RHarvey@derenzo.com)  
(517) 324-1880

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**From:** Scearce, Lynn [<mailto:Lynn.Scearce@dep.state.fl.us>]  
**Sent:** Friday, August 19, 2011 4:13 PM  
**To:** [kstewart@coj.net](mailto:kstewart@coj.net)  
**Cc:** [scott.salisbury@landfillenergy.com](mailto:scott.salisbury@landfillenergy.com); [rharvey@derenzo.com](mailto:rharvey@derenzo.com); Kirts, Christopher; [robinson@coj.net](mailto:robinson@coj.net); [forney.kathleen@epa.gov](mailto:forney.kathleen@epa.gov); [abrams.heather@epa.gov](mailto:abrams.heather@epa.gov); DeVore, Christy; Arif, Syed; Friday, Barbara; Scearce, Lynn  
**Subject:** Trail Ridge Landfill, 0310358-012-AC and 0310358-013-AV - Draft Permit

Dear Ms. Stewart:

Attached is the official **Notice of Draft Permit** for the project referenced below. Click on the link displayed below to access the permit project documents and send a "reply" message verifying receipt of the document(s) provided in the link; this may be done by selecting "Reply" on the menu bar of your e-mail software, noting that you can view the documents, and then selecting "Send".

*Note: We must receive verification that you are able to access the documents. Your immediate reply will preclude subsequent e-mail transmissions to verify accessibility of the document(s).*

Attention: Christy

Owner/Company Name: CITY OF JACKSONVILLE  
Facility Name: TRAIL RIDGE LANDFILL  
Project Number: 0310358-012-AC and 0310358-013-AV  
Permit Status: DRAFT  
Permit Activity: CONSTRUCTION  
Facility County: DUVAL

## Scarce, Lynn

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**From:** Robert Harvey [rharvey@derenzo.com]  
**Sent:** Monday, August 22, 2011 7:03 AM  
**To:** Scarce, Lynn  
**Subject:** Read: Trail Ridge Landfill, 0310358-012-AC and 0310358-013-AV - Draft Permit  
**Attachments:** ATT00001

**Scearce, Lynn**

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**From:** Scott Salisbury [Scott.salisbury@landfillenergy.com]  
**To:** Scearce, Lynn  
**Sent:** Friday, August 19, 2011 5:04 PM  
**Subject:** Read: Trail Ridge Landfill, 0310358-012-AC and 0310358-013-AV - Draft Permit

Your message was read on Friday, August 19, 2011 5:04:13 PM (GMT-05:00) Eastern Time (US & Canada).

## Scearce, Lynn

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**From:** Robinson, Richard [ROBINSON@coj.net]  
**To:** Scearce, Lynn  
**Sent:** Friday, August 19, 2011 4:17 PM  
**Subject:** Read: Trail Ridge Landfill, 0310358-012-AC and 0310358-013-AV - Draft Permit

Your message was read on Friday, August 19, 2011 4:17:26 PM (GMT-05:00) Eastern Time (US & Canada).

**Scearce, Lynn**

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**From:** Microsoft Exchange  
**To:** scott.salisbury@landfillenergy.com  
**Sent:** Friday, August 19, 2011 4:14 PM  
**Subject:** Relayed: Trail Ridge Landfill, 0310358-012-AC and 0310358-013-AV - Draft Permit

**Delivery to these recipients or distribution lists is complete, but delivery notification was not sent by the destination:**

scott.salisbury@landfillenergy.com

Subject: Trail Ridge Landfill, 0310358-012-AC and 0310358-013-AV - Draft Permit

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Sent by Microsoft Exchange Server 2007



**Scearce, Lynn**

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**From:** Microsoft Exchange  
**To:** rharvey@derenzo.com  
**Sent:** Friday, August 19, 2011 4:13 PM  
**Subject:** Relayed: Trail Ridge Landfill, 0310358-012-AC and 0310358-013-AV - Draft Permit

**Delivery to these recipients or distribution lists is complete, but delivery notification was not sent by the destination:**

[rharvey@derenzo.com](mailto:rharvey@derenzo.com)

Subject: Trail Ridge Landfill, 0310358-012-AC and 0310358-013-AV - Draft Permit

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Sent by Microsoft Exchange Server 2007

**Scearce, Lynn**

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**From:** Microsoft Exchange  
**To:** kstewart@coj.net; robinson@coj.net  
**Sent:** Friday, August 19, 2011 4:13 PM  
**Subject:** Relayed: Trail Ridge Landfill, 0310358-012-AC and 0310358-013-AV - Draft Permit

**Delivery to these recipients or distribution lists is complete, but delivery notification was not sent by the destination:**

[kstewart@coj.net](mailto:kstewart@coj.net)

[robinson@coj.net](mailto:robinson@coj.net)

Subject: Trail Ridge Landfill, 0310358-012-AC and 0310358-013-AV - Draft Permit

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Sent by Microsoft Exchange Server 2007