AIR CONSTRUCTION PERMIT APPLICATION

Green Circle Bio Energy Inc. – Madison, Florida

Received
MAY 06 2014
FDEP

Submitted To: Green Circle Bio Energy Inc.
2500 Green Circle Parkway
Cottondale, FL 32431 USA

Submitted By: Golder Associates Inc.
6026 NW 1st Place
Gainesville, FL 32607 USA

Distribution: FDEP – 4 copies
Green Circle – 2 copies
Golder – 1 copy

May 2014

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Golder Associates

APPLICATION FOR AIR PERMIT

LONG FORM

Department of Environmental Protection

Division of Air Resource Management

APPLICATION FOR AIR PERMIT - LONG FORM

I. APPLICATION INFORMATION

Air Construction Permit – Use this form to apply for an air construction permit:

- For any required purpose at a facility operating under a federally enforceable state air operation permit (FESOP) or Title V air operation permit;
- For a proposed project subject to prevention of significant deterioration (PSD) review, nonattainment new source review, or maximum achievable control technology (MACT);
- To assume a restriction on the potential emissions of one or more pollutants to escape a requirement such as PSD review, nonattainment new source review, MACT, or Title V; or
- To establish, revise, or renew a plantwide applicability limit (PAL).

Air Operation Permit – Use this form to apply for:

- An initial federally enforceable state air operation permit (FESOP); or
- An initial, revised, or renewal Title V air operation permit.

To ensure accuracy, please see form instructions.

Identification of Facility

1. Facility Owner/Company Name: **Green Circle Bio Energy Inc.**	
2. Site Name: **Madison**	
3. Facility Identification Number:	
4. Facility Location... Street Address or Other Locator: City: County: **Madison** Zip Code:	
5. Relocatable Facility? ☐ Yes ☒ No	6. Existing Title V Permitted Facility? ☐ Yes ☒ No

Application Contact

1. Application Contact Name: **Greg Martin**
2. Application Contact Mailing Address... Organization/Firm: **Green Circle Bio Energy Inc.** Street Address: **2500 Green Circle Parkway** City: **Cottondale** State: **Florida** Zip Code: **32431**
3. Application Contact Telephone Numbers... Telephone: **(850) 819-8449** ext. Fax: **(850) 579-4062**
4. Application Contact E-mail Address: **gmartin@greencirclebio.com**

Application Processing Information (DEP Use)

1. Date of Receipt of Application:	3. PSD Number (if applicable):
2. Project Number(s):	4. Siting Number (if applicable):

APPLICATION INFORMATION

Purpose of Application

This application for air permit is being submitted to obtain: (Check one)

Air Construction Permit

☒ Air construction permit.

☐ Air construction permit to establish, revise, or renew a plantwide applicability limit (PAL).

☐ Air construction permit to establish, revise, or renew a plantwide applicability limit (PAL), and separate air construction permit to authorize construction or modification of one or more emissions units covered by the PAL.

Air Operation Permit

☐ Initial Title V air operation permit.

☐ Title V air operation permit revision.

☐ Title V air operation permit renewal.

☐ Initial federally enforceable state air operation permit (FESOP) where professional engineer (PE) certification is required.

☐ Initial federally enforceable state air operation permit (FESOP) where professional engineer (PE) certification is not required.

Air Construction Permit and Revised/Renewal Title V Air Operation Permit (Concurrent Processing)

☐ Air construction permit and Title V permit revision, incorporating the proposed project.

☐ Air construction permit and Title V permit renewal, incorporating the proposed project.

Note: By checking one of the above two boxes, you, the applicant, are requesting concurrent processing pursuant to Rule 62-213.405, F.A.C. In such case, you must also check the following box:

☐ I hereby request that the department waive the processing time requirements of the air construction permit to accommodate the processing time frames of the Title V air operation permit.

Application Comment

Refer to Part B.

APPLICATION INFORMATION

Scope of Application

Emissions Unit ID Number	Description of Emissions Unit	Air Permit Type	Air Permit Processing Fee
	Wood Pellet Production	AC1B	N/A
	Fire Pump	AC1F	N/A
	Two Emergency Generators	AC1F	N/A

Application Processing Fee

Check one: ☐ Attached - Amount: $_____ ☒ Not Applicable

APPLICATION INFORMATION

Owner/Authorized Representative Statement

Complete if applying for an air construction permit or an initial FESOP.

1. Owner/Authorized Representative Name :
   Greg Martin, VP of Manufacturing
2. Owner/Authorized Representative Mailing Address...
   Organization/Firm: **Green Circle Bio Energy Inc.**
   Street Address: **2500 Green Circle Parkway**
   City: **Cottondale** State: **Florida** Zip Code: **32431**
3. Owner/Authorized Representative Telephone Numbers...
   Telephone: **(850) 819-8449** ext. Fax: **(850) 579-4062**
4. Owner/Authorized Representative E-mail Address: **gmartin@greencirclebio.com**
5. Owner/Authorized Representative Statement:

   I, the undersigned, am the owner or authorized representative of the corporation, partnership, or other legal entity submitting this air permit application. To the best of my knowledge, the statements made in this application are true, accurate and complete, and any estimates of emissions reported in this application are based upon reasonable techniques for calculating emissions. I understand that a permit, if granted by the department, cannot be transferred without authorization from the department.

   Signature

   Date 5/2/14

APPLICATION INFORMATION

Application Responsible Official Certification

Complete if applying for an initial, revised, or renewal Title V air operation permit or concurrent processing of an air construction permit and revised or renewal Title V air operation permit. If there are multiple responsible officials, the "application responsible official" need not be the "primary responsible official."

1. Application Responsible Official Name:

2. Application Responsible Official Qualification (Check one or more of the following options, as applicable):

   ☐ For a corporation, the president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation, or a duly authorized representative of such person if the representative is responsible for the overall operation of one or more manufacturing, production, or operating facilities applying for or subject to a permit under Chapter 62-213, F.A.C.

   ☐ For a partnership or sole proprietorship, a general partner or the proprietor, respectively.

   ☐ For a municipality, county, state, federal, or other public agency, either a principal executive officer or ranking elected official.

   ☐ The designated representative at an Acid Rain source or CAIR source.

3. Application Responsible Official Mailing Address...
   Organization/Firm:
   Street Address:
   City: State: Zip Code:

4. Application Responsible Official Telephone Numbers...
   Telephone: ( ) ext. Fax: ( )

5. Application Responsible Official E-mail Address:

6. Application Responsible Official Certification:

I, the undersigned, am a responsible official of the Title V source addressed in this air permit application. I hereby certify, based on information and belief formed after reasonable inquiry, that the statements made in this application are true, accurate and complete and that, to the best of my knowledge, any estimates of emissions reported in this application are based upon reasonable techniques for calculating emissions. The air pollutant emissions units and air pollution control equipment described in this application will be operated and maintained so as to comply with all applicable standards for control of air pollutant emissions found in the statutes of the State of Florida and rules of the Department of Environmental Protection and revisions thereof and all other applicable requirements identified in this application to which the Title V source is subject. I understand that a permit, if granted by the department, cannot be transferred without authorization from the department, and I will promptly notify the department upon sale or legal transfer of the facility or any permitted emissions unit. Finally, I certify that the facility and each emissions unit are in compliance with all applicable requirements to which they are subject, except as identified in compliance plan(s) submitted with this application.

_____ _____

Signature Date

APPLICATION INFORMATION

Professional Engineer Certification

1. Professional Engineer Name: **Scott A. McCann**
   Registration Number: **54172**
2. Professional Engineer Mailing Address...
   Organization/Firm: **Golder Associates Inc.****
   Street Address: **6026 NW 1st Place**
   City: **Gainesville** State: **FL** Zip Code: **32607**
3. Professional Engineer Telephone Numbers...
   Telephone: **(352) 336-5600** ext. **21143** Fax: **(352) 336-6603**
4. Professional Engineer E-mail Address: **scottmccann@golder.com**
5. Professional Engineer Statement:

I, the undersigned, hereby certify, except as particularly noted herein, that:*

(1) To the best of my knowledge, there is reasonable assurance that the air pollutant emissions unit(s) and the air pollution control equipment described in this application for air permit, when properly operated and maintained, will comply with all applicable standards for control of air pollutant emissions found in the Florida Statutes and rules of the Department of Environmental Protection; and

(2) To the best of my knowledge, any emission estimates reported or relied on in this application are true, accurate, and complete and are either based upon reasonable techniques available for calculating emissions or, for emission estimates of hazardous air pollutants not regulated for an emissions unit addressed in this application, based solely upon the materials, information and calculations submitted with this application.

(3) If the purpose of this application is to obtain a Title V air operation permit (check here ☐, if so), I further certify that each emissions unit described in this application for air permit, when properly operated and maintained, will comply with the applicable requirements identified in this application to which the unit is subject, except those emissions units for which a compliance plan and schedule is submitted with this application.

(4) If the purpose of this application is to obtain an air construction permit (check here ☒, if so) or concurrently process and obtain an air construction permit and a Title V air operation permit revision or renewal for one or more proposed new or modified emissions units (check here ☐, if so), I further certify that the engineering features of each such emissions unit described in this application have been designed or examined by me or individuals under my direct supervision and found to be in conformity with sound engineering principles applicable to the control of emissions of the air pollutants characterized in this application.

(5) If the purpose of this application is to obtain an initial air operation permit or operation permit revision or renewal for one or more newly constructed or modified emissions units (check here ☐, if so), I further certify that, with the exception of any changes detailed as part of this application, each such emissions unit has been constructed or modified in substantial accordance with the information given in the corresponding application for air construction permit and with all provisions contained in such permit.

Signature _____ Date 5/8/2014

(seal) 5/2/2014

* Attach any exception to certification statement.

**Board of Professional Engineers Certificate of Authorization #00001670.

II. FACILITY INFORMATION

A. GENERAL FACILITY INFORMATION

Facility Location and Type

1. Facility UTM Coordinates... Zone **17** East (km) North (km)		2. Facility Latitude/Longitude... Latitude (DD/MM/SS) Longitude (DD/MM/SS)	
3. Governmental Facility Code: **0**	4. Facility Status Code: **A**	5. Facility Major Group SIC Code: **24**	6. Facility SIC(s): **2499**
7. Facility Comment :			

Facility Contact

1. Facility Contact Name: **Greg Martin**
2. Facility Contact Mailing Address... Organization/Firm: **Green Circle Bio Energy Inc.** Street Address: **2500 Green Circle Parkway** City: **Cottondale** State: **Fl** Zip Code: **32431**
3. Facility Contact Telephone Numbers: Telephone: **(850) 819-8449** ext. Fax: **(850) 579-4062**
4. Facility Contact E-mail Address: **gmartin@greencirclebio.com**

Facility Primary Responsible Official

Complete if an "application responsible official" is identified in Section I that is not the facility "primary responsible official."

1. Facility Primary Responsible Official Name:
2. Facility Primary Responsible Official Mailing Address... Organization/Firm: Street Address: City: State: Zip Code:
3. Facility Primary Responsible Official Telephone Numbers... Telephone: ( ) ext. Fax: ( )
4. Facility Primary Responsible Official E-mail Address:

Facility Regulatory Classifications

Check all that would apply *following* completion of all projects and implementation of all other changes proposed in this application for air permit. Refer to instructions to distinguish between a "major source" and a "synthetic minor source."

1. ☐ Small Business Stationary Source	☐ Unknown
2. ☐ Synthetic Non-Title V Source	
3. ☒ Title V Source	
4. ☒ Major Source of Air Pollutants, Other than Hazardous Air Pollutants (HAPs)	
5. ☐ Synthetic Minor Source of Air Pollutants, Other than HAPs	
6. ☐ Major Source of Hazardous Air Pollutants (HAPs)	
7. ☐ Synthetic Minor Source of HAPs	
8. ☒ One or More Emissions Units Subject to NSPS (40 CFR Part 60)	
9. ☐ One or More Emissions Units Subject to Emission Guidelines (40 CFR Part 60)	
10. ☐ One or More Emissions Units Subject to NESHAP (40 CFR Part 61 or Part 63)	
11. ☐ Title V Source Solely by EPA Designation (40 CFR 70.3(a)(5))	
12. Facility Regulatory Classifications Comment:	
See Section 4.0 of Part B.	

List of Pollutants Emitted by Facility

1. Pollutant Emitted	2. Pollutant Classification	3. Emissions Cap [Y or N]?
Nitrogen Oxides - NOx	**A**	**N**
Sulfur Dioxide - SO2	**B**	**N**
Carbon Monoxide - CO	**B**	**N**
Particulate Matter - PM/PM10	**A**	**N**
Volatile Organic Compounds - VOC	**A**	**N**
Total HAPs	**B**	**N**
H001 - Acetaldehyde	**B**	**N**
H006 - Acrolein	**B**	**N**
H115 - Methanol	**B**	**N**
H095 - Formaldehyde	**B**	**N**
H154 - Propionaldehyde	**B**	**N**
Carbon Dioxide Equivalent - CO2e	**B**	

B. EMISSIONS CAPS

Facility-Wide or Multi-Unit Emissions Caps

1. Pollutant Subject to Emissions Cap	2. Facility-Wide Cap [Y or N]? (all units)	3. Emissions Unit ID's Under Cap (if not all units)	4. Hourly Cap (lb/hr)	5. Annual Cap (ton/yr)	6. Basis for Emissions Cap

7. Facility-Wide or Multi-Unit Emissions Cap Comment:

C. FACILITY ADDITIONAL INFORMATION

Additional Requirements for All Applications, Except as Otherwise Stated

1. Facility Plot Plan: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   ☒ Attached, Document ID: GC-FI-C1 ☐ Previously Submitted, Date:_____

2. Process Flow Diagram(s): (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   ☒ Attached, Document ID: GC-FI-C2 ☐ Previously Submitted, Date:_____

3. Precautions to Prevent Emissions of Unconfined Particulate Matter: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   ☒ Attached, Document ID: GC-FI-C3 ☐ Previously Submitted, Date:_____

Additional Requirements for Air Construction Permit Applications

1. Area Map Showing Facility Location:
   ☒ Attached, Document ID: GC-FI-CC1 ☐ Not Applicable (existing permitted facility)

2. Description of Proposed Construction, Modification, or Plantwide Applicability Limit (PAL):
   ☐ Attached, Document ID:_____

3. Rule Applicability Analysis:
   ☒ Attached, Document ID: Part B

4. List of Exempt Emissions Units:
   ☐ Attached, Document ID:_____ ☒ Not Applicable (no exempt units at facility)

5. Fugitive Emissions Identification:
   ☐ Attached, Document ID:_____ ☒ Not Applicable

6. Air Quality Analysis (Rule 62-212.400(7), F.A.C.):
   ☐ Attached, Document ID:_____ ☒ Not Applicable

7. Source Impact Analysis (Rule 62-212.400(5), F.A.C.):
   ☐ Attached, Document ID:_____ ☒ Not Applicable

8. Air Quality Impact since 1977 (Rule 62-212.400(4)(e), F.A.C.):
   ☐ Attached, Document ID:_____ ☒ Not Applicable

9. Additional Impact Analyses (Rules 62-212.400(8) and 62-212.500(4)(e), F.A.C.):
   ☐ Attached, Document ID:_____ ☒ Not Applicable

10. Alternative Analysis Requirement (Rule 62-212.500(4)(g), F.A.C.):
    ☐ Attached, Document ID:_____ ☒ Not Applicable

C. FACILITY ADDITIONAL INFORMATION (CONTINUED)

Additional Requirements for FESOP Applications

1. List of Exempt Emissions Units:
   ☐ Attached, Document ID:_____ ☐ Not Applicable (no exempt units at facility)

Additional Requirements for Title V Air Operation Permit Applications

1. List of Insignificant Activities: (Required for initial/renewal applications only)
   ☐ Attached, Document ID:_____ ☐ Not Applicable (revision application)

2. Identification of Applicable Requirements: (Required for initial/renewal applications, and for revision applications if this information would be changed as a result of the revision being sought)
   ☐ Attached, Document ID:_____
   ☐ Not Applicable (revision application with no change in applicable requirements)

3. Compliance Report and Plan: (Required for all initial/revision/renewal applications)
   ☐ Attached, Document ID:_____
   Note: A compliance plan must be submitted for each emissions unit that is not in compliance with all applicable requirements at the time of application and/or at any time during application processing. The department must be notified of any changes in compliance status during application processing.

4. List of Equipment/Activities Regulated under Title VI: (If applicable, required for initial/renewal applications only)
   ☐ Attached, Document ID:_____
   ☐ Equipment/Activities Onsite but Not Required to be Individually Listed
   ☐ Not Applicable

5. Verification of Risk Management Plan Submission to EPA: (If applicable, required for initial/renewal applications only)
   ☐ Attached, Document ID:_____ ☐ Not Applicable

6. Requested Changes to Current Title V Air Operation Permit:
   ☐ Attached, Document ID:_____ ☐ Not Applicable

C. FACILITY ADDITIONAL INFORMATION (CONTINUED)

Additional Requirements for Facilities Subject to Acid Rain, CAIR, or Hg Budget Program

1. Acid Rain Program Forms:

   Acid Rain Part Application (DEP Form No. 62-210.900(1)(a)):
   ☐ Attached, Document ID:_____ ☐ Previously Submitted, Date:_____
   ☒ Not Applicable (not an Acid Rain source)

   Phase II NO_X Averaging Plan (DEP Form No. 62-210.900(1)(a)1.):
   ☐ Attached, Document ID:_____ ☐ Previously Submitted, Date:_____
   ☒ Not Applicable

   New Unit Exemption (DEP Form No. 62-210.900(1)(a)2.):
   ☐ Attached, Document ID:_____ ☐ Previously Submitted, Date:_____
   ☒ Not Applicable

2. CAIR Part (DEP Form No. 62-210.900(1)(b)):
   ☐ Attached, Document ID:_____ ☐ Previously Submitted, Date:_____
   ☒ Not Applicable (not a CAIR source)

Additional Requirements Comment

ATTACHMENT GC-FI-C1

FACILITY PLOT PLAN

ATTACHMENT GC-FI-C2

PROCESS FLOW DIAGRAM

ATTACHMENT GC-FI-C3

PRECAUTIONS TO PREVENT EMISSIONS OF UNCONFINED PARTICULATE MATTER

ATTACHMENT GC-FI-C3

PRECAUTIONS TO PREVENT EMISSIONS OF UNCONFINED PARTICULATE MATTER

Reasonable precautions to include the following:

a. Paving and maintenance of roads, parking areas, and yards

b. Application of water or chemicals to control emissions from such activities as demolition of buildings, grading roads, construction, and land clearing

c. Application of asphalt, water, oil, chemicals, or other dust suppressants to unpaved roads, yards, open stock piles, and similar activities

d. Removal of particulate matter (PM) from roads and other paved areas under the control of the owner or operator of the facility to prevent re-entrainment and from buildings or work areas to prevent particulates from becoming airborne

e. Landscaping or planting of vegetation

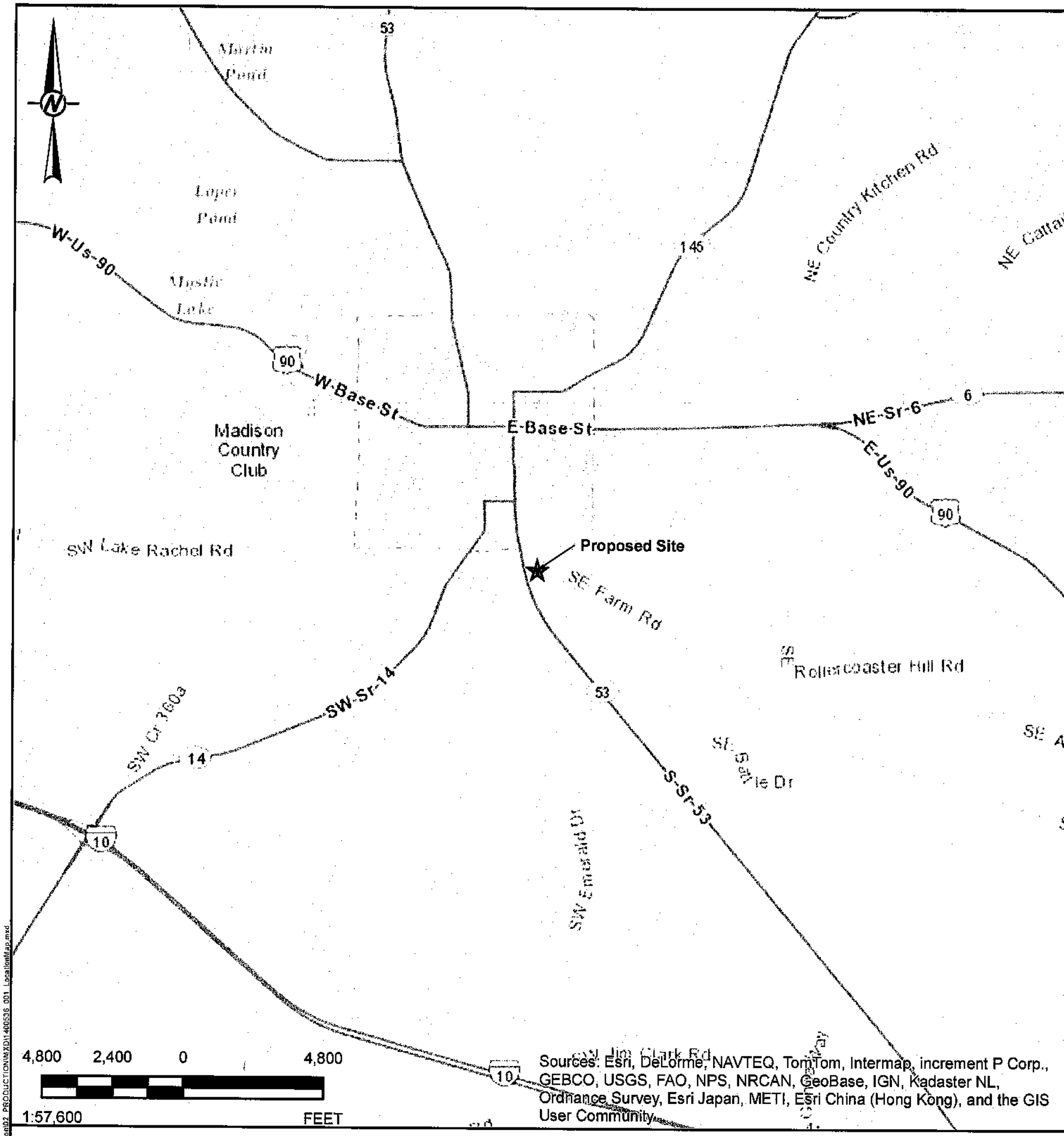
f. Use of hoods, fans, filters, and similar equipment to contain, capture, and/or vent PM

g. Confining abrasive blasting where possible

h. Enclosure or covering of conveyor systems

ATTACHMENT GC-FI-CC1

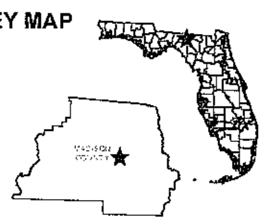
AREA MAP SHOWING FACILITY LOCATION



LEGEND

★ Proposed Site

KEY MAP



REFERENCE

PROPOSED SITE, GOLDER ASSOCIATES INC., 2014

CLIENT
GREEN CIRCLE BIO ENERGY INC.
MADISON, FL

PROJECT
AIR CONSTRUCTION
PERMIT APPLICATION

TITLE
PROPOSED SITE LOCATION MAP

CONSULTANT

Golder Associates

YYYY-MM-DD	2014-04-17
PREPARED	NRL
DESIGN	NRL
REVIEW	SAM
APPROVED	SAM

PROJECT	CONSULTANT	Rev.	FIGURE
1400536	001	0	GC-FI-CC1

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM:

Path: G:\PROJECTS\Green Circle\Madison Plant\99 PROJECTS\1400536 ACPermitApplication\02 PRODUCTION\MXD\1400536 001 LocationMap.mxd

III. EMISSIONS UNIT INFORMATION

Title V Air Operation Permit Application - For Title V air operation permitting only, emissions units are classified as regulated, unregulated, or insignificant. If this is an application for an initial, revised or renewal Title V air operation permit, a separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each regulated and unregulated emissions unit addressed in this application. Some of the subsections comprising the Emissions Unit Information Section of the form are optional for unregulated emissions units. Each such subsection is appropriately marked. Insignificant emissions units are required to be listed at Section II, Subsection C.

Air Construction Permit or FESOP Application - For air construction permitting or federally enforceable state air operation permitting, emissions units are classified as either subject to air permitting or exempt from air permitting. The concept of an "unregulated emissions unit" does not apply. If this is an application for an air construction permit or FESOP, a separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each emissions unit subject to air permitting addressed in this application for air permit. Emissions units exempt from air permitting are required to be listed at Section II, Subsection C.

Air Construction Permit and Revised/Renewal Title V Air Operation Permit Application – Where this application is used to apply for both an air construction permit and a revised or renewal Title V air operation permit, each emissions unit is classified as either subject to air permitting or exempt from air permitting for air construction permitting purposes, and as regulated, unregulated, or insignificant for Title V air operation permitting purposes. A separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each emissions unit addressed in this application that is subject to air construction permitting and for each such emissions unit that is a regulated or unregulated unit for purposes of Title V permitting. (An emissions unit may be exempt from air construction permitting but still be classified as an unregulated unit for Title V purposes.) Emissions units classified as insignificant for Title V purposes are required to be listed at Section II, Subsection C.

If submitting the application form in hard copy, the number of this Emissions Unit Information Section and the total number of Emissions Unit Information Sections submitted as part of this application must be indicated in the space provided at the top of each page.

EMISSIONS UNIT INFORMATION
Section [1]
Wood Pellet Production

A. GENERAL EMISSIONS UNIT INFORMATION

Title V Air Operation Permit Emissions Unit Classification

1. Regulated or Unregulated Emissions Unit? (Check one, if applying for an initial, revised or renewal Title V air operation permit. Skip this item if applying for an air construction permit or FESOP only.)

☐ The emissions unit addressed in this Emissions Unit Information Section is a regulated emissions unit.

☐ The emissions unit addressed in this Emissions Unit Information Section is an unregulated emissions unit.

Emissions Unit Description and Status

1. Type of Emissions Unit Addressed in this Section: (Check one)

☐ This Emissions Unit Information Section addresses, as a single emissions unit, a single process or production unit, or activity, which produces one or more air pollutants and which has at least one definable emission point (stack or vent).

☒ This Emissions Unit Information Section addresses, as a single emissions unit, a group of process or production units and activities which has at least one definable emission point (stack or vent) but may also produce fugitive emissions.

☐ This Emissions Unit Information Section addresses, as a single emissions unit, one or more process or production units and activities which produce fugitive emissions only.

2. Description of Emissions Unit Addressed in this Section:
Wood Pellet Production

3. Emissions Unit Identification Number:

4. Emissions Unit Status Code:	5. Commence Construction Date:	6. Initial Startup Date:	7. Emissions Unit Major Group SIC Code:
C			**24**

8. Federal Program Applicability: (Check all that apply)

☐ Acid Rain Unit

☐ CAIR Unit

9. Package Unit:
Manufacturer: Model Number:

10. Generator Nameplate Rating: MW

11. Emissions Unit Comment:
The wood pellet production includes the following units: Dust Burner, Dryer, Hammer Mills, Pelleting Storage Bins, Pellet Mills, Pellet Cooler and Pellet Sieve.

Emissions Unit Control Equipment/Method: Control **1** of **3**

1. Control Equipment/Method Description: **Wet Electrostatic Precipitator**
2. Control Device or Method Code: **146**

Emissions Unit Control Equipment/Method: Control **2** of **3**

1. Control Equipment/Method Description: **Regenerative Thermal Oxidizer**
2. Control Device or Method Code: **131**

Emissions Unit Control Equipment/Method: Control **3** of **3**

1. Control Equipment/Method Description: **Twin Cyclones: One pair with a common stack, for each of four pellet coolers**
2. Control Device or Method Code: **121**

Emissions Unit Control Equipment/Method: Control __ of __

1. Control Equipment/Method Description:
2. Control Device or Method Code:

B. EMISSIONS UNIT CAPACITY INFORMATION
(Optional for unregulated emissions units.)

Emissions Unit Operating Capacity and Schedule

1. Maximum Process or Throughput Rate:	
2. Maximum Production Rate: **743,000 TPY Wood Pellets**	
3. Maximum Heat Input Rate: **240** million Btu/hr **(Dust Burner)**	
4. Maximum Incineration Rate: pounds/hr tons/day	
5. Requested Maximum Operating Schedule:	
24 hours/day	**7** days/week
52 weeks/year	**8,760** hours/year

6. Operating Capacity/Schedule Comment:
The proposed facility will receive green chipped hardwood, green chipped softwood, saw mill chips, saw dust, and dried wood shavings and process them into wood pellets using a dryer, hammer mills and pellet mills.

Maximum Throughput for Raw materials:
Green Hardwood Chips: 660,592 TPY,
Green Softwood Chips: 660,592 TPY,
Dried Shavings: 145,000 TPY.

C. EMISSION POINT (STACK/VENT) INFORMATION

(Optional for unregulated emissions units.)

Emission Point Description and Type

1. Identification of Point on Plot Plan or Flow Diagram:	2. Emission Point Type Code: **3**	
3. Descriptions of Emission Points Comprising this Emissions Unit for VE Tracking: **Refer to Attachment GC-EU1-C15.**		
4. ID Numbers or Descriptions of Emission Units with this Emission Point in Common:		
5. Discharge Type Code:	6. Stack Height: feet	7. Exit Diameter: feet
8. Exit Temperature: °F	9. Actual Volumetric Flow Rate: acfm	10. Water Vapor: %
11. Maximum Dry Standard Flow Rate: dscfm	12. Nonstack Emission Point Height: feet	
13. Emission Point UTM Coordinates... Zone: East (km): North (km):	14. Emission Point Latitude/Longitude... Latitude (DD/MM/SS) Longitude (DD/MM/SS)	
15. Emission Point Comment: **A summary of stack parameters is presented in Attachment GC-EU1-C15.**		

D. SEGMENT (PROCESS/FUEL) INFORMATION

Segment Description and Rate: Segment 1 of 2

1. Segment Description (Process/Fuel Type): **Industrial Processes; In Process Fuel Use; Wood; General: Wood Dust**		
2. Source Classification Code (SCC): **3-90-009-099**	3. SCC Units: **Tons Burned**	
4. Maximum Hourly Rate: **14.35**	5. Maximum Annual Rate: **125,706**	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur: **0.02**	8. Maximum % Ash: **2.5**	9. Million Btu per SCC Unit: **16.73**
10. Segment Comment: **Maximum hourly and annual rate for the Dust Burner. Based on an estimated wood dust heat capacity of 8,365 Btu/lb and a maximum heat input rate of 240 MMBtu/hr.**		

Segment Description and Rate: Segment 2 of 2

1. Segment Description (Process/Fuel Type): **Industrial Processes; Pulp and Paper and Wood; Other: Not Classified**		
2. Source Classification Code (SCC): **30799998**	3. SCC Units: **Tons Processed**	
4. Maximum Hourly Rate: **128**	5. Maximum Annual Rate: **743,000**	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit:
10. Segment Comment: **Maximum hourly production from the Pelleting Lines is 128 TPH which could be entirely hardwood, softwood, or shavings for any given hour, although a mix will typically be used. See Table 3-3 in Part B.**		

E. EMISSIONS UNIT POLLUTANTS

List of Pollutants Emitted by Emissions Unit

1. Pollutant Emitted	2. Primary Control Device Code	3. Secondary Control Device Code	4. Pollutant Regulatory Code
PM/PM10/PM2.5	121, 127, 131,146		NS
SO2			NS
NOx			NS
CO	131		NS
VOC	131		NS
HAPs	131		NS
H001 - Acetaldehyde	131		NS
H006 - Acrolein	131		NS
H095 - Formaldehyde	131		NS
H115 - Methanol	131		NS
H154 - Propionaldehyde	131		NS
CO2e			NS

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS

(Optional for unregulated emissions units.)

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: **PM10/PM2.5**	2. Total Percent Efficiency of Control:
3. Potential Emissions: lb/hour **108** tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: **See Tables 3-1 and 3-4 in Part B** Reference:	7. Emissions Method Code: **5**
8.a. Baseline Actual Emissions (if required): tons/year	8.b. Baseline 24-month Period: From: To:
9.a. Projected Actual Emissions (if required): tons/year	9.b. Projected Monitoring Period: ☐ 5 years ☐ 10 years
10. Calculation of Emissions: **See Tables 3-1 and 3-4 in Part B.**	
11. Potential, Fugitive, and Actual Emissions Comment:	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions **1** of **1**

1. Basis for Allowable Emissions Code: **ESCPSD**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **250 TPY**	4. Equivalent Allowable Emissions: lb/hour **250** tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS

(Optional for unregulated emissions units.)

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: **SO2**	2. Total Percent Efficiency of Control:
3. Potential Emissions: lb/hour **24.1** tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: **Table 3-1 in Part B** Reference:	7. Emissions Method Code: **3**
8.a. Baseline Actual Emissions (if required): tons/year	8.b. Baseline 24-month Period: From: To:
9.a. Projected Actual Emissions (if required): tons/year	9.b. Projected Monitoring Period: ☐ 5 years ☐ 10 years
10. Calculation of Emissions: **See Table 3-1 in Part B.**	
11. Potential, Fugitive, and Actual Emissions Comment:	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions ____ of ____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions ____ of ____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions ____ of ____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS

(Optional for unregulated emissions units.)

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: **NOx**	2. Total Percent Efficiency of Control:
3. Potential Emissions: lb/hour **245** tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: **Table 3-1 in Part B** Reference:	7. Emissions Method Code: **5**
8.a. Baseline Actual Emissions (if required): tons/year	8.b. Baseline 24-month Period: From: To:
9.a. Projected Actual Emissions (if required): tons/year	9.b. Projected Monitoring Period: ☐ 5 years ☐ 10 years
10. Calculation of Emissions: **See Table 3-1 in Part B.**	
11. Potential, Fugitive, and Actual Emissions Comment:	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions **1** of **1**

1. Basis for Allowable Emissions Code: **ESCPSD**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **250 TPY**	4. Equivalent Allowable Emissions: lb/hour **250** tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS

(Optional for unregulated emissions units.)

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: **CO**	2. Total Percent Efficiency of Control:
3. Potential Emissions: lb/hour **165** tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: **Table 3-1 in Part B** Reference:	7. Emissions Method Code: **5**
8.a. Baseline Actual Emissions (if required): tons/year	8.b. Baseline 24-month Period: From: To:
9.a. Projected Actual Emissions (if required): tons/year	9.b. Projected Monitoring Period: ☐ 5 years ☐ 10 years
10. Calculation of Emissions: **See Table 3-1 in Part B.**	
11. Potential, Fugitive, and Actual Emissions Comment:	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS

(Optional for unregulated emissions units.)

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: **VOC**	2. Total Percent Efficiency of Control:
3. Potential Emissions: lb/hour **247** tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: **Tables 3-1 and 3-3 in Part B** Reference:	7. Emissions Method Code: **5**
8.a. Baseline Actual Emissions (if required): tons/year	8.b. Baseline 24-month Period: From: To:
9.a. Projected Actual Emissions (if required): tons/year	9.b. Projected Monitoring Period: ☐ 5 years ☐ 10 years
10. Calculation of Emissions: **See Tables 3-1 and 3-3 in Part B.**	
11. Potential, Fugitive, and Actual Emissions Comment:	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions **1** of **1**

1. Basis for Allowable Emissions Code: **ESCPSD**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **250 TPY**	4. Equivalent Allowable Emissions: lb/hour **250** tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS

(Optional for unregulated emissions units.)

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: **HAP**	2. Total Percent Efficiency of Control:
3. Potential Emissions: lb/hour **21.2** tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: Reference:	7. Emissions Method Code: **2**
8.a. Baseline Actual Emissions (if required): tons/year	8.b. Baseline 24-month Period: From: To:
9.a. Projected Actual Emissions (if required): tons/year	9.b. Projected Monitoring Period: ☐ 5 years ☐ 10 years
10. Calculation of Emissions: **See Tables 3-2 and 3-5 in Part B.**	
11. Potential, Fugitive, and Actual Emissions Comment:	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS

(Optional for unregulated emissions units.)

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: **H001 - Acetaldehyde**	2. Total Percent Efficiency of Control:
3. Potential Emissions: lb/hour **7.1** tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: Reference:	7. Emissions Method Code: **2**
8.a. Baseline Actual Emissions (if required): tons/year	8.b. Baseline 24-month Period: From: To:
9.a. Projected Actual Emissions (if required): tons/year	9.b. Projected Monitoring Period: ☐ 5 years ☐ 10 years
10. Calculation of Emissions: **See Tables 3-2 and 3-5 in Part B.**	
11. Potential, Fugitive, and Actual Emissions Comment:	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS

(Optional for unregulated emissions units.)

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: **H006 - Acrolein**	2. Total Percent Efficiency of Control:
3. Potential Emissions: lb/hour **3.2** tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: Reference:	7. Emissions Method Code: **5**
8.a. Baseline Actual Emissions (if required): tons/year	8.b. Baseline 24-month Period: From: To:
9.a. Projected Actual Emissions (if required): tons/year	9.b. Projected Monitoring Period: ☐ 5 years ☐ 10 years
10. Calculation of Emissions: **See Table 3-5 in Part B.**	
11. Potential, Fugitive, and Actual Emissions Comment:	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions ____ of ____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions ____ of ____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions ____ of ____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS

(Optional for unregulated emissions units.)

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: **H115 - Methanol**	2. Total Percent Efficiency of Control:
3. Potential Emissions: lb/hour **1.1** tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: Reference:	7. Emissions Method Code: **5**
8.a. Baseline Actual Emissions (if required): tons/year	8.b. Baseline 24-month Period: From: To:
9.a. Projected Actual Emissions (if required): tons/year	9.b. Projected Monitoring Period: ☐ 5 years ☐ 10 years
10. Calculation of Emissions: **See Table 3-5 in Part B.**	
11. Potential, Fugitive, and Actual Emissions Comment:	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS

(Optional for unregulated emissions units.)

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: **H095 - Formaldehyde**	2. Total Percent Efficiency of Control:
3. Potential Emissions: lb/hour **9.2** tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: Reference:	7. Emissions Method Code: **5**
8.a. Baseline Actual Emissions (if required): tons/year	8.b. Baseline 24-month Period: From: To:
9.a. Projected Actual Emissions (if required): tons/year	9.b. Projected Monitoring Period: ☐ 5 years ☐ 10 years
10. Calculation of Emissions: **See Tables 3-2 and 3-5 in Part B.**	
11. Potential, Fugitive, and Actual Emissions Comment:	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions ____ of ____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions ____ of ____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions ____ of ____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS

(Optional for unregulated emissions units.)

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: **H154 - Propionaldehyde**	2. Total Percent Efficiency of Control:
3. Potential Emissions: lb/hour **0.71** tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: Reference:	7. Emissions Method Code: **2**
8.a. Baseline Actual Emissions (if required): tons/year	8.b. Baseline 24-month Period: From: To:
9.a. Projected Actual Emissions (if required): tons/year	9.b. Projected Monitoring Period: ☐ 5 years ☐ 10 years
10. Calculation of Emissions: **See Table 3-5 in Part B.**	
11. Potential, Fugitive, and Actual Emissions Comment:	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions ____ of ____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions ____ of ____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions ____ of ____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS

(Optional for unregulated emissions units.)

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: **CO2e**	2. Total Percent Efficiency of Control:
3. Potential Emissions: lb/hour **205,970** tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: Reference:	7. Emissions Method Code: **1**
8.a. Baseline Actual Emissions (if required): tons/year	8.b. Baseline 24-month Period: From: To:
9.a. Projected Actual Emissions (if required): tons/year	9.b. Projected Monitoring Period: ☐ 5 years ☐ 10 years
10. Calculation of Emissions: **See Table 3-8 in Part B.**	
11. Potential, Fugitive, and Actual Emissions Comment: **Biogenic CO2e: 200,430 TPY; Non-biogenic CO2e: 5,539 TPY.**	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

G. VISIBLE EMISSIONS INFORMATION

Complete Subsection G if this emissions unit is or would be subject to a unit-specific visible emissions limitation.

Visible Emissions Limitation: Visible Emissions Limitation **1** of **1**

1. Visible Emissions Subtype: **VE20**	2. Basis for Allowable Opacity: ☒ Rule ☐ Other
3. Allowable Opacity: Normal Conditions: **20** % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour	
4. Method of Compliance: **EPA Method 9**	
5. Visible Emissions Comment: **Rule 62-296.410(2)(b)1, F.A.C.**	

Visible Emissions Limitation: Visible Emissions Limitation ____ of ____

1. Visible Emissions Subtype:	2. Basis for Allowable Opacity: ☐ Rule ☐ Other
3. Allowable Opacity: Normal Conditions: % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour	
4. Method of Compliance:	
5. Visible Emissions Comment:	

H. CONTINUOUS MONITOR INFORMATION

Complete Subsection H if this emissions unit is or would be subject to continuous monitoring.

Continuous Monitoring System: Continuous Monitor ____ of ____

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement:	☐ Rule ☐ Other
4. Monitor Information... Manufacturer: Model Number:	Serial Number:
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment:	

Continuous Monitoring System: Continuous Monitor ____ of ____

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement:	☐ Rule ☐ Other
4. Monitor Information... Manufacturer: Model Number:	Serial Number:
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment:	

I. EMISSIONS UNIT ADDITIONAL INFORMATION

Additional Requirements for All Applications, Except as Otherwise Stated

1. Process Flow Diagram: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   ☒ Attached, Document ID: **GC-FI-C2** ☐ Previously Submitted, Date _____

2. Fuel Analysis or Specification: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   ☒ Attached, Document ID: **GC-EU1-I2** ☐ Previously Submitted, Date _____

3. Detailed Description of Control Equipment: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   ☒ Attached, Document ID: **GC-EU1-I3** ☐ Previously Submitted, Date _____

4. Procedures for Startup and Shutdown: (Required for all operation permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   ☐ Attached, Document ID: _____ ☐ Previously Submitted, Date _____
   ☒ Not Applicable (construction application)

5. Operation and Maintenance Plan: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   ☐ Attached, Document ID: _____ ☐ Previously Submitted, Date _____
   ☒ Not Applicable

6. Compliance Demonstration Reports/Records:
   ☐ Attached, Document ID: _____
   Test Date(s)/Pollutant(s) Tested: _____
   ☐ Previously Submitted, Date: _____
   Test Date(s)/Pollutant(s) Tested: _____
   ☐ To be Submitted, Date (if known): _____
   Test Date(s)/Pollutant(s) Tested: _____
   ☒ Not Applicable
   Note: For FESOP applications, all required compliance demonstration records/reports must be submitted at the time of application. For Title V air operation permit applications, all required compliance demonstration reports/records must be submitted at the time of application, or a compliance plan must be submitted at the time of application.

7. Other Information Required by Rule or Statute:
   ☒ Attached, Document ID: **Part B** ☐ Not Applicable

I. EMISSIONS UNIT ADDITIONAL INFORMATION (CONTINUED)

Additional Requirements for Air Construction Permit Applications

1. Control Technology Review and Analysis (Rules 62-212.400(10) and 62-212.500(7), F.A.C.; 40 CFR 63.43(d) and (e)): ☐ Attached, Document ID: _____ ☒ Not Applicable
2. Good Engineering Practice Stack Height Analysis (Rules 62-212.400(4)(d) and 62-212.500(4)(f), F.A.C.): ☐ Attached, Document ID: _____ ☒ Not Applicable
3. Description of Stack Sampling Facilities: (Required for proposed new stack sampling facilities only) ☐ Attached, Document ID: _____ ☒ Not Applicable

Additional Requirements for Title V Air Operation Permit Applications

1. Identification of Applicable Requirements: ☐ Attached, Document ID: _____
2. Compliance Assurance Monitoring: ☐ Attached, Document ID: _____ ☐ Not Applicable
3. Alternative Methods of Operation: ☐ Attached, Document ID: _____ ☐ Not Applicable
4. Alternative Modes of Operation (Emissions Trading): ☐ Attached, Document ID: _____ ☐ Not Applicable

Additional Requirements Comment

ATTACHMENT GC-EU1-I2

FUEL ANALYSIS OR SPECIFICATION

ATTACHMENT GC-EU1-I2
FUEL ANALYSIS

Fuel	Weight Percent			Heat Capacity
	Sulfur	Nitrogen	Ash	
Wood Dust	0.02%		2.5%	8,365 Btu/lb

ATTACHMENT GC-EU1-C15

STACK PARAMETERS

Attachment GC-EU1-C15: Stack Parameters

Emission Point ID	Orientation (H-Horizontal V=Vertical)	Rain Caps (Yes or No)	Height Above Ground (ft)	Base Elevation (ft)	Exit Temp. (°F)	Inside Diameter or Dimensions (ft)	Velocity (ft/sec)
RTO Stack	V	No	50	290	260	8.0	74.26
Cooler No. 1 Stack	V	No	18	290	178	3.0	55.63
Cooler No. 2 Stack	V	No	18	290	178	3.0	55.63
Cooler No. 3 Stack	V	No	18	290	178	3.0	55.63
Cooler No. 4 Stack	V	No	18	290	178	3.0	55.63

ATTACHMENT GC-EU1-I3

VENDOR DATA AND
DETAILED DESCRIPTION OF CONTROL EQUIPMENT

Technical Note

Date : Jan. 10, 2013, rev. 0

HI-TECH CYCLONE –DUST EMISSION

From: Real Blackburn, P. Eng. MBA

SUBJECT: **Data on dust emission – HI-TECH Cyclone, 3H43**
PROJECT: **12-1318A / WOOD PELLET PROJECT /GREEN CIRCLE BIO**

Process, design data :

- **WOOD PELLET COOLING SYSTEM (EACH SYSTEM)**
- **PRODUCTION RATE, MEAN ; 30 T/h, MAXIMUM PRODUCTION RATE; 32 T/h**
- **NORMAL FINE RATE OF PELLET PROCESS; 3 %**
- **GENERATED DUST RATE (< 50 MICRONS), following experience & test (ROTAP test) ; 0. 0 3 %**
- **WEIGHED EFFICIENCY OF LMM CYCLONE –HI-TECH TYPE; 92 %**
- **MAXIMUM FINE RATE (ABNORMAL CASE) OF PELLET PROCESS; 10 %**

A) NORMAL CASE – PELLET PROCESS (3 % of fine):

- Normal fine rate;
  - Mean : **30T/h x 2000 #/T x 3 % of fine = 1800 # /h**
  - Maximum **:32 T/h x 2000 #/T x 3 % of fine = 1920 # /h**

- **GENERATED DUST RATE :**(< 50 microns); **(0.03 %);**
  - Mean: **30 T/h x 2000 # /T x 0.03 % of dust = 18 #/h**
  - Maximum **: 32T /h x 2000 #/ T x 0.03 % of dust = 19.2 #/h**

- **Emission rate (normal process)** of **3H43** cyclone (**WEIGHED EFFICIENCY** of 92%);
  - Mean : **18 #/h x (1-0.92) = 1.44 #/h**
  - Maximum **: 19.2 #/h x (1-0.92) =1.54 #/h**

B) ABNORMAL CASE – PELLET PROCESS (10 % of fine supposed)

- Fine rate (abnormal process);
  - Mean: **30 T /h x 2000 #/T x 10 % = 6000 # /h**
  - Maximum **: 32T /h x 2000 #/T x 10 % = 6400 # /h**

- **GENERATED DUST RATE :**(< 50 microns) **(abnormal 10 % fine)**
  - Mean: **30 T X 2000 # /T of dust x 0.03 % x (10% /3% ratio) = 60 #/h**
  - Maximum **: 32 T X 2000 # /T of dust x 0.03 % x (10% /3% ratio) = 64 #/h**

- Emission rate (abnormal process) of **3H43** cyclone (**WEIGHED EFFICIENCY** of 92);
  - Mean : **60 #/h x (1-0.92) = 4.8 #/h**
  - Maximum **: 64 #/h x (1-0.92) =5.1 #/h**

MEGTEC Systems Inc.
830 Prosper Road
P.O. Box 5030
De Pere, WI 54115-5030
800/558-5535

MEGTEC Systems, Inc. (MEGTEC), along with the TurboSonic division, appreciates the opportunity to provide air pollution control equipment to meet the performance specifications set forth by Green Circle Bio Energy, Inc. (Green Circle). This information specifically pertains to Green Circle's proposed wood pellet production facility, to be located in Lucedale, Mississippi. As MEGTEC understands this project, Green Circle is proposing to construct a wood pellet production facility comprised of a wood dust burner, rotary wood chip dryer, hammer mills, pellet mills, bulk load-out system, and wood dust fuel preparation system.

Heat for the dryer, which will be directly fired, will be provided by the wood dust burner. The heat input capacity of the wood dust burner will be approximately 220 million British thermal units per hour (MMBtu/hr). Exhaust gases from the dryer, notably containing particulate matter (PM), volatile organic compounds (VOC), nitrogen oxides (NO_x), carbon monoxide and the hazardous air pollutants formaldehyde and acetaldehyde; will be vented to a wet electrostatic precipitator (WESP) for PM removal and then to a regenerative thermal oxidizer (RTO).

The purpose of this correspondence is to provide Green Circle with anticipated air pollutant performance specifications for the RTO proposed for this project. MEGTEC is proposing a TurboSonic WESP Model No. SonicKleen WESP-681-12H195 and RTO model No. CS-1600-96 RTO for this project. These specifications are based on our experience with the operation of similar systems. MEGTEC has relied on the following information to prepare these performance specifications:

1. Green Circle will use a dust burner to provide direct heat to a rotary wood chip dryer manufactured by Diffenbacher, Buettner, or the equivalent.
2. The maximum heat input rate of the dust burner will not exceed 220 MMBtu/hr.
3. The wood chips will be dried to a moisture content of approximately 6.5%.
4. The inlet flow to the abatement system will be approximately 157,598 wscfm (wet standard cubic feet per minute) and 205,000 actual cubic feet per minute, at a temperature of 230F and moisture content of 0.365 lb water/lb dry air and a PM loading of 165 lbs/hr (0.194 gr/dscf).
5. The inlet concentrations to the abatement system will be as indicated in the table below or less.

Pollutant	Inlet Mass Loading Rate		Outlet Mass Emission Rate		Destruction Efficiency (%)
PM	165	lb/hr	4.33	lb/hr	97.4
NO_x	44	lb/hr	55.98[3]	lb/hr	NA
CO	140	lb/hr	37.6	lb/hr	73[4]
VOC	220	lb/hr C_3[1]	9.45	lb/hr C_3[1]	95.7
Formaldehyde	17	lb/hr	1.70	lb/hr	90
Acetaldehyde	2[2]	lb/hr	1.18	lb/hr	47.5

[1]Assumes emission limit is lb/hr C_3 (molecular weight = 44)
[2]Acetaldehyde RTO inlet concentration assumed. Dryer manufacturer estimates non-detect.
[3]NO_x emissions based on the 96% thermal efficiency option.
[4]CO removal efficiency of approximately 73% requires a burner chamber set point of 1,550 deg. F or higher.

If you have any questions concerning the information provided in this correspondence, please contact me at 908-797-4069 or at jcash@megtec.com.

Sincerely,

MEGTEC Systems, Inc.

James T. Cash
Senior Product Engineer

III. EMISSIONS UNIT INFORMATION

Title V Air Operation Permit Application - For Title V air operation permitting only, emissions units are classified as regulated, unregulated, or insignificant. If this is an application for an initial, revised or renewal Title V air operation permit, a separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each regulated and unregulated emissions unit addressed in this application. Some of the subsections comprising the Emissions Unit Information Section of the form are optional for unregulated emissions units. Each such subsection is appropriately marked. Insignificant emissions units are required to be listed at Section II, Subsection C.

Air Construction Permit or FESOP Application - For air construction permitting or federally enforceable state air operation permitting, emissions units are classified as either subject to air permitting or exempt from air permitting. The concept of an "unregulated emissions unit" does not apply. If this is an application for an air construction permit or FESOP, a separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each emissions unit subject to air permitting addressed in this application for air permit. Emissions units exempt from air permitting are required to be listed at Section II, Subsection C.

Air Construction Permit and Revised/Renewal Title V Air Operation Permit Application – Where this application is used to apply for both an air construction permit and a revised or renewal Title V air operation permit, each emissions unit is classified as either subject to air permitting or exempt from air permitting for air construction permitting purposes, and as regulated, unregulated, or insignificant for Title V air operation permitting purposes. A separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each emissions unit addressed in this application that is subject to air construction permitting and for each such emissions unit that is a regulated or unregulated unit for purposes of Title V permitting. (An emissions unit may be exempt from air construction permitting but still be classified as an unregulated unit for Title V purposes.) Emissions units classified as insignificant for Title V purposes are required to be listed at Section II, Subsection C.

If submitting the application form in hard copy, the number of this Emissions Unit Information Section and the total number of Emissions Unit Information Sections submitted as part of this application must be indicated in the space provided at the top of each page.

EMISSIONS UNIT INFORMATION
Section [2]
Fire Pump

A. GENERAL EMISSIONS UNIT INFORMATION

Title V Air Operation Permit Emissions Unit Classification

1. Regulated or Unregulated Emissions Unit? (Check one, if applying for an initial, revised or renewal Title V air operation permit. Skip this item if applying for an air construction permit or FESOP only.)

☐ The emissions unit addressed in this Emissions Unit Information Section is a regulated emissions unit.

☐ The emissions unit addressed in this Emissions Unit Information Section is an unregulated emissions unit.

Emissions Unit Description and Status

1. Type of Emissions Unit Addressed in this Section: (Check one)

☐ This Emissions Unit Information Section addresses, as a single emissions unit, a single process or production unit, or activity, which produces one or more air pollutants and which has at least one definable emission point (stack or vent).

☒ This Emissions Unit Information Section addresses, as a single emissions unit, a group of process or production units and activities which has at least one definable emission point (stack or vent) but may also produce fugitive emissions.

☐ This Emissions Unit Information Section addresses, as a single emissions unit, one or more process or production units and activities which produce fugitive emissions only.

2. Description of Emissions Unit Addressed in this Section:
One 110 hp Fire Pump

3. Emissions Unit Identification Number:

4. Emissions Unit Status Code:	5. Commence Construction Date:	6. Initial Startup Date:	7. Emissions Unit Major Group SIC Code:
C			**24**

8. Federal Program Applicability: (Check all that apply)

☐ Acid Rain Unit

☐ CAIR Unit

9. Package Unit:
Manufacturer: **John Deere or equivalent** Model Number: **2013/4045TF220 or equivalent**

10. Generator Nameplate Rating: **0.110** MW

11. Emissions Unit Comment:
110 hp diesel fuel-fired fire pump.

EMISSIONS UNIT INFORMATION
Section [2]
Fire Pump

Emissions Unit Control Equipment/Method: Control ____ of ____

1. Control Equipment/Method Description:
2. Control Device or Method Code:

Emissions Unit Control Equipment/Method: Control ____ of ____

1. Control Equipment/Method Description:
2. Control Device or Method Code:

Emissions Unit Control Equipment/Method: Control ____ of ____

1. Control Equipment/Method Description:
2. Control Device or Method Code:

Emissions Unit Control Equipment/Method: Control ____ of ____

1. Control Equipment/Method Description:
2. Control Device or Method Code:

B. EMISSIONS UNIT CAPACITY INFORMATION

(Optional for unregulated emissions units.)

Emissions Unit Operating Capacity and Schedule

1. Maximum Process or Throughput Rate:	
2. Maximum Production Rate:	
3. Maximum Heat Input Rate: **3.22** million Btu/hr	
4. Maximum Incineration Rate: pounds/hr tons/day	
5. Requested Maximum Operating Schedule: hours/day weeks/year	days/week hours/year
6. Operating Capacity/Schedule Comment: **No limit in response to emergency conditions;** **Maximum heat input rate based on a fuel consumption rate of 3.8 gal/hr and diesel fuel heat content of 140,000 Btu/hr.**	

C. EMISSION POINT (STACK/VENT) INFORMATION

(Optional for unregulated emissions units.)

Emission Point Description and Type

1. Identification of Point on Plot Plan or Flow Diagram:	2. Emission Point Type Code:	
3. Descriptions of Emission Points Comprising this Emissions Unit for VE Tracking:		
4. ID Numbers or Descriptions of Emission Units with this Emission Point in Common:		
5. Discharge Type Code:	6. Stack Height: feet	7. Exit Diameter: feet
8. Exit Temperature: °F	9. Actual Volumetric Flow Rate: acfm	10. Water Vapor: %
11. Maximum Dry Standard Flow Rate: dscfm	12. Nonstack Emission Point Height: feet	
13. Emission Point UTM Coordinates... Zone: East (km): North (km):	14. Emission Point Latitude/Longitude... Latitude (DD/MM/SS) Longitude (DD/MM/SS)	
15. Emission Point Comment:		

D. SEGMENT (PROCESS/FUEL) INFORMATION

Segment Description and Rate: Segment **1** of **1**

1. Segment Description (Process/Fuel Type): **Internal Combustion Engines; Electric Generation; Distillate Oil; Reciprocating**		
2. Source Classification Code (SCC): **2-01-001-02**	3. SCC Units: **1000 Gallons Burned**	
4. Maximum Hourly Rate: **0.0038**	5. Maximum Annual Rate: **1.9**	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur: **0.05%**	8. Maximum % Ash:	9. Million Btu per SCC Unit: **140**
10. Segment Comment: **Max hourly rate = 3.8 gal/hr x 1 kgal/1,000 gal = 0.0038 kgal/yr** **Max annual rate = 3.8 gal/hr x 500 hr/yr x 1 kgal/1,000 gal = 1.9 kgal/yr** **Hourly fuel usage based on manufacturer data.**		

Segment Description and Rate: Segment _____ of _____

1. Segment Description (Process/Fuel Type):		
2. Source Classification Code (SCC):	3. SCC Units:	
4. Maximum Hourly Rate:	5. Maximum Annual Rate:	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit:
10. Segment Comment:		

E. EMISSIONS UNIT POLLUTANTS

List of Pollutants Emitted by Emissions Unit

1. Pollutant Emitted	2. Primary Control Device Code	3. Secondary Control Device Code	4. Pollutant Regulatory Code
PM			EL
PM10/ PM2.5			NS
SO2			EL
CO			NS
VOC			NS
NOx			EL
CO2e			NS

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS

(Optional for unregulated emissions units.)

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: **PM**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **0.053** lb/hour **0.013** tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: **0.22 g/hp-hr** Reference: **NSPS Subpart IIII**	7. Emissions Method Code: 5
8.a. Baseline Actual Emissions (if required): tons/year	8.b. Baseline 24-month Period: From: To:
9.a. Projected Actual Emissions (if required): tons/year	9.b. Projected Monitoring Period: ☐ 5 years ☐ 10 years
10. Calculation of Emissions: **See Table 3-6 in Part B.**	
11. Potential, Fugitive, and Actual Emissions Comment: **The diesel fuel-fired fire pump has a nominal power of 110 hp.**	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: **RULE**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **0.22 g/hp-hr (NSPS Subpart IIII, 2011 or later)**	4. Equivalent Allowable Emissions: **0.053** lb/hour **0.013** tons/year
5. Method of Compliance: **Manufacturer Certification of Subpart IIII Standards**	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions _ of _

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions _ of _

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS

(Optional for unregulated emissions units.)

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: **PM10/PM2.5**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **0.053** lb/hour **0.013** tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: **0.22 g/hp-hr** Reference: **NSPS Subpart IIII**	7. Emissions Method Code: 5
8.a. Baseline Actual Emissions (if required): tons/year	8.b. Baseline 24-month Period: From: To:
9.a. Projected Actual Emissions (if required): tons/year	9.b. Projected Monitoring Period: ☐ 5 years ☐ 10 years
10. Calculation of Emissions: **See Table 3-6 in Part B.**	
11. Potential, Fugitive, and Actual Emissions Comment: **The diesel fuel-fired fire pump has a nominal power of 110 hp.**	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions _ of _

1. Basis for Allowable Emissions Code: **RULE**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **0.22 g/hp-hr**	4. Equivalent Allowable Emissions: **0.053** lb/hour **0.013** tons/year
5. Method of Compliance: **NSPS Subpart IIII**	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions _ of _

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions _ of _

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS

(Optional for unregulated emissions units.)

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: **SO2**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **0.027** lb/hour **0.0068** tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: **0.33 g/hp-hr** Reference: **AP-42**	7. Emissions Method Code: **3**
8.a. Baseline Actual Emissions (if required): tons/year	8.b. Baseline 24-month Period: From: To:
9.a. Projected Actual Emissions (if required): tons/year	9.b. Projected Monitoring Period: ☐ 5 years ☐ 10 years
10. Calculation of Emissions: **See Table 3-6 in Part B.**	
11. Potential, Fugitive, and Actual Emissions Comment: **The diesel fuel-fired fire pump has a nominal power of 110 hp.**	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: **RULE**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **Maximum S content 0.05% by weight**	4. Equivalent Allowable Emissions: **0.027** lb/hour **0.0068** tons/year
5. Method of Compliance: **Fuel Specification**	
6. Allowable Emissions Comment (Description of Operating Method): **Hourly: 3.8 gal/hr x 7.05 lb/gal x 0.05% x 64 lb SO_2/32 lbs= 0.013 lb/hr** **Annual: 0.027 lb/hr x 500 hr/yr x 1 ton/2,000 lb = 0.0068**	

Allowable Emissions Allowable Emissions _ of _

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions _ of _

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS

(Optional for unregulated emissions units.)

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: **NOx**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **0.73** lb/hour **0.18** tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: **3.0 g/hp-hr** Reference: **NSPS Subpart IIII**	7. Emissions Method Code: **5**
8.a. Baseline Actual Emissions (if required): tons/year	8.b. Baseline 24-month Period: From: To:
9.a. Projected Actual Emissions (if required): tons/year	9.b. Projected Monitoring Period: ☐ 5 years ☐ 10 years
10. Calculation of Emissions: **See Table 3-6 in Part B.**	
11. Potential, Fugitive, and Actual Emissions Comment: **The diesel fuel-fired fire pump has a nominal power of 110 hp. Emission Limit of the total of NMHC and NOx is permitted to be 3.0 g/hp-hr.**	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: **RULE**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **NOx+NMHC 3.0 g/hp-hr (NSPS Subpart IIII 2011 or later)**	4. Equivalent Allowable Emissions: **0.73** lb/hour **0.18** tons/year
5. Method of Compliance: **Manufacturer Certification of Subpart IIII Standards**	
6. Allowable Emissions Comment (Description of Operating Method): **Hourly: 3.0 g/hp-hr x 110 hp x 1 lb/ 453.6g = 0.73 lb/hr** **Annual: 0.73 lb/hr x 500 hr/yr x 1 ton/ 2000 lb = 0.18 TPY**	

Allowable Emissions Allowable Emissions _ of _

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions _ of _

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS

(Optional for unregulated emissions units.)

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: **CO**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **0.21** lb/hour **0.053** tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: **0.87 g/hp-hr** Reference: **Emission data report by Clarke Fire Protection**	7. Emissions Method Code: **5**
8.a. Baseline Actual Emissions (if required): tons/year	8.b. Baseline 24-month Period: From: To:
9.a. Projected Actual Emissions (if required): tons/year	9.b. Projected Monitoring Period: ☐ 5 years ☐ 10 years
10. Calculation of Emissions: **See Table 3-6 in Part B.**	
11. Potential, Fugitive, and Actual Emissions Comment: **The diesel fuel-fired fire pump has a nominal power of 110 hp.**	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions _ of _

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions _ of _

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions _ of _

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS

(Optional for unregulated emissions units.)

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: **VOC**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **0.04** lb/hour **0.01** tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: **0.16 g/hp-hr** Reference: **Emission data report by Clarke Fire Protection**	7. Emissions Method Code:
8.a. Baseline Actual Emissions (if required): tons/year	8.b. Baseline 24-month Period: From: To:
9.a. Projected Actual Emissions (if required): tons/year	9.b. Projected Monitoring Period: ☐ 5 years ☐ 10 years
10. Calculation of Emissions: **See Table 3-6 in Part B.**	
11. Potential, Fugitive, and Actual Emissions Comment: **The diesel fuel-fired fire pump has a nominal power of 110 hp. Emission Limit of the total of NMHC and NOx is permitted to be 3.0 g/hp-hr.**	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions **1** of **1**

1. Basis for Allowable Emissions Code: **RULE**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **NOx+NMHC 3.0 g/hp-hr (NSPS Subpart IIII 2011 or later)**	4. Equivalent Allowable Emissions: **0.73** lb/hour **0.18** tons/year
5. Method of Compliance: **Manufacturer Certification of Subpart IIII Standards**	
6. Allowable Emissions Comment (Description of Operating Method): **Hourly: 3.0 g/hp-hr x 110 hp x 1 lb/ 453.6g = 0.73 lb/hr** **Annual: 0.73 lb/hr x 500 hr/yr x 1 ton/ 2000 lb = 0.18 TPY**	

Allowable Emissions Allowable Emissions _ of _

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions _ of _

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS

(Optional for unregulated emissions units.)

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: **CO2e**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **86.86** lb/hour **21.71** tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: Reference: **40 CFR 98, Subpart C**	7. Emissions Method Code: **5**
8.a. Baseline Actual Emissions (if required): tons/year	8.b. Baseline 24-month Period: From: To:
9.a. Projected Actual Emissions (if required): tons/year	9.b. Projected Monitoring Period: ☐ 5 years ☐ 10 years
10. Calculation of Emissions: **See Table 3-9 in Part B.**	
11. Potential, Fugitive, and Actual Emissions Comment:	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions _ of _

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions _ of _

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions _ of _

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

G. VISIBLE EMISSIONS INFORMATION

Complete Subsection G if this emissions unit is or would be subject to a unit-specific visible emissions limitation.

Visible Emissions Limitation: Visible Emissions Limitation **1** of **1**

1. Visible Emissions Subtype: **VE20**	2. Basis for Allowable Opacity: ☒ Rule ☐ Other
3. Allowable Opacity: Normal Conditions: **20** % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour	
4. Method of Compliance: **EPA Method 9**	
5. Visible Emissions Comment: **Rule 62-296.410(2)(b)1, F.A.C.**	

Visible Emissions Limitation: Visible Emissions Limitation ____ of ____

1. Visible Emissions Subtype:	2. Basis for Allowable Opacity: ☐ Rule ☐ Other
3. Allowable Opacity: Normal Conditions: % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour	
4. Method of Compliance:	
5. Visible Emissions Comment:	

H. CONTINUOUS MONITOR INFORMATION

Complete Subsection H if this emissions unit is or would be subject to continuous monitoring.

Continuous Monitoring System: Continuous Monitor ____ of ____

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement:	☐ Rule ☐ Other
4. Monitor Information... Manufacturer: Model Number:	Serial Number:
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment:	

Continuous Monitoring System: Continuous Monitor ____ of ____

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement:	☐ Rule ☐ Other
4. Monitor Information... Manufacturer: Model Number:	Serial Number:
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment:	

EMISSIONS UNIT INFORMATION
Section [2]
Fire Pump

I. EMISSIONS UNIT ADDITIONAL INFORMATION

Additional Requirements for All Applications, Except as Otherwise Stated

1. Process Flow Diagram: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   ☐ Attached, Document ID: _____ ☐ Previously Submitted, Date _____

2. Fuel Analysis or Specification: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   ☒ Attached, Document ID: **GC-EU2-I2** ☐ Previously Submitted, Date _____

3. Detailed Description of Control Equipment: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   ☐ Attached, Document ID: _____ ☐ Previously Submitted, Date _____

4. Procedures for Startup and Shutdown: (Required for all operation permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   ☐ Attached, Document ID: _____ ☐ Previously Submitted, Date _____
   ☐ Not Applicable (construction application)

5. Operation and Maintenance Plan: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   ☐ Attached, Document ID: _____ ☐ Previously Submitted, Date _____
   ☒ Not Applicable

6. Compliance Demonstration Reports/Records:
   ☐ Attached, Document ID: _____
   Test Date(s)/Pollutant(s) Tested: _____
   _____
   ☐ Previously Submitted, Date: _____
   Test Date(s)/Pollutant(s) Tested: _____
   _____
   ☐ To be Submitted, Date (if known): _____
   Test Date(s)/Pollutant(s) Tested: _____
   _____
   ☐ Not Applicable
   Note: For FESOP applications, all required compliance demonstration records/reports must be submitted at the time of application. For Title V air operation permit applications, all required compliance demonstration reports/records must be submitted at the time of application, or a compliance plan must be submitted at the time of application.

7. Other Information Required by Rule or Statute:
   ☒ Attached, Document ID: **Part B** ☐ Not Applicable

I. EMISSIONS UNIT ADDITIONAL INFORMATION (CONTINUED)

Additional Requirements for Air Construction Permit Applications

1. Control Technology Review and Analysis (Rules 62-212.400(10) and 62-212.500(7), F.A.C.; 40 CFR 63.43(d) and (e)): ☐ Attached, Document ID: _____ ☒ Not Applicable
2. Good Engineering Practice Stack Height Analysis (Rules 62-212.400(4)(d) and 62-212.500(4)(f), F.A.C.): ☐ Attached, Document ID: _____ ☒ Not Applicable
3. Description of Stack Sampling Facilities: (Required for proposed new stack sampling facilities only) ☐ Attached, Document ID: _____ ☒ Not Applicable

Additional Requirements for Title V Air Operation Permit Applications

1. Identification of Applicable Requirements: ☐ Attached, Document ID: _____
2. Compliance Assurance Monitoring: ☐ Attached, Document ID: _____ ☐ Not Applicable
3. Alternative Methods of Operation: ☐ Attached, Document ID: _____ ☐ Not Applicable
4. Alternative Modes of Operation (Emissions Trading): ☐ Attached, Document ID: _____ ☐ Not Applicable

Additional Requirements Comment

ATTACHMENT GC-EU2-I2

FUEL ANALYSIS OR SPECIFICATION

ATTACHMENT GC-EU2-I2
FUEL ANALYSIS

Fuel	Weight Percent			Heat Capacity
	Sulfur	Nitrogen	Ash	
Diesel	0.05%		2.5%	140,000 Btu/gal

III. EMISSIONS UNIT INFORMATION

Title V Air Operation Permit Application - For Title V air operation permitting only, emissions units are classified as regulated, unregulated, or insignificant. If this is an application for an initial, revised or renewal Title V air operation permit, a separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each regulated and unregulated emissions unit addressed in this application. Some of the subsections comprising the Emissions Unit Information Section of the form are optional for unregulated emissions units. Each such subsection is appropriately marked. Insignificant emissions units are required to be listed at Section II, Subsection C.

Air Construction Permit or FESOP Application - For air constructiodn permitting or federally enforceable state air operation permitting, emissions units are classified as either subject to air permitting or exempt from air permitting. The concept of an "unregulated emissions unit" does not apply. If this is an application for an air construction permit or FESOP, a separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each emissions unit subject to air permitting addressed in this application for air permit. Emissions units exempt from air permitting are required to be listed at Section II, Subsection C.

Air Construction Permit and Revised/Renewal Title V Air Operation Permit Application – Where this application is used to apply for both an air construction permit and a revised or renewal Title V air operation permit, each emissions unit is classified as either subject to air permitting or exempt from air permitting for air construction permitting purposes, and as regulated, unregulated, or insignificant for Title V air operation permitting purposes. A separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each emissions unit addressed in this application that is subject to air construction permitting and for each such emissions unit that is a regulated or unregulated unit for purposes of Title V permitting. (An emissions unit may be exempt from air construction permitting but still be classified as an unregulated unit for Title V purposes.) Emissions units classified as insignificant for Title V purposes are required to be listed at Section II, Subsection C.

If submitting the application form in hard copy, the number of this Emissions Unit Information Section and the total number of Emissions Unit Information Sections submitted as part of this application must be indicated in the space provided at the top of each page.

EMISSIONS UNIT INFORMATION
Section [3]
Emergency Generators 1 and 2

A. GENERAL EMISSIONS UNIT INFORMATION

Title V Air Operation Permit Emissions Unit Classification

1. Regulated or Unregulated Emissions Unit? (Check one, if applying for an initial, revised or renewal Title V air operation permit. Skip this item if applying for an air construction permit or FESOP only.)

   ☒ The emissions unit addressed in this Emissions Unit Information Section is a regulated emissions unit.

   ☐ The emissions unit addressed in this Emissions Unit Information Section is an unregulated emissions unit.

Emissions Unit Description and Status

1. Type of Emissions Unit Addressed in this Section: (Check one)

   ☒ This Emissions Unit Information Section addresses, as a single emissions unit, a single process or production unit, or activity, which produces one or more air pollutants and which has at least one definable emission point (stack or vent).

   ☐ This Emissions Unit Information Section addresses, as a single emissions unit, a group of process or production units and activities which has at least one definable emission point (stack or vent) but may also produce fugitive emissions.

   ☐ This Emissions Unit Information Section addresses, as a single emissions unit, one or more process or production units and activities which produce fugitive emissions only.

2. Description of Emissions Unit Addressed in this Section:
   Emergency Generators 1 and 2

3. Emissions Unit Identification Number:

4. Emissions Unit Status Code:	5. Commence Construction Date:	6. Initial Startup Date:	7. Emissions Unit Major Group SIC Code:
C			**24**

8. Federal Program Applicability: (Check all that apply)

   ☐ Acid Rain Unit

   ☐ CAIR Unit

9. Package Unit:
   Manufacturer: **Power Solutions International or equivalent** Model Number:

10. Generator Nameplate Rating: **0.342** MW **(each)**

11. Emissions Unit Comment:

Emissions Unit Control Equipment/Method: Control ____ of ____

1. Control Equipment/Method Description:
2. Control Device or Method Code:

Emissions Unit Control Equipment/Method: Control ____ of ____

1. Control Equipment/Method Description:
2. Control Device or Method Code:

Emissions Unit Control Equipment/Method: Control ____ of ____

1. Control Equipment/Method Description:
2. Control Device or Method Code:

Emissions Unit Control Equipment/Method: Control ____ of ____

1. Control Equipment/Method Description:
2. Control Device or Method Code:

B. EMISSIONS UNIT CAPACITY INFORMATION
(Optional for unregulated emissions units.)

Emissions Unit Operating Capacity and Schedule

1. Maximum Process or Throughput Rate:	
2. Maximum Production Rate:	
3. Maximum Heat Input Rate: **3.22 MMBtu/hr**	
4. Maximum Incineration Rate: pounds/hr tons/day	
5. Requested Maximum Operating Schedule: hours/day weeks/year	days/week hours/year
6. Operating Capacity/Schedule Comment: **Natural gas fired. Maximum 500 hours per engine per year.**	

C. EMISSION POINT (STACK/VENT) INFORMATION

(Optional for unregulated emissions units.)

Emission Point Description and Type

1. Identification of Point on Plot Plan or Flow Diagram:	2. Emission Point Type Code:	
3. Descriptions of Emission Points Comprising this Emissions Unit for VE Tracking:		
4. ID Numbers or Descriptions of Emission Units with this Emission Point in Common:		
5. Discharge Type Code:	6. Stack Height: feet	7. Exit Diameter: feet
8. Exit Temperature: °F	9. Actual Volumetric Flow Rate: acfm	10. Water Vapor: %
11. Maximum Dry Standard Flow Rate: dscfm	12. Nonstack Emission Point Height: feet	
13. Emission Point UTM Coordinates... Zone: East (km): North (km):	14. Emission Point Latitude/Longitude... Latitude (DD/MM/SS) Longitude (DD/MM/SS)	
15. Emission Point Comment:		

D. SEGMENT (PROCESS/FUEL) INFORMATION

Segment Description and Rate: Segment 1 of 1

1. Segment Description (Process/Fuel Type): **Internal Combustion Engines; Electric Generation; Natural Gas; Reciprocating**		
2. Source Classification Code (SCC): **2-01-002-02**	3. SCC Units: **MMscf**	
4. Maximum Hourly Rate: **0.00317**	5. Maximum Annual Rate: **1.586**	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit: **1,015**
10. Segment Comment: **Based on maximum heat input 3.22 MMBtu/hr, Natural Gas heat content of 1,015 MMBtu/MMscf, and a maximum annual operation of 500 hr/yr per engine.**		

Segment Description and Rate: Segment _____ of _____

1. Segment Description (Process/Fuel Type):		
2. Source Classification Code (SCC):	3. SCC Units:	
4. Maximum Hourly Rate:	5. Maximum Annual Rate:	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit:
10. Segment Comment:		

EMISSIONS UNIT INFORMATION
Section [3]
Emergency Generators 1 and 2

E. EMISSIONS UNIT POLLUTANTS

List of Pollutants Emitted by Emissions Unit

1. Pollutant Emitted	2. Primary Control Device Code	3. Secondary Control Device Code	4. Pollutant Regulatory Code
PM10/PM2.5			NS
NOx			EL
CO			NS
SO2			NS
VOC			EL
CO2e			NS

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS

(Optional for unregulated emissions units.)

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: **PM/PM10**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **$3.32x10^{-2}$** lb/hour **$5.82x10^{-3}$** tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: **$8.87x10^{-5}$ g/hp-hr** Reference: **AP-42, Chapter 3.2**	7. Emissions Method Code: **3**
8.a. Baseline Actual Emissions (if required): tons/year	8.b. Baseline 24-month Period: From: To:
9.a. Projected Actual Emissions (if required): tons/year	9.b. Projected Monitoring Period: ☐ 5 years ☐ 10 years
10. Calculation of Emissions: **Refer to Table 3-7 in Part B.**	
11. Potential, Fugitive, and Actual Emissions Comment: **Emissions reported are for two generators.**	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions ____ of ____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions ____ of ____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions ____ of ____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS

(Optional for unregulated emissions units.)

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: **NOx**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **4.04** lb/hour **1.01** tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: **2.0 g/hp-hr** Reference: **NSPS Subpart JJJJ.**	7. Emissions Method Code: **5**
8.a. Baseline Actual Emissions (if required): tons/year	8.b. Baseline 24-month Period: From: To:
9.a. Projected Actual Emissions (if required): tons/year	9.b. Projected Monitoring Period: ☐ 5 years ☐ 10 years
10. Calculation of Emissions: **See to Table 3-7 in Part B.**	
11. Potential, Fugitive, and Actual Emissions Comment: **Emissions reported are for two generators.**	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions **1** of **1**

1. Basis for Allowable Emissions Code: **RULE**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **2.0 g/hp-hr (NSPS Subpart JJJJ)**	4. Equivalent Allowable Emissions: **4.05** lb/hour **1.01** tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method): **Reordkeeing of maintenance activities and operation hours is required.**	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS

(Optional for unregulated emissions units.)

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: **CO**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **4.05** lb/hour **1.01** tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: **2.0 lb/hr** Reference: **EPA Certificate No. DPWRB14.6NGP-004.**	7. Emissions Method Code: **5**
8.a. Baseline Actual Emissions (if required): tons/year	8.b. Baseline 24-month Period: From: To:
9.a. Projected Actual Emissions (if required): tons/year	9.b. Projected Monitoring Period: ☐ 5 years ☐ 10 years
10. Calculation of Emissions: **See Table 3-7 in Part B.**	
11. Potential, Fugitive, and Actual Emissions Comment: **Emissions reported are for two generators.**	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions **1** of **1**

1. Basis for Allowable Emissions Code: **RULE**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **4.0 g/hp-hr (NSPS Subpart JJJJ)**	4. Equivalent Allowable Emissions: **8.1** lb/hour **2.02** tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method): **Recordkeeping of maintenance activities and operation hours is required.**	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS

(Optional for unregulated emissions units.)

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: **SO2**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **$1.37x10^{-3}$** lb/hour **$3.42x10^{-4}$** tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: **$6.7x10^{-4}$ g/hp-hr** Reference: **AP-42, Chapter 3.2.**	7. Emissions Method Code: **3**
8.a. Baseline Actual Emissions (if required): tons/year	8.b. Baseline 24-month Period: From: To:
9.a. Projected Actual Emissions (if required): tons/year	9.b. Projected Monitoring Period: ☐ 5 years ☐ 10 years
10. Calculation of Emissions: **Refer to Table 3-7 in Part B.**	
11. Potential, Fugitive, and Actual Emissions Comment: **Emissions reported are for two generators.**	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS

(Optional for unregulated emissions units.)

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: **VOC**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **1.42** lb/hour **0.35** tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: **0.7 g/hp-hr** Reference: **EPA Certificate No. DPWRB14.6NGP-004**	7. Emissions Method Code: **5**
8.a. Baseline Actual Emissions (if required): tons/year	8.b. Baseline 24-month Period: From: To:
9.a. Projected Actual Emissions (if required): tons/year	9.b. Projected Monitoring Period: ☐ 5 years ☐ 10 years
10. Calculation of Emissions: **Refer to Table 3-7 in Part B.**	
11. Potential, Fugitive, and Actual Emissions Comment: **Emissions reported are for two generators.**	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions **1** of **1**

1. Basis for Allowable Emissions Code: **RULE**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **1.0 g/hp-hr (40 CFR Part 94.8)**	4. Equivalent Allowable Emissions: **2.02** lb/hour **0.51** tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method): **Reordkeeing of maintenance activities and operation hours is required.**	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS

(Optional for unregulated emissions units.)

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: **CO2e**	2. Total Percent Efficiency of Control:
3. Potential Emissions: lb/hour **188.1** tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: **116.85 lb/MMBtu** Reference: **40 CFR 98, Subpart C**	7. Emissions Method Code: **5**
8.a. Baseline Actual Emissions (if required): tons/year	8.b. Baseline 24-month Period: From: To:
9.a. Projected Actual Emissions (if required): tons/year	9.b. Projected Monitoring Period: ☐ 5 years ☐ 10 years
10. Calculation of Emissions: **Refer to Table 3-9 in Part B.**	
11. Potential, Fugitive, and Actual Emissions Comment: **Emissions reported are for two generators.**	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions _ of _

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions ____ of ____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions ____ of ____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

G. VISIBLE EMISSIONS INFORMATION

Complete Subsection G if this emissions unit is or would be subject to a unit-specific visible emissions limitation.

Visible Emissions Limitation: Visible Emissions Limitation 1 of 1

1. Visible Emissions Subtype: **VE20**	2. Basis for Allowable Opacity: ☒ Rule ☐ Other
3. Allowable Opacity: Normal Conditions: **20** % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour	
4. Method of Compliance: **EPA Method 9**	
5. Visible Emissions Comment: **FDEP Rule 62-296.320(4)(b)1, F.A.C., requires 20% opacity. Excess emissions provided By Rule 62-210.700(1), F.A.C.**	

Visible Emissions Limitation: Visible Emissions Limitation ____ of ____

1. Visible Emissions Subtype:	2. Basis for Allowable Opacity: ☐ Rule ☐ Other
3. Allowable Opacity: Normal Conditions: % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour	
4. Method of Compliance:	
5. Visible Emissions Comment:	

H. CONTINUOUS MONITOR INFORMATION

Complete Subsection H if this emissions unit is or would be subject to continuous monitoring.

Continuous Monitoring System: Continuous Monitor ____ of ____

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement:	☐ Rule ☐ Other
4. Monitor Information... Manufacturer: Model Number:	Serial Number:
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment:	

Continuous Monitoring System: Continuous Monitor ____ of ____

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement:	☐ Rule ☐ Other
4. Monitor Information... Manufacturer: Model Number:	Serial Number:
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment:	

I. EMISSIONS UNIT ADDITIONAL INFORMATION

Additional Requirements for All Applications, Except as Otherwise Stated

1. Process Flow Diagram: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   ☐ Attached, Document ID: _____ ☐ Previously Submitted, Date _____

2. Fuel Analysis or Specification: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   ☒ Attached, Document ID: **GC-EU3-I2** ☐ Previously Submitted, Date _____

3. Detailed Description of Control Equipment: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   ☐ Attached, Document ID: _____ ☐ Previously Submitted, Date _____

4. Procedures for Startup and Shutdown: (Required for all operation permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   ☐ Attached, Document ID: _____ ☐ Previously Submitted, Date _____
   ☒ Not Applicable (construction application)

5. Operation and Maintenance Plan: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   ☐ Attached, Document ID: _____ ☐ Previously Submitted, Date _____
   ☒ Not Applicable

6. Compliance Demonstration Reports/Records:
   ☐ Attached, Document ID: _____
   Test Date(s)/Pollutant(s) Tested: _____
   _____
   ☐ Previously Submitted, Date: _____
   Test Date(s)/Pollutant(s) Tested: _____
   _____
   ☐ To be Submitted, Date (if known): _____
   Test Date(s)/Pollutant(s) Tested: _____
   _____
   ☐ Not Applicable
   Note: For FESOP applications, all required compliance demonstration records/reports must be submitted at the time of application. For Title V air operation permit applications, all required compliance demonstration reports/records must be submitted at the time of application, or a compliance plan must be submitted at the time of application.

7. Other Information Required by Rule or Statute:
   ☒ Attached, Document ID: **Part B** ☐ Not Applicable

I. EMISSIONS UNIT ADDITIONAL INFORMATION (CONTINUED)

Additional Requirements for Air Construction Permit Applications

1. Control Technology Review and Analysis (Rules 62-212.400(10) and 62-212.500(7), F.A.C.; 40 CFR 63.43(d) and (e)): ☐ Attached, Document ID: _____ ☒ Not Applicable
2. Good Engineering Practice Stack Height Analysis (Rules 62-212.400(4)(d) and 62-212.500(4)(f), F.A.C.): ☐ Attached, Document ID: _____ ☒ Not Applicable
3. Description of Stack Sampling Facilities: (Required for proposed new stack sampling facilities only) ☐ Attached, Document ID: _____ ☒ Not Applicable

Additional Requirements for Title V Air Operation Permit Applications

1. Identification of Applicable Requirements: ☐ Attached, Document ID: _____
2. Compliance Assurance Monitoring: ☐ Attached, Document ID: _____ ☐ Not Applicable
3. Alternative Methods of Operation: ☐ Attached, Document ID: _____ ☐ Not Applicable
4. Alternative Modes of Operation (Emissions Trading): ☐ Attached, Document ID: _____ ☐ Not Applicable

Additional Requirements Comment

ATTACHMENT GC-EU3-I2

FUEL ANALYSIS OR SPECIFICATION

ATTACHMENT GC-EU3-I2

FUEL ANALYSIS

Fuel	Weight Percent			Heat Capacity
	Sulfur	Nitrogen	Ash	
Natural Gas	Neg.		Neg.	1,015 Btu/scf

PART B

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List of Appendices

1.0 INTRODUCTION

Green Circle Bio Energy Inc. (Green Circle) is proposing to construct a wood pelleting plant in Madison County, Florida. The facility will be built on a 160-acre greenfield site located south of the town of Madison on the east side of State Road 53 south of the railroad tracks. A facility location map is included as Attachment GC-FI-CC1 of the attached permit application. The facility will receive chipped virgin hardwood and softwood (green wood), both hardwood and softwood saw mill chips/saw dust, and dry wood shavings. The facility will have the capacity to produce a maximum of 743,000 short tons per year (TPY) of wood pellets for transport via rail to the Port of Jacksonville.

The proposed facility will be a source of volatile organic compounds (VOCs), particulate matter (PM) with an aerodynamic diameter of 10 microns or less (PM_{10}), PM with an aerodynamic diameter of 2.5 microns or less ($PM_{2.5}$), nitrogen oxides (NO_x), carbon monoxide (CO), and sulfur dioxide (SO_2). Potential emissions of these pollutants will each be below the prevention of significant deterioration (PSD) major source threshold of 250 TPY. The proposed facility will also be a source of greenhouse gas (GHG) emissions. Potential annual GHG emissions associated with the project from non-biogenic sources will be well below the PSD major source threshold of 100,000 tons of carbon dioxide equivalent (CO_2e). The facility will also be an area source of hazardous air pollutants (HAP).

The purpose of this document is to provide the Florida Department of Environmental Protection (FDEP) the necessary application forms and supporting documentation to issue Green Circle an Air Construction Permit for the proposed facility. This document is organized into four additional sections. A project description is presented in Section 2.0. Potential emission rate calculations are presented in Section 3.0. A regulatory analysis is presented in Section 4.0. The necessary application forms and supporting documentation are presented in Section 5.0.

2.0 PROCESS DESCRIPTION

Green Circle's proposed facility will be located in Madison, Florida on a 160-acre greenfield site that was formerly used for agricultural purposes. Green Circle will receive chipped hardwood, softwood, and dry wood shavings and sawdust via trucks and produce wood pellets. The facility will have a maximum annual production capacity of 743,000 TPY of wood pellets. A process flow diagram for the facility is presented as Attachment GC-FI-C2 of the permit application. A detailed process description is presented in the following sections.

2.1 Wood Receiving, Storage, Transfer, and Processing

Green Circle will receive green chipped hardwood, green chipped softwood, saw mill chips, saw dust, and dried wood shavings via truck delivery. Truck dumps will be used to empty trucks of these raw materials. Radial conveyor stackers will be used to transfer chipped wood from the truck dump to separate hardwood and softwood storage piles. Dried shavings will be conveyed to a separate storage silo.

Chipped hardwood and softwood will be reclaimed from their respective storage piles by front-end loaders and placed in designated reclaim hoppers. The reclaim hoppers feed chip conveyors with variable speed drives so that the proper mix of hardwood and softwood can be metered together. Ferrous metals will be removed from the chip mix before it is further processed by a thickness screen. Oversized materials from the thickness screen will be sent to a re-chipper. Wood chips passing through the thickness screen will be transferred to a small silo which will serve as buffer storage and the metering device for the dryer. Dried shavings will be introduced into the process after the dryer, but before the hammer mill area of the facility.

2.2 Dryer

Green Circle will feed metered amounts of hardwood and softwood into the dryer. Typically, hardwood contains approximately 30 percent of the VOC found in softwood. Green Circle will employ this characteristic of hardwood to limit VOC emissions from the dryer. Under normal operations, Green Circle plans to feed equal weights of hardwood and softwood into the dryer. To limit VOC emissions from the dryer and other downstream process equipment (e.g., hammer mills and pellet mills, pellet mill coolers), the amount of softwood fed into the dryer will be metered to maintain VOC compliance throughout the facility. Wood chips will be dried to a moisture content of approximately 6.5 percent weight.

Heat for the dryer, which is direct-fired, will be provided by a wood dust burner with a projected maximum heat input rate of 240 million British thermal units per hour (MMBtu/hr). Fuel for the dust burner will be collected from the hammer mill and pellet mill dust collection systems, cooler cyclones, and the vibrating screen pellet sieve. Prior to introduction into the dust burner, this material will be further processed though

a hammer mill with a dust collector. The exhaust from this dust collector will be vented directly to the dust burner. Natural gas will be used as a supplemental fuel for initial start-up of the dust burner.

The exhaust gases from the dryer will be vented to a wet electrostatic precipitator (WESP) for PM control and then to a regenerative thermal oxidizer (RTO) for VOC, CO, and HAP control. Dried wood chips from the dryer will be conveyed to the hammer mills for further processing.

2.3 Hammer Mills

Wood chips from the dryer will be conveyed to the Grinding Building. Additionally, dried wood shavings may be introduced to the process between the dryer and Grinding Building. In the Grinding Building, hammer mills will be used to grind the wood chips and shavings into a form suitable for further processing in the pellet mills. A dust collection system will be used to remove fines from the grinding process. Consequently, this system may remove moisture and VOC. Any moisture, PM, or VOC removed by the hammer mill dust collection system will be vented to the fuel system for the dust burner where it will be thermally treated in the dust burner itself and eventually exhausted from the dryer to the WESP and RTO. Ground wood from the hammer mills will be stored in a storage silo before it is transferred to the Pelleting Building.

2.4 Pellet Mills

Ground wood from the storage silo will be conveyed to the Pelleting Building. Pellet mills will be used to process the ground wood into wood pellets. The pellet mills force ground wood through forged alloy dies. The heat of friction during the pelletizing process is sufficient to liquefy the lignin in the wood and bind the ground wood into a pellet without the addition of other binders. A dust collection system, similar to that used for the hammer mills, will be used to remove PM, moisture, and VOC from the pelletizing process. In a manner similar to the hammer mill dust collection system, moisture, PM, and VOC (captured by the pellet mill dust collection system) will be vented to the fuel system for the dust burner and similarly processed by the dust burner itself, WESP, and RTO.

Four counter-current air coolers will be used to reduce the temperature of the wood pellets produced by the pellet mills. Cyclones will be used to separate dust and fines from the wood pellets in the air stream. The exhaust from the coolers cyclones may contain PM and VOC which will be vented to the atmosphere. Any wood dust collected by the cyclones will be transferred to the fuel system for the dust burner.

From the coolers, the wood pellets will proceed to pellet sieves consisting of vibrating screens. Reject material from the vibrating screens will be transferred to the fuel system for the dust burner. Pellets leaving the sieves will be conveyed to the Bulk Load-Out System.

2.5 Bulk Load-Out System

The Bulk Load-Out System will directly load trucks and/or railcars for transport of wood pellets to the port. As this loading will occur inside a structure and wood pellets will be transferred to an enclosed railcar or truck, no significant PM emissions are expected from the Bulk Load-Out System.

2.6 Support Equipment

Green Circle is proposing to install two 300 kilowatt-electric (KWe) emergency generators and a fire pump at the Madison facility (see Appendix B). The emergency generators will be manufactured by Blue Star Power Systems (Model No. NG300-01) or the equivalent and will be natural gas-fired. The fire pump will be a diesel fuel-fired unit manufactured by John Deere (Model No. JUAH-UF58) or an equivalent unit. The selected fire pump will be certified by the National Fire Protection Association which requires that it meet U.S. Environmental Protection Agency (EPA) requirements.

3.0 EMISSIONS INVENTORY

3.1 Criteria and Hazardous Air Pollutants

Green Circle's proposed wood pelleting facility includes five exhaust stacks associated with production of wood pellets – the RTO stack and four pellet cooler stacks three additional exhaust stacks associated with two emergency generators and a diesel fuel-fire fire pump. Emissions from the RTO stack include products for combustion from the dust burner and the supplemental firing of natural gas in the RTO, and PM and VOC (including some hazardous air pollutants [HAPs]) from the wood drying process. Emissions from the cooler stacks include PM and VOC released during cooling of the pellets. No significant PM emissions are anticipated for the Bulk Load-out System. Emission estimates from each of these sources are detailed in the following sections.

3.1.1 Dust Burner and Dryer

Exhaust from the dust burner will be used to directly heat the dryer and dry the green wood chips. Exhaust from the dryer, containing moisture, the products of combustion from the dust burner, PM, VOC, and HAPs will be vented to the WESP and then to the RTO. The emission point for the dust burner and the dryer will be the RTO stack.

Emission estimates for the RTO stack are presented in Table 3-1. These emission estimates are based on information provided by Megtec (the manufacturer of an appropriate WESP and RTO), working in conjunction with Buttner (the manufacturer of an appropriate dust burner and dryer). Vendor information for appropriate air pollution control equipment is presented in Attachment GC-EU1-I3 in the permit application forms. The final selection of the supplier of the provider of pollution control equipment has not been selected. Green Circle will select this equipment, or equipment of similar performance for this project. These emission estimates also reflect the processing of equal amounts of hardwood and softwood chips.

Formaldehyde and acetaldhyde (both HAPs) will also be emitted from the RTO stack. Emission estimates for formaldehyde and acetaldhyde, also provided by Megtec, are presented in in Table 3-2.

3.1.2 Pellet Coolers

Green Circle will employ four counter-current air coolers to reduce the temperature of the newly formed pellets prior to transferring them to the Bulk Load-Out System. Cyclones will be used to separate the wood pellets and some entrained PM from the cooling air. The exhaust from cyclones contain PM and VOC and will be exhausted directly to the atmosphere.

VOC emissions from the cooler cyclones are based on testing performed at Green Circle's facility located in Cottondale, Florida. Operation of the pellet mill coolers at the Cottondale facility is identical to the

proposed operation of the pellet mill coolers at the proposed Madison facility with one notable exception – the Cottondale facility primarily processes only softwood. Generally, the VOC content of hardwood is only about 30 percent that of softwood. To reduce VOC emissions from the Madison facility, Green Circle is proposing to limit annual softwood chip usage to no more than 50 percent of total wood usage. VOC emission rate calculations for the Pellet Coolers are presented in Table 3-3.

Green Circle is proposing to use Model No. 3H43 HI-TECH Cyclones manufactured by LMM, or the equivalent, on each pelletizing line. PM emission rate calculations for each cyclone, as provided by LMM, are presented in Appendix A and are a function of the maximum pellet production rate, the fines content entrained with the pellets, and PM control efficiency. Using a maximum pellet production rate of 32 tons per hour (TPH), a worst-case fines content of 10 percent, and a PM control efficiency for the cyclone of 92 percent, a maximum PM emission rates for each cyclone was calculated by LMM to be 5.1 pounds per hour (lb/hr) or 22 TPY, assuming 8,760 hours of annual operation. The total annual PM emission rate from all four pellet cooler stacks will be 89 TPY. PM emission calculations for the cooler cyclones are presented in Table 3-4.

The coolers are also sources of HAP emissions. HAP emission estimates for the coolers are based on emission factors provided by Rajeev Gupta of the Mississippi Department of Environmental Quality for the Enviva wood pellet production facility located in Wiggins, Mississippi which uses a similar mix of hardwoods and softwoods. These emission factors were used to permit Green Circle's facility in Lucedale, Mississippi and are currently the only known source of HAP emission factors for wood pellet coolers. Estimates of HAP emissions from the pellet coolers are presented in Table 3-5.

3.1.3 Support Equipment – Fire Pump and Two Emergency Generators

Emission estimates for the proposed fire pump and emergency generators are presented in Tables 3-6 and 3-7, respectively.

3.2 Greenhouse Gas Emissions

Sources of GHG emissions at the proposed facility are wood firing in the dust burner, natural gas-firing as a supplemental fuel in the RTO, natural gas-firing in the two proposed emergency generators, and diesel fuel-firing in the fire pump. GHG emission calculations for the dust burner are presented in Table 3-8. As shown in Table 3-8, total annual GHG emissions from the RTO stack, due to both biogenic and non-biogenic fuels, are estimated to be 205,970 TPY of CO_2e. The majority of the CO_2e emissions, from the RTO stack, 200,430 TPY CO_2e, are from the dust burner, which fires wood dust, a biogenic fuel. Non-biogenic GHG emissions from the RTO are only 5,539 TPY CO_2e.

GHG emission calculations for the two proposed emergency generators and fire pump and presented in Table 3-9. These calculations are based on 500 hours of annual operation for these units.

A discussion of the regulatory implications of potential GHG emissions from the facility is presented in Section 4.1.

3.3 Facility-Wide Emissions

A summary of potential facility-wide annual emission rates is presented in Table 3-10. As shown in Table 3-10, potential facility-wide annual emission rates for all criteria pollutants are below 250 TPY, the threshold that triggers new source review (NSR) under PSD regulations for this type of facility. A discussion of the regulatory implications of these emission rates with regard to PSD applicability is presented in Section 4.1.

Table 3-10 shows potential facility-wide GHG emissions from the facility are in excess of 100,000 CO_2e, the triggering threshold for PSD applicability under the Tailoring Rule. However, only 5,539 TPY CO_2e are attributed to non-biogenic sources. A discussion of the implication of these GHG emission rates is presented in Section 4.1.

As indicated by Table 3-10, potential annual emissions of all criteria pollutants emitted by the facility are above 100 TPY, the Title V Air Operation applicability threshold for criteria pollutants. However, total and individual HAP emissions are below the Title V applicability thresholds of 25 and 10 TPY, respectively. A discussion of the implication of these HAP emission rates is presented in Section 4.2.

4.0 REGULATORY ANALYSIS

4.1 PSD Applicability

The EPA has defined a "major facility" under the PSD regulations as any one of 28 named source categories that have the potential to emit 100 TPY or more or any other stationary facility that has the potential to emit 250 TPY or more of any pollutant regulated [e.g., PM_{10}, NO_x, SO_2 (sulfur dioxide) etc.] under the Clean Air Act (CAA). For the 28 named source categories, fugitive emissions must be considered for determination of PSD applicability. For facilities that are not one of the 28 named source categories but have potential emissions of regulated pollutants of 250 TPY or more, fugitive emissions do not need to be considered in the applicability determination. A discussion on the applicability of GHG emissions with respect to PSD regulations is presented later in this section.

Green Circle's proposed Madison facility is not in one of these 28 named source categories, and the facility's potential emissions of each regulated pollutant are not greater than 250 TPY. Therefore, fugitive emissions (e.g., from truck traffic, material handling, pellet load-out) do not have to be considered when determining the applicability of PSD regulations. Accordingly, Green Circle's proposed Madison facility is considered a minor facility with regard to PSD regulations when considering potential emissions of criteria pollutants.

GHG emissions must also be considered with regard to PSD applicability. On June 30, 2010, EPA promulgated the *Prevention of Significant Deterioration and Title V Greenhouse Gas Tailoring Rule*, referred to as the Tailoring Rule, which became effective on January 2, 2011. New sources, as well as existing sources not already subject to Title V that emit, or have the potential to emit, at least 100,000 TPY of CO_2e will become subject to the PSD and Title V requirements. In addition, sources that emit or have the potential to emit at least 100,000 TPY CO_2e and that undertake a modification that increases net emissions of GHGs by at least 75,000 TPY CO_2e, will also be subject to PSD requirements.

However, in July 2011, EPA issued a 3-year deferral of the Tailoring Rule for facilities firing biomass or biologically-based (biogenic) fuels. This deferral specifically exempted facilities firing biogenic fuels from permitting under PSD regulations, if subject to NSR under PSD regulations solely due to GHG emissions. However, on July 12, 2013, the United States Court of Appeals for the District of Columbia, vacated the EPA rule that deferred the regulation of biogenic carbon dioxide under PSD and Title V Programs of the CAA. As the court cited only the administrative law arguments used by EPA to enact the deferral and not the agencies authority to promulgate the deferral, many states are confident that EPA will move forward using the proper procedures to reinstate the deferral. Accordingly, many states are continuing to process permit applications assuming the deferral will be reinstated. This appears to be consistent with the approach that FDEP is employing. Based on the assumption that the deferral will be reinstated, Green

Circle's proposed Madison facility, as a wood pelleting facility firing primarily biogenic fuels, is also exempt from PSD permitting under the Tailoring Rule.

4.2 Boiler MACT Applicability

The Boiler MACT (Title 40 CFR, Part 63, Subpart DDDDD for major sources and Title 40 CFR, Part 63, Subpart JJJJJJ for area sources) as indicated by the title, applies to industrial, commercial, institutional boilers, and process heaters located at major sources of HAPs. The Boiler MACT includes the following definitions:

> *Boiler* means an enclosed device using controlled flame combustion and having the primary purpose of recovering thermal energy in the form of steam or hot water. Controlled flame combustion refers to a steady-state, or near steady-state, process wherein fuel and/or oxidizer feed rates are controlled. A device combusting solid waste, as defined in § 241.3 of this chapter, is not a boiler unless the device is exempt from the definition of a solid waste incineration unit as provided in Section 129(g)(1) of the Clean Air Act. Waste heat boilers are excluded from this definition.
>
> *Process heater* means an enclosed device using controlled flame, and the unit's primary purpose is to transfer heat indirectly to a process material (liquid, gas, or solid) or to a heat transfer material (e.g., glycol or a mixture of glycol and water) for use in a process unit, instead of generating steam. Process heaters are devices in which the combustion gases do not come into direct contact with process materials. A device combusting solid waste, as defined in § 241.3 of this chapter, is not a process heater unless the device is exempt from the definition of a solid waste incineration unit as provided in Section 129(g)(1) of the Clean Air Act. Process heaters do not include units used for comfort heat or space heat, food preparation for on-site consumption, or autoclaves. Waste heat process heaters are excluded from this definition.

As shown in Table 3-10, estimated HAP emissions from Green Circle's proposed facility are less than 25 TPY for total HAPS and 10 TPY for individual HAPs. Accordingly, the proposed facility will be an area source with regard to Title V regulations and the Boiler MACT.

The only source at Green Circle's facility that might be considered a boiler is the combination of the dust burner and dryer. To be considered a boiler under the Boiler MACT, the primary purpose of Green Circle's dust burner would have to recover thermal energy in the form of hot water or steam. Since the heat from the dust burner will be used to directly heat the dryer (products of combustion from the dust burner come into direct contact with the wood chips being dried) and will not be used to recover thermal energy in the form of hot water or steam, the dust burner/dryer combination cannot be considered a boiler under the Boiler MACT.

For the dust burner/dryer combination to be considered a process heater under the Boiler MACT, its primary purpose would have to be to transfer heat indirectly to a liquid, gas, or solid. Since the heat from the dust burner will directly contact the wood chips in the dryer, it cannot be considered a process heater under the boiler MACT.

Subsequently, Green Circle's proposed facility is not subject to the Boiler MACT.

4.3 Reciprocating Internal Combustion Engine MACT Applicability

The proposed fire pump and emergency generators will be considered new units under the Reciprocating Internal Combustion Engine (RICE) MACT (Title 40 CFR Part 63, Subpart ZZZZ). As new units, the fire pump and emergency generators are required to comply with Title 40 CFR 60, Subparts IIII and JJJJ, respectively, which satisfy Title 40 CFR, Part 63, Subpart ZZZZ requirements. Green Circle will only select and install a fire pump and emergency generators that are EPA-Certified as MACT compliant.

4.4 Title V Applicability

As shown in Table 3-10, potential facility-wide emissions of criteria pollutants are in excess of the Title V applicability threshold of 100 TPY. Accordingly, Green Circle's proposed facility is subject to Title V regulations. However, because total and individual HAP emissions are less than the Title V applicability thresholds of 25 and 10 TPY, respectively, it is considered an area source of HAP with regard to Title V regulations.

5.0 APPLICATION FORMS AND SUPPORT DOCUMENTATION

The permit application forms and supporting application documentation are presented in the following attachments and appendices.

TABLES

Table 3-1. Summary of Criteria Pollutant Emission Rates for the RTO Stack

Pollutant	Hourly Emission Rate (lb/hr)		Annual Emission Rate[c] (TPY)
Particulate Matter	4.3	[a]	18.8
Sulfur Dioxide	5.5	[b]	24.1
Nitrogen Oxides	56.0	[a]	245
Carbon Monoxide	37.6	[a]	165
Volatile Organic Compounds	9.5	[a]	41.6

Notes:

[a] As provided by the Megtec, a potential vendor of the WESP and RTO, based on information provided to them from the manufacturer of the dryer and dust burner.

[b] An emission factor of 0.025 lb/MMBtu was used to estimate SO_2 emissions from wood combustion in the dust burner used to heat the dryer. The source of this emission factor was AP-42, Compilation of Air Pollutant Emission Factors, Section 1.6, Wood Residue Combustion in Boilers. The maximum firing rate of the dust burner is 28,700 lb/hr of wood. A heat content of wood of 16.73 MMBtu/ton was used to estimate the maximum heat input rate of 240 MMBtu/hr.

[c] Assumes 8,760 hr/yr of operation.

Table 3-2. Summary of Hazardous Air Pollutants Emission Rates for the RTO Stack

Pollutant	Hourly Emission Rate (lb/hr)	Annual Emission Rate[b] (TPY)
Formaldehyde	1.7 [a]	7.4
Acetaldhyde	1.2 [a]	5.3
Total Hazardous Air Pollutants	2.9	12.7

Notes:

[a] As provided by the Megtec, the vendor of the WESP and RTO, based on information provided to them from the manufacturer's of the dryer and dust burner (see Appendix A).

[b] Assumes 8,760 hr/yr of operation.

Table 3-3. Summary of Volatile Organic Compound Emission Rates for all Four Pellet Mill Cooler Stacks Combined

	Maximum Hourly Pellet Production (TPH)	Maximum Annual Pellet Production (TPY)	VOC Emission Factor (lb/ton pellets produced)		Maximum Hourly VOC Emission Rate (lb/hr)		Annual VOC Emission Rate (TPY)
Dried Softwood Chips	128	299,000	0.77	[a]	98.6		115.1
Hardwood/Softwood Shavings (not processed through the dryer)	128	145,000	0.77	[a]	98.6		55.8
Dried Hardwood Chips	128	299,000	0.23	[b]	29.6		34.5
Total	128[c]	743,000			98.6	[d]	205.5

Notes:

[a] Based on stack test results and current Air Construction Permit for Green Circle's facility located in Cottondale, Florida.

[b] Assumes the typical VOC content of hardwood is 30 percent that of softwood.

[c] Maximum hourly production from the Pelleting Lines is 128 TPH which could be entirely hardwood, softwood, or shavings for any given hour, although a mix will typically be used.

[d] Worst-case hourly emission rate.

Table 3-4. Summary of Particulate Matter Emission Rates for the Four Pellet Cooler Stacks

Pollutant	Hourly Emission Rate (lb/hr)	Annual Emission Rate[b] (TPY)
Particulate Matter	20.4 [a]	89

Notes:

[a] Based on a 5.1 lb/hr PM emission rate for each cooler stack as provided by LMM, the manufacturer of the cooler cyclone and 4 pellet coolers. See Appendix A, Abnormal Case (10% fines), maximum throughput of 32 TPH per cooler, and a 92 percent control efficiency.

[b] Assumes 8,760 hr/yr of operation.

Table 3-5. Summary of HAP Emission Rates for all Four Pellet Mill Cooler Stacks Combined

	Maximum Hourly Pellet Production[a] (TPH)	Maximum Annual Pellet Production[b] (TPY)	HAP Emission Factor[c] (lb/oven dried ton pellets produced)	Maximum Hourly HAP Emission Rate (lb/hr)	Annual HAP Emission Rate (TPY)
Methanol	121.6	705,850	0.003	0.36	1.06
Acetaldehyde	121.6	705,850	0.005	0.61	1.76
Acrolein	121.6	705,850	0.009	1.09	3.18
Formaldehyde	121.6	705,850	0.005	0.61	1.76
Propionaldehyde	121.6	705,850	0.002	0.24	0.71
Total				2.9	8.5

Notes:

[a] Based on a maximum hourly pellet production rate of 128 TPH at a moisture content of 5%, oven dried to a moisture content of 0%. 128 TPH x (1-0.05) = 121.6 TPH dry.

[b] Based on a maximum annual pellet production rate of 743,000 TPY at a moisture content of 5%, oven dried to a moisture content of 0%. 743,000 TPY x (1-0.05) = 705,850 TPY dry.

[c] As based on emission factors submitted to the Mississippi Department of Environmental Quality by Enviva in December 2013 for a high efficiency cooler cyclone located at their facility in Wiggins, Mississippi.

Table 3-6. Calculation of Criteria Pollutant Emission Rates for the Stationary Fire Pump

Regulated Pollutant	Emission Factor (g/hp-hr)	Ref.	Activity Factor (hp)	Hours of Operation (hours)	Hourly Emissions (lb/hr)	Annual Emissions (TPY)
Particulate Matter (PM_{10})	0.22	1	110	500	0.053	0.013
Particulate Matter ($PM_{2.5}$)	0.22	1	110	500	0.053	0.013
Sulfur Dioxide (SO_2)	--	2	--	500	0.027	0.0068
Nitrogen Oxides (NO_x)	3.00	1	110	500	0.73	0.18
Carbon Monoxide (CO)	0.87	3	110	500	0.21	0.053
Volatile Organic Compounds (VOC)	0.16	3	110	500	0.04	0.010

References:

1. Based on NSPS Subpart IIII, Table 4.

2. Based on a diesel fuel usage rate of 3.8 gal/hr, a diesel fuel density of 7.05 lb/gal, and a sulfur content of 0.05% by wt., SO_2 emissions are calculated to be 3.8 gal/hr x 7.05 lb/gal x 0.05 lb S/100 lb diesel fuel x 64 lb SO_2/32 lb S = 0.027 lb/hr

3. Based on emission data report provided by Clarke Fire Protection.

Table 3-7. Calculation of Criteria Pollutant Emission Rates for the Emergency Generators

Regulated Pollutant	Emission Factor (g/hp-hr)	Ref.	Activity Factor (hp)	Hours of Operation (hours)	Hourly Emissions (lb/hr)	Annual Emissions (TPY)
EMERGENCY GENERATOR NO. 1						
Particulate Matter (PM_{10})	1.15E-02	1	459	500	1.16E-02	2.91E-03
Particulate Matter ($PM_{2.5}$)	1.15E-02	1	459	500	1.16E-02	2.91E-03
Sulfur Dioxide (SO_2)	6.79E-04	1	459	500	6.87E-04	1.72E-04
Nitrogen Oxides (NO_x)	2.00	2	459	500	2.02	0.51
Carbon Monoxide (CO)	2.00	3	459	500	2.02	0.51
Volatile Organic Compounds (VOC)	0.70	3	459	500	0.71	0.18
EMERGENCY GENERATOR NO. 2						
Particulate Matter (PM_{10})	1.15E-02	1	459	500	1.16E-02	2.91E-03
Particulate Matter ($PM_{2.5}$)	1.15E-02	1	459	500	1.16E-02	2.91E-03
Sulfur Dioxide (SO_2)	6.79E-04	1	459	500	6.87E-04	1.72E-04
Nitrogen Oxides (NO_x)	2.00	2	459	500	2.02	0.51
Carbon Monoxide (CO)	2.00	3	459	500	2.02	0.51
Volatile Organic Compounds (VOC)	0.70	3	459	500	0.71	0.18

References:

1. Based on the following emission factors from AP-42, Chapter 3.2, Natural Gas Fired Reciprocating Engines (4-Stroke Lean Burn), July 2000:

   PM_{10} (filterable): 7.71E-05 lb/MMBtu = 8.90E-05 g/hp-hr

   PM_{10} (Condensible): 9.91E-03 lb/MMBtu = 1.14 E-02 g/hp-hr

   Total: 9.99E-03 lb/MMBtu = 1.15E-02 g/hp-hr

   $PM_{2.5}$ assumed = to PM_{10}

   SO_2: 5.88E-04 lb/MMBtu = 6.79E-04 g/hp-hr

   A factor of 1.155 was used to convert emission factors from lb/MMBtu to g/hp-hr.

   1 lb/MMBtu x 1 MMBtu/10^6 BTU x 2,547 Btu/hp-hr x 453.59 g/lb = 1.155 g/hp-hr

2. Based on NSPS Subpart JJJJJ.

3. Based on Certificate of Conformity Emission Standards, EPA Certificate No. DPWRB14.6NGP-004, Issued to Power Solutions International, 12/20/2013.

Table 3-8. Potential Greenhouse Gas Emissions

Pollutant	Emission Factor [a] (kg/MMBtu)	Emission Factor [a] (lb/MMBtu)	Activity Factor [a]	Hourly Emissions (lb/hr)	Annual Emissions (TPY) [b]
Wood Dust Burner (Biogenic)			26,300 lb/hr wood		
-- Carbon Dioxide (CO_2)	9.38E+01	2.07E+02	218.369 MMBtu/hr	45,157	197,789
-- Methane (CH_4)	7.20E-03	1.59E-02	218.369 MMBtu/hr	3.47	15
-- Nitrogen Oxide (N_2O)	3.60E-03	7.94E-03	218.369 MMBtu/hr	1.73	8
-- Greenhouse Gases (mass basis) [c]	9.38E+01	2.07E+02	218.369 MMBtu/hr	45,162	197,811
-- Greenhouse Gases (CO_2e basis) [c]	9.51E+01	2.10E+02	218.369 MMBtu/hr	45,760	200,430
- RTO Natural Gas (Non-Biogenic)			10,526 scf/hr		
-- Carbon Dioxide (CO_2)	5.31E+01	1.17E+02	10.8 MMBtu/hr	1,263	5,533
-- Methane (CH_4)	1.00E-03	2.20E-03	10.8 MMBtu/hr	0.02	0
-- Nitrogen Oxide (N_2O)	1.00E-04	2.20E-04	10.8 MMBtu/hr	0.00	0
-- Greenhouse Gases (mass basis) [c]	5.31E+01	1.17E+02	10.8 MMBtu/hr	1,263	5,534
-- Greenhouse Gases (CO_2e basis) [c]	5.31E+01	1.17E+02	10.8 MMBtu/hr	1,265	5,539
			Facility Total		
			Carbon Dioxide (CO_2)	46,421	203,322
			Methane (CH_4)	3.49	15
			Nitrogen Oxide (N_2O)	1.74	8
			Greenhouse Gases (mass basis) [c]	46,426	203,345
			Greenhouse Gases (CO_2e basis) [c]	47,025	205,970

Notes:

[a] Based on 40 CFR 98, Subpart C, Tables C-1 and C-2 for wood/wood residuals and natural gas. Standard heating values are 17.48 MMBtu/ton from dry wood/wood residuals and 1,028 MMBtu/10^6 ft^3 natural gas. To correct heat content for moisture content in wood, the standard formula is used: HHVw = ((100 - M)/100) * HHVd, where HHVw is the wet heating value, HHVd is the dry heating value (17.48 MMBtu/ton), and M is the moisture content (50%). The result is a value for HHVw of 16.61 MMBtu/ton.

[b] Based on 8,760 hr/yr operation.

[c] Greenhouse Gases (mass bassis) = sum of emission rates of CO_2, CH_4, and N_2O on a mass basis.
Greenhouse Gases (CO_2e basis) = sum of emission rates of CO_2, CH_4, and N_2O using global warming potentials (GWP).
GWP: CO_2 = 1, CH_4 = 25, and N_2O = 298. GHG = CO_2 + CH_4 + N_2O, CO_2e = CO_2 + 25*CH_4 + 298*N_2O.

Table 3-9. Calculation of Greenhouse Gas Emission Rates for the Generators and Fire Pump

Regulated Pollutant	Emission Factor (lb/MMBtu)	Ref.	Annual Hours of Operation (hr/yr)	Activity Factor (MMBtu/hr)	Hourly Emissions (lb/hr)	Annual Emissions (TPY)
EMERGENCY GENERATOR NO. 1						
Carbon Dioxide (CO_2)	116.73	1	500	3.22	375.88	93.97
Methane (CH_4)	2.20E-03	2	500	3.22	7.08E-03	1.77E-03
Nitrous Oxide (N_2O)	2.20E-04	2	500	3.22	7.08E-04	1.77E-04
Carbon Dioxide Equivalent (CO_2e)	116.85	3	500	3.22	376.27	94.07
EMERGENCY GENERATOR NO. 2						
Carbon Dioxide (CO_2)	116.73	1	500	3.22	375.88	93.97
Methane (CH_4)	2.20E-03	2	500	3.22	7.08E-03	1.77E-03
Nitrous Oxide (N_2O)	2.20E-04	2	500	3.22	7.08E-04	1.77E-04
Carbon Dioxide Equivalent (CO_2e)	116.85	3	500	3.22	376.27	94.07
STATIONARY FIRE PUMP						
Carbon Dioxide (CO_2)	162.71	4	500	0.532	86.56	21.64
Methane (CH_4)	6.60E-03	5	500	0.532	3.51E-03	8.78E-04
Nitrous Oxide (N_2O)	1.32E-03	5	500	0.532	7.02E-04	1.76E-04
Carbon Dioxide Equivalent (CO_2e)	163.27	6	500	0.532	86.86	21.71

Note:
Hourly Emissions (lb/hr) = Emission Factor (lb/MMBtu) * Activity Factor (MMBtu/hr)
Annual Emissions (TPY) = Hourly Emissions (lb/hr) * Annual Hours of Operation (hr/yr) * 1 ton/2,000 lb

References:

1. Based on emission factors from 40 CFR 98, Subpart C, Table C-1 for Natural Gas
2. Based on emission factors from 40 CFR 98, Subpart C, Table C-2 for Natural Gas
3. Based on 40 CFR 98 emission factors described in the following equation:
   CO_2e = 116.73 lb/MMBtu + (2.20E-03 lb/MMBtu * 25) + (2.30E-04 lb/MMBtu * 298)
4. Based on emission factors from 40 CFR 98, Subpart C, Table C-1 for Distillate Fuel Oil No. 2
5. Based on emission factors from 40 CFR 98, Subpart C, Table C-2 for Distillate Fuel Oil No. 2
6. Based on 40 CFR 98 emission factors described in the following equation:
   CO_2e = 162.71 lb/MMBtu + (6.60E-03 lb/MMBtu * 25) + (1.32E-03 lb/MMBtu * 298)

APPENDIX A

VENDOR INFORMATION FOR AIR POLLUTION CONTROL EQUIPMENT

Technical Note

Date : Jan. 10, 2013, rev. 0

HI-TECH CYCLONE –DUST EMISSION

From: Real Blackburn, P. Eng. MBA

SUBJECT: Data on dust emission – HI-TECH Cyclone, 3H43
PROJECT: **12-1318A / WOOD PELLET PROJECT /GREEN CIRCLE BIO**

Process, design data :

- **WOOD PELLET COOLING SYSTEM (EACH SYSTEM)**
- **PRODUCTION RATE, MEAN ; 30 T/h, MAXIMUM PRODUCTION RATE; 32 T/h**
- **NORMAL FINE RATE OF PELLET PROCESS; 3 %**
- **GENERATED DUST RATE (< 50 MICRONS), following experience & test (ROTAP test) ; 0. 0 3 %**
- **WEIGHED EFFICIENCY OF LMM CYCLONE –HI-TECH TYPE; 92 %**
- **MAXIMUM FINE RATE (ABNORMAL CASE) OF PELLET PROCESS; 10 %**

A) NORMAL CASE – PELLET PROCESS (3 % of fine):

- Normal fine rate;
  - Mean : **30T/h x 2000 #/T x 3 % of fine = 1800 # /h**
  - Maximum **:32 T/h x 2000 #/T x 3 % of fine = 1920 # /h**

- **GENERATED DUST RATE :**(< 50 microns); **(0.03 %);**
  - Mean: **30 T/h x 2000 # /T x 0.03 % of dust = 18 #/h**
  - Maximum **: 32T /h x 2000 #/ T x 0.03 % of dust = 19.2 #/h**

- **Emission rate (normal process)** of **3H43** cyclone (**WEIGHED EFFICIENCY** of 92%);
  - Mean : **18 #/h x (1-0.92) = 1.44 #/h**
  - Maximum **: 19.2 #/h x (1-0.92) =1.54 #/h**

B) ABNORMAL CASE – PELLET PROCESS (10 % of fine supposed)

- Fine rate (abnormal process);
  - Mean: **30 T /h x 2000 #/T x 10 % = 6000 # /h**
  - Maximum **: 32T /h x 2000 #/T x 10 % = 6400 # /h**

- **GENERATED DUST RATE :**(< 50 microns) **(abnormal 10 % fine)**
  - Mean: **30 T X 2000 # /T of dust x 0.03 % x (10% /3% ratio) = 60 #/h**
  - Maximum **: 32 T X 2000 # /T of dust x 0.03 % x (10% /3% ratio) = 64 #/h**

- Emission rate (abnormal process) of **3H43** cyclone (**WEIGHED EFFICIENCY** of 92);
  - Mean : **60 #/h x (1-0.92) = 4.8 #/h**
  - Maximum **: 64 #/h x (1-0.92) =5.1 #/h**

MEGTEC Systems Inc.
830 Prosper Road
P.O. Box 5030
De Pere, WI 54115-5030
800/558-5535

MEGTEC Systems, Inc. (MEGTEC), along with the TurboSonic division, appreciates the opportunity to provide air pollution control equipment to meet the performance specifications set forth by Green Circle Bio Energy, Inc. (Green Circle). This information specifically pertains to Green Circle's proposed wood pellet production facility, to be located in Lucedale, Mississippi. As MEGTEC understands this project, Green Circle is proposing to construct a wood pellet production facility comprised of a wood dust burner, rotary wood chip dryer, hammer mills, pellet mills, bulk load-out system, and wood dust fuel preparation system.

Heat for the dryer, which will be directly fired, will be provided by the wood dust burner. The heat input capacity of the wood dust burner will be approximately 220 million British thermal units per hour (MMBtu/hr). Exhaust gases from the dryer, notably containing particulate matter (PM), volatile organic compounds (VOC), nitrogen oxides (NO_x), carbon monoxide and the hazardous air pollutants formaldehyde and acetaldehyde; will be vented to a wet electrostatic precipitator (WESP) for PM removal and then to a regenerative thermal oxidizer (RTO).

The purpose of this correspondence is to provide Green Circle with anticipated air pollutant performance specifications for the RTO proposed for this project. MEGTEC is proposing a TurboSonic WESP Model No. SonicKleen WESP-681-12H195 and RTO model No. CS-1600-96 RTO for this project. These specifications are based on our experience with the operation of similar systems. MEGTEC has relied on the following information to prepare these performance specifications:

1. Green Circle will use a dust burner to provide direct heat to a rotary wood chip dryer manufactured by Diffenbacher, Buettner, or the equivalent.
2. The maximum heat input rate of the dust burner will not exceed 220 MMBtu/hr.
3. The wood chips will be dried to a moisture content of approximately 6.5%.
4. The inlet flow to the abatement system will be approximately 157,598 wscfm (wet standard cubic feet per minute) and 205,000 actual cubic feet per minute, at a temperature of 230F and moisture content of 0.365 lb water/lb dry air and a PM loading of 165 lbs/hr (0.194 gr/dscf).
5. The inlet concentrations to the abatement system will be as indicated in the table below or less.

Pollutant	Inlet Mass Loading Rate		Outlet Mass Emission Rate		Destruction Efficiency (%)
PM	165	lb/hr	4.33	lb/hr	97.4
NO_x	44	lb/hr	55.98[3]	lb/hr	NA
CO	140	lb/hr	37.6	lb/hr	73[4]
VOC	220	lb/hr C_3[1]	9.45	lb/hr C_3[1]	95.7
Formaldehyde	17	lb/hr	1.70	lb/hr	90
Acetaldehyde	2[2]	lb/hr	1.18	lb/hr	47.5

[1]Assumes emission limit is lb/hr C_3 (molecular weight = 44)
[2]Acetaldehyde RTO inlet concentration assumed. Dryer manufacturer estimates non-detect.
[3]NO_x emissions based on the 96% thermal efficiency option.
[4]CO removal efficiency of approximately 73% requires a burner chamber set point of 1,550 deg. F or higher.

If you have any questions concerning the information provided in this correspondence, please contact me at 908-797-4069 or at jcash@megtec.com.

Sincerely,

MEGTEC Systems, Inc.

James T. Cash
Senior Product Engineer

APPENDIX B

MANUFACTURER DATA SHEETS FOR GENERATORS AND FIRE PUMP

GENERATORS

BLUE STAR
Power Systems Inc.

Gaseous Product Line

208-600 Volt

NG300-01

60 Hz / 1800 RPM

300 kWe

Standby

Ratings

	240V	208V	240V	480V	600V
Phase	1	3	3	3	3
PF	1	0.8	0.8	0.8	0.8
Hz	60	60	60	60	60
Generator Model	572RSL4029	433CSL6216	433CSL6216	432CSL6212	432PSL6246
Connection	12 LEAD ZIG-ZAG	12 LEAD WYE	12 LEAD DELTA	12 LEAD WYE	4 LEAD WYE
kWe Nat (LP)	300 (155)	300 (155)	300 (155)	300 (155)	300 (155)
AMPS Nat (LP)	1250 (646)	1042 (538)	903 (467)	452 (233)	361 (187)
Temp Rise	130°C / 27°C	130°C / 27°C	130°C / 27°C	130°C / 27°C	130°C / 27°C

Standard Equipment

Engine

- Radiator Cooled Unit Mounted (50°C)
- Blower Fan & Fan Drive
- Starter & Alternator
- Oil Pump & Filter
- Oil Drain Extension w/Valve
- Governor - Electronic Isochronous
- 24V Battery System & Cables
- SAE Flywheel & Housing
- Air Cleaner (Dry Single Stage)
- Flexible Fuel Connector
- EPA Certified

Generator

- Brushless Single Bearing
- Automatic Voltage Regulator
- ± 1% Voltage Regulation
- 4 Pole, Rotating Field
- 130°C Standby Temperature Rise
- 100% of Rated Load - One Step
- 5% Maximum Harmonic Content
- NEMA MG 1, IEEE and ANSI standards compliance for temperature rise

Additional

- Microprocessor Based Digital Control
- Base - Structural Steel
- Main Line Circuit Breaker Mounted & Wired
- Catalyst/Silencer Mounted
- Battery Charger 24V 5 Amp
- Jacket Water Heater -20°F 4000W 240V w/Isolation Valves
- Vibration Isolation Mounts
- Radiator Duct Flange (OPU Only)
- Single Source Supplier
- 2YR / 2000HR Standby Warranty
- Standard Colors - White / Tan / Gray

Application Data

Engine			
Manufacturer:	NGE	Displacement - Cu. In. (lit):	892 (14.6)
Model:	14.6LTHO	Bore - in. (cm) x Stroke - in. (cm):	5.04 (12.8) x 5.59 (14.2)
Type:	4-Cycle	Compression Ratio:	10.5 : 1
Aspiration:	Turbo Charged, CAC	Rated RPM:	1800
Cylinder Arrangement:	8 Cyl Vee	Max HP Stby (kWm):	459 (300)

Exhaust System		
Gas Temp. (Stack): °F (°C)		1,382 (750)
Gas Volume at Stack Temp: CFM (m³/min)		2,521 (71.3)
Maximum Allowable Exhaust Restriction: in. H2O (kPa)		40.8 (10.2)
Cooling System		
Ambient Capacity of Radiator: °F (°C)		122 (50.0)
Maximum Allowable Static Pressure on Rad. Exhaust: in. H20 (kPa)		0.5 (0.12)
Water Pump Flow Rate: Gpm (lit/min)		180 (681)
Heat Rejection to Coolant: BTUM (kW)		18,456 (323)
Heat Rejection to CAC: BTUM (kW)		5,338 (93.4)
Heat Radiated to Ambient: BTUM (kW)		4,269 (74.7)
Air Requirements		
Aspirating: CFM (m³/min)		687 (19.4)
Air Flow Required for Rad. Cooled Unit: CFM (m³/min)		30,000 (849)
Air Flow Required for Heat Exchanger/Rem. Rad. CFM (m³/min)		Consult Factory For Remote Cooled Applications
Fuel Consumption	**Natrual Gas**	**LP**
At 100% of Power Rating: ft3/hr (m3/hr)	3,172 (89.8)	1,269 (35.9)
At 75% of Power Rating: ft3/hr (m3/hr)	2,538 (71.8)	1,015 (28.7)
At 50% of Power Rating: ft3/hr (m3/hr)	1,745 (49.4)	698 (19.8)
Fuel Inlet Size: NPT (Qty)	3" (2)	3" (2)
Fuel Pressure Required: in. H20 (kPa)	11 (2.7)	11 (2.7)
Fluids Capacity		
Total Oil System: gal (lit)		8.19 (31.0)
Engine Jacket Water Capacity: gal (lit)		9.5 (36.0)
System Coolant Capacity: gal (lit)		33.5 (127)

All calculations based on natural gas fuel.
Deration Factors: Temperature: Derate 1.5% Per 10°F Over 77°F Air Inlet Temperature | Altitude: Derate 2.5% Per 1000ft Over 1200ft

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
2013 MODEL YEAR
CERTIFICATE OF CONFORMITY
WITH THE CLEAN AIR ACT OF 1990

OFFICE OF TRANSPORTATION AND AIR QUALITY
ANN ARBOR, MICHIGAN 48105

Certificate Issued To: **Power Solutions International**
(U.S. Manufacturer or Importer)

Certificate Number: **DPWRB14.6NGP-004**

Effective Date: 12/20/2012

Expiration Date: 12/31/2013

Byron J. Bunker, Division Director
Compliance Division

Issue Date: 12/20/2012

Revision Date: N/A

Manufacturer: Power Solutions International
Engine Family: DPWRB14.6NGP
Certificate Number: DPWRB14.6NGP-004
Certification Type: Mobile and Stationary
Fuel : LPG/Propane
Natural Gas (CNG/LNG)
Emission Standards : VOC (g/Hp-hr) : 0.7
CO (g/Hp-hr) : 2
NOx (g/Hp-hr) : 1NMHC + NOx (g/kW-hr) : 2.7
HC + NOx (g/kW-hr) : 2.7
CO (g/kW-hr) : 4.4
Emergency Use Only : N

Pursuant to Section 213 of the Clean Air Act (42 U.S.C. section 7547) and 40 CFR Part 60, 40 CFR Part 1048, 1065, 1068, and 60 (stationary only and combined stationary and mobile) and subject to the terms and conditions prescribed in those provisions, this certificate of conformity is hereby issued with respect to the test engines which have been found to conform to applicable requirements and which represent the following nonroad engines, by engine family, more fully described in the documentation required by 40 CFR Part 60, 40 CFR Part 1048 and produced in the stated model year.

This certificate of conformity covers only those new nonroad spark-ignition engines which conform in all material respects to the design specifications that applied to those engines described in the documentation required by 40 CFR Part 60, 40 CFR Part 1048 and which are produced during the model year stated on this certificate of the said manufacturer, as defined in 40 CFR Part 60, 40 CFR Part 1048. This certificate of conformity does not cover nonroad engines imported prior to the effective date of the certificate.

It is a term of this certificate that the manufacturer shall consent to all inspections described in 40 CFR 1068.20 and authorized in a warrant or court order. Failure to comply with the requirements of such a warrant or court order may lead to revocation or suspension of this certificate for reasons specified in 40 CFR Part 60, 40 CFR Part 1048. It is also a term of this certificate that this certificate may be revoked or suspended or rendered void *ab initio* for other reasons specified in 40 CFR Part 60, 40 CFR Part 1048.

This certificate does not cover large nonroad engines sold, offered for sale, or introduced, or delivered for introduction, into commerce in the U.S. prior to the effective date of the certificate.

14.6LHO

	Rev:	A				
	Units		14.6L HO			
	Std	Metric	1500		1800	
General Engine Data						
Type	N/A		V-type 4 cycle			
Number of cylinders	N/A		8			
Aspiration	N/A		Turbo Charge Air Cooled			
Bore	in	mm	5.04	128	5.04	128
Stroke	in	mm	5.59	142	5.59	142
Displacement	in^3	L	892	14.6	892	14.6
Compression Ratio	N/A		10.5			
Mean Piston Speed	ft/min	m/s	1398	7.1	1677	8.52
Gross Standby Power Rating[1,2,3] Per ISO 3046 at the Flywheel						
NG	Hp	kW	339	253	459	342
LP	Hp	kW	229	171	253	189
MEP (@ rated Load on NG)	psi	bar	200.8	13.8	226.2	15.6
MEP (@ rated Load on LP)	psi	bar	135.7	9.4	125.0	8.6
Gross Prime Power Rating[1,2,3] Per ISO 3046 at the Flywheel						
NG	Hp	kW	N/A	N/A	N/A	N/A
LP	Hp	kW	N/A	N/A	N/A	N/A
MEP (@ rated Load on NG)	psi	bar	N/A	N/A	N/A	N/A
MEP (@ rated Load on LP)	psi	bar	N/A	N/A	N/A	N/A
RPM Range (Min-Max)	RPM		1500-1800			
Rotation Viewed from Flywheel	N/A		Counter Clockwise			
Firing Order	N/A		1-5-7-2-6-3-4-8-1			
Dry Weight						
Fan to Flywheel	lb	kg	3150	1429	3150	1429
Rad to Flywheel	lb	kg	4450	2018	4450	2018
Wet Weight						
Fan to Flywheel	lb	kg	3291	1475	3291	1475
Rad to Flywheel	lb	kg	4757	2155	4757	2155
CG						
Distance from FW housing	in	mm	18	449	18	449
Distance above center of crankshaft	in	mm	6	159	6	159
Engine Mounting						
Maximum Allowable Bending Moment at Rear of Block	lb ft	N m				
Moment of Inertia About Roll Axis	lb ft^2	kg m^2				
Flywheel housing	N/A		SAE No.1			
Flywheel	N/A		No. 14			
Number of Flywheel Teeth	N/A		160			
Exhaust System						
Type			Water Cooled Manifold			
Maximum allowable Back pressure	in HG	kPa	3.0	10.2	3.0	10.2
Standard Catalyst Back pressure	in HG	kPa	1.5	5.1	1.5	5.1
Exhaust Outlet Pipe Size						
Maximum Turbine Inlet Temperature	F	C	1382	750	1382	750
Exhaust Flow at Rated Power	lb/hr	kg/hr	2094	950	3172	1391
Exhaust Flow at Rated Power @1350F	cfm	m^3/min	1596	45	2521	71.3
Air Induction System						
Maximum allowable Intake Air Restriction with Air Cleaner						
Clean	inH2O	kPa	5	1.24	5	1.24
Dirty	inH2O	kPa	15	3.74	15	3.74
Combustion Air required	lb/hr	kg/hr	1075	896	2993	1227
Combustion Air required	cfm	m^3/min	592	14	667	19

14.6LHO

	Rev:	A				
	Units		14.6L HO			
	Std	Metric	1500		1800	
Electrical System						
Minimum Recommended Battery Capacity	AH		200			
Cold Cranking Current						
Engine only	CCA		1000			
Engine with Drive train	CCA		1000			
Maximum Allowable Resistance of Starting Circuit	Ohms		0.002			
Starting Motor Power	HP	kW	9.4	7.0	9.4	7.0
Battery Charging Alternator						
Voltage	Volts		24			
Current	Amps		45			
Coil primary Resistance	Ohms		0.59O ± 10%			
Spark Plug p/n			IFR7F-4D			
Spark plug gap	inches	mm	.015" (-0/+.008") .38mm (-0/+.2mm)			
Cooling System						
Coolant Capacity						
Engine only	gal	L	9.5	43.2	9.5	43.2
Engine with Radiator	gal	L	28.0	127.3	28.0	127.3
Engine Coolant Flow	gal/min	L/min	150.6	570.0	179.6	680.0
Water Pump Speed	RPM		2547		3056	
Heat rejected to Cooling water at rated Load	btu/min	kcal/sec	13094	55	18456	77.52
Maximum Intake Air Temperature (IAT)	F	C	155	68	155	68
ECU IAT Warning	F	C	140	60	140	60
ECU IAT Shutdown	F	C	155	69.1011	155	69.1011
Maximum Coolant Friction Head External to the engine	psi	bar	5.8	0.4	5.8	0.4
Maximum Air Restriction Across a Radiator	inH2O	mmH2O	0.5	12.8	0.5	12.8
Standard Thermostat Range						
Cracking Temperature	F	C	160	71	160	71
Full Open Temperature	F	C	185	85	185	85
Maximum Allowable Pressure Cap	psi	bar	14.7	1	14.7	1
Ambient Clearance Open Genset (water) (Air-to-Boil)						
Specified	F	C	142	61	142	61
Acutal	F	C			147	64
Ambient Clearance (Oil)						
Specified	F	C	142	61	142	61
Acutal	F	C			150	66
CAC Rise over Ambient (Charge)						
Specified	F	C	15	8	15	9
Acutal	F	C			13	8
Maximum Allowable Top Tank Temperature	F	C	230	110	230	110
ECU Warning	F	C	220	104	220	104
ECU Shutdown	F	C	230	110	230	110
Fan Power	HP	kW	13	9.6941	22	16.4054
Fan Diameter, including blades	in	mm	45	1143	45	1143
Fan Speed	RPM		1200		1440	
Cooling Fan Air Flow @ 1" Static H2O Pressure and 125F @ radiator	CFM	m^3/min	25,714	728	30,000	849
Charge Air Cooler						
Compressor Outlet Temperature	F	C	250	121	285	163
Compressor Flow Rate	lb/hr	kg/hr	2094	950	3172	1391
Heat Rejection per CAC	btu/min	kW	TBD		2660	47

14.6LHO

E N G I N E S

	Rev:	A				
	Units		14.6L HO			
	Std	Metric	1500		1800	
Lubrication System						
Oil Specification			SAE 15W-40 Low Ash Gas engine oil (.25-.5% by wt), API CD/CF or higher			
Oil Pressure						
Idle						
Min	Psi	Bar	13	0.9	13	0.9
Max	Psi	Bar	43.5	3	43.5	3
Rated Speed						
Min	Psi	Bar	43.5	3	43.5	3
Max	Psi	Bar	94.5	6.5	94.5	6.5
Maximum Allowable Oil Temperature	F	C	250	121	250	121
Engine Oil Capacity						
Min.	Qts	L	26.5	25	26.5	25
Max	Qts	L	32.75	31	32.75	31
Oil Filter Capacity	Qts	L	7.5	7.1	7.5	7.1
ECU Oil Pressure Warning[5]	psi		30			
ECU Oil Pressure Shut Down [5]	psi		25			
Fuel System						
Fuel Consumption[6]						
NG	Ft^3/hr	kg/hr	2485	56	3172	72
LP	Ft^3/hr	kg/hr	780	42	926	49
Maximum EPR Rated Pressure	psi	kPa	1	7	1	7
Maximum Running pressure to Electronic Pressure Regulator (EPR)	inH2O	kPa	11	3	11	3
Minimum Running pressure to EPR	inH2O	kPa	7	2	7	2
Minimum Gas Supply Pipe Size			2 x 1-1/4" NPT			
Maximum EPR Rated Pressure	psi	kPa	1.0	6.9	1.0	6.9
Maximum Running Pressure to EPR	inH2O	kPa	11.0	2.7	11.0	2.7
Minimum Running Pressure to EPR	inH2O	kPa	7.0	1.7	7.0	1.7
Minimum LPG Supply Pipe Size [4]			2 x 1-1/4" NPT			

The preceeding pipe sizes are only suggestions and piping sizes may vary with temperature, pressure, distance from supply and application of local codes. Gas must be available at adequate volume and pressure for engine at the EPR.

[1] Standby and overload ratings based on ISO3046.

[2] All ratings are gross flywheel horsepower corrected to 77°F at an altitude of 328feet with no cooling fan or alternator losses using heating value for NG of 1015 BTU/SCF.

[3] Production tolerances in engines and installed components can account for power variations of +/- 5%. Altitude, temperature and excessive exhaust and intake restrictions should be applied to power calculations.

[4] The preceeding pipe sizes are only suggestions and piping sizes may vary with temperature, pressure, distance from supply and application of local codes. Gas must be available at adequate volume and pressure for engine at the EPR.

[5] >1400RPM

[6] See NGE Technical Spec. 56300002 - Fuel Specification

FIRE PUMP

JU4H-UF58
Stationary Fire Pump Engine Driver
EMISSION DATA
EPA 40 CFR Part 60

4 *Cylinders*
Four *Cycle*
Lean *Burn*
Turbocharged

500 PPM SULFUR #2 DIESEL FUEL								
RPM	BHP [3]	FUEL GAL/HR (L/HR)	GRAMS / HP- HR				EXHAUST	
			NMHC	NOx	CO	PM [4]	°F (°C)	CFM (m^3/min)
1470	79	3.2 (12.1)	0.19	5.88	1.88	0.46	1135 (613)	431 (12)
1760	110	3.8 (14.4)	0.16	6.07	0.87	0.30	1108 (598)	554 (16)

Notes:

1) *4045TF220 Base Engine Model manufactured by John Deere Corporation. For John Deere Emissions Conformance to EPA 40 CFR Part 60 see Page 2 of 2.*
2) *The Emission Warranty for this engine is provided directly to the owner by John Deere Corporation. A copy of the John Deere Emission Warranty can be found in the Clarke Operation and Maintenance Manual*
3) *Engines are rated at standard conditions of 29.61in. (7521 mm) Hg barometer and 77°F (25° C) inlet air temperature. (SAE J1349)*
4) *PM is a measure of total particulate matter, including PM_{10}.*

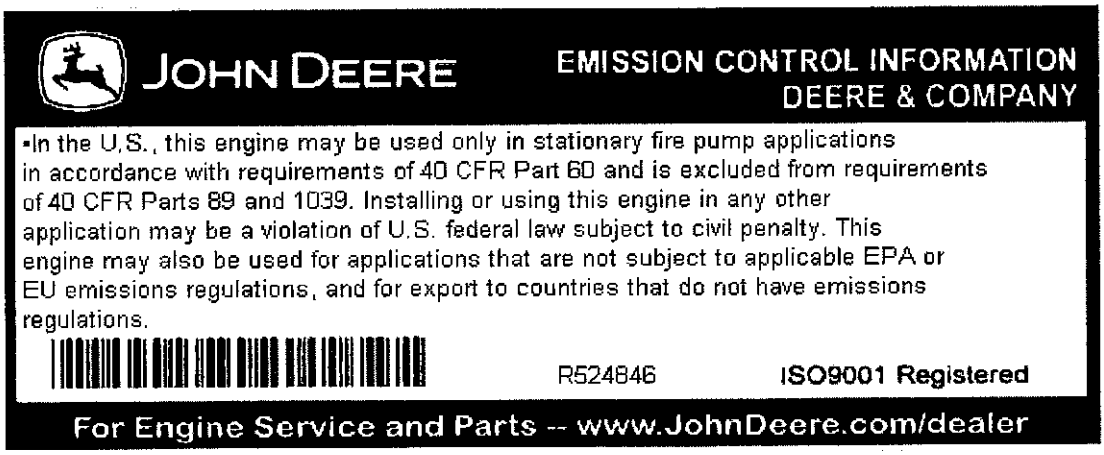
CLARKE
FIRE PROTECTION PRODUCTS
3133 EAST KEMPER ROAD
CINCINNATI, OH 45241

John Deere Power Systems
3801 W. Ridgeway Ave., PO Box 5100
Waterloo, Iowa USA 50704-5100

31 October 2007

Subject: **Fire Pump Ratings – Conformance to EPA 40 CFR Part 60 (NSPS requirements)**

All John Deere stationary fire pump engines conform to the requirements of 40 CFR Part 60. All such engines include an emission label, stating the engine conforms to the requirements of 40 CFR Part 60. An example of the emission label is show below:



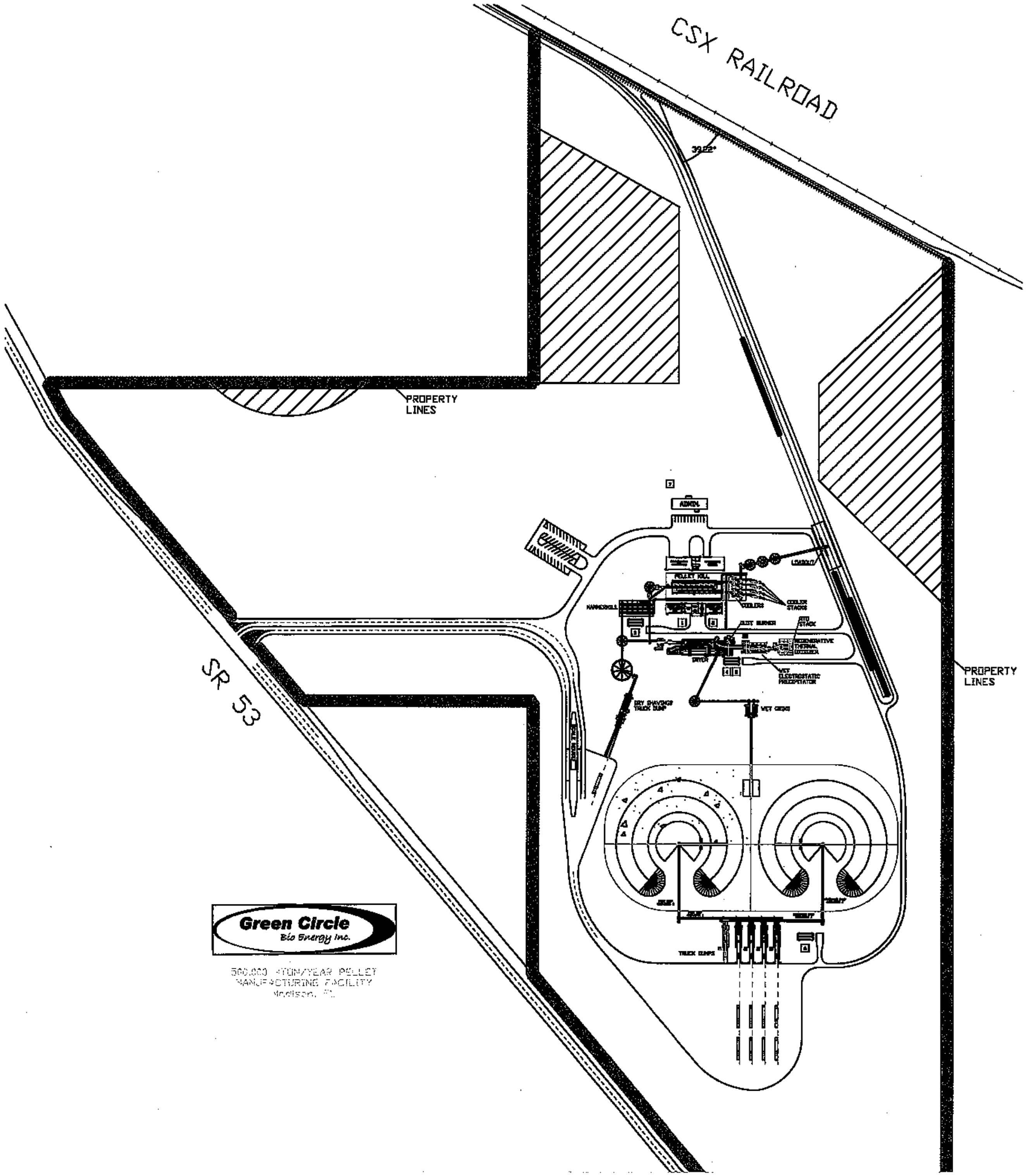
This label applies to all of the following engine models, sold to Clarke Fire Protection, for use in stationary fire pump applications:

John Deere Engine Model
4045DF120
4045DF159
4045TF252
4045TF254
4045TF220
6068TF252
6068TF254
6068HF252
6068HF254
6068HF120
6068TF220
6081AF001
6081HF001
6125AF001
6125HF070

All engines conforming to 40 CFR Part 60 (identified by emission label, as shown above) are covered under the emissions warranty of 40 CFR Part 89.

Sincerely,

Kyle J. Tingle
Regional Sales Manager, JDPS


CSX RAILROAD
39.02°
PROPERTY LINES
PROPERTY LINES
SR 53
ADMIN.
PELLET MILL
HAMMERMILL
COOLERS
COOLER STACKS
LOADOUT
DUST BURNER
RTO STACK
REGENERATIVE THERMAL OXIDIZER
DRYER
WET ELECTROSTATIC PRECIPITATOR
DRY SHAVINGS TRUCK DUMP
TRUCK DUMPS
Green Circle
Bio Energy Inc.
500,000 ?TON/YEAR PELLET
MANUFACTURING FACILITY
Madison, FL