TECHNICAL EVALUATION
&
PRELIMINARY DETERMINATION

APPLICANT

Green Circle Bio Energy Inc.
2500 Green Circle Parkway
Cottondale, Florida 32431

Cottondale Wood Pellet Plant
Facility ID No. 0630058

PROJECT

Project No. 0630058-010-AC
Application for Title V Source Air Construction Permit
Pellet Production Increase

COUNTY

Jackson, Florida

PERMITTING AUTHORITY

Florida Department of Environmental Protection
Air Resource Section
Northwest District Office
160 W. Government Street, Suite 308
Pensacola, Florida 32502-5740

March 7, 2012

1. GENERAL PROJECT INFORMATION

Air Pollution Regulations

Projects at stationary sources with the potential to emit air pollution are subject to the applicable environmental laws specified in Section 403 of the Florida Statutes (F.S.). The statutes authorize the Department of Environmental Protection (Department) to establish regulations regarding air quality as part of the Florida Administrative Code (F.A.C.), which includes the following applicable chapters: 62-4 (Permits); 62-204 (Air Pollution Control - General Provisions); 62-210 (Stationary Sources - General Requirements); 62-212 (Stationary Sources - Preconstruction Review); 62-213 (Operation Permits for Major Sources of Air Pollution); 62-296 (Stationary Sources - Emission Standards); and 62-297 (Stationary Sources - Emissions Monitoring). Specifically, air construction permits are required pursuant to Rules 62-4, 62-210 and 62-212, F.A.C.

In addition, the U. S. Environmental Protection Agency (EPA) establishes air quality regulations in Title 40 of the Code of Federal Regulations (CFR). Part 60 specifies New Source Performance Standards (NSPS) for numerous industrial categories. Part 61 specifies National Emission Standards for Hazardous Air Pollutants (NESHAP) based on specific pollutants. Part 63 specifies NESHAP based on the Maximum Achievable Control Technology (MACT) for numerous industrial categories. The Department adopts these federal regulations on a quarterly basis in Rule 62-204.800, F.A.C.

Glossary of Common Terms

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

Facility Description and Location

Green Circle Bio Energy Inc. is an existing facility which processes wood chips into wood fuel pellets. It is categorized under Standard Industrial Classification Code No. 2499, Wood Products, Not Elsewhere Classified. The Cottondale Wood Pellet Facility is located in Jackson County at 2500 Green Circle Parkway in Cottondale, Florida. The UTM coordinates of the existing facility are Zone 16, 653.89 km East, and 3401.68 km North. This site is in an area that is in attainment (or designated as unclassifiable) for all air pollutants subject to state and federal Ambient Air Quality Standards (AAQS).

Facility Regulatory Categories

- The facility is not a major source of hazardous air pollutants (HAP).
- The facility has no units subject to the acid rain provisions of the Clean Air Act.
- The facility is not a Title V major source of air pollution in accordance with Chapter 213, F.A.C.
- The facility is not a major stationary source in accordance with Rule 62-212.400, F.A.C. for the Prevention of Significant Deterioration (PSD) of Air Quality.

Project Description

This project is to increase wood pellet production from 554,304 tons per year to 610,000 tons per year; remove aspiration systems on the hammer mill and pelletizing infeed conveyors for Pelletizing Lines 1, 2 and 3; redefine several compliance demonstration measures; and, remove the never-constructed Green Wood Chip Grinding System (EU 009) from the permit.

Processing Schedule

December 19, 2011 Received the application for a minor source air pollution construction permit; application complete.

2. PSD APPLICABILITY

General PSD Applicability

For areas currently in attainment with the state and federal AAQS or areas otherwise designated as unclassifiable, the Department regulates major stationary sources of air pollution in accordance with Florida's PSD preconstruction review program as defined in Rule 62-212.400, F.A.C. Under preconstruction review, the Department first must determine if a project is subject to the PSD requirements ("PSD applicability review") and, if so, must conduct a PSD preconstruction review. A PSD applicability review is required for projects at new and existing major stationary sources. In addition, proposed projects at existing minor sources are subject to a PSD applicability review to determine whether potential emissions *from the proposed project itself* will exceed the PSD major stationary source thresholds. A facility is considered a major stationary source with respect to PSD if it emits or has the potential to emit:

- 250 tons per year or more of any regulated air pollutant; or
- 100 tons per year or more of any regulated air pollutant and the facility belongs to one of the following 28 PSD-major facility categories: fossil fuel-fired steam electric plants of more than 250 million British thermal units per hour heat input, coal cleaning plants (with thermal dryers), Kraft pulp mills, portland cement plants, primary zinc smelters, iron and steel mill plants, primary aluminum ore reduction plants, primary copper smelters, municipal incinerators capable of charging more than 250 tons of refuse per day, hydrofluoric, sulfuric, and nitric acid plants, petroleum refineries, lime plants, phosphate rock processing plants, coke oven batteries, sulfur recovery plants, carbon black plants (furnace process), primary lead smelters, fuel conversion plants, sintering plants, secondary metal production plants, chemical process plants, fossil fuel boilers (or combinations thereof) totaling more than 250 million British thermal units per hour heat input, petroleum storage and transfer units with a total storage capacity exceeding 300,000 barrels, taconite ore processing plants, glass fiber processing plants and charcoal production plants.

Once it is determined that a project is subject to PSD preconstruction review, the project emissions are compared to the "significant emission rates" defined in Rule 62-210.200, F.A.C. for the following pollutants: carbon monoxide (CO); nitrogen oxides (NO_X); sulfur dioxide (SO_2); particulate matter (PM); particulate matter with a mean particle diameter of 10 microns or less (PM_{10}); volatile organic compounds (VOC); lead (Pb); fluorides (Fl); sulfuric acid mist (SAM); hydrogen sulfide (H_2S); total reduced sulfur (TRS), including H_2S; reduced sulfur compounds, including H_2S; municipal waste combustor organics measured as total tetra- through octa-chlorinated dibenzo-p-dioxins and dibenzofurans; municipal waste combustor metals measured as particulate matter; municipal waste combustor acid gases measured as SO_2 and hydrogen chloride (HCl); municipal solid waste landfills emissions measured as non-methane organic compounds (NMOC); and mercury (Hg). In addition, significant emissions rate also means any emissions rate or any net emissions increase associated with a major stationary source or major modification which would construct within 10 kilometers of a Class I area and have an impact on such area equal to or greater than 1 $\mu g/m^3$, 24-hour average.

If the potential emission exceeds the defined significant emissions rate of a PSD pollutant, the project is considered "significant" for the pollutant and the applicant must employ the Best Available Control Technology (BACT) to minimize the emissions and evaluate the air quality impacts. Although a facility or project may be *major* with respect to PSD for only one regulated pollutant, it may be required to install BACT controls for several "significant" regulated pollutants.

<u>PSD Applicability for Project</u>

As provided in the application, the following table summarizes potential emissions and PSD applicability for the project.

Table A. Potential Emissions (Tons/Year) and PSD Applicability

Pollutant (TPY)	Pre-Project Potential Emissions	Contempo-raneous Emissions*	Post Project Potential Emissions	Total Emissions Change	Significant Emissions Rate	Subject to PSD
CO	22.20	0.00	22.20	0.00	100	NO
NO_X	245.30	0.00	245.30	0.00	40	NO
PM/PM_{10}	229.14	3.60	228.71	(0.43)	25/15	NO
SO_2	0.34	0.00	0.34	0.00	40	NO
VOC	226.30	0.00	243.10	17.80	40	NO

* contemporaneous emissions included in pre-project and post-project emissions numbers

This facility is not considered a major stationary source with respect to PSD, because existing potential emissions do not exceed the 250 tons per year threshold and because the facility is not a listed major stationary source in the "List of 28," so the 100 tons per year threshold does not apply. The project itself is not subject to PSD review because the potential emissions increase alone from the proposed project is less than PSD major stationary source thresholds for this type of facility. Based on these facts, it is determined that the project is not subject to PSD preconstruction review.

3. APPLICATION REVIEW

Application Fee

Title V Facility - no application fee

Discussion of Emissions

PM Contemporaneous Emissions Explained: Permit 0630058-008-AC installed one new pelletizer mill each on Pelletizing Line Nos. 1 and 3, removed the operating hours limit established for the horizontal hammer mill in permit 0630058-004-AC, and made the horizontal hammer mill a part of Pelletizing Line 3 (EU 006). The new pelletizer mills increased the maximum production rate for Pelletizing Line Nos. 1 and 3 from 23.7 TPH to 29.6 TPH. Combined Particulate Matter (PM) emissions increased by 3.6 TPY (from 176.4 to 180 TPY total for all three Pelletizing Lines). This allowed for a maximum production rate from each Pelletizing Line of 29.6 TPH (combined 88.8 TPH for all three Pelletizing Lines), but did not change facility-wide production of 554,304 TPY of wood pellets. PM emissions from continuous operation of the horizontal hammermill (increased by 1.82 TPY) are included in the combined Pelletizer Line emissions.

Pre-project emissions by emission unit - PROCESS AREA	**ESTIMATED POLLUTANTS (Tons per Year)**				
	PM/PM_{10}	**NO_X**	**CO**	**VOC**	**SO_2**
Wood Fiber Receiving & Storage Area	8.20	NA	NA	NA	NA
Dryer Line 1	19.90	122.65	11.10	24.10	0.17
Dryer Line 2	19.90	122.65	11.10	24.10	0.17
Pelletizing Line 1	60.00	NA	NA	59.033	NA
Pelletizing Line 2	60.00	NA	NA	59.033	NA
Pelletizing Line 3	60.00	NA	NA	59.033	NA
Bulk Load-out Area	0.71	NA	NA	NA	NA
Green Chip Grinder (removed in this project)	0.43	NA	NA	NA	NA
Diesel Fuel Storage Tank	NA	NA	NA	1.00	NA
TOTAL	229.14	245.30	22.20	226.30	0.34

SO_2 potential emission estimates are based on wood firing.
Wood Fiber Receiving & Storage Area PM estimated emissions do not include 168.3 T/yr fugitive emissions

This project increases wood pellet production from 554,304 to 610,000 TPY. Existing production equipment can achieve this rate without new construction. Potential emissions of VOC increase by 17.8 TPY in the Pelletizing Lines. A Dry Wood Truck Dump enables the facility to receive dry wood chips and shavings by truck, storing these under cover until conveyed directly to the grinding storage bin, bypassing the Dryer Lines. This provides wood pellet production flexibility and allows Dryer Line production to remain unchanged so potential emissions of PM/PM_{10}, NO_X, CO, VOC, and SO_2 from the Dryer Lines do not change.

Post-project emissions by emission unit - PROCESS AREA	**ESTIMATED POLLUTANTS (Tons per Year)**				
	PM/PM_{10}	**NO_X**	**CO**	**VOC**	**SO_2**
Wood Fiber Receiving & Storage Area	8.20	NA	NA	NA	NA
Dryer Line 1	19.90	122.65	11.10	24.10	0.17
Dryer Line 2	19.90	122.65	11.10	24.10	0.17
Pelletizing Line 1	60.00	NA	NA	64.97	NA
Pelletizing Line 2	60.00	NA	NA	64.97	NA
Pelletizing Line 3	60.00	NA	NA	64.97	NA
Bulk Load-out Area	0.71	NA	NA	NA	NA
Diesel Fuel Storage Tank	NA	NA	NA	1.00	NA
TOTAL	228.71	245.30	22.20	244.11	0.34

Wood Fiber Receiving & Storage Area PM estimated emissions do not include 168.3 T/yr fugitive emissions

State Requirements

Rules 62-4.070(3), 62-210.200(PTE) and 62-297.310(2), F.A.C.

Federal NSPS Provisions

Not Applicable

Federal NESHAP Provisions

Not Applicable

Other Draft Permit Requirements

For Dryer Lines 1 and 2, the current compliance determinations are for a maximum production rate and a maximum heat input rate. The monitored parameters are wood chip feed screw sets revolutions per hour and combustor hydraulic ram feeder strokes per hour, respectively. This permit removes the maximum production rate requirements and retains the maximum heat input rate requirements.

Individual Pelletizing Line pellet production rates cannot be accurately measured long-term. This permit authorizes the Permittee to measure an overall (all three Pelletizing Lines) pellet production rate at Bulk Load-Out in tons of pellets produced on a 24-hour average, calculated daily.

A table in the Compliance Monitoring Plan (CMP), which includes the CAM Plan, will be revised.

4. PRELIMINARY DETERMINATION

The Department makes a preliminary determination that the proposed project will comply with all applicable state and federal air pollution regulations as conditioned by the draft permit. This determination is based on a technical review of the complete application, reasonable assurances provided by the applicant, and the conditions specified in the draft permit. Rick Prusa is the project engineer responsible for reviewing the application and drafting the permit. Additional details of this analysis may be obtained by contacting the project engineer at 850/595-0634 or rick.prusa@dep.state.fl.us.