
STATEMENT OF BASIS

Title V Air Operation Permit Revision Permit No. 0630058-017-AV

APPLICANT

The applicant for this project is Green Circle Bio Energy, Inc. The applicant's responsible official and mailing address are: Mr. Greg Martin, Vice President, Green Circle Bio Energy, Inc., Cottondale Wood Pellet Plant, 2500 Green Circle Parkway, Cottondale, Florida 32431.

FACILITY DESCRIPTION

The applicant operates the Cottondale Wood Pellet Plant, which is located at 2500 Green Circle Parkway in Cottondale, Jackson County, Florida.

This facility is a wood fuel pellet manufacturing plant, comprised of a wood fiber receiving and storage area, two dryer lines, three pelleting lines and a pellet load-out area. Wood fiber (pulpwood logs, dry wood chips or sawmill residuals) is unloaded and stored. Logs are debarked and stored; bark is hammer-milled, screened and stored. All stored piles are conveyed for raw material and/or fuel. A Dry Wood Truck Dump allows "as-delivered" dry wood chips to be fed directly into existing Grinding Storage Bin, bypassing the Dryer Lines and allowing for production flexibility. The ground wood is compressed into wood pellets. The finished pellets are loaded into railcars for shipment to customers.

Each of two Dryer Lines consists of a 125 MMBtu/hr bark fuel combustor that exhausts into a rotary drum dryer, which dries wood chips. The dryer exhaust flows through a high efficiency cyclone and on to the dryer's induced draft fan, a wet electrostatic precipitator and a regenerative thermal oxidizer, then out a stack to the atmosphere. Bypass stacks exhaust from the wood chip dryer and bark fuel combustor, for each Dryer Line during startups (for temperature control) and malfunctions, but not more than a total of 50 hours per year. Each combustor can operate up to 1,500 hours per year in malfunction "idle mode" (defined as operation at up to a maximum heat input rate of 5 MMBtu/hr). A fraction (11 MMBtu per hour) of the gases from the secondary combustion chamber is drawn through a 6,900 lbs/hr steam generator. Steam is used in the Pelleting process to soften the wood fiber prior to compression into pellets.

Pelleting Lines 1, 2 and 3 have a combined maximum process rate of 121 tons per hour and 827,000 tons of pellets per year. Pelleting Lines 1 and 3 have eight vertical hammer mills each and Pelleting Line 2 has ten vertical hammer mills. The hammer mills accurately grind the dry wood chips to under 4 mm (0.16") in size. The ground wood fiber is conveyed to three sealed storage and metering bins each with a capacity of approximately 40 tons. A ventilation system in the grinding and pellet storage bins helps minimize condensation. Steam is carefully applied to soften the wood fiber as it is drawn into a pellet mill. The wood fiber is compressed by the pellet mill rotating press rolls, exiting through the sizing die. The resultant heat of friction activates the wood lignin as the wood is compressed, effectively bonding the wood fiber into a durable pellet. PM emissions are controlled by two cyclones and fabric filters for each Pelleting Line. Pellets exiting the Pellet Mills are conveyed via sealed chain conveyor to a counter flow pellet cooler. Each Pelleting Line has a Pellet Cooler, twin cyclones, a single ID fan and an exhaust stack. Each Pelleting Line has five pellet mills with each line authorized to get a new pellet mill in permit 0630058-011-AC. A new pellet mill has been installed on Pellet Mill Line No. 3.

Ten new horizontal hammer mills were authorized by Permit 0630058-011-AC but this authorization was revoked in Permit 0630058-014-AC. All hammer mill and pellet mill aspiration systems were routed (Permit 0630058-014-AC) by a furnaces VOC control air handling system to Dryer Line Furnaces 1 and 2. The authorization for the removal of the existing pelleting lines' aspiration dust collectors and venting their exhaust stream to the cooler exhaust stream for each pelleting line was revoked with Permit 0630058-014-AC. The pellet mill coolers continue to vent to the twin cyclone systems and then to the atmosphere. After the construction of the VOC control air handling system, these emissions units were no longer subject to the Compliance Assurance Monitoring (CAM) requirements contained in the Compliance Monitoring Plan (CMP)

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because the Dryer Line Furnaces and their wet ESPs (electrostatic precipitator) and RTOs (regenerative thermal oxidizer) are used as emission control devices for the hammer mills and pellet mills.

Pellets are transported to two storage bins, each with a capacity of 94 tons and located above the rail car loading area. The bins provide up to about two hours of pellet storage and uniformly meter out the pellets for rail car loading. All conveyors are sealed with dust aspiration air directed to a Buhler dust filter system.

The last Title V revision 0630058-013-AV incorporated a 110 hp fire pump engine. At the time of installation in 2008, the fire pump engine was included in the list of insignificant sources as there were no applicable unit-specific requirements. However, this fire pump became subject to regulations applicable to reciprocating internal combustion engines (RICE), specifically 40 CFR 60 Subpart IIII – Standards of Performance for Stationary Compression Ignition Internal Combustion Engines and 40 CFR 63, Subpart ZZZZ. By meeting the applicable requirements of 40 CFR 60 Subpart IIII, the engine also meets applicable requirements in 40 CFR 63, NESHAP Subparts A and ZZZZ.

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

The Department determined that Green Circle became a major stationary source for HAPs (hazardous air pollutants) with the expansion and increase in production authorized by construction permit 0630058-011-AC. After the completion of project 0630058-011-AC, Green Circle also became categorized as a major stationary source for VOC, NO_x and PM with respect to PSD (prevention of significant deterioration). Emissions limits from previous permits to keep the facility from being classified as a major stationary source for PSD were removed because the facility became a major stationary source after construction was completed.

PROCESS AREA	ESTIMATED POLLUTANTS (Tons per Year)				
	PM/PM ₁₀	NO _x	CO	VOC	SO ₂
Wood Fiber Receiving & Storage Area	101.5/20.3 ²	NA	NA	NA	NA
Dryer Lines 1 & 2	39.8 ³	245.3	22.2	136.4	0.34 ¹
Pelletizing Lines 1, 2, & 3	162.6	NA	NA	360	NA
Bulk Load-out Area	0.71	NA	NA	NA	NA
TOTAL	203.1	245.3	22.2	496.4	0.34

¹ SO₂ potential emission estimates are based on wood firing.

² Wood Fiber fugitives, 20.3 TPY PM₁₀ and 101.5 TPY PM, are not included in Facility totals.

³ PM based on emission rates from the manufacturer (more conservative) and not on the 0.10 lb PM/MMBtu NSPS Db limit.

PROJECT DESCRIPTION

The purpose of this permitting project is to revise the existing Title V permit for the above referenced facility by incorporating construction permits 0630058-011-AC and 0630058-014-AC. This Title V permit revision is being concurrently processed with construction permit 0630058-016-AC, which is a modification to construction permit 0630058-014-AC and 0630058-011-AC, and revokes the authorization to construct a third dryer; updates specific conditions of 40 CFR 60 subpart Db to the existing dryer lines (EU002 and EU003); and revises the frequency of compliance testing.

PROCESSING SCHEDULE AND RELATED DOCUMENTS

Initial Title V Air Operation Permit issued March 16, 2011

Title V Air Operation Permit Revision issued November 13, 2012

Title V Air Operation Permit Revision issued July 8, 2013

Application for a Title V Air Operation Permit Revision received July 2, 2014

Additional Information Request dated July 21, 2014

Additional Information Response received August 12, 2014

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Notice of Intent to Issue Air Permit issued November 7, 2014.

Public Notice Published [Month, Day, Year]

PRIMARY REGULATORY REQUIREMENTS

Title III: The facility is identified as a major source of hazardous air pollutants (HAP).

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

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

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

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

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

Siting: No emissions units are certified pursuant to the power plant Siting provisions of Chapter 62-17, F.A.C.

CAM: Compliance Assurance Monitoring (CAM) applies to Emissions Units 002 and 003 (Dryer Lines 1 and 2) for PM, VOC, and NO_x, with emissions controlled by a fan induced drafted cyclone, a wet electrostatic precipitator and a regenerative thermal oxidizer for each Dryer Line. Emissions Units 004, 005, and 006 (Pelleting Lines 1, 2, and 3) are no longer subject to CAM because emissions from the hammer mill and pellet mill aspiration systems have been exhausted to the Dryer Lines Furnaces. The pellet cooler stacks have no VOC controls.

PROJECT REVIEW

This revision to Permit 0630058-005-AV incorporates elements of construction permits 0630058-011-AC, 0630058-014-AC, 0630058-015-AC and 0630058-016-AC. This revision is being concurrently processed with construction permit 0630058-016-AC.

Other changes that were made as part of this revision include reformatting, replacement of separate outdated appendices with new combined updated appendices, and streamlining of EU sections by moving common conditions to the new appendices.

The facility was found during the processing of 0630058-017-AV to not have come into compliance with the requirements of 40 CFR 60 Db imposed by permit 0630058-011-AC. The facility has acknowledged they are subject to that subpart and have committed to come into compliance by using predictive modeling for their wet ESPs. This revision includes a compliance plan addressing this issue.

CONCLUSION

This project revises Title V air operation permit No. 0630058-005-AV, which was issued on May 16, 2011. This Title V air operation permit revision is issued under the provisions of Chapter 403, Florida Statutes (F.S.), and Chapters 62-4, 62-210 and 62-213, F.A.C.