Florida Department of Environmental Protection

Northeast District
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PERMITTEE

Rayonier Performance Fibers, LLC
PO Box 2002
Fernandina Beach, FL 32035

Authorized Representative:
Mr. C. A. McDonald, General Manager

Air Permit No. 0890004-036-AC
Permit Expires: December 31, 2014
Issue Date: DRAFT
Fernandina Beach Sulfite Pulp Mill
ARMS ID No. 0890004
Sulfur Dioxide Project

PROJECT AND LOCATION

The permittee is authorized to construct a new, taller stack for the Vent Gas Scrubber System (EU No. 005) and to extend the stack at the Power Boiler (EU No. 022), if needed; and lower the allowable SO_2 emission limits for the Recovery Boiler (EU No. 006), Power Boiler (EU No. 022), and the Vent Gas Scrubber System (EU No. 005). Implementing these voluntary changes at the Fernandina Beach mill will lower the SO_2 impact from the Rayonier Performance Fibers, LLC facility on the ambient air of Nassau County. The new Sulfur Dioxide Project is not intended or expected to result in an increase in mill production capacity. The proposed work will be conducted at the Fernandina Beach Pulp Mill, which is a Sulfite Pulp Mill (Standard Industrial Classification No. 2611). The existing facility is located in Nassau County at the foot of Gum Street in Fernandina Beach, Florida. The UTM coordinates are Zone 14: 454.7 km East; 3392.2 km North.

STATEMENT OF BASIS

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

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Executed in Jacksonville, Florida

DRAFT

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Khalid A. Al-Nahdy, P.E.
District Air Program Administrator

Clerk Stamp

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

DRAFT

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(Clerk) (Date)

SUBSECTION A. FACILITY DESCRIPTION

The mill uses a sulfite (ammonia-base) process to produce various grades of chemical cellulose from pine wood-chips. There are only two other pulp mills located in the United States that produce products similar to the Fernandina Mill and neither of these mills use the same type of manufacturing process. This plant produces approximately 10 different grades of cellulose each with different specifications and customers. The amount of each grade of product that is produced is based on market demand. The cellulose produced at this mill goes into such products as plastics, photographic film, LCD screens, paints, cigarette filters, pharmaceuticals, food products, cosmetics and textiles. Customers of these products have stringent quality requirements. This mill produces approximately 175,000 tons of performance fibers annually.

The existing facility consists of the following emissions units.

E.U. ID No.	Brief Description
005	Vent Gas Scrubber and Direct Contact Condenser
006	Sulfite Recovery Boiler firing RLS, No. 6 fuel oil, and No. 2 fuel oil
007	Molten sulfur handling area.
010	Biological Effluent Treatment System
011	Dissolving-Grade Bleaching System
021	Evaporator Vents Methanol Condenser
022	Bubbling Fluidized Bed No. 6 Power Boiler

Unregulated Emissions Units and/or Activities: *Refer to Appendix U-1, List of Unregulated Emissions Units and/or Activities*

The proposed project will affect the following emissions unit(s).

E.U. ID No.	Brief Description
005	Vent Gas Scrubber and Direct Contact Condenser
006	Sulfite Recovery Boiler firing Red Liquor Solids, No. 6 fuel oil, and No. 2 fuel oil
022	Bubbling Fluidized Bed No. 6 Power Boiler

PROJECT DESCRIPTION

The permittee is authorized to construct a new, taller stack for the Vent Gas Scrubber System (EU No. 005) and to extend the stack at the Power Boiler (EU No. 022), if needed; lower the allowable SO_2 emission limits for the Recovery Boiler (EU No. 006), Power Boiler (EU No. 022), and the Vent Gas Scrubber System (EU No. 005). Implementing these voluntary changes at the Fernandina Beach mill will lower the SO_2 impact from the Rayonier Performance Fibers, LLC facility on the ambient air of

Nassau County. The new Sulfur Dioxide Project is not intended or expected to result in an increase in mill production capacity.

FACILITY REGULATORY CLASSIFICATION

- The facility is a major source of hazardous air pollutants (HAP).
- The facility has no units subject to the acid rain provisions of the Clean Air Act (CAA).
- The facility is a Title V major source of air pollution in accordance with Chapter 213, F.A.C.
- The facility is a major stationary source in accordance with Rule 62-212.400(PSD), F.A.C.
- This facility is a major source of air pollutants, other than HAPs.
- This facility has one or more emissions units subject to NSPS (40 CFR 60).
- This facility has one or more emissions units subject to NESHAP (40 CFR Part 61 or Part 63)

1. Permitting Authority: The permitting authority for this project is the Florida Department of Environmental Protection (Department), Northeast District Office, Air Resources Section. The Northeast District Office's mailing address is 7825 Baymeadows Way, Suite B200, Jacksonville, Florida 32256-7590. All documents related to applications for permits to operate an emissions unit shall be submitted to the Northeast District.

2. Compliance Authority: All documents related to compliance activities such as reports, tests, and notifications shall be submitted to the Northeast District Office. The mailing address and phone number of the District Office is: 7825 Baymeadows Way, Suite B200, Jacksonville, Florida 32256. The Permitting Authority's telephone number is 904/256-1700.

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

   a. Appendix A. Citation Formats and Glossary of Common Terms;

   b. Appendix B. General Conditions;

   c. Appendix C. Common Conditions

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

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

6. Modifications: The permittee shall notify the Compliance Authority upon commencement of construction. No new emissions unit shall be constructed and no existing emissions unit shall be modified without obtaining an air construction permit from the Department. Such permit shall be obtained prior to beginning construction or modification. [Rules 62-210.300(1) and 62-212.300(1)(a), F.A.C.]

7. Source Obligation:

   a. At such time that a particular source or modification becomes a major stationary source or major modification (as these terms were defined at the time the source obtained the enforceable limitation) solely by virtue of a relaxation in any enforceable limitation which was established after August 7, 1980, on the capacity of the source or modification otherwise to emit a pollutant, such as a restriction on hours of operation, then the requirements of subsections 62-212.400(4) through (12), F.A.C., shall apply to the source or modification as though construction had not yet commenced on the source or modification.

   b. At such time that a particular source or modification becomes a major stationary source or major modification (as these terms were defined at the time the source obtained the enforceable limitation) solely by exceeding its projected actual emissions, then the requirements of subsections 62-212.400(4) through (12), F.A.C., shall apply to the source or modification as though construction had not yet commenced on the source or modification.

[Rule 62-212.400(12), F.A.C.]

8. Application for Title V Permit: This permit authorizes construction/modification of the permitted emissions units and initial operation. A Title V air operation permit is required for continued operation of the permitted emissions unit(s). The permittee shall apply for a Title V air operation permit revision at least 90 days prior to expiration of this permit, but no later than 180 days after commencing operation of the new equipment, whichever occurs first. To apply for a Title V operation permit revision, the applicant shall submit the appropriate application form, compliance test results, and such additional information as the Department may by law require. The application shall be submitted to the appropriate Permitting and Compliance Authority. [Rules 62-4.030, 62-4.050, 62-4.220 and Chapter 62-213, F.A.C.]

A - Sulfur Dioxide Project -- Vent Gas Scrubber and Direct Contact Condenser

This section of the permit addresses the following emissions unit.

Emissions Unit Number	Brief Description
005	Emission Unit 005 identifies the Vent Gas Scrubber and Direct Contact Condenser. The permittee is authorized to construct a new, taller stack for the Vent Gas Scrubber System (EU No. 005). The existing stack is approximately 110 feet high. The proposed new stack will be at least 165 feet high. The applicant has also proposed to lower the maximum allowable emission limit for sulfur dioxide emissions from 250 ppm to 100 ppm. The vent gas scrubber (wet scrubber), which controls emissions from numerous vents from the cooking acid plant, the red stock washers, the unwashed stock tank, the spent sulfite liquor storage tanks, the spent sulfite liquor washer area, the digesters (6), and the blow pits. The scrubber is a packed bed containing 10 feet of packing consisting of two packed sections. The lower section is designed for sulfur dioxide emissions control via gas absorption using alkaline scrubbing media (soda ash, sodium hydroxide, etc.). The spent scrubber media is bled first to other closed sources to make maximum use of the alkali to remove sulfur dioxide, and then to sewer via closed piping to number 1 Pump Station. The sulfur dioxide concentration in the stack is continuously measured with a CMS. The upper packed section of the vent gas scrubber is designed to condense methanol from the gas stream by direct contact with fresh well water, i.e. the Direct Contact Condenser. This is a once through process. The condensed methanol held in the water is sent to the biological effluent treatment system for treatment in order to comply with the requirements of 40 CFR 63 Subpart S. This emissions unit has a CMS required for compliance purposes, therefore, it is exempt from CAM for SO_2 monitoring.

PERFORMANCE RESTRICTIONS

A.1. Capacities : The proposed work shall not result in any increase in the mill pulp production rate.

[Rule 62-4.070(3), F.A.C. and Application No. 0890004-36-AC]

A.2. Hours of Operation. This emissions unit shall be allowed to operate continuously, i.e., 8,760 hours/year.

[Rules 62-4.160(2) and 62-210.200(PTE), F.A.C.]

EMISSION LIMITATIONS AND STANDARDS

A.3. The permittee has determined to lower the allowable sulfur dioxide emission rate from 250 ppm to 100 ppm as part of the program to lower the SO_2 impact from the Rayonier

Performance Fibers, LLC facility on the ambient air of Nassau County. The 100 ppm SO_2 limit shall become the emission limiting standard on the effective date of the Title V Air Operating Permit revision unless otherwise established by order, rule, permit, agreement, or State Implementation Plan.

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

REPORTING REQUIREMENTS

A.4. The permittee shall report to the Department the commencement of construction date of the new stack system within 30 days after beginning construction.

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

A.5. The permittee shall report to the Department the completion of construction date of the new stack system within 30 days after completing construction. As built stack parameters shall be described and submitted with this report.

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

B - Sulfur Dioxide Project -- Recovery Boiler

This section of the permit addresses the following emissions unit.

Emissions Unit Number	Brief Description
006	Emission Unit 006 identifies the Recovery Boiler. Combustion gases from the boiler and noncondensible gases from the evaporators are controlled through a multi-stage wet scrubber that utilizes ammonium hydroxide as the scrubbing medium. This absorption process produces a fine, aerosol type particulate, which is subsequently controlled by a filter unit, the Brinks Demister. The Brinks Demister consists of four, enclosed rubber-lined metal compartments each containing 52 candles. Each candle is a 24-inch diameter, 12–feet high cylinder with 6 inches of tightly wound polyester fiber filter held within a concentric wire cage. Gases flow up through the center of each candle then pass through the 6 inches of filter medium, out an opening near the top of the compartment and on to the stack. The sulfur dioxide concentration within the stack is measured continuously using a CMS, therefore this emissions unit is exempt from CAM. The BetaGuard Particulate Monitor is the CMS utilized to demonstrate compliance with 40 CFR 63 Subpart MM.

{Permitting note(s): This emissions unit is subject to Rule 17-2.03, F.A.C., Latest Reasonable Available Control Technology (LRACT dated 07-12-76), which was based on Washington State Standards for Sulfite Pulp Mills (WAC 18-38-040). This rule became 17-2.630, F.A.C. which became Best Available Control Technology (BACT) now Rule 62-212.400(6), F.A.C. This emissions unit was issued Final Order dated June 19, 1991, which included Alternate Sampling Procedure No. ASP-91-H-01, which approved the continual operation of the Brinks Demister System in lieu of meeting the general visible emissions standard of less than 20% opacity as measured by EPA Method 9. This emissions unit is also regulated under NESHAP - 40 CFR 63, Subpart MM, adopted and incorporated by reference in Rule 62-204.800, F.A.C.

PERFORMANCE RESTRICTIONS

B.1. Capacities : The proposed work shall not result in any increase in the mill pulp production rate.

[Rule 62-4.070(3), F.A.C. and Application No. 0890004-36-AC]

B.2. Hours of Operation. This emissions unit shall be allowed to operate continuously, i.e., 8,760 hours/year.

[Rules 62-4.160(2) and 62-210.200(PTE), F.A.C.]

EMISSION LIMITATIONS AND STANDARDS

B.3. The permittee has determined to lower the allowable sulfur dioxide emission rate from 300 ppmvd to 250 ppmvd as part of the program to lower the SO_2 impact from the Rayonier

Performance Fibers, LLC facility on the ambient air of Nassau County. The 250 ppmvd SO_2 limit shall become the emission limiting standard on the effective date of the Title V Air Operating Permit revision unless otherwise established by order, rule, permit, agreement, or State Implementation Plan.

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

C - Sulfur Dioxide Project -- No. 6 Power Boiler

Emissions Unit Number	Brief Description
022	The No. 6 Power Boiler is a Bubbling Fluidized Bed boiler that produces steam for electrical generation and usage in the manufacturing process. The total maximum operational heat input of this emissions unit is 525 MMBtu/hr (24-hr average). The boiler was originally constructed in 1983 as a traveling grate coal-fired boiler. *Fuel*: This unit is authorized to fire biomass (green bark, chips, knots, fines, and landscape waste), tires, No. 2 fuel oil for startup, No. 6 fuel oil with a maximum sulfur content of 2.5% by weight, spent sulfite liquor, small quantities of facility-generated on-specification used oil (to be blended with the No. 6 fuel oil); and mill effluent treatment system solids (primary and secondary sludge only). *Controls*: Particulate matter emissions are controlled with a large settling chamber followed by an electrostatic precipitator (ESP). Large ash particles settle out in the chamber and are removed from the bottom hopper by a screw conveyor system. The design includes a four-field ESP with collector plates and rigid electrodes. Each field has a dedicated transformer/rectifier (T/R) set and ash hopper. Ash is removed by a screw conveyor system. NO_x emissions are reduced by staged combustion and flue gas recirculation (FGR). A selective non-catalytic reduction (SNCR) system is installed to control NO_x emissions (may be used as determined by plant personnel) . This system consists of an ammonia tank, pumps, piping, compressed air delivery, injectors, and a control system. Acid gases are controlled by a wet alkaline scrubber located after the ESP and induced draft fan. The wet scrubber sprays approximately 4000 gpm of re-circulated alkaline scrubber water over a series of chevrons and louver-type packings to reduce acid gas emissions. The design pressure drop across the system is approximately 2 inches of water column. *Monitors*: A continuous opacity monitoring system (COMS); a fuel flow monitor; continuous monitoring of ESP total power (CAM); exhaust flow rate monitor; a continuous emissions monitoring system (CEMS) for SO_2 emissions, a CEMS for NOx emissions, a CEMS for CO emissions, and a CEMS for oxygen. *Stack Parameters*: Exhaust gas exits at approximately 150 °F with a volumetric flow rate of 183,421 acfm through a single wet scrubber stack that is approximately 10 feet in diameter and 190 feet above ground level. The proposed new stack height will be approximately 210 feet (if the permittee decides to raise the stack height). The applicant has also proposed to lower the maximum allowable emission limit for sulfur dioxide emissions from 420 Pounds per hour (lbs/hr) to 180 lbs/hr (current stack height of 190 feet) or 250 lbs/hr (new stack height of 210 feet).

{Permitting note (s): This emissions unit is regulated under: Rule 296.410, F.A.C. –Carbonaceous Fuel Burning Equipment; Rule 62-296.405, F.A.C. – Fossil Fuel Steam Generators with More Than 250 Million Btu Per Hour Heat Input; NSPS - 40 CFR 60, Subpart D, Standards of Performance for Fossil-Fuel-Fired Steam Generators for Which Construction Is Commenced After August 17, 1971, adopted and incorporated by

reference in Rule 62-204.800, F.A.C.; Rule 212.400(5), F.A.C., Prevention of Significant Deterioration (PSD; Compliance Assurance Monitoring (CAM), adopted and incorporated by reference in Rule 62-204.800, F.A.C.}

C.1. Capacities: The proposed work shall not result in any increase in the mill pulp production rate.

[Rule 62-4.070(3), F.A.C. and Application No. 0890004-36-AC]

C.2. Hours of Operation. This emissions unit shall be allowed to operate continuously, i.e., 8,760 hours/year.

[Rules 62-4.160(2) and 62-210.200(PTE), F.A.C.]

EMISSION LIMITATIONS AND STANDARDS

C.3. The permittee has determined to lower the allowable sulfur dioxide emission rate to 180 lbs/hr or 250 lbs/hr as part of the program to lower the SO_2 impact from the Rayonier Performance Fibers, LLC facility on the ambient air of Nassau County. The 180 lbs/hr or 250 lbs/hr SO_2 limit shall become the emission limiting standard on the effective date of the Title V Air Operating Permit revision unless otherwise established by order, rule, permit, agreement, or State Implementation Plan.

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

{Permitting note: The proposed limit will be:

a. 180 lbs/hr at the current stack height of 190 feet

b. 250 lbs/hr if the stack height is raised to 210 feet}

REPORTING REQUIREMENTS

C.4. *The permittee shall report to the Department the commencement of construction date of the new stack system within 30 days after beginning construction.

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

C.5. *The permittee shall report to the Department the completion of construction date of the new stack system within 30 days after completing construction. As built stack parameters shall be described and submitted with this report.

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

* If the stack height is raised