STATEMENT OF BASIS

Rayonier Performance Fibers, LLC

Fernandina Beach Mill

Facility ID No.: 0890004

Nassau County

Proposed Title V Air Operation Permit Renewal No.: 0890004-029-AV

This permit is being issued for the purpose of renewing the terms and conditions of Title V Air Operation Permit No.: 0890004-028-AV and incorporating the terms and conditions of air construction permit Nos. 0890004-026-AC, 0890004-027-AC and 0890004-031-AC.

The applicant, Mr. C.A. McDonald, Rayonier Performance Fibers, LLC, applied on March 22, 2010 to the permitting authority for a Title V Air Operation Permit Renewal for the facility located at the Foot of Gum Street in Nassau County, Fernandina Beach, Florida. UTM Coordinates: Zone 17, 454.7 km East and 3392.2 km North; Latitude: 30° 39′ 44″ North and Longitude: 81° 29′ 03″ West.

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

Facility Description

Rayonier is an acid sulfite based pulp mill using ammonia as a base chemical for the manufacture of dissolving pulps. This plant produces approximately 10 different grades of pulp. The pulp produced at this plant is used in products such as plastics, photographic film, LCD screens, paints, cigarette filters, pharmaceuticals, food productions, cosmetics and textiles. The mill produces approximately 150,000 tons of performance fibers annually.

The sulfite process utilizes a sulfurous acid and ammonium bisulfite cooking solution to chemically separate the lignin from the cellulose. Pine wood chips and cooking solution are cooked in the six (6) batch digesters. The cooking process requires approximately 6 hours to complete. The unbleached sulfite pulp and spent cooking solution (SSL- spent

sulfite liquor) are separated over vacuum washers (red stock washers). The unbleached pulp is then sent into the screening area to remove any knots and tailings (uncooked, woody materials), while the SSL is pumped to the evaporators to concentrate the solids content before being burned in the recovery boiler. The collected knots and tailings are pressed for use as fuel in the No. 6 Power Boiler.

The sulfurous acid and ammonium bisulfite cooking solution is prepared in the "acid plant".

The unbleached pulp exiting the screening operation enters the bleach plant. The first stage in the bleaching plant is the Hot Caustic Extraction (HCE) stage. Caustic soda is used to remove hemi-cellulose (small chain cellulose molecules), from the pulp in small pressure vessels called an HCE cells. The mill currently operates eight (8) such cells. The pulp is washed after this HCE stage. The spent solution, Hot Caustic Extract, is concentrated in a set of evaporators before being sold to Kraft mills for its sodium content and energy value.

Pulp leaving the HCE stage is further purified in continuous and batch stages using peroxide, chlorine dioxide, chlorine, sodium hydroxide, and sodium hypochlorite depending upon the pulp grade specifications. Following these bleaching stages, the pulp passes through centrifugal dirt cleaners before being sent to the pulp machine. The pulp machine forms the sheet by draining water from the pulp slurry (containing 99% water) over a moving wire to a consistency of 50% water. The remainder of the water is removed by passing the pulp sheet over pressing and drying cylinders heated internally with steam. The pulp sheet, which contains approximately 7% moisture, is then wound onto a "jumbo" before being transported to the finishing room where the pulp sheet is cut into smaller rolls or sheets based on customer specifications. No coatings are used on any of the pulp grades produced by the mill.

The digestion, the HCE stage, and the pulp machine are high users of steam for heating. The steam is produced in the power boiler~~s~~. Steam is also used to produce about 90 percent of the mill's electricity needs.

The recovery boiler provides steam for the evaporators and its emissions are scrubbed for sulfur dioxide recovery using an ammonia solution. The ammonium bisulfite produced in the scrubber is used for cooking acid make-up.

40 CFR 63 Subpart S Applicability

This facility is subject to the requirements of 40 CFR 63 Subpart S. Hazardous air pollutant emission points include 1) the combined digester and washer systems vent where the methanol is removed by the Direct Contact Condenser, 2) the vents from the two sets of multiple effect evaporators where the methanol is removed by a Direct

Contact Condenser, and 3) the waste water collection and treatment systems where the spent scrubbing media from the direct contact condensers is routed.

There are three streams of water that contain collected methanol. These are a) alkali in the water stream used in the Vent Gas Scrubber, b) the liquid effluent stream from the Direct Contact Condenser used to treat the gases from the digester system vent and the pulp washing system, and c) the liquid effluent stream from the Direct Contact Condenser used to treat the collected gases from the Evaporator System Vent.

These streams are sent to the wastewater treatment system via open pump stations. The two streams used to collect methanol from the pulp washing system and the digester system vent are sent to the Number 1 Pump Station and Bar Screen. The stream collecting the methanol from the evaporator system vent is discharged to the Number 3 Pump Station.

Rayonier is authorized to use WATER9 to calculate the fraction of incoming methanol in each of the three mentioned streams that is emitted to the air. In each case, the stream enters an enclosed sewer line until it is discharged into the open pump station. The WATER9 model is also used to estimate the total methanol emissions from the pump stations.

The WATER9 model is also used to predict the fraction of the influent methanol emitted to the air from the biological effluent treatment system. Rayonier has determined, using the procedures in Appendix C to Part 63, that the aeration stabilization basin contains five mixing units.

The total methanol emissions is determined from the direct measurement of the methanol emissions from the pulping and washing Direct Contact Condenser and those from the evaporator Direct Contact Condenser, and the WATER9 determined methanol emissions from the methanol concentration in the liquid streams from each pump station (No. 1 Pump Station & Bar Screen and No. 3 Pump Station) and the biological effluent treatment system.

Because the Fernandina Beach Mill produces dissolving and specialty grade pulp, the mill was required to achieve compliance with the bleach plant provisions of 40 CFR 63.445 as expeditiously as practicable but in no event later than 4 years from the issuance of Construction Permit No. 0890004-018-AC, i.e. no later than February 19, 2010. The bleach plant collection and control system started operation on February 18, 2010.

40 CFR 63 Subpart MM Applicability

The Recovery Boiler is subject to the requirements of 40 CFR 63 Subpart MM. The standard has established particulate matter as the surrogate for HAP metals. The

scrubber on the recovery boiler is installed to recover sulfur as opposed to the control of particulates. Therefore, in this case, the scrubber parameters required by the Subpart MM standards do not relate to particulate emissions. Due to the scrubber, the gas stream from the recovery boiler is wet and therefore opacity monitoring is unsuitable. On May 19, 2004, EPA approved the use of a beta monitor as an Alternative Monitoring Method instead of the standard required continuous opacity monitor and scrubber operating parameters.

Emissions Units Descriptions

No. 1 Power Boiler (Emissions Unit No. 001):

The No. 1 Power Boiler was shutdown on May 26, 2007. This emissions unit is therefore removed from the Title V Permit.

No. 2 Power Boiler (Emissions Unit No. 002):

The No. 2 Power Boiler was shutdown on May 26, 2007. This emissions unit is therefore removed from the Title V Permit.

No. 3 Power Boiler (Emissions Unit No. 003):

The No. 3 Power Boiler was shutdown on May 26, 2007. This emissions unit is therefore removed from the Title V Permit.

Vent Gas Scrubber and Direct Contact Condenser (Emissions Unit No. 005):

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 washers, the digesters, and the blow pits are collected and scrubbed in the Vent Gas Scrubber. The scrubber consists of a packed tower containing two designated packed sections. The lower section is designed for sulfur dioxide emissions control via gas absorption using alkaline scrubbing media (soda ash or sodium hydroxide). The absorbate, sodium bisulfite, is pumped from the scrubber sump to the sodium bisulfite storage tank. From here, it is recirculated back to the scrubber for reuse.

The sulfur dioxide concentration in the stack is continuously measured with a CMS, therefore, this emissions unit is exempt from CAM.

The standards of 40 CFR 63 Subpart S require sulfite mills to control the total HAP emissions from each digester system vent, each evaporator system vent, and each pulp washing system. These systems are to be enclosed and vented into a closed-vent system and routed to a control device that meets the requirements 40 CFR 63.444(c). For the digester system vent and pulp washing system, Rayonier uses the upper packed section

of the Vent Gas Scrubber as the control device to meet the referenced Subpart S standards, i.e. the Direct Contact Condenser. The upper packed section consists of a 6-foot section of pall ring packing for condensing methanol from the gas stream. The gas stream is cooled below 150° F and contacted directly with fresh well water at approximately 80° F. The methanol in the gas stream condenses at this temperature, dissolves in the water and is removed from the gas stream. 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.

40 CFR 63.453(a) requires that the pH or oxidation/reduction potential of the gas scrubber effluent, the gas scrubber vent gas inlet flow rate, and the gas scrubber liquid influent flow rate to be continuously monitored for each gas scrubber used to comply with the sulfite pulping system requirements of 40 CFR 63.444(c). However, the measurement of pH or oxidization/reduction potential and scrubber gas inlet flow rate are not adequate indicators of the performance of the direct contact condenser due to the fact that there is little change that occurs in the pH or oxidation/reduction potential when the cooler influent water cools the gas stream and the methanol dissolves in the water.

40 CFR 63.453(m) requires facilities using a control device, technique or an alternative parameter other than those specified in the monitoring section of the Subpart, to install a CMS and establish appropriate operating parameters to be monitored that demonstrate continuous compliance with the applicable control requirements. Rayonier proposed that the final gas temperature and the liquid inlet flow rate be monitored as alternative parameters. The Department approved the use of these parameters in the Initial Performance Test Plan Approval letter dated March 7, 2002.

Recovery Boiler (Emissions Unit No. 006):

The hot flue gas from the recovery boiler along with the non-condensable gases from the evaporator methanol condensers (EU 021), are routed to a multi-stage, wet scrubber followed by a four-compartment filter unit.

Spent Sulfite Liquor or a mixture of Spent Sulfite Liquor and ultra low sulfur diesel fuel oil is burned in the recovery boiler to produce steam and recycle sulfur. The evaporated, spent sulfite liquor contains sulfur compounds, which are converted to sulfur dioxide during combustion. The sulfur dioxide is recovered from the flue gas in the multi-stage, wet scrubber. Ammonium hydroxide is the scrubbing media. The sulfur dioxide reacts with the ammonium hydroxide to form ammonium bisulfite. The ammonium bisulfite solution is drawn off, filtered through sand filters, and pumped to the acid plant and recycled as the base for making the cooking acid used in the digesters.

The sulfur dioxide in the flue gas also reacts with the ammonium hydroxide (scrubbing media), to form ammonium sulfate, a fine, aerosol-type particulate that is emitted in the moist vapor leaving the scrubber. This ammonium sulfate is the predominate source of particulate emissions from the recovery boiler as the spent sulfite liquor (red liquor fired), contains little ash.

Collecting the ammonium sulfate is difficult because it is a wet stream. Measuring opacity is also difficult because the water vapor tends to interfere with the measurements. Ammonium sulfate also has a high reflectance and therefore the use of opacity monitors is not successful.

On December 12, 1990, the facility petitioned for the approval of the operation of a Brinks Demister System in lieu of meeting the July 12, 1976 LRACT Determination of visible emissions of 10% opacity. The LRACT visible emissions standard of 10% opacity was based on the State of Washington's standard, which was rescinded at the time of the 1990 petition. During this case, the Department concluded that the LRACT visible emissions standard was inappropriate and the general visible emissions standard of less than 20% opacity (now Rule 62-296.320(4)(b)1., F.A.C.), was applied to this emissions unit. As justification for the alternate compliance verification procedure, the facility provided test results, which demonstrated plume interferences due to humidity, which inhibited accurate evaluations of the plume opacity. It was therefore determined, in the Final Order dated June 19, 1991, that compliance with the opacity limitation will be based on the record of on-line operation of the Brinks Demister System. An Alternate Sampling Procedure was issued for this opacity determination, No. ASP-91-H-01.

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 tube wrapped with 6 inches of tightly wound polyester fiber filter. 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 flue gas is normally passed through 3 of the 4 filter compartments, while the fourth compartment is on a wash cycle. Much of the particulate flows with the moisture down the inside of the candle and out to the effluent treatment system while the filters are in operation. However, some particulate is caught within the filter medium and must be periodically washed from the filters. The washing is accomplished by sealing the gas inlet with water in the bottom of the compartment and adding evaporator condensate (acidic) to dissolve any ammonium sulfate built up within the filters.

Fuel Oil is fired in the recovery boiler to heat the boiler and prepare the spent sulfite liquor for burning. The heat input from this oil firing is considerably less than from full-spent sulfite liquor firing. During the burning of oil, the flue gas is completely scrubbed by the scrubber and the sulfur dioxide is removed with the ammonia/water media. Because there is far less sulfur dioxide in the flue gas when firing only oil, very little ammonium bisulfite is formed from the gas coming in contact with the ammonia/water

media. The Brinks Demister is bypassed during periods of startup when oil is burned. During this period, the filters are not needed and are not used since any fine oil-derived particulate, which gets through the scrubber, has the potential of plugging the filter medium. When the first spent sulfite liquor gun is introduced to the boiler, ammonia water is used for scrubbing, the bypass valve is closed and all flue gas passes through the Brinks mist filters.

The SRB was refurbished in early 2010 authorized by permit no. 0890004-027-AC.

This emissions unit has a CMS required for compliance purposes; therefore, it is exempt from CAM for SO2 monitoring. This emissions unit is subject to 40 CFR 63 Subpart MM; therefore, it is exempt from CAM for particulate monitoring.

Molten Sulfur storage and handling facility (Emissions Unit No. 007):

Molten sulfur is transferred from rail tank cars to a 55,000-gallon storage tank via an enclosed piping system. The surface below the rail cars is paved and bermed to capture any potential spills. All emissions are fugitive in nature and are associated with spills.

CAM is not applicable to this emissions unit.

Biological Effluent Treatment System (Emissions Unit No. 010):

The effluent from 1) the spent scrubber media from the Vent Gas Scrubber, 2) the water stream from the methanol Direct Contract Condenser at the Vent Gas Scrubber, and 3) the liquid effluent from the pre-condenser and the main condenser at the Evaporator Vents Methanol Condenser System are combined with other mill effluent and treated in a primary, open clarifier and the aerated stabilization basin (biological treatment system). The biological treatment removes the methanol from the effluent via bacterial digestion.

Dissolving-Grade Bleaching System (Emissions Unit No. 011)

Pulp leaving the HCE stage is further purified in continuous and batch stages using peroxide, chlorine dioxide, chlorine, sodium hydroxide, and sodium hypochlorite depending upon the pulp grade specifications. The bleaching area of the facility generally consists of various pulp washers and seal tanks, screen tank, chlorine tower, mild extraction tower, continuous bleaching tower, surge and dump tanks, chlorine dioxide tower, and cold caustic extraction tower. Gaseous hazardous air pollutant (HAP) emissions are collected from the following equipment: chlorination tower, old screen tank, continuous bleaching tower, chlorine dioxide retention tower, Nos. 3, 4, 5, and 5A washer and seal tanks, stock surge tank (to No. 4 washer), and last stage dump tank. HAPs are transported to the Rotabed Model No. 42/60 bisulfite venturi type scrubber for removal. The design air flow rate is approximately 10,000 ACFM. The HAP collection and control system started up on February 18, 2010.

Evaporator Vents Methanol Condenser System (Emissions Unit No. 021):

The steam that is used to eject the vent gases from the two trains of multiple effect evaporators dedicated to increasing the solids concentration of red liquor, along with the evaporator vent gases themselves, are piped to a pre-condenser which condenses the steam followed by the main condenser which condenses the methanol.

In addition, a third multiple effect evaporator train consisting of three (3) refurbished existing evaporators bodies, authorized to be installed under Construction Permit No. 0890004-018-AC, shall be used to increase the solids concentration of weak Hot Caustic Extract (the spent solution from the pulp washed after the Hot Caustic Extraction stage which is sold to Kraft mills for its sodium content and energy value). This third MEE train is also vented to the pre-condenser followed by the main condenser and the multi-stage wet scrubber/Brinks Demister at the Recovery boiler (Emissions Unit No. 006) before being vented to the atmosphere.

The water used to condense the steam and methanol in the two condensers is reclaimed from the biological effluent treatment system after the methanol has been digested. The condensate formed in the pre-condenser and the main condenser is sewered to the biological effluent treatment system via the Number 3 Pump Station for compliance with the 40 CFR 63 Subpart S requirements. The non-condensable gases from the main condenser are sent to the multi-stage wet scrubber/Brinks Demister at the Recovery boiler (Emissions Unit No. 006) before being vented to the atmosphere.

No. 6 Power Boiler (Emissions Unit No. 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). 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). The mill effluent treatment system solids (primary and secondary sludge only) addition was authorized by permit no. 0890004-026-AC. Particulate matter emissions are controlled with a large settling chamber followed by an electrostatic precipitator (ESP). NO_x emissions are reduced by staged combustion and flue gas recirculation (FGR). A selective non-catalytic reduction (SNCR) system is also 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.

This emissions unit is subject to CAM requirements.

Miscellaneous Changes Summary

- The SIP excess emission segment (Condition G.13.) has been expanded to allow up to 3.5 hours excess emissions during cold and warm start-up provided best operational practices to minimize emissions are followed.

- Particulate Matter and Volatile Organic Compound emission limits averaging times have been clarified for the No. 6 Power Boiler (Emission Unit No. 022)

- Excess emission reporting has been clarified for No. 6 Power Boiler (Emission Unit No. 022) (Condition G.33.)

- An insignificant emission unit has been added to Appendix I for a temporary package boiler. The boiler must meet the requirements of Rule Nos. 62-213.420(3)(n), F.A.C. and 62-213.430(6), F.A.C. concerning insignificant emission units located at Title V facilities. One requirement of Rule 62-213.430(6), F.A.C. is that an insignificant unit may not be subject to an applicable requirement. Applicable requirement is defined in Rule 62-210.200, F.A.C. It is noted, for example, that an applicable requirement includes a fuel oil sulfur content limit such as that required for small boilers subject to 40 CFR 60, Subpart Dc which burn very low sulfur distillate fuel oil.

- A selective non-catalytic reduction system (SNCR) has been installed on the No. 6 Power Boiler (Emission Unit No. 022) for the control of oxides of nitrogen emissions. It was authorized by air construction permit Nos. 0890004-018-AC and 0890004-021-AC. The facility placed the SNCR into service on June 3, 2010. The SNCR may be used at the discretion of plant personnel. It is not required by rule.

- Permit No. 0890004-026-AC authorized the addition of mill effluent treatment system solids (primary and secondary sludge only) as a fuel in the No. 6 Power Boiler. This permit adds this fuel and associated conditions to the Title V Air Operation permit.

- Permit No. 0890004-027-AC authorized the repair and replacement of components on the existing SRB including the steam drum, mud drum, air heater components, generating bank steam tubes, and minor modifications to the side wall, outlet duct, rear wall, screen supply and roof steam tubes. Boiler refractory was also replaced as necessary to accommodate these repairs. The project did not regain lost capacity and did not result in any increase in the SRB heat input, fuel consumption, steam generation capacity or pulp production. This permit adds this refurbishment to the Title V Air Operation permit.

- Permit No. 0890004-031-AC revises Construction Permit No. 089004-018-AC (modified in Construction Permit No. 0890004-021-AC, extended in Construction Permit No. 0890004-023-AC, and extended in Construction Permit No. 0890004-030-AC) to increase in the interim pulp production limit from 162,000 to 165,852 ADMT per consecutive 12-months, rolling total. Prior to increasing the pulp production beyond 165,852 ADMT to a maximum of 175,000 ADMT per consecutive 12-months rolling total, the mill will install the blow heat recovery system as previously authorized in Construction Permit No. 0890004-018-AC. The interim production limit shall be effective during the time period prior to installation of the blow heat recovery system, through its startup, testing, and approval as specified within Construction Permit No. 0890004-021-AC. This permit adds the increased production capacity (165,852 ADMT) and associated conditions to the Title V Air Operation permit.