

TITLE V APPLICATION REVIEW

Facility Name: **Rayonier, Inc. - Lumber City Planer Mill**

City: Lumber City

County: Telfair

AIRS #: 04-13-271-00004

Application #: TV- 10217

Date Application Received: September 10, 1997 (Updated February 8, 1999)

Date Application Deemed

Administratively Complete: February 16, 1999

Date of Draft Permit: April 20, 1999

Permit No: 2421-271-0004-V-01-0

Program	Review Engineers	Review Managers
SSPP/ASU	Susan Jenkins	John Yntema
SSCP/ASU	Richard McDonald	Lou Musgrove
ISMP	DeAnna Garrison	Larry Webber
TOXICS	Not Applicable	Not Applicable

Introduction

This narrative is being provided to assist the reader in understanding the content of the attached draft Title V operating permit. Complex issues and unusual items are explained in simpler terms and/or greater detail than is sometimes possible in the actual permit. This permit is being proposed pursuant to: (1) Section 391-3-1-.03(10) of the Georgia Rules for Air Quality Control, (2) Part 70 of Chapter I of Title 40 of the Code of Federal Regulations, and (3) Title V of the Clean Air Act Amendments of 1990. The primary purpose of this permit is to consolidate and identify existing state and federal air requirements applicable to **Rayonier, Inc. - Lumber City Planer Mill** and to provide practical methods for determining compliance with these requirements. The following narrative is designed to accompany the draft permit and is presented in the same general order as the permit. It initially describes the facility receiving the permit, then the applicable requirements and their significance, and finally the methods for determining compliance with those applicable requirements. This narrative is intended only as an adjunct for the reviewer and has no legal standing. Any revisions made to the permit in response to comments received during the public participation process will be described in an addendum to this narrative.

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I. Facility Description

A. Facility Identification

- 1. Facility Name: Rayonier, Inc.
- 2. Parent/Holding Company Name: Rayonier, Inc.
- 3. Previous and/or Other Name(s):

Previous names identified are as follows: Startup - 1985: St. Regis Paper Company
1985-1993: Champion International
1993 - Unknown: ITT Rayonier
Present: Rayonier, Inc.

- 4. Facility Location: Corner of Central Avenue and Industrial Blvd, Lumber City, Telfair County, Georgia 31549
- 5. Attainment or Non-attainment Area Location

The facility is located in Telfair County, Georgia which is in attainment for all criteria pollutants.

- 6. Class I Area Impacts

Rayonier, Inc. in Lumber City, Telfair County, Georgia is located within 100 km of the Okefenokee Class I Area.

B. Site Determination

There are no other facilities which could possibly be contiguous or adjacent and under common control.

C. Existing Permits

Table 1 below lists all current permits (including Part 71 permits), as amended, issued to the facility. Based on a comparative review of Item 19 in Section 1.10 of the Title V application and the "Permit" file(s) on the facility found in the Air Branch office, comments are listed in Table 2 below.

Table 1: List of Current Permits, as Amended

Permit Number and/or Purpose of Issuance	Date of Issuance and Date of Amendments (if any)	Comments	
		Yes	No
2421-134-11322	December 29, 1993	X	

Table 2: Comments on Specific Permits

Permit Number	Comments
2421-134-11322	Rayonier did not list the Permit Amendment date of December 9, 1997 in their Title V permit application.

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D. Process Description

1. SIC Code(s)

Major - 2421
 Other - None

2. Description of Product(s)

The facility produces dried lumber.

3. Overall Facility Process Description

The facility receives green lumber as the raw material, and this lumber is dried in one of five indirect steam heated kilns (DK01, DK02, DK03, DK04, and DK05). The dried lumber is shaped in planer mills PM01 and PM02 and is then bundled for shipment. Heat energy for the kilns is supplied by a wood-fired boiler (PB01) which is controlled by a multiclone (MC01) and wet scrubber (SC01). Shavings from the planer mills are either sold or are used as fuel for PB01.

4. Overall Process Flow Diagram (optional)

Received as a hard copy attachment with application.

E. Regulatory Status

1. PSD/NSR

This facility is a major source under PSD because it has potential emissions of VOC and CO greater than 250 tpy (it is not one of the 28 named source categories under PSD). The facility was originally constructed before the PSD regulations were effective.

2. Title V Major Source Status by Pollutant

Table 3: Title V Major Source Status

Pollutant	Is the Pollutant Emitted?	If emitted, what is the facility's Title V status for the Pollutant?		
		Major Source Status	Major Source Requesting SM Status	Non-Major Source Status
PM	X	No	No	Yes
PM ₁₀	X	No	No	Yes
SO ₂	X	No	No	Yes
VOC	X	Yes	No	No
NO _x	X	No	No	Yes
CO	X	Yes	No	No
TRS	X	No	No	Yes
H ₂ S	X	No	No	Yes
Individual HAP	X	No	No	Yes
Total HAPs	X	No	No	Yes

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3. MACT Standards

This facility is not subject to a proposed or final MACT standard.

4. Program Applicability

Program Code	Applicable (Yes/No)
Program Code 6 - PSD	No
Program Code 8 - Part 61 NESHAP	No
Program Code 9 - NSPS	No
Program Code M - Part 63 NESHAP	No
Program Code V - Title V	Yes

Regulatory Analysis

There are a number of conditions in the permit which are state-only enforceable. These conditions are individually marked, in bold, **State Only Enforceable Condition**. Conditions which are not marked as such should be assumed to be federally enforceable.

II. Facility Wide Requirements

A. Emission and Operating Caps: Not applicable.

B. Applicable Rules and Regulations

! Rules and Regulations Assessment - The only facility-wide rule that applies is Georgia Rule 391-3-1-.02(2)(a)1.

! Emission and Operating Standards - Not applicable.

C. Compliance Status: See Section VII.F.

D. Testing, Monitoring and Record Keeping: See Sections IV, V, and VI.

E. Operational Flexibility: See Section VII.A.

F. Permit Conditions - Not applicable.

III. Regulated Equipment Requirements

A. Brief Process Description

The facility receives green lumber as the raw material, and this lumber is dried in one of five indirect steam heated kilns (DK01, DK02, DK03, DK04, and DK05). The dried lumber is shaped in planer mills PM01 and PM02 and is then bundled for shipment. Heat energy for the kilns is supplied by a wood-fired boiler (PB01) which is controlled by a multiclone (MC01) and wet scrubber (SC01). Shavings from the planer mills are either sold or are used as fuel for PB01.

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B. Equipment List for the Process

Emission Unit ID No.	Emission Unit Description	Pollutant(s) Emitted	Applicable Requirements	Is the Rule or Regulation Federally Enforceable?	APCE* Control ID No.	APCE Description
Equipment Group DKGP	Five indirect steam heated lumber kilns	PM PM-10 VOC HAPs	391-3-1-.02(2)(e) 391-3-1-.02(2)(b)	Yes Yes	None	None
Equipment Group PMGP	Two planer mills and a hog	PM PM-10	391-3-1-.02(2)(e) 391-3-1-.02(2)(b)	Yes Yes	BH01	Baghouse
PB01	Wood-fired Boiler	PM PM-10 NOx CO VOC SO ₂	391-3-1-.02(2)(d) 391-3-1-.02(2)(g)	Yes Yes	MC01 SC01	Multiclone Wet Scrubber
VFDG	Vehicular traffic fugitives from paved surfaces	PM PM-10	391-3-1-.02(2)(n)	Yes	None	None

* APCE = Air Pollution Control Equipment

C. Equipment & Rule Applicability

Equipment Group DKGP - Indirect Steam Heated Lumber Kilns

Rayonier operates five indirect steam heated lumber kilns and these kilns comprise Equipment Group DKGP. This Title V permit considers the five kilns as one process, as has historically been done. The allowable PM emission rate from this Equipment Group is established by Georgia Rule 391-3-1-.02(2)(e)1.(i) and is specified as follows:

For process input weight rate up to and including 30 tons per hour:

$$E = 4.1P^{0.67};$$

For process input weight rate above 30 tons per hour:

$$E = 55P^{0.11} - 40$$

where E equals the allowable PM emission rate in pounds per hour and P equals the maximum dry process weight input rate for the five kilns combined.

Equipment Group DKGP is also subject to Georgia Rule for Air Quality Control 391-3-1-.02(2)(b). Georgia Rule (b) applies to all sources that are subject to at least one other emission limitation and are not subject to any other more stringent opacity standard. Georgia Rule (b) limits visible emissions to forty (40) percent opacity.

Equipment Group PMGP

Rayonier operates two planer mills (PM01 and PM02) and a hog which comprise Equipment Group PMGP, and the emissions from this group are controlled by a baghouse. The baghouse cannot be considered process equipment, and as such, PM emissions before the baghouse are greater than 25 tpy. Thus, these emission units cannot be listed in Section 4.20 as Rayonier has done. These emission units that comprise this equipment group constitute one Georgia Rule (e) process.

The allowable PM emission rate from this Equipment Group is established by Georgia Rule 391-3-1-.02(2)(e)1.(i) and is specified as follows:

For process input weight rate up to and including 30 tons per hour:

$$E = 4.1P^{0.67};$$

For process input weight rate above 30 tons per hour:

$$E = 55P^{0.11} - 40$$

where E equals the allowable PM emission rate in pounds per hour and P equals the maximum dry process weight input rate for the process.

Equipment Group PMGP is also subject to Georgia Rule for Air Quality Control 391-3-1-.02(2)(b). Georgia Rule (b) applies to all sources that are subject to at least one other emission limitation and are not subject to any other more stringent opacity standard. Georgia Rule (b) limits visible emissions to forty (40) percent opacity.

Emission Unit - Wood-Fired Boiler PB01

Heat energy is generated by a 75.8 MMBtu/hr wood-fired boiler that is controlled by a multiclone (MC01) and a wet scrubber (SC01). The allowable PM emissions limit from PB01 is established by Georgia Rule for Air Quality Control 391-3-1-.02(2)(d)2.(ii) which is as follows:

$$P = 0.5(10/R)^{0.5}$$

where P is the allowable PM emission rate in pounds per million Btu and R is the heat input capacity in million Btu per hour.

Georgia Rule (d) also establishes an opacity limit of twenty (20) percent, except for one six minute period per hour of not more than twenty-seven (27) percent. In addition, Rayonier cannot burn fuel in PB01 whose sulfur content exceeds that allowed by Georgia Rule for Air Quality Control 391-3-1-.02(2)(g).

The Division established an hourly CO emission limit for PB01 in 1997 to act as a retroactive PSD avoidance cap for the facility.

Fugitive Emission Point - VFDG - Paved Road Emissions

The paved roads are subject to Georgia Rule for Air Quality Control 391-3-.02(2)(n) "Fugitive Dust" which applies to any operation, process, handling, transportation or storage facility which may result in fugitive dust. This applicable requirement limits the fugitive dust to 20% opacity from the roads and requires the facility to take all reasonable precautions to prevent dust from becoming airborne from these roads.

- D. Compliance Status: See Section VII.F.
- E. Testing, Monitoring and Record Keeping: See Sections IV, V, and VI.

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F. Operational Flexibility: See Section VII.A.

G. Permit Conditions

Condition 3.2.1 limits the hourly CO emission rate from wood-fired boiler PB01. This condition is taken from Condition No. 16 in Permit No. 2421-134-11322.

Condition 3.4.1 establishes the allowable opacity limit for Equipment Groups DKGP and PMGP.

Condition 3.4.2 establishes the allowable PM emission rate from Equipment Groups DKGP and PMGP.

Condition 3.4.3 establishes the allowable PM emission rate from wood-fired boiler PB01.

Condition 3.4.4 establishes the allowable opacity limit for wood-fired boiler PB01.

Condition 3.4.5 establishes the maximum sulfur content of the fuel burned in wood-fired boiler PB01.

IV. Testing Requirements (with Associated Record keeping and Reporting)

A. General Testing Requirements:

This facility is not currently required to perform any emissions testing. However, a condition specifying that the Division can require emissions testing on any emissions unit is included. The test methods to be used to determine compliance with the limitations in Part 3 are listed and a general condition requiring notification of any test and submission of a test plan are also provided.

B. Specific Testing Requirements: None

V. Monitoring Requirements (with Associated Record keeping and Requirements)

A. General Monitoring Requirements:

The standard general monitoring requirements have been included in the permit.

B. Specific Monitoring Requirements:

The wood-fired boiler (PB01) is subject to Georgia Rules 391-3-1-.02-2(d) for visible emissions (VE) and for PM and (g) for SO₂ emissions ; and Georgia Rules 391-3-1-.03(1) and (2) for CO emissions in order to avoid PSD review. The boiler utilizes a multiclone (MC01) and a wet scrubber (SC01) to control PM and visible emissions, and proper operation of the wet scrubber will assure that emissions are below allowable limitations. Installation of devices to continuously monitor scrubber parameters (scrubbing liquid flow rate and gas stream pressure loss) is required. A pressure loss monitoring device has been installed on the scrubber and a trigger level for pressure loss (based upon available historical data) for reporting excursions is specified. A liquid flow rate monitoring device is required to be installed, and within 90 days of the date of issuance of this permit, the facility is required to establish a trigger value for liquid flow rate for the purpose of reporting excursions. For the multiclone (MC01), weekly inspections, to ensure proper operation and maintenance, are required to be recorded and records are required to be maintained. Any adverse condition discovered by the inspections is required to be recorded, and records of the inspections are required to be maintained.

The allowable CO emission limit from PB01 is 57.1 pounds per hour. Emissions tests, conducted in April 1998, showed CO emission rates of 29.81 pounds per hour (52.2 percent of the allowable limit) at full load and 13.59 pounds per hour (23.8 percent of the allowable) at reduced load. Since CO emissions are only slightly greater than 50 percent of the allowable, a weekly measurement of the CO concentration using a calibrated instrument or analyzer was judged to be adequate monitoring for CO emissions. A CO concentration (in ppm) that corresponds to the allowable emission rate

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was determined by extrapolation of the test data and this value is used as a trigger for determining and reporting excursions. In addition, since boiler PB01 only burns wood, the likelihood of violation of Georgia Rule 391-3-1-.02(2)(g) is minimal. Therefore, no monitoring is required with respect to this regulation.

The lumber kilns (Equipment Group DKGP) are subject to Georgia Rules 391-3-1-.02(b) for VE and (e) for PM. The kilns use steam from Boiler PB01 for drying and there is no equipment for control of PM emissions on the kilns. However, based on available technical literature, potential PM emissions are only 11 percent of the allowable PM limitation. Therefore, no additional periodic monitoring for PM is prescribed by the permit.

Fugitive dust emissions from VFDG must comply with Georgia Rule 391-3-1-.02(2)(n). Periodic monitoring to assure compliance with this regulation is given in Condition No. 8.22 and consists of work and design practice standards.

Equipment Group PMGP is subject to Georgia Rules 391-3-1-.02(2)(b) and (e) for visible emissions and PM emissions. The waste shavings from the planed lumber are transferred through a cyclone to be used either as fuel for the boilers or sold. Baghouse BH01 controls the emissions from this shavings transfer cyclone and due to the cleaning action of the cyclone, emissions from the cyclone would be less than the allowable limitation and no monitoring of the baghouse is specified in the permit.

C. Associated Record Keeping and Reporting Requirements:

Records, including identification of any excursions from applicable monitoring triggers, the cause of such occurrence and the corrective action taken are required to be kept by the Permittee and reporting is required on a semiannual basis.

A requirement is included for Rayonier to maintain a record of all actions taken to suppress fugitive dust from the vehicular traffic on paved roads (VFDG) in order to show compliance with Georgia Rule 391-3-1-.02(2)(n).

VI. Other Record Keeping and Reporting Requirements

A. General Record Keeping and Reporting Requirements:

The Permit contains general requirements for the maintenance of all records for a period of five years following the date of entry and requires the prompt reporting of all related information to deviations from applicable requirements.

B. Specific Record Keeping and Reporting Requirements: None.

VII. Specific Requirements

A. Operational Flexibility

Other than the standard conditions (7.1.1, 7.2.1, and 7.2.2), operational flexibility provisions have not been incorporated into this Title V Permit. The applicant did not include any alternative operating scenarios in their Title V application or request any specific operational flexibility conditions.

B. Alternative Requirements

There are no alternative requirements that need to be incorporated into the Title V Permit.

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C. Insignificant Activities

A list of insignificant activities is attached at the end of the Title V permit. These insignificant emission units may also be seen in Sections 4.10 and 4.50 of the Title V permit application.

D. Temporary Sources

This section is not applicable to this facility. 40 CFR 70.6(e) requires Georgia EPD to provide for the permitting of certain types of temporary sources. This facility currently has no such sources and is unlikely to have such sources in the future. However, they may add temporary sources provided that the facility follows any necessary regulatory procedures for the operation of such sources. This may include amending the Title V permit, if necessary.

E. Short-Term Activities

Rayonier, Inc. has not requested to operate any short-term activities.

F. Compliance Schedule/Progress Reports

This facility is not in compliance with air quality permit no. 2421-134-11322 in that they do not operate a liquid flow rate monitoring device on wet scrubber SC01. They must install and operate this monitoring device within 90 days of the date of issuance of the Title V permit. No progress reports are deemed necessary other than that Rayonier must notify the Division when the monitoring device has been installed.

G. Emissions Trading

The facility is not involved in any emissions trading programs.

H. Acid Rain Requirements

This facility is not subject to any requirements in Title IV of the Clean Air Act.

I. Prevention of Accidental Releases

This facility is not subject to the requirements of 40 CFR 68.

J. Stratospheric Ozone Protection Requirements

Rayonier, Inc. has noted in their Title V permit application that they do not operate equipment subject to the Title VI regulations.

K. Pollution Prevention

There are no pollution prevention provisions incorporated into this Title V Permit.

L. Specific Conditions

None

VIII. General Provisions

Generic provisions have been included in this permit to address the requirements in 40 CFR Part 70 that apply to all Title V sources, and the requirements in Chapter 391-3-1 of the Georgia Rules for Air Quality Control that apply to all stationary sources of air pollution.

This facility might not have emission units subject to Sections 8.18, 8.19, 8.20, 8.21, and 8.22 which would qualify as generic emission units under Section 4.20 of their Title V Permit Application. This type of emission unit typically does not get specifically identified in Parts 2.0 or 3.0 of the Title V Permit. Therefore, Section 8.18 through 8.22 are included in the Title V Permit to ensure that emission units which are allowed to be listed in Section 4.20 of the application have all applicable requirements included in the Title V Permit (See White Paper #1 on Generic Grouping of Emissions Units and Activities). If the facility does not have any such emission units at the time of initial permit issuance, the conditions in Section 8.18 through 8.22 are still needed because they allow the facility to add any such emission unit(s) without having to reopen or amend the Title V Permit.

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Closing Block: We have reviewed and recommend issuance of draft Permit No. 2421-271-0004-V-01-0

Program	Review Engineers	Dates	Review Managers	Dates
SSPP/ASU				
SSCP/ASU				
ISMP				
TOXICS				

Stationary Source Permitting Program Manager

Date

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Addendum to Narrative

EPD issued draft Title V Permit 2421-271-0004-V-01-0 for Rayonier's planer mill in Lumber City, Georgia on June 14, 1999. The public notice for this permit was published in The Telfair Enterprise on July 7, 1999. The public and EPA comment periods expired August 5, 1999 and August 20, 1999, respectively. Comments were received from Rayonier on July 9, 1999; however, no comments were received from the public or EPA. A meeting was held on November 9, 1999 between EPD and Rayonier to review Rayonier's July 1999 comments. Correspondences relating to this meeting were exchanged on November 22, 1999, February 1, 2000, February 22, 2000, March 29, 2000, and May 1, 2000.

Below are EPD's responses to questions and issues raised by Rayonier:

1. Condition 3.2.1

Issue: Proposed condition 3.2.1 limits CO emissions from wood-fired boiler PB01 to less than 57.1 pounds per hour, for PSD avoidance purposes, and this hourly emissions limit was taken from their existing SIP permit. Rayonier voiced concern that a single test of the CO levels above 57.1 pounds per hour would result in a retroactive PSD violation. Consequently, they requested this hourly emissions limit be replaced by a rolling twelve month limit of 250 tons per year and that the frequency of monitoring be kept as weekly.

Response: In a meeting with Rayonier on November 9, 1999, EPD informed the facility that the frequency of monitoring would have to be continuous if the averaging period for the emissions limit was increased from hourly to annually. With that in mind, Rayonier asked that condition 3.2.1 not be revised.

2. Condition 5.2.2

Issue: Rayonier requests that this condition be implemented within 180 days of permit issuance and not within 90 days.

Response: This condition has been revised as requested.

3. Condition 5.2.3

Issue: Condition 5.2.3 requires periodic monitoring for the CO concentration at the exhaust from boiler PB01. Rayonier voiced concern about this condition because it did not allow for an implementation period. They request up to 90 days from the date of Permit issuance to implement this condition.

Response: The lack of such an implementation period was an oversight and has been added as requested. In addition, EPD has revised language in the condition to make it more clear.

4. Condition 7.2.1(d)

Condition 7.2.1 defines "off-permit" changes as defined in 40 CFR 70.4(b)(14) and Georgia Rule 391-3-1-.03(10)(b)6.

Issue: Rayonier voiced concerns about this condition because it appears to go beyond PSD requirements.

Response: Rayonier is correct in their judgement that Condition 7.2.1(d) goes beyond the implementation of the PSD rule requirements. The Part 70 regulation is more stringent in its interpretation of what emission increases and decreases must be tracked and recorded. Condition 7.2.1(d) will not be revised.

5. Condition 7.10.1

Issue: Rayonier voiced concern that Condition 7.10.1 requires that they submit a Risk Management Plan even though they are not currently subject to 40 CFR Part 68.

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Response: This condition does not automatically require such a submission. It states, “The Permittee shall submit a Risk Management Plan (RMP) in accordance with the 40 CFR Part 68, when and if, such requirement becomes applicable.” Condition 7.10.1 will not be revised.

6. Operational Flexibility

Issue: Rayonier did not request any operational flexibility in their initial or updated Title V permit applications; however, they determined that the draft permit did not allow them the operational flexibility they desired. Based on discussions between the facility and EPD, it became clear that Rayonier wanted their Title V permit to pre-authorize the most likely facility changes which would otherwise require notification or application as “Off-Permit” changes; 502(b)(10) changes, or Title V modifications. Hence, they submitted updated Title V permit application forms for Sections 4.40 (Short Term Activities), 4.50 (Insignificant Activities Based on Emission Levels), and 5.10 (For Boiler PB01) to specifically identify the operational flexibility that they desire under Part 70.

In addition, they submitted a SIP Permit Application to request specific flexibility for their wood fired boiler. They do not want the permit to specify that the boiler burns planer shavings, since it is capable of burning any wood waste. They also included a higher firing rate which they believe that the boiler has always been capable of. These changes needed approval under the construction permitting provisions in the Georgia Air Quality Rules.

Response: EPD initially commented on their request for more operational flexibility in a fax dated November 22, 1999. Since that time EPD has reviewed Rayonier’s request in more detail. The planer mill in Lumber City includes a boiler, five indirect fired steam heated lumber kilns, and a planer mill. A summary of the changes in potential emissions at the plant are illustrated in Supplement A of this letter. [Please note that this information demonstrates that kiln numbers 4 and 5 should have already had (and now must have) a PSD avoidance cap for VOCs in their permit. This cap is computed by adding the “past actual” annual VOC emission rate of old kiln No. 4 to an amount less than the PSD significance level for VOC (40 tons per year). The “past actual” VOC emission rate is the average VOC emissions from kiln No. 4 for its last two years of operation (presumably 1996-1997).]

a) Short Term Activity - Change in Wood Species Sawn & Dried

EPD has reviewed the definition of “major modification” under the PSD rule and the associated EPA memorandums to determine if this change would trigger the PSD modification provisions. It is important to note that there have not been and still are no permit conditions which prohibit the use of any wood species in the kilns or planer mill. For such changes, EPD does not anticipate an increase in VOC emissions because a very conservative VOC emission factor was chosen as part of the NSR “look back” analysis.

EPD also does not anticipate a net increase in PM emissions would be caused by sawing and planing a different wood species. This is because these steps are controlled by a cyclone and baghouse in series.

In Training Course APTI-461 (Intermediate Permitting), the course notes state that if a source undergoes a physical or operational change, and there is a net emissions decrease or no change, that is not a modification. As indicated above, EPD does not believe that there would be a net emissions increase associated with changing the wood species sawn and dried. Consequently, the PSD (and state permitting) modification provisions would not be triggered by such a change. Rayonier already has the requested flexibility without any addition to their Title V permit.

b) Short Term Activity - Additional Temporary Equipment (e.g., Generators, Compressors, Fire Pumps)

EPD cannot extend operational flexibility for such equipment because they appear in Georgia Rule 391-3-1-.03(10)(g), and the potential emissions from these units may have to be capped to not equal or exceed the PSD significant threshold. Rayonier would have to notify EPD when such an addition is to take place.

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c) Short Term Activity - Change in Length of Kiln Drying Time

EPD does not believe that language should be added to your Title V permit to specifically authorize the plant to change kiln drying time. On one hand, we believe that an increase in drying time is already authorized by the proposed Title V permit, since that would lower production capacity and emissions; if such an increase occurred, the VOC emissions per board-foot would either remain the same or be lower. On the other hand a reduction in the drying time cannot simply be authorized by the Title V permit, for the following reasons.

A reduction in drying time would allow an increase in production capacity and therefore (all other things being equal) allow an increase in potential VOC emissions. Small reductions in drying time are likely already possible and EPD believes that there is nothing in the proposed Permit which that would prevent such minor variations, just as there is nothing to prevent the plant from decreasing down-time between loads. However, if Rayonier were to modify its kilns (for example, by replacing its fan systems or adding electronic controls), this would be a change in the method of operation. Depending on the production increase allowed and the past actuals, such a change would be subject to PSD; this Title V permit could not pre-authorize that change. It is also not possible to pre-authorize a decrease in the drying time, accomplished without any modifications to the kilns, if this caused an emissions increase per board-foot. Such a change might need to undergo a permit review.

It is possible to pre-permit more than one operating scenario, if enough details of each scenario are supplied such that a full air quality review were possible for each such scenario. However, it is not possible to pre-permit a scenario in which all we know is that drying time is reduced.

d) Short Term Activity - Change in Operating Hours

EPD does not believe that changing the operating hours would trigger state, Title V, or PSD modification provisions because there would be no net emissions increase. The facility has been permitted to operate at 8,760 hours per year. Thus, Rayonier, can implement this flexibility without any additional language added to their Title V permit.

e) Insignificant Activity - Add New Forklift for Moving Lumber Around Yard

Adding such a mobile source, by itself, would not be covered under Title V. This would not necessarily be the case if such an addition signaled an increase in the number of lumber storage piles. Thus, Rayonier does not have to track and record the addition of forklift trucks.

f) Improve Log Utilization to Produce More Lumber from Same Logs W/out Exceeding Significance Levels

The PSD modification provisions can be triggered if there is a physical change or a change in the method of operation. It appears that improved log utilization would be a change in the method of operation and the PSD modification provisions will be triggered if there is a net emissions increase associated with this improvement. In order for this to be permitted without PSD review, the company would need a PSD avoidance permit which limited emissions to the last two year baseline actual emissions (average) plus an amount less than the PSD significance threshold for each pollutant for which there is an increase. Such a permit condition cannot be added without our knowing what the change in the method of operation consists of.

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g) Change the Type of Wood-waste Being Burned in the Boiler

Boiler PB01 was installed in 1978 and Rayonier noted in the original SIP permit application (# 2219 - 1986) that this boiler would only burn wood-waste (chips, planer shaving, hogged, etc.). This flexibility is already allowed by the existing SIP permit and proposed Part 70 permit. This does not need to be added as an insignificant activity based on emission levels.

h) Include Used Oil as an Alternative Fuel for Boiler PB01

The primary air pollutants of concern are SO₂, Pb, and HCl, and Supplement B contains an analysis of emissions before and after this proposed change. The combustion of used oil does not trigger the Title V or PSD modification provisions even though it is a change in the method of operation, because there is not an associated net emissions increase. The NSPS modification provisions would not be triggered because there is not an increase in emissions of a pollutant for which a standard applies. An SIP application must be submitted to request authorization to burn used oil; this application should show that there is no increase in pollutants.

SUPPLEMENT A

Summary as of June 6, 1975 (PSD Date)

The plant was operational before this date. However, no equipment list is available to determine potential emissions at the time the PSD rules came into effect.

Summary as of 1978

A retroactive PSD avoidance cap for CO emissions was established in 1997 to deal with the addition of the wood-waste boiler in 1978. Rayonier argued that, if the 1997 CO emissions test data is used to establish an emissions factor, the boiler does not need a retroactive PSD avoidance cap. EPD did not agree and limited CO emissions from the boiler for PSD avoidance purposes.

Summary as of April 1986

The facility consists of four indirect fired lumber kilns and one wood-waste fired boiler controlled by a wet scrubber. Facility is assumed to be a PSD minor source based on the then available CO emission factor for wood-waste combustion and without considering VOC emissions from the kilns.

Summary 1996-1997

In 1996-1997, kiln No. 4 was destroyed by fire. Rayonier decided to replace this destroyed kiln with two smaller kilns, replacement kiln No. 4 and new kiln No. 5

1. At the time of the kiln replacement, was Rayonier a major PSD source?

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The allowable potential to emit from the facility is determined based on information in their permit and correspondence files and in their Title V permit application. VOCs, CO, NO_x, PM, and SO₂ are analyzed.

VOCs: The primary sources of VOCs at the plant are from the four lumber kilns and the wood-waste fired boiler.

Boiler: The September, 1999 proposed AP-42 emission factor for Volatile Organic Compounds (VOC) = 0.093 lb/ton for wood with 50% moisture and a heating value of 4500 Btu/lb. Based on information in their Title V permit application, the average heating value of the wood-waste is 6,000 Btu/lb. I am assuming an average moisture content of 30%. The maximum hourly fuel consumption is based on the heating value of the fuel. Boiler PB01 is a spreader stoker with 75.8 MMBtu/hr heat input capacity. The maximum hourly fuel consumption, at an average heating value of 6,000 Btu/lb, is computed as follows:

$$\text{tons of fuel/hr} = (\text{lb fuel}/6,000 \text{ Btu}) * (75.8 \text{ MMBtu/hr}) * (1 \text{ ton}/2000 \text{ lbs}) = 6.32 \text{ tons/hr}$$

$$\text{VOC} = (0.093 \text{ lb/ton}) * [(100 - 30)/50] * (6,000/4500) = 0.174 \text{ lb VOC/ton}$$

$$\text{VOC} = (0.174 \text{ lbs VOC/ton wood waste}) * (6.32 \text{ tons wood waste/hr}) * (8760 \text{ hrs/yr}) * (1 \text{ ton}/2000 \text{ lbs})$$

VOC = 4.81 tpy

CO = 249.99 tpy, based on permit limit

It is important to note that this limit on CO emissions limits the amount of heat energy available to dry the lumber. Thus this limit also limits the board feet of lumber that can be dried. Based on Rayonier's letter to EPD dated April 26, 1997, it takes about 3,400 Btu/BF to kiln dry lumber. The maximum board feet that can be dried under this CO emissions limit is derived as follows:

$$\begin{aligned} (\text{BF/yr}) &= (\text{BF}/3,400 \text{ Btu}) * (250 \text{ tons CO/yr}) * (2000 \text{ lbs CO/ton}) * (\text{MMBtu}/0.3944 \text{ lbs CO}) \\ (\text{BF/yr}) &= 368,199,357 \text{ BF/yr or } 368 \text{ MMBF/yr} \end{aligned}$$

The five kilns can process 154 MMBF/yr to 209 MMBf/yr.

Thus, this limit on CO emissions allows the kilns to be operated at full capacity.

NO_x = 58 tpy (based on source testing)

PM = 39 tpy (based on source testing)

Kilns: Potential VOC emissions from the kilns is based on the capacity of the kilns and the VOC emission factor. Rayonier used 3.15 lbs VOC/MBF to compute emissions in 1996-1997. They have since used a factor of 4 lbs VOC/MBF for calculations regarding their Swainsboro and Baxley mills. I will apply the higher emission factor at the Lumber City mill. The EPD files and the Title V permit application was used to determine the capacity of each kiln. Table A-1 shows the capacity of the kilns. The first Data column shows the capacity as indicated in the our application files; the second column is data found in Rayonier's Title V application.. Table A-2 shows the corresponding board-feet capacities. Table A-3 shows annual VOC emissions generated by these kilns generated by using the following equation:

TITLE V APPLICATION REVIEW

(4 lbs VOC/MBF)*(MMBF/yr)*(1 ton/2000 lbs).

Table A-4 shows the potential emissions from the entire plant prior to the destruction of old Kiln No. 4.

Table A-1: Kiln Production Capacity in Tons per Year

Kiln	1996-1997 Capacity Data (tons/hr)	1999-2000 Capacity Data (tons/hr)
#1	11.81	15.75
#2	7.71	11
#3	7.71	11
#4 (Old Kiln No. 4 Destroyed in Fire)	7.71	-
#4 (New Kiln No. 4 Installed in 1997)	6.68	8
#5 (Installed in 1997)	6.68	8

Table A-2: Kiln Production Capacity in Board-Feet per Year

Kiln	1996-1997 Capacity Data MMBF/yr	1999-2000 Capacity Data MMBF/yr
#1	46	61
#2	30	43
#3	30	43
#4 (Old Kiln No. 4 Destroyed in Fire)	30	30
#4 (New Kiln No. 4 Installed in 1997)	24	31
#5 (Installed in 1997)	24	31

**Note: I used 4.5 lb/grn bd-ft as the conversion factor. This conversion factor is stated in SIP Application No. 9870 dated February 26, 1997.

Table A-3: Kiln VOC Emissions Potential of Plant Existing Prior to Destruction of Kiln No. 4

Kiln	1996-1997 VOCs in tpy	1999-2000 VOCs in tpy
#1	92	122
#2	60	86

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#3	60	86
#4 (Old Kiln No. 4 Destroyed in Fire)	60	60
TOTAL	272	354

Since the potential emissions from the kilns is 272, the allowable potential VOC emissions from the facility, before 1 destroyed the fourth kiln, clearly was greater than 250 tpy. Added to the potential VOC emissions from the boiler of 4.8 tons per year and the potential is about 277 tons VOCs per year.

Planer Mill: Assume a PTE of PM = 10 tpy (approximate guess)

Table A-4: Facility-Wide Potential to Emit

Pollutant	Allowable Potential to Emit (tpy)
VOC	≥ 277
CO	< 250
NO _x	~ 58
PM	~ 50

Since the facility potential to emit VOCs was never limited by permit condition, the 1996-97 potential VOC emissions of 272 tpy make this a major PSD source before kiln No. 4 burned down. Table A-3 also indicates that the most up-to-date information that we have on kilns No. 1, 2, and 3 (which are still operating) indicates that these 3 kilns alone have (and had) the potential to emit VOCs exceeding 250 tons per year.

2. Replacement of Kiln Destroyed in Fire

Rayonier replaced the fourth kiln with two smaller ones. Potential VOC emissions from each kiln are computed as follows:

$$\text{VOC emissions} = (4 \text{ lbs VOC/MBF}) * (24 \text{ MMBF/yr}) * (1 \text{ ton}/2000 \text{ lbs})$$

The potential VOC emissions from these two kilns is greater than 40 tpy, as shown in the following table:

Table A-5: Potential to Emit VOCs from New Kilns

Kiln	1996-1997 VOCs (tpy)	1999-2000 VOCs (tpy)
#4 (New Kiln No. 4 Installed in 1997)	48	62

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#5 (Installed in 1997)	48	62
TOTAL	96	124

3. Derivation of PSD Avoidance Limit for Kilns #4 and #5.

Rayonier was unable to provide a baseline VOC emissions estimate for the kiln destroyed by fire, as shown in their letter to EPD dated May 1, 2000. Without a creditable reduction of VOCs, at least equal to 56 tpy (i.e., 96 tpy - 40 tpy), the potential VOC emissions increase from the two new kilns, on a combined basis, must be limited for PSD avoidance purposes. The limit, in terms of board-feet, can be calculated, as follows.

$$\text{Production Limit (Kilns \#4 + \#5)} = (40 \text{ tons VOC/yr}) * (2000 \text{ lbs/ton}) * (\text{MBF}/4 \text{ lbs VOC}) = 20 \text{ MMBF/yr}$$

SUPPLEMENT B

Boiler PB01 is rated at 75.8 MMBtu/hr.

Wood-Waste Emissions Survey: Emission factors for SO₂, VOC, lead, and chlorine are taken from AP-42 - Section 1.6.

Pollutant	Emission Factors ^A	Emission Factors ^B	Emissions ^C (tpy)
NO _x *	0.1733 lb/MMBtu	0.1733 lb/MMBtu	58
CO*	0.3994 lb/MMBtu	0.3994 lb/MMBtu	249.99 (Permit Limit)
SO ₂	0.2 lb/ton	0.3733	10.33
VOC	0.256 lb/ton	0.478 lb/ton	13.23
Pb	0.00035 lb/ton	0.000653 lb/ton	0.018
PM*	0.1162 lb/MMBtu	0.1162 lb/MMBtu	39
HCl (with scrubber)	0.0078	0.216	6

* From testing conducted in August 28, 1997

A = Emission factors in lb/ton taken from AP-42 with a fuel that contains 50% moisture and has a heating value of 4,500 Btu/lb.

B = Converting the AP-42 values to represent a fuel that contains 30% moisture and has a heating value of 6,000 Btu/lb.

C = Assumed a maximum fuel usage rate of 6.32 tons/hr (average of the values provided in Section 5.10 form in their Title V Permit.

Used Oil Emissions Survey: Emissions are taken from AP-42 Section 1.11.

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Pollutant	Emission Factors	Emissions^A (tpy)
NO _x	19 lb/1000 gal	0.0055
CO	5 lb/1000 gal	0.00146
SO ₂	147S/1000 gal (S=2.5)	0.107
VOC	1.17 lb/1000 gal	0.00034
Pb	55L lb/1000 gal	L = 1, 0.01606
PM	64A lb/1000 gal	A = 10%, 0.1868
HCl (with scrubber)	66Cl/1000 gal	Cl = 10%, 0.193

A = Maximum used oil usage = 584 gallons per year based on a used oil density of 7.5 lb/gal and heating value of the fuel stated in Section 5.10 of their Title V permit application.

Modified (or New) Title V Conditions
TV-10217, Rayonier, Inc. - Lumber City Planer Mill
May 3, 2000

3.2.2 The Permittee shall not dry green wood in amounts equal to or exceeding twenty (20) million green board feet of wood in kilns DK04 and DK05, combined, during any twelve consecutive months.

[PSD Avoidance - 391-3-1-.03(2)(c)]

5.2.2 Within ~~90~~ 180 days of the date of issuance of this permit, the Permittee shall establish the scrubbing liquid flow rate for representative operation of scrubber SC01 using data from the liquid flow rate monitoring device required by Condition 5.2.1a. The Permittee shall submit, for acceptance by the Division, a report containing the liquid flow rate data, the flow rate which has been established as representative of scrubber operation, and a description of the procedures used to establish the flow rate.

[391-3-1-.02(6)(b)1 and 40 CFR 70.6(a)(3)(i)]

5.2.3 ~~The Permittee shall maintain, calibrate, and operate an instrument/analyzer for measuring the CO concentration in the exhaust gas from boiler PB01. The output of the instrument/analyzer shall be in terms of parts per million (ppm). Calibration shall be performed each time that the instrument/analyzer is used to measure CO concentration.~~

~~[391-3-1-.02(6)(b)1 and 40 CFR 70.6(a)(3)(i)]~~

The Permittee shall, for each week or portion of each week of operation of wood-fired boiler PB01, measure the concentration of CO (parts per million) using the procedures of Gas Research Institute Method GRI-96/0008, EPA/EMC Conditional Test Method (CTM-30) *Determination of Nitrogen Oxides, Carbon Monoxide, and Oxygen Emissions from Natural Gas-Fired Engines, Boilers and Process Heaters Using Portable Analyzers*. The sampling time for each measurement shall be no less than 30 minutes and no longer than three hours. The CO concentration shall be recorded once each minute during the measurement. The CO concentration for each sampling period shall be determined as an arithmetic average over the sampling period. The Permittee shall implement this condition within 90 days of the date of issuance of this Permit. [391-3-1-.02(6)(b)1. and 40 CFR 70.6(a)(3)(i)]

5.2.6 For the purposes of the report required in Condition 5.3.1, the following excess emissions, exceedances, and excursions shall be reported.

[391-3-1-.02(6)(b)1. and 40 CFR 70.6(a)(3)(i)]

a. Excess emissions:

None required to be reported in accordance with Condition 5.3.1.

b. Exceedances:

~~None required to be reported in accordance with Condition 5.3.1.~~

i. Any amount of green wood dried in kilns DK04 and DK05, combined, exceeding 20 million green board feet during any twelve consecutive month period.

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c. Excursions:

- i. Any time that the average flow rate of the scrubbing liquid of scrubber SC01 is greater than 120 percent or less than 80 percent of the value established in Condition 5.2.2 for a period of three contiguous hours or more.
- ii. Any time that the average gas stream pressure loss in wet scrubber SC01 is outside the range of 5 to 9 inches of water for a period of three contiguous hours or more.
- iii. Any average CO concentration measured in accordance with Condition 5.2.4 that is greater than 536 ppm.

6.2.2 The Permittee shall maintain monthly records specifying the green board feet of wood dried in lumber kilns DK04 and DK05, combined. All calculations used to figure the values should be kept as part of the monthly record.

[391-3-1-.02(6)(b)1.; 40 CFR 70.6(a)(3)(i)]

6.2.3 The Permittee shall use the monthly records required by Condition 6.2.2 to determine the twelve month rolling total of green board feet of wood dried in kilns DK04 and DK05, combined, on a monthly basis. A twelve consecutive month total shall be for a month in the reporting period plus the totals for the previous eleven consecutive months.

[391-3-1-.02(6)(b)1.; 40 CFR 70.6(a)(3)(i)]

6.2.4 The Permittee shall submit reports to the Division for the semiannual periods ending June 30 and December 31, of each year. All reports shall be postmarked by the 30th day following the end of each reporting period July 30 and January 30, respectively. The reports shall include the 12 month rolling total of green board feet of wood dried in lumber kilns DK04 and DK05, combined, for each month in the semiannual reporting period. The reports shall be prepared from the records contained in Condition 6.2.3.

[391-3-1-.02(6)(b)1. and 40 CFR 70.6(a)(3)(i)]

ATTACHMENT B

INSIGNIFICANT ACTIVITIES BASED ON EMISSION LEVELS

Description of Emission Units / Activities	Quantity
Not Applicable Addition of forklift trucks for moving lumber around yard.	NA 1