

Facility Name: **Weyerhaeuser Corporation – Port Wentworth Mill**

City: Port Wentworth

County: Chatham

AIRS #: 04-13-051-00010

Application #: 14026

Date SIP Application Received: September 27, 2002

Date Title V Application Received: December 09, 2003

Permit No: 2611-051-0010-V-01-7

<b>Program</b>	<b>Review Engineers</b>	<b>Review Managers</b>
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## **Introduction**

This narrative is being provided to assist the reader in understanding the content of the referenced SIP permit to construct and draft operating permit amendment. 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 issued pursuant to: (1) Sections 391-3-1-.03(1) and 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 following narrative is designed to accompany the draft permit and is presented in the same general order as the permit. 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 comment period and EPA review process will be described in an addendum to this narrative.

**I. Facility Description**

A. Existing Permits

Table 1 below lists the current Title V permit, and all administrative amendments, minor and significant modifications to that permit, and 502(b)(10) attachments. Comments are listed in Table 2 below.

Table 1: Current Title V Permit and Amendments

Permit/Amendment Number	Date of Issuance	Comments	
		Yes	No
2611-051-0010-V-01-0	December 19, 2002		X
2611-051-0010-V-01-1	December 17, 2003	X	
2611-051-0010-V-01-2	October 13, 2004	X	
2611-051-0010-V-01-3	December 08, 2004	X	
2611-051-0010-V-01-4	February 15, 2005	X	
2611-051-0010-V-01-5	N/a	X	
2611-051-0010-V-01-6	August 31, 2005	X	

Table 2: Comments on Specific Permits

Permit Number	Comments
2611-051-0010-V-01-0	N/A
2611-051-0010-V-01-1	To modify permit conditions and to avoid Acid Rain requirements.
2611-051-0010-V-01-2	The modification of the chip feed system to debottleneck Kamyr Digester.
2611-051-0010-V-01-3	The inclusion of 40 CFR Pat 63, Subpart MM requirements.
2611-051-0010-V-01-4	The installation of a new pressure diffusion washer.
2611-051-0010-V-01-5	This permit number was inadvertently skipped. No permit amendment with this number has ever been issued.
2611-051-0010-V-01-6	502(b)(10) change for construction of a new stacker/reclaim system, debarker and chipper.

B. Regulatory Status

1. PSD/NSR/RACT

Weyerhaeuser is major for PSD regulations. To date, the facility has undergone two PSD reviews, a PCP review, and has taken limits to avoid PSD reviews on multiple occasions. Previous limits are indicated in the attached copy of the Title V operating permit and its amendment. Weyerhaeuser has applied for a PSD permit for the 1996 modification of the No. 3 Recovery Boiler. This application is the result of a PSD lookback initiated by the previous owners, Willamette Industries, Inc. The modification occurred while the boiler was owned by Smurfit-Stone Container Corporation. The modification consisted of installing additional steam tubes that connected the upper steam drums to the lower drums and changing the baffling in the main steam drum. These modifications resulted in an increase in firing rate of 0.4 million pounds of black liquor per day. The increase in potential emissions associated with this modification exceeded the thresholds for a "significant increase in emissions" given in 40 CFR Part 52.21 for NO<sub>x</sub>, SO<sub>2</sub>, CO, PM, and PM<sub>10</sub>.

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	Yes	√		
PM <sub>10</sub>	Yes	√		
SO <sub>2</sub>	Yes	√		
VOC	Yes	√		
NO <sub>x</sub>	Yes	√		
CO	Yes	√		
TRS	Yes	√		
H <sub>2</sub> S	Yes	√		
Individual HAP	Yes	√		
Total HAPs	Yes	√		

**II. Proposed Modification**

A. Description of Modification

See Section 2.2 of the Preliminary Determination.

B. Emissions Change

See Section 2.4 of the Preliminary Determination. Air toxics emissions increased by 20.15 TPY. See attached spreadsheet "12.08.03 RB Air Toxics data.xls".

C. PSD/NSR Applicability

The modification to the No. 3 Recovery Boiler is a major modification with respect to PSD regulations. The Preliminary Determination for the modification of the No. 3 Recovery Boiler describes the issues in detail.

**III. Facility Wide Requirements**

A. Emission and Operating Caps

There are no new facility-wide emission or operating caps associated with this modification.

B. Applicable Rules and Regulations

There are no new facility-wide rules or regulations associated with this modification.

C. Compliance Status

The facility is in compliance with all facility-wide rules and regulations.

D. Operational Flexibility

No new request for operational flexibility associated with this modification.

E. Permit Conditions

The modification to the No 3 Recovery Boiler does not necessitate any new or modified facility-wide permit conditions.

**IV. Regulated Equipment Requirements**

A. Brief Process Description

See Section 2.2 of the Preliminary Determination.

B. Equipment List for the Process

Emission Units		Specific Limitations/Requirements		Air Pollution Control Devices	
ID No.	Description	Applicable Requirements/Standards	Corresponding Permit Conditions	ID No.	Description
RE01	No. 3 Recovery Boiler	40 CFR 52.21 40 CFR 60 Subpart BB 40 CFR 63 Subpart S 40 CFR 63 Subpart MM 391-3-1-.02(2)(b) 391-3-1-.02(2)(e) 391-3-1-.02(2)(g) 391-3-1-.02(2)(gg)	3.3.11, 3.3.12, 3.3.17, 3.3.19, 3.3.21, 3.3.22, 3.3.32, 3.3.34, 3.3.35, 3.3.37, 3.4.1, 3.4.2, 4.2.1, 4.2.2, 4.2.4, 4.2.8 through 4.2.12, 5.2.1, 5.2.2, 5.2.3, 6.1.7, 6.2.4, 6.2.5, 6.2.6, 6.2.9, 6.2.17, 6.2.21, 6.2.24 through 6.2.29	RE01E, RE01W	Electrostatic Precipitator

C. Equipment & Rule Applicability

**Emission and Operating Caps** –  
No new emission or operating caps.

**Applicable Rules and Regulations** –

40 CFR Part 52.21, “Prevention of Significant Deterioration (PSD)” - The facility is major for PSD (PTE  $\geq$  100 TPY) and the modification to the No. 3 Recovery Boiler resulted in a significant emissions increase for NO<sub>x</sub>, SO<sub>2</sub>, CO, and PM/PM<sub>10</sub>.

40 CFR Part 60, Subpart Db, “New Source Performance Standards for Industrial-Commercial-Institutional Steam Generating Units” - Since the changes to the No. 3 Recovery Boiler did not increase its capacity to burn #2 and #6 fuel oils, the changes do **not** make the boiler an affected source under Subpart Db.

**Emission and Operating Standards** - An analysis of the Best Achievable Control Technology (BACT) for recovery boilers/furnaces at Kraft Pulp Mills revealed that no add-on control efficiencies have been achieved in practice for NO<sub>x</sub>, SO<sub>2</sub>, TRS, and CO. The same analysis revealed the BACT for PM and PM<sub>10</sub> to be an electrostatic precipitator (ESP) with a 99.8% control efficiency. The No. 3 Recovery Boiler is currently controlled by two (2) ESPs with a combined control efficiency of 98.75% for PM/PM<sub>10</sub>. Therefore, the current permitted limits for NO<sub>x</sub>, SO<sub>2</sub>, TRS, and CO would satisfy PSD requirements for this modification. However, the facility has expressed difficulty with demonstrating compliance on a lb/hr basis, and has requested that the limit be expressed as 0.02 grain PM/dscf at 8% O<sub>2</sub> which is more stringent than 40 CFR Part 63, Subpart MM requirements.

D. Compliance Status

The No. 3 Recovery Boiler is currently in compliance with all applicable rules and regulations.

E. Operational Flexibility

The No. 3 Recovery Boiler primarily burns black liquor solids with #2 and #6 fuel oils as auxiliary fuels.

F. Permit Conditions

The emission limit in Condition 3.3.11.a will be changed to 0.02 grains PM/dscf at 8% oxygen. This is the equivalent of the current permit limit for PM, 47 pounds per hour (lb/hr), converted using Equation 2 from §63.865:

$$\text{Black Liquor Solids firing rate} = \text{BLS}_{\text{TOT}} = 5.1 \times 10^6 \text{ pounds per day} = 2550 \text{ tons/day}$$

$$\text{PM emission rate} = 47 \text{ pounds/hour} = 1128 \text{ pounds/day}$$

$$\text{ER}_{\text{RF}} = 1128 \div 2550 = 0.44 \text{ lb PM/ton BLS}$$

$$\text{Q}_{\text{RF}} = \text{average gas flow rate from recovery furnace} = (151,121 + 119,778) = 270,899 \text{ dscfm}$$

$$\text{F1} = \text{conversion factor} = 1.44 \text{ min} \cdot \text{gram/day} \cdot \text{kg} \text{ (} 0.206 \text{ min} \cdot \text{lb/day} \cdot \text{grain)}$$

$$\begin{aligned} \text{C}_{\text{EL,RF}} &= \text{Concentration corrected to 8 \%} = \frac{(\text{ER}_{\text{RF}})(\text{BLS}_{\text{TOT}})}{(\text{F1})(\text{Q}_{\text{RF}})} \\ &= \frac{(0.44 \text{ lb PM/ton BLS})(2550 \text{ ton BLS/day})}{(0.206 \text{ min} \cdot \text{lb/day} \cdot \text{grain})(270,899 \text{ dsf/min})} \\ &= \mathbf{0.02 \text{ grains PM/dscf}} \end{aligned}$$

The emissions limitation from 40 CFR Part 63, Subpart MM (0.10 gram per dry standard cubic meter (g/dscm) and 0.044 grain per dry standard cubic foot (gr/dscf)) corrected to 8 percent oxygen is subsumed by this limit. Therefore, Condition No. 3.3.11.f will be deleted.

Conditions 3.3.11.c. and 3.3.11.e will be modified to include a citation for PSD compliance (40 CFR Part 52.21).

**V. Testing Requirements (with Associated Record Keeping and Reporting)**

A. Individual Equipment:

- a. Specific test requirements – Testing requirements were originally drafted as Condition No. 4.2.7. As such, Condition 4.2.7 was reserved in subsequent amendments and the Subpart MM testing requirements were written as Condition Nos. 4.2.8 and 4.2.9. Condition No. 4.2.7 will be reserved for future use. Since there are no provisions for testing in 40 CFR 52.21, no citation referencing PSD will be added to Condition Nos. 4.2.8 and 4.2.9.
- b. Record keeping for testing – No new record keeping requirements have been added.
- c. Reporting for testing – No new reporting requirements have been added.

B. Equipment Groups (all subject to the same test requirements):

- a. Specific test requirements – No new testing requirements have been added.
- b. Record keeping for testing – No new record keeping requirements have been added.
- c. Reporting for testing – No new reporting requirements have been added.

**VI. Monitoring Requirements (with Associated Record Keeping and Reporting)**

A. Individual Equipment:

- a. Specific monitoring requirements – No new requirements have been added.
- b. Record keeping for monitoring – No new requirements have been added.
- c. Reporting for monitoring – No new requirements have been added.

B. Equipment Groups (all subject to the same monitoring requirements): No new requirements have been added.

**VII. Other Record Keeping and Reporting Requirements**

No new requirements have been added.

**VIII. Specific Requirements**

A. Operational Flexibility

The existing permit contains the standard provisions for operational flexibility. There have been no requests for additional provisions pertaining to operational flexibility.

B. Alternative Requirements

There has been no request by the facility for alternative requirements under Rule 391-3-1-.03(10)(d)8. to combine multiple overlapping of state and federal requirements.

C. Insignificant Activities

There are no additional insignificant activities due to this significant modification.

D. Temporary Sources

There are no temporary sources associated with this modification.

E. Short-Term Activities

There are no short-term activities associated with this modification.

F. Compliance Schedule/Progress Reports

Not applicable.

G. Emissions Trading

Not applicable.

H. Acid Rain Requirements

Facility has accepted facility-wide restrictions to avoid Acid Rain requirements.

I. Prevention of Accidental Releases

This modification does not change the source's applicability to this requirement.

J. Stratospheric Ozone Protection Requirements

This modification does not change the source's applicability to this requirement.

K. Pollution Prevention

Not applicable.

L. Specific Conditions

Not applicable.