NORTH CAROLINA DIVISION OF AIR QUALITY

DRAFT Air Permit Review

Permit Issue Date:

Region: Washington Regional Office
County: Craven
NC Facility ID: 2500104
Inspector's Name: Betsy Huddleston
Date of Last Inspection: 05/17/2011
Compliance Code: 3 / Compliance - inspection

Facility Data

Applicant (Facility's Name): **Weyerhaeuser NR Company Vanceboro Pulp**

Facility Address:

Weyerhaeuser NR Company Vanceboro Pulp
1785 Weyerhaeuser Road

Vanceboro, NC 28586

SIC: 2611 / Pulp Mills
NAICS: 32211 / Pulp Mills

Facility Classification: Before: Title V **After:** Title V
Fee Classification: Before: Title V **After:** Title V

Permit Applicability (this application only)

SIP:
NSPS:
NESHAP:
PSD:
PSD Avoidance:
NC Toxics:
112(r):
Other: TV Appeal

Contact Data

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Application Data

Application Number: **2500104.05A**
Date Received: 02/03/2005
Application Type: Appeal
Application Schedule: Appeal

Existing Permit Data
Existing Permit Number: 02590/R42
Existing Permit Issue Date: 04/07/2011
Existing Permit Expiration Date: 12/31/2013

Review Engineer: **Jay W Evans**

Review Engineer's Signature: **Date:**

Comments / Recommendations:
Issue 02590/T43
Permit Issue Date: TDB
Permit Expiration Date: TDB

I. Introduction and Purpose of Application:

Weyerhaeuser NR Company (Weyerhaeuser) operates an integrated bleached Kraft pulp mill near New Bern, North Carolina. The primary activity at the Weyerhaeuser New Bern Mill is pulp production (Standard Industrial Classification [SIC] code 2611), and operations include multiple fuel-fired boilers, chemical recovery

operations, wood pulping and bleaching operations, and additional operations and equipment necessary to support these operations.

The Initial Title V permit 02590T30 was appealed. The issues upon which the appeal was based have subsequently been resolved through a settlement agreement. Consequently, the purpose of this permitting activity is to issue an updated Title V permit that reflects both the settlement agreement as well as any permit modifications authorized subsequent to the appeal and made to the existing state construction and operating permit(s).

II. History/Background/Application Chronology

December 31, 2003 – Initial Title V permit 02590T30 issued.
February 9, 2004 – Initial Title V permit 02590T30 adjudicated.
February 9, 2005 – Permit 02590R31 issued pursuant to application 2500104.04A. The purpose of this application was to replace/upgrade the existing electrostatic precipitator installed on the then-existing recovery furnace and the addition of three new storage tanks. The necessary changes made pursuant to this application are reflected in the draft Title V permit and the specific changes are discussed further below as applicable.
October 19, 2006 – Permit 02590R32 issued pursuant to application 2500104.06A. The purpose of this application was to allow for the collection and control of existing HVLC sources as required per MACT Subpart S. The necessary changes made pursuant to this application are reflected in the draft Title V permit and the specific changes are discussed further below as applicable.
July 26, 2007 – Permit 02590R33 issued pursuant to application 2500104.07C. The purpose of this application was to include Special Order by Consent (SOC) compliance language relative to the then-existing smelt dissolving tanks. The changes made pursuant to this application are not reflected in the draft Title V permit because the SOC is no longer in effect and the tanks in question have been replaced as outline further below.
September 21, 2007 – Permit 02590R34 issued pursuant to application 2500104.07B. The purpose of this application was to add an additional 500 ton high density bleach pulp storage tank as well and some addition changes to replace associated pumps and pump motors as well as relocate certain acid sewer lines. The necessary changes made pursuant to this application are reflected in the draft Title V permit and the specific changes are discussed further below as applicable.
January 13, 2009 – Permit 02590R35 issued pursuant to application 2500104.08C. The purpose of this application was to add natural gas as a permitted fuel for the existing Lime Kiln. The necessary changes made pursuant to this application are reflected in the draft Title V permit and the specific changes are discussed further below as applicable.
April 6, 2009 – Permit 02590R36 issued pursuant to application 2500104.09D. The purpose of this application was to add No. 2 fuel oil as a permitted fuel for the existing Recovery Furnace. The necessary changes made pursuant to this application are reflected in the draft Title V permit and the specific changes are discussed further below as applicable.
June 15, 2009 – Permit 02590R37 issued pursuant to applications 2500104.08D; 09A; 08B; and 06C. The purpose of these applications was to make certain changes to the existing recovery furnace system defined as the 2009 Recovery Furnace Upgrade Project; add the Recovery Furnace as backup/alternative control for certain HVLC Subpart S sources; and update the facility-wide toxics demonstration (state-only). The necessary changes made pursuant to this application are reflected in the draft Title V permit and the specific changes are discussed further below as applicable.
August 7, 2009 – Permit 02590R38 issued pursuant to application 2500104.09E. The purpose of this application was to install a pilot plant to remove lignin solids from the black liquor generated on-site The necessary changes made pursuant to this application are reflected in the draft Title V permit and the specific changes are discussed further below as applicable.
March 3, 2010 – Permit 02590R39 issued pursuant to application 2500104.09H. The purpose of this application was to add natural gas as a permitted fuel for the existing No. 2 Power Boiler. The necessary changes made pursuant to this application are reflected in the draft Title V permit and the specific changes are discussed further below as applicable.
October 26, 2010– Permit 02590R40 issued pursuant to application 2500104.10A. The purpose of this application was to existing pulp machines/dryer. The necessary changes made pursuant to this application are reflected in the draft Title V permit and the specific changes are discussed further below as applicable.

January 4, 2011 – Permit 02590R41 issued pursuant to application 2500104.09G. The purpose of this application was to Case-by-Case MACT requirements for Boilers and Process Heaters as applicable to the source. The necessary changes made pursuant to this application are reflected in the draft Title V permit and the specific changes are discussed further below as applicable.
April 7, 2011 – Permit 02590R42 issued pursuant to application 2500104.10B. The purpose of this application was to make modifications upgrade the existing bleach plant; remove the black liquor gasifier from the facility; and add natural gas and No. 2 fuel oil as a permitted fuel for the existing No. 1 Power Boiler. The necessary changes made pursuant to this application are reflected in the draft Title V permit and the specific changes are discussed further below as applicable.

Each above-reference permit review is attached to this review and are incorporated by reference as applicable.

III. Permit Modifications/Changes

The following generally summarizes the changes made to the adjudicated initial Air Quality Permit (Permit No. 02590T30)[Page numbers are for draft permit unless noted otherwise]

Page(s)	Section	Description of Change(s)
NA	Permit Cover Page	Amend permit revision numbers and issuance/effective dates and updated the insignificant activities attachement.
3-9	List of Permitted Sources	- Add No.2 and natural gas to No. 1 Power Boiler fuels. Include Case-by-Case MACT/CAIR - Removed Package Boiler - Add No.2 and natural gas and propane to No. 2 Power Boiler fuels and removed black liquor gasifier gases as fuel. Corrected existing heat input. Include Case-by-Case MACT/CAIR. - Temp Boiler: Include Case-by-Case MACT. - Foul Condensate System: Added Recovery Boiler and Lime Kiln to affected source controls. - River Oxygen Motors: included MACT ZZZZ - Wood yard: Removed log sawing. - Turpentine Recovery: Added Power Boiler; Recovery Boiler and Lime Kiln to affected source controls. - Digester Area: Added Recovery Boiler to affected source controls. - Washing and Screening: Added Recovery Boiler to affected source controls. - Oxygen Delignification Area: Added Power Boiler and Recovery Boiler to affected source controls. - Bleach Plant Area: Removed ES 425-076; 083; 081; 020; 026; and 024. Renamed 425-008; 13; 011; 0417; 054; 052; 060; 067; 065; 032; 036; and 038. - Evaporator Area: Removed Black Liquor storage tanks (4); Added Recovery Boiler to affected source controls - Recovery Boiler: added Subpart S Controls and NSPS BB; added natural gas and No. 2 fuel oil fuels. Updated description to reflect BLS firing design; and updated control device - Smelt Dissolving tanks replaced with new, single NSPS Dissolving tank with wet scrubber -Black liquor gasifier; Air Preheater; and Saltcake Mix Tank removed from permit - Lignin Removal Process added. - Lime Kiln: natural gas added as fuel - Pulp Machine: removed Pulp Trim Handling System - HBA Plant removed from permit
10	Specific Condition 2.1.A	-updated fuels -updated PSD avoidance monitoring to calculate/report actual emissions
12(T30)-end	Specific Condition 2.1.B	Removed Package Boiler-renumbered remaining conditions throughout

Page(s)	Section	Description of Change(s)
14	Specific Condition 2.1.B	-updated fuels -removed 2D .0519 applicability -updated NSPS applicability and monitoring -removed erroneous PSD avoidance condition -added 2D .0503 applicability -added 2D .0530(u) monitoring -removed outdated SOC reference
17	Specific Condition 2.1.D	-added Recovery Boiler and Lime Kiln controls and monitoring
21	Specific Condition 2.1.E	-added 2D .0516 applicability/monitoring -added MACT ZZZZ applicability
23	Specific Condition 2.1.F	-added Recovery Boiler controls and monitoring
24	Specific Condition 2.1.G	-added Recovery Boiler controls and monitoring
25	Specific Condition 2.1.H	-added Recovery Boiler controls and monitoring
26	Specific Condition 2.1.I	-updated fuels and description -removed 2D. 0508 visible emissions applicability -added NSPS PM, TRS, and VE applicability -added 2D .0530(u) monitoring -removed 2D. 0528 TRS applicability -updated monitoring per Subpart MM
29	Specific Condition 2.1.J	-updated to new source and controls -updated 2D. 0521 visible emissions limit -added NSPS PM and TRS applicability -added 2D .0530(u) monitoring -removed 2D. 0528 TRS applicability -updated monitoring per Subpart MM
31	Specific Condition 2.1.K	-updated fuels -added 2D .0508 applicability -updated NSPS PM limits/monitoring -updated monitoring per Subpart MM
20(T30)-end	Specific Condition 2.1.L	Removed Black Liquor gasifier Pre-heater - renumbered remaining conditions throughout
39	Specific Condition 2.1.N	-added new source and all applicable limits
36(T30)-end	Specific Condition 2.1.P	Removed Pulp Trim System-renumbered remaining conditions throughout
38(T30)-end	Specific Condition 2.1.Q	Removed HBA Plant-renumbered remaining conditions throughout
41	Specific Condition 2.2.A	-updated source descriptions and added controls -removed SSM allowance language -removed reference to April 17, 2006 compliance reference -update fan “on” to amps -modified SFR value and liquid density -added bleach testing requirement for modified source
47	Specific Condition 2.2.B	-updated placeholder language to include specific Subpart MM conditions. Where sources that are subject to Subpart MM were previously required to monitor for compliance for applicable pollutants, such monitoring was updated to include the continuous compliance monitoring of Subpart MM.
50	Specific Condition 2.2.C	-updated to reflect from former 2D .0417 to the current 2D. 2405

Page(s)	Section	Description of Change(s)
51	Specific Condition 2.2.D	-added condition for tracking Actual-to-Future Projected Actual monitoring per 2D. .0530(u) for affected source/projects
48(T30)	Specific Condition 2.2.D	-renumbered toxics condition to 2.3 A.2
54	Specific Condition 2.2.E	-added condition for 1 and 2 Power Boiler Case-by-Case MACT requirements
49(T30)	Specific Condition 2.3	-removed non-applicable SOC
58	Specific Condition 2.3 A.1	-added new state-only toxics condition
80-end	General Conditions	-updated to most recent version (version 3.x)

IV. Summary of Current Emission Sources and Control Devices

The following table contains a summary of all permitted emission sources and associated air pollution control devices and appurtenances:

Emission Source ID No.	Emission Source Description	Control Device ID No.	Control Device Description
Power Area			
ES 150-001 **CAIR Ozone Season Source** **Case-By-Case MACT**	No. 1 Power Boiler – No. 2/No. 4/No. 6 Fuel Oil/Natural Gas-Fired (579 million Btu/hour nominal maximum heat input)	NA	NA
ES 161-001 **NSPS Subpart Db** **MACT Subpart S Control Device** **CAIR Ozone Season Source** **Case-By-Case MACT**	No. 2 Power Boiler - No. 2, 4 and No. 6 Fuel Oil/Propane/Natural Gas/LVHC gases/HVLC gases/SOGs-Fired (287 million Btu per hour maximum heat input rate from by-product gas, natural gas, propane and fuel oil/267 million Btu per hour maximum heat input rate from oil only)	CD 161-018 CD 161-024	Caustic scrubber (400 gallons per minute nominal liquid injection rate) Chevron-type mist eliminator
ES 160-TMP **NSPS Subpart Dc** **Case-By-Case MACT**	Temporary Boiler - No. 2 Fuel Oil-Fired (greater than 30 million Btu/hour and less than 100 million Btu hour nominal maximum heat input)	NA	NA
ES 155-999	Power Area Fugitive Sources	NA	NA
Foul Condensate Handling System			
ES 161-078 **NSPS Subpart BB** **MACT Subpart S**	Steam Stripper (SOG)	ES 161-001 or ES 445-001	No. 2 Power Boiler or Recovery Boiler via LVHC (SOG) NCG Collection System
ES 401-007 **MACT Subpart S**	Stripper Feed Tank No. 1 (LVHC source)	ES 161-001 or ES 445-001	No. 2 Power Boiler or Recovery Boiler via LVHC NCG Collection System
ES 401-013 **MACT Subpart S**	Stripper Feed Tank No. 2 (LVHC source)		

Emission Source ID No.	Emission Source Description	Control Device ID No.	Control Device Description
ES 161-484 **MACT Subpart S**	LVHC Foul Gas Collection System Cooler	or ES 455-061 or ES 445-001	or No. 2 Power Boiler or Recovery Boiler via HVLC NCG Collection System or Lime Kiln via LVHC collection system
ES 402-722 ES 402-943 **MACT Subpart S**	HVLC Foul Gas Collection System Cooler HVLC Gas Collection System Cooler		
Waste Water Treatment			
ES 185-000 ES 185-010	Wastewater Treatment System	NA	NA
ES 185-125 **MACT Subpart ZZZZ**	River Oxygen Diesel Motor No. 1	NA	NA
ES 185-127 **MACT Subpart ZZZZ**	River Oxygen Diesel Motor No. 2	NA	NA
Wood Yard			
ES 354-044	Log Debarking	NA	NA
ES 356-999	Pine Wood Chip Piles	NA	NA
Turpentine Recovery			
ES 401-704 **MACT Subpart S**	Turpentine Decanter	ES 161-001 or ES 445-001 or ES 455-061	No. 2 Power Boiler via LVHC/HVLC NCG Collection System or Recovery Boiler via LVHC/HVLC NCG Collection System or Lime Kiln via LVHC NCG Collection System
ES 401-709 **MACT Subpart S**	Underflow Decanter		
ES 402-211 **NSPS Subpart BB** **MACT Subpart S**	Primary Vapor STM Vessel		
ES 402-220 **NSPS Subpart BB** **MACT Subpart S**	Secondary Condenser		
ES 401-071-02 **MACT Subpart S**	Turpentine Storage Tank		
ES 401-076	Turpentine Sump	NA	NA
Digester Area			
ES 402-119 **NSPS Subpart BB** **MACT Subpart S**	Chip Bin (HVLC source)	ES 161-001 or ES 445-001	No. 2 Power Boiler or Recovery Boiler via HVLC/LVHC NCG Collection System
ES 402-141 **NSPS Subpart BB** **MACT Subpart S**	Continuous Digester (LVHC source)		

Emission Source ID No.	Emission Source Description	Control Device ID No.	Control Device Description
ES 402-179 **NSPS Subpart BB** **MACT Subpart S**	Blow Tank (HVLC source)		
ES 402-190 **NSPS Subpart BB** **MACT Subpart S**	Filtrate Wash Liquor Tank	ES 161-001 or ES 445-001	No. 2 Power Boiler or Recovery Boiler via HVLC NCG Collection System
ES 402-150 **NSPS Subpart BB** **MACT Subpart S**	Primary Flash Tank		
ES 402-151 **NSPS Subpart BB** **MACT Subpart S**	Secondary Flash Tank		
Washing and Screening			
ES 420-004	Rejects Vibrating Screens	NA	NA
ES 420-006 **NSPS Subpart BB** **MACT Subpart S**	Filtrate Storage Tank No. 1	ES 161-001 or ES 445-001	No. 2 Power Boiler or Recovery Boiler via HVLC NCG Collection System
ES 420-008 **NSPS Subpart BB** **MACT Subpart S**	Filtrate Storage Tank No. 2		
ES 420-025 **MACT Subpart S**	Foam Tank		
ES 420-010 **MACT Subpart S**	Brownstock Washer System		
ES 420-044 **MACT Subpart S**	Brown Stock Decker		
ES 420-123	Primary Rejects Tank (190)	NA	NA
ES 420-140	Secondary Rejects Tank (192)	NA	NA
ES 420-332	Brown Decker Filtrate Tank (189)	ES 161-001 or ES 445-001	No. 2 Power Boiler or Recovery Boiler via HVLC NCG Collection System
ES 420-029	Washed Stock Chest (9)	NA	NA
ES 420-325	Brown Stock Washed HD Chest (3)	ES 161-001 or ES 445-001	No. 2 Power Boiler or Recovery Boiler via HVLC NCG Collection System
Oxygen Delignification Area			
ES 420-052	200 Ton Brownstock HD Chest (38)	NA	NA
ES 420-229 **MACT Subpart S**	Oxygen Blow Tank	ES 161-001 or ES 445-001	No. 2 Power Boiler or Recovery Boiler via HVLC

Emission Source ID No.	Emission Source Description	Control Device ID No.	Control Device Description
ES 420-235 **MACT Subpart S**	No. 1 Press Washer		NCG Collection System
ES 420-259 **MACT Subpart S**	No. 1 Press Washer Level Tank		
ES 420-261 **MACT Subpart S**	No. 1 Press Washer Filtrate Tank (12)		
ES 420-274	Oxygen Interstage Pulp Tank	NA	NA
ES 420-280 **MACT Subpart S under AOS1**	No. 2 Press Washer	AOS 1: ES 161-001 or ES 445-001	No. 2 Power Boiler or Recovery Boiler via HVLC NCG Collection System during AOS 1 when No. 1 wash press is out of service.
ES 420-302 **MACT Subpart S under AOS1**	No. 2 Press Washer Level Tank		
ES 420-306 **MACT Subpart S under AOS1**	No. 2 Press Washer Filtrate Tank		
ES 420-202	White Liquor Oxidizer	CD 420-207	Dual Chevron-type Mist Eliminators
Bleach Plant Area			
ES 425-005	Acid Sewer Vent Tower (46)	CD 425-101	Bleach Plant Fluidized Bed Wet Scrubber (660 gallons per minute nominal white liquor recirculation rate)
ES 425-008 **MACT Subpart S**	D1 Stage Tower		
ES 425-013 **MACT Subpart S**	D1 Stage ClO2 Seal Box		
ES 425-011 **MACT Subpart S**	D1 Stage Bleach Washer		
ES 425-047 **MACT Subpart S**	D2 Stage Tower	CD 425-101	Bleach Plant Fluidized Bed Wet Scrubber (660 gallons per minute nominal white liquor recirculation rate)
ES 425-054 **MACT Subpart S**	D2 Stage ClO2 Seal Box		
ES 425-052 **MACT Subpart S**	D2 Stage Bleach Washer		
ES 425-032	Pre-Bleach Tower	NA	NA
ES 425-036	Pre-Bleach Washer		
ES 425-038	Pre-Bleach Seal Tank		
ES 425-060	Eop Stage Tower		
ES 425-067	Eop Stage Seal Box		
ES 425-065	Eop Stage Bleach Washer		
ES 425-117, 118	Nos. 1 and 2 Bleached Deckers		
ES 425-714	No. 3 Bleached Decker		
Bleached Chemical Preparation Area			
ES 430-047	East Chlorine Dioxide Storage Tank (22,000 gallons)	CD 430-531	Packed Tower Type Wet Scrubber (100 gallon per minute nominal chilled water injection rate)
ES 430-542	Chlorine Dioxide Generator System		
ES 430-543	West Chlorine Dioxide Storage Tank (21,100 gallons)		

Emission Source ID No.	Emission Source Description	Control Device ID No.	Control Device Description
Evaporator Area			
ES 440-008 *NSPS Subpart BB* **MACT Subpart S**	Evaporator/Concentrator Hotwell System	ES 161-001 or ES 455-061	No. 2 Power Boiler or Recovery Boiler via LVHC NCG Collection System or Lime Kiln via LVHC NCG Collection System
ES 440-713 *NSPS Subpart BB* **MACT Subpart S**	No. 1 Pre-Evaporator	ES 161-001 or ES 455-061	No. 2 Power Boiler or Recovery Boiler via LVHC NCG Collection System or Lime Kiln via LVHC NCG Collection System
ES 440-719 *NSPS Subpart BB* **MACT Subpart S**	No. 2 Pre-Evaporator		
ES 440-720 *NSPS Subpart BB* **MACT Subpart S**	No. 3 Pre-Evaporator		
ES 440-016 *NSPS Subpart BB* **MACT Subpart S**	1A Effect Evaporator	ES 161-001 or ES 445-001 or ES 455-061	No. 2 Power Boiler or Recovery Boiler via LVHC NCG Collection System or Lime Kiln via LVHC NCG Collection System
ES 440-015 *NSPS Subpart BB* **MACT Subpart S**	1B Effect Evaporator		
ES 440-014 *NSPS Subpart BB* **MACT Subpart S**	Second Effect Evaporator		
ES 440-013 *NSPS Subpart BB* **MACT Subpart S**	Third Effect Evaporator		
ES 440-012 *NSPS Subpart BB* **MACT Subpart S**	Fourth Effect Evaporator		
ES 440-011 *NSPS Subpart BB* **MACT Subpart S**	Fifth Effect Evaporator		
ES 440-009 *NSPS Subpart BB* **MACT Subpart S**	Sixth Effect Evaporator		
ES 440-400 *NSPS Subpart BB* **MACT Subpart S**	C-1 Black Liquor Concentrator		

Emission Source ID No.	Emission Source Description	Control Device ID No.	Control Device Description
ES 440-401 *NSPS Subpart BB* **MACT Subpart S**	C-2 Black Liquor Concentrator		
Chemical Recovery			
ES 445-001 **MACT Subpart MM** *NSPS Subpart BB* **MACT Subpart S** **Control Device**	Recovery Boiler (New Design) - Black Liquor Solids/HVLC Gases/LVHC/SOG/Natural Gas/No. 2, No. 4, and No. 6 Fuel Oil-Fired (4.2 million lbs BLS/day nominal maximum firing rate)	CD 445-340 and CD 445-369 (IDs for each chamber)	Dry Bottom, two-chamber electrostatic precipitator - 201,960 square feet of collection plate area
ES 445-121 **MACT Subpart MM** *NSPS Subpart BB*	Smelt Dissolving Tank	CD 445-370 and ES 445-001	Wet Scrubber (735 gallons per minute nominal injection rate) and Recovery Boiler
Lignin Removal Process			
ES 470-001	Lignin Solids Removal System Pilot Plant (114 lbs of dried lignin/hour)	CD-470-009	NCG Caustic Scrubber Spray Tower
ES 470-002	Lignin Solids Handling Process System	NA	NA
Causticizing Area			
ES 455-003	No. 1 Green Liquor Clarifier (134)	NA	NA
ES 455-403	No. 2 Green Liquor Clarifier (135)	NA	NA
ES 455-015	No. 1 Causticizer	NA	NA
ES 455-017	No. 2 Causticizer	NA	NA
ES 455-019	No. 3 Causticizer	NA	NA
ES 455-020	No. 4 Causticizer	NA	NA
ES 455-410	No. 5 Causticizer	NA	NA
ES 455-061 **NSPS Subpart BB** **MACT Subpart S** **Control Device** **MACT Subpart MM**	Lime Kiln – Residual Fuel Oil/ Natural Gas /LVHC Gases-Fired (118 million Btu per hour nominal maximum heat input rate)	CD 455-433	Single-chamber, three-field, high-voltage, negative-corona electrostatic precipitator (30,222 square feet of collection plate area)
ES 455-036	Mud Washer/Weak Wash Tank	NA	NA
ES 455-058	Lime Mud Filter Vacuum Pump	NA	NA
ES 455-059	Lime Conveyor Transfer Points (Hot Lime Pan Conveyor)	CD 455-751-00 CD 455-754-00	Bagfilter (1,885 square feet of filter area) in series with a simple cyclone (39.6 inches in diameter)
ES 455-073-08	Hot Lime Pan Conveyor		
ES 455-072-00	Hot Lime Crusher		
ES 455-074-08	Hot Lime Bucket Elevator		
ES 455-075-02	Hot Lime Bin		
ES 455-749-02	Fresh Lime Bin		
ES 455-079	Lime Mud Filter	NA	NA

Emission Source ID No.	Emission Source Description	Control Device ID No.	Control Device Description
ES 455-406	Lime Slaker	CD 455-408	Spray chamber wet scrubber (50 gallons per minute nominal injection rate)
ES 455-999	Bucket Conveyor Fugitive Sources	NA	NA
Pulp Machine Area			
ES 465-001 ES 465-019 ES 465-056	Pulp Dryer Operation	NA	NA

V. Source-by-Source Review of Permit Changes

1. **No. 1 Power Boiler (ID No. ES 150-001) – No. 2/No. 4/No. 6 fuel oil/Natural gas-fired (579 mmBtu per hour nominal maximum heat input), Uncontrolled**
   1) 2.1.A.1 – Compliance with 15A NCAC 2D .0503 was affected during the period of processing the appealed TV Permit. Based on changes made to 2D .2600, NC SIP PM limits are measured using both filterable and condensible particulate matter. Therefore, where other applicable PM limits under federal rules are measured using filterable particulate only, the SIP PM limits will also apply. For this source, no other PM limits apply, but compliance will be measured using both PM fractions. The addition of natural gas and No. 2 fuel oil is not expected to affect the compliance status for PM based on the inherent combustion characteristics of natural gas and No. 2 fuel oil and the existing limit.
   2) 2.1.A.2 – The addition of natural gas and No. 2 is not expected to affect the compliance status for PM based on the inherent combustion characteristics of natural gas and No. 2 and the existing limit.
   3) 2.1.A.3 - The addition of natural gas and No. 2 is not expected to affect the compliance status for PM based on the inherent combustion characteristics of natural gas and No. 2 and the existing limit.
   4) 2.1.A.4 - The addition of natural gas is not expected to affect the compliance status for PM based on the inherent combustion characteristics of natural gas and No. 2 and the existing limit.
   5) 2.1.A.5 – The compliance monitoring for this condition is affected by the addition of natural gas and No. 2. Rather than monitoring fuel oil usage based on the prior permitted fuels, compliance will be based directly on calculated emissions. Also, the addition of natural gas is monitored separately under Condition 2.2.D as discussed further below.
   6) Case-by-case MACT – See discussion below.
   7) 2D .0530(u) – See discussion below.
2. **No. 2 Power Boiler (ID No. ES 161-001) – No. 2/4/No. 6 fuel oil/Propane/Natural Gas/LVHC gases/HVLC gases/SOG-fired (287 million Btu/hour nominal maximum heat input from by-product gas and oil/267 million Btu/hour nominal maximum heat input from oil only), Controlled by a Caustic Scrubber (ID No. CD-161-018) and a Chevron-type Mist Eliminator (ID No. CD-161-024)**
   1) 2.1.B.1 – Compliance with 15A NCAC 2D .0503 was affected during the period of processing the appealed TV Permit. Based on changes made to 2D .2600, NC SIP PM limits are measured using both filterable and condensible particulate matter. Therefore, where other applicable PM limits under federal rules are measured using filterable particulate only, the SIP PM limits will also apply. For this source both SIP and NSPS PM limits apply. The addition of propane, natural gas and No. 2 fuel oil is not expected to affect the compliance status for PM based on the inherent combustion characteristics and the existing limits.
   2) 2.1.B.2 – The additional fuels are not expected to affect the compliance status for NSPS PM and SO2 based on the inherent combustion characteristics and the existing limit. The updated NSPS NOx limits were added both based on the added fuels as well and the updated site-specific promulgation of 40 CFR 60.44b(x) for Weyerhauser during the appeal process. 2D .0519 is no longer applicable based on the applicability of NSPS Subpart Db for NOx. Further the SCO compliance language is no longer applicable and was removed.

3) 2Q .0317 – The condition from T30 was removed entirely. It was determined that is was not appropriate to include the No. 2 Power Boiler in this avoidance condition. The state permit existing prior to the issuance of T30 also did not include the No. 2 Power Boiler in this calculation. Power Boiler No. 2 was added during the Title V permit process. Further review of the past files indicated that the current draft reflects the appropriate, historical limits are for Power Boiler No.1 only as reached during settling the appeal.
4) 2D .0530(u) – See discussion below.

3. Temporary Boiler (ID No. ES 160-TMP) – No. 2 fuel oil-fired (greater than 30 mmBtu per hour and less than 100 mmBtu per hour heat input), Uncontrolled

1) 2.1.C.5 – As provide in permit review 2500109.09G below, this condition was added to outline the requirements for avoiding the current Case-by-case MACT requirements for the facility boilers.

4. Foul Condensate Handling System

1) 2.1.D.1 – The additional control scenarios were added consistent with the existing permit language.
2) Subpart S – Was update to reflect the additional control device(s) in Condition 2.2.A

5. River Oxygen Diesel Motors (ID Nos. ES 185-125 and 185-127), Uncontrolled

1) 2.1.E.1 – 2D .0516 condition was added based on oversight during the initial TV permit process. Compliance with the SO2 limit is expected by the use diesel fuel in these sources.
2) 2.1.E.4 – The MACT Subpart ZZZZ placeholder language was added based on the most recent promulgation of Subpart ZZZZ. Compliance is required by May 3, 2013

6. Turpentine Recovery System

1) 2.1.F.1 – The additional control scenarios were added consistent with the existing permit language.
2) Subpart S – Was update to reflect the additional control device(s) in Condition 2.2.A

7. The Digester System

1) 2.1.G.1 – The additional control scenarios were added consistent with the existing permit language.
2) Subpart S – Was update to reflect the additional control device(s) in Condition 2.2.A

8. The Evaporator Area

1) 2.1.H.1 – The additional control scenarios were added consistent with the existing permit language.
2) Subpart S – Was update to reflect the additional control device(s) in Condition 2.2.A

9. Recovery Boiler (New Design) (ID No. ES 445-001) – Black Liquor Solids/Natural Gas/HVLC Gases/LVHC Gases/SOG gases/No. 2/ No. 4 or No. 6 fuel oil-fired (4.2 million lbs BLS/day nominal maximum firing rate), Controlled by the Dry Bottom ESP (ID Nos. CD-455-340 and CD-455-369)

1) 2.1.I.1 – Compliance with 15A NCAC 2D .0508 was affected during the period of processing the appealed TV Permit. Based on changes made to 2D .2600, NC SIP PM limits are measured using both filterable and condensible particulate matter. Therefore, where other applicable PM limits under federal rules are measured using filterable particulate only, the SIP PM limits will also apply. For this source both SIP and NSPS PM limits apply. The additional fuels are not expected to affect the compliance status for PM based on the inherent combustion characteristics and the existing limits
2) 2.1.I.2 – The additional fuel are not expected to affect the compliance status for SO2 based on the the existing limit.
3) 2.1.I.3 - The modifications made to this source per application(s) 2500104.08D; 09A; 08B; and 06C triggered NSPS applicability for this source. The reference application discusses this applicability in further detail. The compliance monitoring for PM is accomplished by streamlining the monitoring with the existing MACT Subpart MM monitoring. The compliance monitoring under Subpart MM was not in effect at the time the appealed permit was issued, Where applicable, streamlined monitoring using Subpart MM was utilized throughout the permit. Where source now have opacity monitors, such monitors were used for compliance monitoring where appropriate.
4) 2D .0528 - The applicability of NSPS Subpart BB for TRS replaces this SIP condition/limit. The limits and morning for TRS are dictated by NSPS and outlined in 2.1.I.3.

10. Smelt Dissolving Tank (ID No. ES 445-121), Controlled by a Wet Scrubber (ID No. CD 445-370) and the Recovery Boiler (ID No. ES 445-001)

1) 2.1.J.1 - Compliance with 15A NCAC 2D .0508 was affected during the period of processing the appealed TV Permit. Based on changes made to 2D .2600, NC SIP PM limits are measured using both filterable and condensible particulate matter. Therefore, where other applicable PM limits under federal rules are measured using filterable particulate only, the SIP PM limits will also apply. For this source both SIP and NSPS PM limits apply. The new smelt tank is expected to comply with both limits. Additionally, because the control device routs to the recovery furnace, compliance at the

recovery furnace stack is limited to lowest applicable emission standard in determining compliance with that standard . Language was included to allow direct-vent testing as may be needed to demonstrate compliance with the smelt tank limits. Subpart MM streamline monitoring was utilized.

2) 2.1.J.2 – The new source added per application 2500104.08D; 09A; 08B; and 06C triggered NSPS applicability for this source. The reference application discusses this applicability in further detail. Subpart MM streamline monitoring was utilized.
3) 2.1.J.3 - The new source added per application 2500104.08D; 09A; 08B; and 06C triggered a new 20 percent opacity as compared to the replaced tanks.. The reference application discusses this applicability in further detail. Subpart MM streamline monitoring was again utilized.

11. Lime Kiln – Residual Fuel Oil/Natural Gas/LVHC Gases-Fired (118 million Btu per hour nominal maximum heat input rate) (ID No. ES 455-061), Controlled by the Electrostatic Precipitator (ID No. CD-455-433)

1) 2.1.K.1 – Compliance with 15A NCAC 2D .0508 was affected during the period of processing the appealed TV Permit. Based on changes made to 2D .2600, NC SIP PM limits are measured using both filterable and condensible particulate matter. Therefore, where other applicable PM limits under federal rules are measured using filterable particulate only, the SIP PM limits will also apply. For this source both SIP and NSPS PM limits apply. The additional fuels are not expected to affect the compliance status for PM based on the inherent combustion characteristics and the existing limits. Subpart MM streamline monitoring was utilized
2) 2.1.K.2 – The addition of natural gas is not expected to affect the compliance status for SO2 based on the inherent combustion characteristics of natural gas and the existing limit.
3) 2.1.K.3 - The addition of natural gas is not expected to affect the compliance status for VE based on the inherent combustion characteristics of natural gas and the existing limit. Subpart MM streamline monitoring was utilized.
4) 2.1.A.4 - The addition of natural gas is not expected to affect the compliance status for PM based on the inherent combustion characteristics of natural gas and the existing limit.
5) 2.1.A.5 – The compliance monitoring for this condition is affected by the addition of natural gas. Also, the addition of natural gas is monitored separately under Condition 2.2.E discussed further below.
6) Case-by-case MACT – See discussion below.

12. The Lignin Solids Recovery System

1) 2.1.N.1 – The new source was added per application 2500104.09E. The reference application discusses this applicability in further detail. The standard non-opacity monitor monitoring language was utilized as included elsewhere in the initial Title V permit.
2) 2D .0530(u) – See discussion below.

13. 40 CFR 63, Subpart S Affected Sources:

1) 2.2.A – The applicability 15A NCAC 2D .1111 was unchanged from the initial permit to the current draft permit. Sources removed and or renamed were changed or removed to reflect those changes. The additional use on the Recovery Boiler as a control device was included by adding the control requirement to the existing Power Boiler conditions.
2) SSM – With court vacatur of the SSM allowance provisions of Subpart S, these were removed form the current condition.
3) Bleach Plant – The Bleach Plant modifications made pursuant to 2500104.10B require the source to retest and reestablish CMS parameters within 180 days of making the changes. The current draft is mostly unchanged with respect to bleach plant CMS parameters, except the fan "on" status has now been updated to define such status based on amp reading.
4) SFR – The initial SFR equation from the TV permit was changed pursuant settlement to include the general measure density of hot condensate rather than water.

14. 40 CFR 63, Subpart S Affected Sources:

1) 2.1.B– The applicability 15A NCAC 2D .1111 was unchanged from the initial permit to the current draft permit. However, during the appeal process the compliance provisions became applicable. The current condition outlines the specific MACT requirements for the affected sources. As with Subpart S, the SSM provisions were expressly excluded.

15. CAIR Sources

1) 2.2.C – the repealed 2D .1400 ozone season allocation rules was replaced by the current 2D .2400 rules. The draft permit includes the allocations and requirements relative to Weyerhaeuser under the new rule as outlined in 2D .2405.

16. Actual-to-Future Project Actual Sources

1) 2.2.D – Pursuant to 15A NCAC 2D .0530(u) because the Permittee relied on projected actual emissions for the purposes of demonstrating that the 2009 Recovery Boiler Upgrade Project (Application 2500104.08D); Pilot Lignin Removal System Project Modification (Application 2500104.09E); No. 2 Power Boiler Natural Gas Addition Modificatio**n** (Application 2500104.09H); and the Pulp Operations/Dryer Modification (Application 2500104.10A) did not result in a significant emissions increases, the Permittee is required to submit a report to the Regional Office within 60 days after the end of each calendar year during which these records must be generated. In addition to the items listed in below, the report shall contain the items listed in 40 CFR 51.166(r)(6)(v)(a) through (c). This report is required for the 10 years following implementation of the project where there is potential capacity increases due to the change, five years otherwise. Additional parameters are included that reflect the base assumption(s) used in the application. These are not per se limits, but rather monitoring tools to determine if the projections are on track with the underlying application.

17. Case-by-Case MACT

1) 2.2.E – 15A NCAC 2D. 1109: 112(j) CASE-BY-CASE MAXIMUM ACHIEVABLE CONTROL TECHNOLOGY; Pursuant to 2500104.09G the facility was issued a 112(j) Case-by-Case MACT permit as a result of the July 20, 2007 vacatur of 40 CFR 63, Subpart DDDDD and the direction of NC Attorney General's Office as detailed in the subject review. The included language provides the final 112(j) conditions applicable to the facility.

VI. Permit Shield (including non-applicable requirements)

In accordance with 2Q .0512 the permit will contain a provision stating that compliance with the terms, conditions, and limitations of the Title V permit shall be deemed in compliance with applicable requirements specifically identified in the permit, as of the date of permit issuance. If the permit does not expressly state that a permit shield exists then it shall be presumed not to provide such a shield.

VII. General Conditions

The "General Conditions" section of the Title V Operating Permits lists additional applicable rule requirements that the Permittee must adhere to, as with any other permit condition. These requirements in general are common to all Title V facilities. The general conditions include provisions such as annual fee payment, permit renewal and expiration, transfer of ownership or operation, property rights, submission of documents, inspections and entry procedures, reopen for cause, and severability.

VIII. Public Notice

Pursuant to 15A NCAC 2Q .0521, a notice of the draft Title V Operating Permit shall published for existing facilities for which a public hearing is not scheduled by posting the draft permit on the North Carolina Division of Air Quality web site, and shall be emailed to persons who are on the Division's emailing list for air quality permit notices. . The notice will provide for a 30 day comment period, with an opportunity for a public hearing. Copies of the public notice shall be sent to persons on the Title V mailing list and EPA.

On July X, 2011 a notice of the draft permit was placed posted on the North Carolina Division of Air Quality web site at http://www.ncair.org/permits/. The public comment period ended on X X, 2011. {Reserved for Commnets}

IX. Recommendations

The Title V application for Weyerhaeuser Company, New Burn Facility has been reviewed by the DAQ to determine compliance with all procedures and requirements under 15A NCAC 2Q .0500 and 40 CFR Part 70. The DAQ is proposing to issue the Title V Operating Permit upon completion of the public comment period and the EPA review.

ATTACHEMENTS

NORTH CAROLINA DIVISION OF AIR QUALITY

Air Permit Review

Permit Issue Date:

Region: Washington Regional Office
County: Craven
NC Facility ID: 2500104
Inspector's Name: Betsy Huddleston
Date of Last Inspection: 07/30/2010
Compliance Code: B / Violation - emissions

Facility Data

Applicant (Facility's Name): **Weyerhaeuser NR Company Vanceboro Pulp**

Facility Address:

Weyerhaeuser NR Company Vanceboro Pulp
1785 Weyerhaeuser Road

Vanceboro, NC 28586

SIC: 2611 / Pulp Mills
NAICS: 32211 / Pulp Mills

Facility Classification: Before: Title V **After:** Title V
Fee Classification: Before: Title V **After:** Title V

Permit Applicability (this application only)

SIP:
NSPS:
NESHAP:
PSD:
PSD Avoidance:
NC Toxics:
112(r):
Other:

Contact Data

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Application Data

Application Number: **2500104.10B**
Date Received: 12/06/2010
Application Type: Modification
Application Schedule: State

Existing Permit Data
Existing Permit Number: 02590/R41
Existing Permit Issue Date: 01/04/2011
Existing Permit Expiration Date: 12/31/2013

Review Engineer: **Jay W Evans**

Review Engineer's Signature: **Date:**

Comments / Recommendations:
Issue 02590/R42
Permit Issue Date:
Permit Expiration Date:

VII. Purpose of Application

Weyerhaeuser NR Company (Weyerhaeuser) operates an integrated bleached Kraft pulp mill near New Bern, North Carolina. The primary activity at the Weyerhaeuser New Bern Mill is pulp production (Standard Industrial Classification [SIC] code 2611), and operations include multiple fuel-fired boilers, chemical recovery operations, wood pulping and bleaching operations, and additional operations and equipment necessary to support these operations.

The New Bern Mill produces softwood pulp. Wood chips are cooked with white liquor and indirect steam in one continuous digester. The pulp slurry from the digester is blown into a blow tank. From the blow tank, the pulp slurry is washed in the brownstock washers, removing the dissolved lignin and spent cooking chemicals (called weak liquor) from the pulp. The pulp is then screened, thickened, and then directed to an oxygen delignification system. After oxygen delignification, pulp is again thickened and stored in storage tanks and chests prior to being sent to the bleaching area. Pulp is bleached with chlorine dioxide, supplemented with other bleaching agents, prior to being sent to the pulp dryer. Chlorine dioxide is generated with a methanol- based system. Turpentine is recovered from condensed gases as a by-product of the pine pulping process. Weak liquor from the pulping process is stored in several process liquor tanks prior to chemical recovery. In the recovery process, spent cooking chemicals are recovered by evaporating water from the weak black liquor in pre-evaporators, multiple effect evaporator systems, and concentrators. The concentrated liquor is combusted in the recovery boiler. The resulting smelt is dissolved in weak wash or mill water in a smelt dissolving tank. In the causticizing and lime recovery area, dissolved smelt (called green liquor) is clarified and then mixed with lime (CaO) in the slaker to form white liquor and lime mud in the causticizers. This white liquor/lime mud slurry is then clarified to separate the white liquor from the lime mud. The white liquor is sent to the digester, and the lime mud is conditioned, thickened, and burned in the lime kiln. Power operations at the New Bern Mill include two power boilers, one recovery boiler, and associated auxiliary processes and equipment. The power and recovery boilers are capable of firing multiple fuels and provide steam for mill production processes and power generation. Emissions from the turpentine condenser, turpentine decanter, turpentine storage tank and evaporator system vents (including the multiple effect evaporators, concentrators and hotwell) are collected in the low-volume high concentration (LVHC) System and combusted in the No. 2 Power Boiler, Lime Kiln or the Recovery Boiler. The No. 2 Power Boiler is controlled by a scrubber and the Lime Kiln is controlled by an ESP. Emissions from the chip bin, digester blow tank, brownstock washing system, and oxygen delignification system are collected in the high- volume low concentration (HVLC) System and combusted in either the No. 2 Power Boiler or the Recovery Boiler.

New Bern currently operates a 1-stage oxygen delignification process followed by a 6-stage bleach plant. Chlorine dioxide (stages 1 and 4), oxygen, and peroxide are used in the bleach plant to bleach the pulp. In order to reduce cost by reducing chemical and energy use, the mill proposes to upgrade the oxygen delignification system to two stages and reduce the number of bleaching stages from 6 to 3. Per this application, the oxygen delignification system will be upgraded to a two stage system and operated at higher pressure and temperature to achieve better delignification. The stock supply pump will be upgraded and a second higher pressure mixer and a new first stage reactor will be added. The modified bleach plant will consist of a chlorine dioxide first stage (D1), an extraction second stage with a new pressurized upflow tube, and a chlorine dioxide third stage (D2). The existing third bleaching stage washer will be converted to a prebleach washer. The two remaining thick stock pumps will be replaced with medium consistency pumps and new chemical mixers will be required for the E0 and D2 stage feeds. The application provides that these modifications will not result in an increase in utilization or capacity over that accommodated during the baseline period. The goal of this project is to improve quality and reduce chemical usage and cost. The project does not de-bottleneck the mill. Additionally, the No. 1 Power Boiler is currently permitted to burn residual oil. The New Bern Mill would like to convert this boiler to a burn both No. 2 fuel oil and natural gas. Finally, Weyerhaeuser has removed the black liquor gasifier from service and requests that it be removed from the permit. The black liquor gasifier preheater (446-0 14) will be removed from the permit and black liquor gasifier product gas will be removed as a fuel for No. 2 Power Boiler (161-001). The Bleach Plant and Oxygen Delignification System Modifications are scheduled for June 2011. The conversion of No. 1 Power Boiler to burn No. 2 fuel oil and natural gas will occur prior to the compliance date with the 112j requirements as added in permit 2590R41.

VIII. Permit Modifications/Changes

The following changes were made to the previous Air Quality Permit (Permit No. 02590R41).

Page(s)	Section	Description of Change(s)
1	Permit Cover Page	Amend permit revision numbers and issuance/effective dates.
1-3	List of Permitted Sources	- Add No.2 and natural gas to No. 1 Power Boiler fuels - Remove gasifier gas from No. 2 Power Boiler fuels - Add D1 and D2 designations to Modified Fiberline sources

Page(s)	Section	Description of Change(s)
4	Specific Condition 4	Removed reference to old smelt tanks that were removed from the facilty and permit in a prior modification.
9-10	Specific Condition 14	Replaced former gasifier condition with existing actual-to-projeted actual monitoring condition formerly at S.C. 30 Add condition (e) relative to this modification
19	Specific Condition 23(b)	Added compliance testing requirement for modified bleach plant source(s)
21-39	Specific Condition 30	Updated Toxics table pursuant to submitted modeling

IX. Emissions Changes

The proposed change will result in emissions changes for the affected sources. These changes are summarized in the table below and discussed in greater detail in the later sections of this review. In short, the emissions changes do not trigger NSR/PSD review and are expected to comply with the individual emissions limitations for the affected unit.

A PSD applicability analysis was performed to determine which regulated compounds would be subject to PSD review as discussed in detail further in this review. Based on the applicability analysis, the project is classified as a minor modification because it will not result in potential emissions increases of any PSD compounds that exceed their respective Significant Emission Rate. A summary of all PSD compound emissions increases and a comparison of these increases against the PSD Significant Emission Rates is presented below. Projected emissions were calculated for the following:

- A maximum projected throughput of: 474,614 ADTP/ 446.521 ADTBP/ 427,153 ODTP per year
- A maximum projected fuel usage of: 8,464 Mgal of No. 2 Fuel Oil/ 1,076 mmscf of Natural Gas per year

	Emissions, tpy											
	VOC	**PM**	**PM10**	**PM2.5**	**SO2**	**NOx**	**CO**	**F**	**Pb**	**H2SO4**	**H2S**	**TRS**
Baseline Actual Emissions (Bleach/Power Boiler)	88.64/ 0.48	-/ 38.66	-/ 33.24	/ 4.71	/ 524.76	/ 79.74	9.02/ 8.48	/ 0.04	/ 0.00	0.92/ 8.19	-/ -	0.57/ -
Projected Actual Emissions	118.05	13.97	9.73	6.52	30.05	101.57	49.15	0.08	0.00	2.37	0.00	.072
Net Emissions Increases	28.93	-24.69	-23.50	1.18	-494	21.83	31.65	0.04	0.00	-6.75	0.00	0.15
NSR Significant Emission Rates	40	25	15	10	40	40	100	3	0.6	7	10	10
Major NSR Review Required	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**

The net emission changes for all emission changes were less than their respective NSR Significant Emission rates, and, therefore, major NSR review is not required. However, the applicant is required to monitor and report the basis of these projected emissions, as required in the amended, existing 15A NCAC 2D .0530 (u) condition. Additionally, it is noted that modification of either source(s) (Bleach or Power Boiler) alone were also below the PSD thresholds.

X. Regulatory Review

The new and existing regulations affected by this application and the PSD applicability are addressed below.

The state and federal regulations potentially applicable to the proposed project are Prevention of Significant Deterioration (PSD) regulations in 40 CFR 52.21; and New Source Performance Standards (NSPS) in 40 CFR

60. These federal requirements are codified in the North Carolina regulations under 15A NCAC 2D.0530, 2D.0524, and 2D.1111. Also, this project affects NC DAQ air quality regulations for stationary sources as codified in 15A of the North Carolina Administrative Code, Subchapter 2D (Air Pollution Control Requirements) and Subchapter 2Q (Air Quality Permit Procedures). A discussion of these regulations is provided in the following subsections.

Particulates from Fuel Burning Indirect Heat Exchangers —2D .0503
Under this rule, the No. 1 Power Boiler PM emissions are limited to 0.195 lb/mmBtu. Use of natural gas as a fuel will reduce PM emissions from the boiler, so compliance with this rule will continue to be achieved.

Sulfur Dioxide Emissions from Combustion Sources — 2D .0516
Under this standard, SO2 emissions from any combustion source are limited to 2.3 lb/MMBtu input. Based on fuel type, scrubber control, and emission factor calculations, the No. 1 Power Boiler will continue to comply with this limit.

Control of Nitrogen Dioxide and Nitrogen Oxides Emissions —2D .0519
Under this rule, emissions of nitrogen oxides shall not exceed 0.8 pounds per millon Btu of heat input from any oil or gas-fired boiler with a capacity of 250 million Btu per hour or more. This project will not affect compliance with this rule; the New Bern Mill will install a low-NOx natural gas burner.

Control of Visible Emissions — 2D .0521
Under this rule, the No. 1 Power Boiler is limited to 40 percent opacity when averaged over a six-minute period, except that six-minute periods averaging not more than 90 percent opacity may occur not more than once in any hour nor more than four times in any 24-hour period. Use of natural gas.No 2 oil as a fuel will not affect compliance with this rule and is not .

New Source Performance Standards —2D .0524
NSPS applies to any stationary source for which the standards are promulgated, and which is constructed, reconstructed or modified after the effective date of the applicable standard to the affected facility. NSPS requirements are promulgated under 40 CFR 60 pursuant to Section 111 of the Clean Air Act. An existing facility can become subject to the NSPS requirements upon reconstruction or modification. A modification under NSPS is defined as any physical or operational change that results in an increase in the emission rate of any pollutant to which a standard applies.

The NSPS for Kraft pulp mills (40 CFR 60, Subpart BB) does not include requirements for bleach plants or oxygen delignification systems, so this project does not trigger applicability of Subpart BB.

The No. 1 Power Boiler is not currently subject to NSPS. Subpart Db — Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units regulates PM, SO2, and NOx emissions from new and modified industrial boilers greater than 100 MMBtu/hr. Installation of a new low-NOx natural gas burner is expected to result in lower hourly emission rates than No. 6 fuel oil firing, based on a comparison of emission factors. Therefore, this project will not trigger NSPS for the No. 1 Power Boiler.

Total Reduced Sulfur from Kraft Pulp Mills — 2D .0528
This emission standard applies to recovery furnaces, digester systems, evaporator systems, lime kilns, smelt tanks, and condensate stripping systems not subject to TRS emission standards under 40 CFR 60. The rule does not apply to bleach plant sources; therefore, compliance with this regulation will not be affected by this project.

Prevention of Significant Deterioration — 2D .0530
The PSD regulations apply to major modifications at major stationary sources, which are considered those sources belonging to any one of the 28 source categories listed in the regulations that has the potential to emit more than 100 tons per year of any PSD-regulated compound, or any other source which has the potential to emit more than 250 tons per year of any PSD compound. A major modification is defined as “any change to a major stationary source that would result in a significant emissions increase of any pollutant subject to regulation under the Act.” Major modifications are subject to review under the PSD regulations and must meet

certain pre-construction review and permitting requirements. The Weyerhaeuser New Bern Mill belongs to one of the 28 listed categories and emits greater than 100 tons per year of a PSD-regulated air compound. Thus, the New Bern Mill is a major source. A PSD applicability analysis was performed to determine which regulated compounds would be subject to PSD review. Emissions increases were calculated utilizing the baseline actual to projected actual emissions comparison allowed by 1 5A NCAC 2D .0530. Based on the applicability analysis, the proposed project is classified as a minor modification because it will not result in emissions increases of any PSD compounds that exceed their respective Significant Emission Rate. Detailed emissions increase calculations were provided in the application and a summary of the PSD applicability analysis approach and key assumptions are provided below.

To determine the baseline period, the past five years of throughput data was reviewed and the highest two year period was selected (2006-2007). The throughput accommodated during the baseline was also determined based on the highest year (2006). The proposed project will not increase production or utilization above levels already accommodated during the baseline. The expected daily throughput at the oxygen delignification system is 1,000 ADMT/day (annual average), with a short term peak of 1,100 ADMT/day following this project; the mill has achieved a production level of greater than 1,000 ADMT/day during the baseline period. Therefore, emissions calculations are included only for the bleach plant and No. 1 Power Boiler, since there are no other sources that will have emissions increases over the level accommodated during the baseline and the oxygen reactor is not an emission point (the oxygen reactor flows into the 02 blow tank, which is controlled in the HVLC system). The emissions increases were calculated by subtracting the baseline actual emissions from the projected actual emissions post project. The project will result in fewer emission points from the bleach plant (from 6 bleach plant stages to 1 pre-bleach stage and 3 bleach plant stages) and lower emissions for most compounds from the No. 1 Power Boiler due to the conversion from No. 6 fuel oil to No. 2 fuel oil and natural gas. Detailed calculations and baseline throughput information are presented in Appendix B. Based on these calculations emission increases are well below the PSD significant emission rates. The No. 1 Power Boiler is currently subject to the existing PSD avoidance limits. The mill will be required to continue to comply with these limits following this project.

Pursuant to 2D .0530(u), because the facility utilized projected emissions in the PSD analysis, the facility will be required to track the relevant items listed in 40 CFR 51.166(r)(6)(v)(a) through (c). Because the modification didi not increase the production capacity of the modified unit, the required timeframe for tracking will be 5 years. To administratively assist the DAQ in tracking the projected emissions, the projected production rate will also be tracked under this condition.

Control of Toxic Air Pollutants —2D.1100

NCAC 2Q .0700 requires facilities that emit toxic air pollutants (TAPs) for which they are required to have a permit under 15 NCAC 2D.1100 to demonstrate compliance with the Acceptable Ambient Levels (AALs). Updated facility-wide TAP modeling was included in the application and the existing TAP tables were updated to reflect the modeled results – as reviewed by Chuck Buckler, AQAB.

Case-by Case MACT (112j)—2D.1109 and MACT—2D.1111

The New Bern Mill is subject to 40 CFR 63, Subpart S, NESHAP for the Pulp and Paper Industry. This rule requires control of bleach plant stages where chlorinated compounds are added (D stages) in order to reduce emissions of chlorinated HAP. The emissions from these stages must be routed to a control device in a closed vent system and the control device must either reduce chlorinated HAP emissions by 99 percent, achieve an outlet chlorinated HAP concentration of 10 ppmv, or achieve an outlet chlorinated HAP emission rate of 0.002 lb/ODTP. The New Bern Mill controls bleach plant D stages in the bleach plant scrubber. The Mill will conduct a performance test following the modifications to the bleach plant to ensure the bleach / plant scrubber continues to meet the Subpart S control requirements. The project does not constitute reconstruction of the bleach plant (although the requirements for new/reconstructed versus existing bleach plants under Subpart S are the same).

The No. 1 Power Boiler is not subject to 40 FR 63, Subpart DDDDD, NESHAP for Industrial, Commercial, and Institutional Boilers and Process Heaters. Following the vacatur of the original rule in 2007, the New Bern Mill

was issued a 112j case-by-case MACT permit for the Nos. 1 and 2 Power Boilers. This application will not result in the need for changes to the 112j permit language or requirements. Conversion to No. 2 Fuel oil or natural gas firing does not constitute reconstruction of the No. 1 Power Boiler, as the project involves only addition of natural gas burners and a natural gas supply line. The existing 112j permit condition is sufficient to cover the newly-added fuels.

Notification in Areas without Zoning – 2Q .0113

The New Bern Mill is located in an area without zoning. Therefore, the Weyerhaeuser facility must follow the requirements presented in 2Q .0113. This rule requires that the facility provide public notice prior to submitting the permit application:

Legal Notice – The facility published a legal notice in the New Bern Sun Journal. The notice included the name of the facility, the name and address of the applicant, and a summary of the modification. An affidavit and proof of publication are presented in the application.

Posting of Sign – The facility has posted a sign that is at least 6 square feet in size, less than ten feet from the highway right-of-way, at least six feet from the ground, contains lettering a person with 20/20 vision can view from the center of the road, and is placed parallel to the highway. The sign contains the name of the facility, the name and address of the applicant, and a summary of the modification. The sign must remain in place for at least 30 days following the submittal of the permit application.

XI. Recommendations

WARO and RCO recommend issuance of this permit.

Issue Permit No. 02590R42

NORTH CAROLINA DIVISION OF AIR QUALITY

Air Permit Review

Permit Issue Date: January 4, 2011

Region: Washington Regional Office
County: Craven
NC Facility ID: 2500104
Inspector's Name: Betsy Huddleston
Date of Last Inspection: 06/04/2009
Compliance Code: 3 / Compliance - inspection

Facility Data

Applicant (Facility's Name): **Weyerhaeuser Company - Vanceboro Pulp and Paper**

Facility Address:

Weyerhaeuser Company - Vanceboro Pulp And Paper
1785 Weyerhaeuser Road

Vanceboro, NC 28586

SIC: 2611 / Pulp Mills
NAICS: 32211 / Pulp Mills

Facility Classification: Before: Title V **After:** Title V
Fee Classification: Before: Title V **After:** Title V

Permit Applicability (this application only)

SIP:
NSPS:
NESHAP: 2D .1109 (Case-By-Case MACT)
PSD:
PSD Avoidance:
NC Toxics:
112(r):
Other:

Contact Data

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Application Data

Application Number: **2500104.09G**
Date Received: 09/09/2009
Application Type: 112(j) Part II
Application Schedule: TV-Significant

Existing Permit Data
Existing Permit Number: 02590/R40
Existing Permit Issue Date: 10/26/2010
Existing Permit Expiration Date: 12/31/2013

Review Engineer: **Fern Paterson, P.E.**

Review Engineer's Signature: **Date:**

Comments / Recommendations:
Issue: 02590/R41
Permit Issue Date: 01/04/2011
Permit Expiration Date: 12/31/2013

XII. Purpose of Application

Weyerhaeuser Company - Vanceboro Pulp and Paper is located in Vanceboro, Craven County, North Carolina. Application No. 2500104.09G, received September 9, 2009, is a Part 2 MACT "Hammer" application for three affected boilers, as follows:

- ***ID No. 150-001*** *– One residual oil-fired #1 Power Boiler (579 million Btu per hour maximum heat input rate)*
- ***ID No. 161-001*** *– One #2 Power Boiler firing No. 2, residual fuel oil, or natural gas alone or with product gas from the black liquor gasifier (287 million Btu per hour maximum heat input rate from product gas and fuel oil/267 million Btu per hour maximum heat input rate from oil only) with a condensing scrubber* ***(ID No. 161-018)*** *and a chevron mist eliminator* ***(ID No. 161-024)****; the boiler is also used to destroy Low Volume High Concentration (LVHC) gases, High Volume Low Concentration (HVLC) gases, and foul condensate steam stripper off-gas (SOG)*
- ***ID No. 446-011*** *– One No. 2 fuel oil-fired preheater (15 million Btu per hour maximum heat input rate) installed on the black liquor gasifier*

Weyerhaeuser also asked that a fourth boiler, the residual fuel oil-fired package boiler ***(ID No. 160-000)*** *be removed from the permit.*

XIII. Permit Modifications/Changes

The following table describes the modifications to the current permit.

Page(s)	Section	Description of Change(s)
1	Permit Cover Page	Amend permit revision numbers and issuance/effective dates.
1-2	List of Permitted Sources	Add "Case-By-Case MACT" designation to the affected boilers, remove package boiler **(ID No. 160-000)**, and renumber permitted sources.
4	Specific Condition 1	Add 15A NCAC 2D .1109 to the list of applicable regulations.
10-13	Specific Condition 16.	Add Section to include Case-By-Case MACT Hammer requirements.

XIV. Regulatory Review

A. ***15A NCAC 2D .1109 – CAA § 112(j); Case-by-Case MACT for Boilers & Process Heaters*** *– On July 20, 2007, the D.C. Circuit Court vacated the National Emission Standard for Hazardous Air Pollutants (NESHAP) for Industrial, Commercial, and Institutional Boilers and Process Heaters, which had been promulgated under 40 CFR 63, Subpart DDDDD. The North Carolina Attorney General's office has determined that the NESHAP vacatur equates to the failure of the U.S. EPA to promulgate a standard as required under Section 112(d) of the Clean Air Act (CAA). As a result, the site-specific Maximum Achievable Control Technology (MACT) standards required under CAA §112(j), commonly referred to as the MACT "hammer" provisions, have been triggered. North Carolina regulations implementing the MACT hammer are found at 15A NCAC 2D .1109.*

NC DAQ has developed this guidance to provide standards and compliance procedures that it has determined meet the requirements of § 112(j) (http://daq.state.nc.us/permits/112j/).

The NC DAQ received a Part 2 MACT "Hammer" application from this facility asking that the NC DAQ establish 112(j) emissions limitations in accordance with NC DAQ's recommendations. The facility proposed to comply with the filterable particulate matter (PM), mercury (Hg), and carbon monoxide (CO) emission limitations that are consistent with the NC DAQ application guidance. NC DAQ has developed this guidance to provide standards and compliance procedures that it has determined meet the requirements of § 112(j). Filterable PM emission limitations are a surrogate for non-mercury metal hazardous air pollutants (HAP).

To demonstrate compliance with the standards:

- *For No. 2 fuel oil, natural gas, gasifier off-gas, and other VOC off-gas firing, NC DAQ has determined that MACT is the use of best work practice standards, consistent with the provisions in CAA § 112(d)(2)(D). No control technologies for the control of CO, metals, Hg, or HCl were identified for natural gas or No. 2 fuel fired boilers in the state of North Carolina, nor were any such technologies identified in a North Carolina query using U.S. EPA's AirControlNet software (v4.1). Gasifier and other process off-gases are expected to have little or no concentrations of metal. Best work practice standards in this case shall include the annual inspection and maintenance of the boiler.*

- *For No. 6 fuel oil firing, the applicable emissions limitations and associated testing, monitoring, and recordkeeping requirements shall only apply to boilers that fire at least 10% residual fuel oil on an annual average heat input basis. In such case:*

    - *The Permittee will be required to conduct an annual compliance test. In most cases, the compliance test will be a stack test. However, the Permittee may chose to conduct a fuel analysis to demonstrate compliance with the mercury limit. Also, if stack test results show that emissions from an affected source are less than 80% of any applicable emission limitation, the frequency of testing for that pollutant shall be reduced from once per year to once every five years.*

    - *The Permittee will be require install, operate, and maintain continuous monitoring systems (CMS) to measure and record the stack gas temperature (degrees F) after the condensing scrubber **(ID No. 161-018)** and the flow rate of the recirculating scrubber reagent (gpm).*
        - The 12-hour average stack gas temperature (degrees F) after the condensing scrubber shall be maintained at or below the operating level established during the most recent performance test that demonstrated compliance with the limits in Section 16.(a) of this permit; and,
        - The 12-hour average flow rate of the recirculating scrubber reagent (gpm) shall be maintained at or above the operating level established during the most recent performance test that demonstrated compliance with the limits in Section 16.(a) of this permit.

    - *The Permittee shall install, operate, and maintain carbon monoxide continuous emissions monitoring system (CO CEMS) at the power boilers **(ID Nos. 150-001 and 161-001)**. Demonstration with the CO emissions limitation shall be on a 30-day average basis.*

    - *For each CMS or CEMS, the Permittee must develop a site-specific monitoring plan for each required continuous monitoring system (CMS), including the CO CEMS. The plan shall be submitted to the NC DAQ Stationary Source Compliance Branch (SSCB) at least 60 days before the initial performance evaluation of the CMS.*

XV. Draft Permit Review Summary

Betsy Huddleston of the Washington Regional Office was provided a draft permit and draft permit review document on October 25, 2010.

Brad Chesson of Weyerhaeuser was provided a draft permit for review on October 25, 2010.

Ms. Katy Forney and Ms. Gracy DeNois (U.S. EPA, Region IV) were provided a draft permit for review on November 8, 2010.

XVI. Recommendations

This permit modification application for the Weyerhaeuser Company - Vanceboro Pulp and Paper facility located in Vanceboro, Craven County, North Carolina has been reviewed by NC DAQ to determine compliance with all procedures and requirements. NC DAQ has determined that this facility appears to be complying with all applicable requirements.

Issue Permit No. 02590R40

NORTH CAROLINA DIVISION OF AIR QUALITY

Air Permit Review

Permit Issue Date:

Region: Washington Regional Office
County: Craven
NC Facility ID: 2500104
Inspector's Name: Betsy Huddleston
Date of Last Inspection: 06/04/2009
Compliance Code: 3 / Compliance - inspection

Facility Data

Applicant (Facility's Name): **Weyerhaeuser Company - Vanceboro Pulp and Paper**

Facility Address:

Weyerhaeuser Company - Vanceboro Pulp And Paper
1785 Weyerhaeuser Road

Vanceboro, NC 28586

SIC: 2611 / Pulp Mills
NAICS: 32211 / Pulp Mills

Facility Classification: Before: Title V **After:** Title V
Fee Classification: Before: Title V **After:** Title V

Permit Applicability (this application only)

SIP:
NSPS:
NESHAP: 2D .1109 (Case-By-Case MACT)
PSD:
PSD Avoidance:
NC Toxics:
112(r):
Other:

Contact Data

Facility Contact	Authorized Contact	Technical Contact
Brad Chesson Environmental Engineer (252) 633-7230 1785 Weyerhaeuser Road Vanceboro, NC 28586	John Ashley Vice President (252) 633-7242 P.O. Box 1391 New Bern, NC 28563	Brad Chesson Environmental Engineer (252) 633-7230 1785 Weyerhaeuser Road Vanceboro, NC 28586

Application Data

Application Number: **2500104.09G**
Date Received: 09/09/2009
Application Type: 112(j) Part II
Application Schedule: TV-Significant

Existing Permit Data
Existing Permit Number: 02590/R39
Existing Permit Issue Date: 03/03/2010
Existing Permit Expiration Date: 12/31/2013

Review Engineer: **Fern Paterson, P.E.**

Review Engineer's Signature: **Date:**

Comments / Recommendations:
Issue: 02590/R40
Permit Issue Date:
Permit Expiration Date: 12/31/2013

XVII. Purpose of Application

Weyerhaeuser Company - Vanceboro Pulp and Paper is located in Vanceboro, Craven County, North Carolina. Application No. 2500104.09G, received September 9, 2009, is a Part 2 MACT "Hammer" application for three affected boilers, as follows:

- ***ID No. 150-001*** *– One residual oil-fired #1 Power Boiler (579 million Btu per hour maximum heat input rate)*
- ***ID No. 161-001*** *– One #2 Power Boiler firing No. 2, residual fuel oil, or natural gas alone or with product gas from the black liquor gasifier (287 million Btu per hour maximum heat input rate from product gas and fuel oil/267 million Btu per hour maximum heat input rate from oil only) with a condensing scrubber* ***(ID No. 161-018)*** *and a chevron mist eliminator* ***(ID No. 161-024)****; the boiler is also used to destroy Low Volume High Concentration (LVHC) gases, High Volume Low Concentration (HVLC) gases, and foul condensate steam stripper off-gas (SOG)*
- ***ID No. 446-011*** *– One No. 2 fuel oil-fired preheater (15 million Btu per hour maximum heat input rate) installed on the black liquor gasifier*

Weyerhaeuser also asked that a fourth boiler, the residual fuel oil-fired package boiler ***(ID No. 160-000)*** *be removed from the permit.*

XVIII. Permit Modifications/Changes

The following table describes the modifications to the current permit.

Page(s)	Section	Description of Change(s)
1	Permit Cover Page	Amend permit revision numbers and issuance/effective dates.
1-2	List of Permitted Sources	Add "Case-By-Case MACT" designation to the affected boilers.
4	Specific Condition 1	Add 15A NCAC 2D .1109 to the list of applicable regulations.
10-13	Specific Condition 16.	Add Section to include Case-By-Case MACT Hammer requirements.

XIX. Regulatory Review

B. ***15A NCAC 2D .1109 – CAA § 112(j); Case-by-Case MACT for Boilers & Process Heaters*** *– On July 20, 2007, the D.C. Circuit Court vacated the National Emission Standard for Hazardous Air Pollutants (NESHAP) for Industrial, Commercial, and Institutional Boilers and Process Heaters, which had been promulgated under 40 CFR 63, Subpart DDDDD. The North Carolina Attorney General's office has determined that the NESHAP vacatur equates to the failure of the U.S. EPA to promulgate a standard as required under Section 112(d) of the Clean Air Act (CAA). As a result, the site-specific Maximum Achievable Control Technology (MACT) standards required under CAA §112(j), commonly referred to as the MACT "hammer" provisions, have been triggered. North Carolina regulations implementing the MACT hammer are found at 15A NCAC 2D .1109.*

NC DAQ has developed this guidance to provide standards and compliance procedures that it has determined meet the requirements of § 112(j) (http://daq.state.nc.us/permits/112j/).

The NC DAQ received a Part 2 MACT "Hammer" application from this facility asking that the NC DAQ establish 112(j) emissions limitations in accordance with NC DAQ's recommendations. The facility proposed to comply with the filterable particulate matter (PM), mercury (Hg), and carbon monoxide (CO) emission limitations that are consistent with the NC DAQ application guidance. NC DAQ has developed this guidance to provide standards and compliance procedures that it has determined meet the requirements of § 112(j). Filterable PM emission limitations are a surrogate for non-mercury metal hazardous air pollutants (HAP).

To demonstrate compliance with the standards:

- *For No. 2 fuel oil, natural gas, gasifier off-gas, and other VOC off-gas firing, NC DAQ has determined that MACT is the use of best work practice standards, consistent with the provisions in CAA § 112(d)(2)(D). No control technologies for the control of CO, metals, Hg, or HCl were identified for natural gas or No. 2 fuel fired boilers in the state of North Carolina, nor were any such technologies identified in a North Carolina query using U.S. EPA's AirControlNet software (v4.1). Gasifier and other process off-gases are expected to have little or no concentrations of metal. Best work practice standards in this case shall include the annual inspection and maintenance of the boiler.*

- *For No. 6 fuel oil firing, the applicable emissions limitations and associated testing, monitoring, and recordkeeping requirements shall only apply to boilers that fire at least 10% residual fuel oil on an annual average heat input basis. In such case:*

    - *The Permittee will be required to conduct an annual compliance test. In most cases, the compliance test will be a stack test. However, the Permittee may chose to conduct a fuel analysis to demonstrate compliance with the mercury limit. Also, if stack test results show that emissions from an affected source are less than 80% of any applicable emission limitation, the frequency of testing for that pollutant shall be reduced from once per year to once every five years.*

    - *The Permittee will be require install, operate, and maintain continuous monitoring systems (CMS) to measure and record the stack gas temperature (degrees F) after the condensing scrubber **(ID No. 161-018)** and the flow rate of the recirculating scrubber reagent (gpm).*
        - The 12-hour average stack gas temperature (degrees F) after the condensing scrubber shall be maintained at or below the operating level established during the most recent performance test that demonstrated compliance with the limits in Section 16.(a) of this permit; and,
        - The 12-hour average flow rate of the recirculating scrubber reagent (gpm) shall be maintained at or above the operating level established during the most recent performance test that demonstrated compliance with the limits in Section 16.(a) of this permit.

    - *The Permittee shall install, operate, and maintain carbon monoxide continuous emissions monitoring system (CO CEMS) at the power boilers (**ID Nos. 150-001 and 161-001**). Demonstration with the CO emissions limitation shall be on a 30-day average basis.*

    - *For each CMS or CEMS, the Permittee must develop a site-specific monitoring plan for each required continuous monitoring system (CMS), including the CO CEMS. The plan shall be submitted to the NC DAQ Stationary Source Compliance Branch (SSCB) at least 60 days before the initial performance evaluation of the CMS.*

XX. Draft Permit Review Summary

Betsy Huddleston of the Washington Regional Office was provided a draft permit and draft permit review document on October 25, 2010. <SUMMARY OF COMMENTS>.

Brad Chesson of Weyerhaeuser was provided a draft permit for review on October 25, 2010. <SUMMARY OF COMMENTS>.

Ms. Katy Forney and Ms. Gracy DeNois (U.S. EPA, Region IV) were provided a draft permit for review on <DATE>. <SUMMARY OF COMMENTS>.

XXI. Recommendations

This permit modification application for the Weyerhaeuser Company - Vanceboro Pulp and Paper facility located in Vanceboro, Craven County, North Carolina has been reviewed by NC DAQ to determine compliance with all procedures and requirements. NC DAQ has determined that this facility appears to be complying with all applicable requirements.

Issue Permit No. 02590R40

NORTH CAROLINA DIVISION OF AIR QUALITY

Air Permit Review

Permit Issue Date:

Region: Washington Regional Office
County: Craven
NC Facility ID: 2500104
Inspector's Name: Betsy Huddleston
Date of Last Inspection: 07/30/2010
Compliance Code: 3 / Compliance - inspection

Facility Data

Applicant (Facility's Name): **Weyerhaeuser Company - Vanceboro Pulp And Paper**

Facility Address:

Weyerhaeuser Company - Vanceboro Pulp And Paper
1785 Weyerhaeuser Road

Vanceboro, NC 28586

SIC: 2611 / Pulp Mills
NAICS: 32211 / Pulp Mills

Facility Classification: Before: Title V **After:** Title V
Fee Classification: Before: Title V **After:** Title V

Permit Applicability (this application only)

SIP:
NSPS:
NESHAP:
PSD:
PSD Avoidance: Yes0
NC Toxics:
112(r):
Other:

Contact Data

Facility Contact	Authorized Contact	Technical Contact
Brad Chesson Environmental Engineer (252) 633-7230 1785 Weyerhaeuser Road Vanceboro, NC 28586	John Ashley Vice President (252) 633-7242 P.O. Box 1391 New Bern, NC 28563	Brad Chesson Environmental Engineer (252) 633-7230 1785 Weyerhaeuser Road Vanceboro, NC 28586

Application Data

Application Number: **2500104.10A**
Date Received: 09/30/2010
Application Type: Modification
Application Schedule: State

Existing Permit Data
Existing Permit Number: 02590/R39
Existing Permit Issue Date: 03/03/2010
Existing Permit Expiration Date: 12/31/2013

Review Engineer: **Jay W Evans**

Review Engineer's Signature: **Date:**

Comments / Recommendations:
Issue 02590/R40
Permit Issue Date:
Permit Expiration Date:

XXII. Purpose of Application

Weyerhaeuser NR Company (Weyerhaeuser) operates an integrated bleached Kraft pulp mill near New Bern, North Carolina. The primary activity at the Weyerhaeuser New Bern Mill is pulp production (Standard Industrial Classification [SIC] code 2611), and operations include multiple fuel-fired boilers, chemical recovery operations, wood pulping and bleaching operations, and additional operations and equipment necessary to support these operations.

The New Bern Mill proposes to make modifications to the pulp machine in order to improve machine productivity and energy efficiency. The modifications involve addition of a top felt on the lump breaker and first press top rolls, and installation of an additional vacuum pump and two new uhle boxes. Existing showers will be relocated to serve as felt wetting showers and high pressure felt cleaning showers will be added. The top felt will be in addition to the bottom felt already installed on the first press. The purpose of the uhle boxes is to remove water from the felt as it passes over the vacuum zone. The added vacuum pump will provide vacuum to the new uhle boxes. These modifications will both reduce water consumption on the pulp machine and reduce the moisture of the pulp entering the dryer. Due to the reduced moisture content of the pulp entering the dryer, the proposed project would allow an increase in production of pulp by 5,000 ADMT (5,510 ADTFP) on an annual basis.

XXIII. Permit Modifications/Changes

The following table describes the modifications to the current permit.

Old page	New page	Section	Change
All	All	All	Updated dates, permit number, etc.
17	17	Specific Condition 29	Added the Pulp Machine/Dryer Modification to the existing 2D .0530(u) monitoring condition.

XXIV. Emissions Changes

The proposed change will result in emissions changes for the affected sources. These changes are summarized in the table below and discussed in greater detail in the later sections of this review. In short, the emissions changes do not trigger NSR/PSD review and are expected to comply with the individual emissions limitations for the affected unit.

A PSD applicability analysis was performed to determine which regulated compounds would be subject to PSD review. The emissions increases for the project were determined for each compound based on the difference between the projected emissions associated with the Pulp Operations and the average actual baseline emissions from January 2007 – December 2008. Additionally, because of the increase in capacity associated with the modification, the increases in utilization of the debottlenecked affected sources were also included in the PSD applicability analysis. In determining the emissions that could have been accommodated, the facility used the annual facility inputs associated with the highest production baseline year (2008).

Based on the applicability analysis, the project is classified as a minor modification because it will not result in potential emissions increases of any PSD compounds that exceed their respective Significant Emission Rate. A summary of all PSD compound emissions increases and a comparison of these increases against the PSD Significant Emission Rates is presented below. Projected emissions were calculated for the following:

- A maximum projected throughput of 357,209ADTFP/year.

	Emissions, tpy											
	VOC	**PM**	**PM10**	**PM2.5**	**SO2**	**NOx**	**CO**	**H2S**	**TRS**	**F**	**H2SO4**	**Pb**
Baseline Actual Emissions	750.12	368.90	220.44	166.13	1316.07	704.78	576.05	44.43	74.75	0.22	20.94	0.01
Projected Actual Emissions	764.16	388.70	223.68	155.55	984.41	719.28	518.96	45.67	73.53	0.22	17.87	0.01
Capable of Accommodating	753.47	373.76	223.40	165.28	1367.88	705.32	571.90	44.40	74.64	0.21	21.55	0.01
Net Emissions Increases	10.70	14.94	0.28	-9.73	-383.47	13.97	-52.94	1.27	-1.11	0.00	-3.68	0.00
NSR Significant	40	25	15	10	40	40	100	10	10	3	7	0.6

	Emissions, tpy											
Emission Rates												
Major NSR Review Required	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**

The net emission changes for all emission changes were less than their respective NSR Significant Emission rates, and, therefore, major NSR review is not required. However, the applicant is required to monitor and report the basis of these projected emissions, as required in the amended, existing 15A NCAC 2D .0530 (u) condition.

XXV. Regulatory Review

The new and existing regulations affected by this application and the PSD applicability are addressed below.

The state and federal regulations potentially applicable to the proposed project are Prevention of Significant Deterioration (PSD) regulations in 40 CFR 52.21; and New Source Performance Standards (NSPS) in 40 CFR 60. These federal requirements are codified in the North Carolina regulations under 15A NCAC 2D.0530, 2D.0524, and 2D.1111. Also, this project affects NC DAQ air quality regulations for stationary sources as codified in 15A of the North Carolina Administrative Code, Subchapter 2D (Air Pollution Control Requirements) and Subchapter 2Q (Air Quality Permit Procedures). A discussion of these regulations is provided in the following subsections.

Prevention of Significant Deterioration – 15A NCAC 2D .0530

The PSD regulations apply to major modifications at major stationary sources, which are considered those sources belonging to any one of the 28 source categories listed in the regulations that has the potential to emit more than 100 tons per year of any PSD-regulated compound, or any other source which has the potential to emit more than 250 tons per year of any PSD compound. A major modification is defined as "any change to a major stationary source that would result in a significant emissions increase of any pollutant subject to regulation under the Act." Major modifications are subject to review under the PSD regulations and must meet certain pre-construction review and permitting requirements. The Weyerhaeuser New Bern Mill belongs to one of the 28 listed categories and emits greater than 100 tons per year of a PSD-regulated air compound. Thus, the New Bern Mill is a major source.

PSD applicability analyses are based on changes in "annual" emission levels. The emissions increase for existing physically modified and affected emission units is calculated either as the difference between projected actual emissions and the baseline actual emissions or as the difference between past actual and future potential emissions; adjusted for emissions accommodated in the baseline years.

Baseline Actual Emissions

For an existing emissions unit, baseline actual emissions means the average rate, in tons per year, at which the emissions unit actually emitted the pollutant during any consecutive 24-month period selected by the owner or operator within the 5-year period immediately preceding the date that a complete permit application is received by the Division for a permit required under this Rule. The Director may allow a different time period, not to exceed 10 years immediately preceding the date that a complete permit application is received by the Division, if the owner or operator demonstrates that it is more representative of normal source operation.

Projected Actual Emissions

Projected actual emissions means the maximum annual rate, in tons per year, at which an existing emissions unit is projected to emit a regulated NSR pollutant in any one of the 5 years (12-month period) following the date the unit resumes regular operation after the project, or in any one the 10 years following that date, if the project involves increasing the emissions unit's design capacity or its potential to emit a regulated NSR pollutant and full utilization of the unit would result in a significant emissions increase or a significant net emissions increase.

Emissions That Could Have Been Accommodated

Emissions from an existing unit that could have been accommodated by that unit can be excluded from the calculated emission increases:

> (iii)Shall exclude, in calculating any increase in emissions that results from the particular project, that portion of the unit's emissions following the project that an existing unit could have accommodated during the consecutive 24-month period used to establish the baseline actual and that are not resulting from the particular project, including any increased utilization due to product demand growth;

Thus, projected emission increases are exempted when (1) a unit could have accommodated the emissions during the baseline 24-month period, (2) the increases do not result from the particular project, and (3) the increases are related to increased product demand.

Description of Emission Calculations
To determine the baseline the past five years of throughput data was reviewed and the relevant two year period was selected (2007-2008) by the applicant. The highest annual throughput accommodated during the baseline was determined based on the highest production year (2008). The proposed project will increase annual actual throughput by 5,000 ADMT (5,510 ADTFP) of finished product. To evaluate the emissions impact of the throughput increase, the percentage of production increase on the pulp dryer was equally applied throughout the affected processes to the throughputs accommodated during the baseline. This approach was considered acceptable for this project given the relatively small (1.54%) increase in capacity. The evaluation provided by the applicant was based on baseline production data, but used updated emission factors in some cases. These updated factors for unmodified sources were based on more recently published emission factors and do not appear to have changed based on any new regulatory requirements. The application of these factors to the baseline period arguably provides the actual emissions for the affected sources; However, this approach did provide significant differences in the provided baseline emissions data compared to the previously reported emissions inventory data for the same time period. As a precaution, the reported baseline data was also evaluated by DAQ against the PSD thresholds using the same approach as the applicant. Based on each of these approaches, the emission increases are well below the PSD significant emission rates. It was noted that emission increases of SO_2, CO, $PM_{2.5}$, TRS, and H_2SO_4 are negative due to recent improvements in the modified Recovery Furnace that provided lower per unit emissions over the baseline period.

Pursuant to 2D .0530(u), because the facility utilized projected emissions in the PSD analysis, the facility will be required to track the relevant items listed in 40 CFR 51.166(r)(6)(v)(a) through (c). Because the modification increased the production capacity of the modified unit, the required timeframe for tracking will be 10 years. To administratively assist the DAQ in tracking the projected emissions, the projected production rate will also be tracked under this condition.

Control of Toxic Air Pollutants – 2D .1100/2Q .0711
15A NCAC 2Q .0700 requires facilities that emit toxic air pollutants (TAPs) for which they are required to have a permit under 15A NCAC 2D.1100 to demonstrate compliance with the Acceptable Ambient Levels (AALs). The New Bern Mill's current air permit has emission limits for several TAPs based on previous facility-wide modeling analyses using optimized emission rates (e.g., modeled TAP emissions exceed potential emission rates). This project will not result in an increase in potential emissions of any source, so updated TAP modeling was not being submitted with this project.

Notification in Areas without Zoning – 2Q .0113
The New Bern Mill is located in an area without zoning. Therefore, the Weyerhaeuser facility must follow the requirements presented in 2Q .0113. This rule requires that the facility provide public notice prior to submitting the permit application:
Legal Notice – The facility published a legal notice in the New Bern Sun Journal on September 15, 2010. The notice included the name of the facility, the name and address of the applicant, and a summary of the modification. An affidavit and proof of publication are presented in the application.
Posting of Sign – The facility has posted a sign that is at least 6 square feet in size, less than ten feet from the highway right-of-way, at least six feet from the ground, contains lettering a person with 20/20 vision can view from the center of the road, and is placed parallel to the highway. The sign contains the name of the facility, the

name and address of the applicant, and a summary of the modification. The sign must remain in place for at least 30 days following the submittal of the permit application. The sign was raised on September 14, 2010

XXVI. Recommendations

RCO recommends issuance of this permit.

Issue Permit No. 02590R40

NORTH CAROLINA DIVISION OF AIR QUALITY

Air Permit Review

Permit Issue Date:

Region: Washington Regional Office
County: Craven
NC Facility ID: 2500104
Inspector's Name: Betsy Huddleston
Date of Last Inspection: 06/04/2009
Compliance Code: 3 / Compliance - inspection

Facility Data

Applicant (Facility's Name): **Weyerhaeuser Company - Vanceboro Pulp And Paper**

Facility Address:

Weyerhaeuser Company - Vanceboro Pulp And Paper
1785 Weyerhaeuser Road

Vanceboro, NC 28586

SIC: 2611 / Pulp Mills
NAICS: 32211 / Pulp Mills

Facility Classification: Before: Title V **After:** Title V
Fee Classification: Before: Title V **After:** Title V

Permit Applicability (this application only)

SIP:
NSPS:
NESHAP:
PSD:
PSD Avoidance:
NC Toxics:
112(r):
Other:

Contact Data

Facility Contact

Brad Chesson
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(252) 633-7230
1785 Weyerhaeuser Road
Vanceboro, NC 28586

Authorized Contact

John Ashley
Vice President
(252) 633-7242
P.O. Box 1391
New Bern, NC 28563

Technical Contact

Brad Chesson
Environmental Engineer
(252) 633-7230
1785 Weyerhaeuser Road
Vanceboro, NC 28586

Application Data

Application Number: **2500104.09H**
Date Received: 12/10/2009
Application Type: Modification
Application Schedule: State

Existing Permit Data
Existing Permit Number: 02590/R38
Existing Permit Issue Date: 08/07/2009
Existing Permit Expiration Date: 12/31/2013

Review Engineer: **Jay W Evans**

Review Engineer's Signature: **Date:**

Comments / Recommendations:

Issue 02590/R39
Permit Issue Date:
Permit Expiration Date:

XXVII. Purpose of Application

Weyerhaeuser NR Company (Weyerhaeuser) operates an integrated bleached Kraft pulp mill near New Bern, North Carolina. The primary activity at the Weyerhaeuser New Bern Mill is pulp production (Standard Industrial Classification [SIC] code 2611), and operations include multiple fuel-fired boilers, chemical recovery operations, wood pulping and bleaching operations, and additional operations and equipment necessary to support these operations.

The Mill proposes to add burners with the capability to burn natural gas in the No. 2 Power Boiler in this application.

XXVIII. Permit Modifications/Changes

The following table describes the modifications to the current permit.

Old page	New page	Section	Change
All	All	All	Updated dates, permit number, etc.
2	2	Source List Nos. 5	Updated No.2 Power Boiler description
10	10	Specific Condition 15	Updated NSPS Condition to reflect NOx limits for Natural Gas and combined fossil fuel combustion.
17	17	Specific Condition 29	Added the No.2 Power Boiler Natural Gas Addition to the existing 2D .0530(u) monitoring condition.

XXIX. Emissions Changes

The proposed change will result in emissions changes for the affected sources. These changes are summarized in the table below and discussed in greater detail in the later sections of this review. In short, the emissions changes do not trigger NSR/PSD review and are expected to comply with the individual emissions limitations for the affected unit.

A PSD applicability analysis was performed to determine which regulated compounds would be subject to PSD review. The emissions increases for the project were determined for each compound based on the difference between the projected emissions associated with the No. 2 Power Boiler and the average actual baseline emissions from October 2004 – September 2006.

Based on the applicability analysis, the proposed natural gas firing is classified as a minor modification because it will not result in potential emissions increases of any PSD compounds that exceed their respective Significant Emission Rate. A summary of all PSD compound emissions increases and a comparison of these increases against the PSD Significant Emission Rates is presented below. For simplicity, the results are presented based on the offset usage of natural gas versus fuel oil and do not reflect emissions from product gases, which exist, but will not be affected by this project

Projected emissions were calculated for the following:

- A maximum projected oil usage of 8,237 million gallons per year in the No. 2 Power Boiler
- A maximum projected natural gas usage of 2,293mmscf per year in the No. 2 Power Boiler

	Emissions, tpy								
	VOC	**PM**	**PM10**	**PM2.5**	**SO2**	**NOx**	**CO**	**H2SO4**	**Fl**
Baseline Actual Emissions	0.14	22	22	22	66.7	156	74	4.9	0.11
Projected Actual Emissions	6.3	28	28	27	83.4	195	96	6.2	0.14
Net Emissions Increases	6.2	5.6	5.6	5.4	17	39	22	1.3	0.03
NSR Significant Emission Rates	40	25	15	10	40	40	100	7	3
Major NSR Review Required	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**

The net emission changes for all emission changes were less than their respective NSR Significant Emission rates, and, therefore, major NSR review is not required. However, the applicant is required to monitor and report the basis of these projected emissions, as required in the amended, existing 15A NCAC 2D .0530 (u) condition.

XXX. Regulatory Review

The new and existing regulations affected by this application and the PSD applicability is addresses below.

The state and federal regulations potentially applicable to the proposed project are Prevention of Significant Deterioration (PSD) regulations in 40 CFR 52.21; and New Source Performance Standards (NSPS) in 40 CFR 60. These federal requirements are codified in the North Carolina regulations under 15A NCAC 2D.0530, 2D.0524, and 2D.1111. Also, this project affects NC DAQ air quality regulations for stationary sources as codified in 15A of the North Carolina Administrative Code, Subchapter 2D (Air Pollution Control Requirements) and Subchapter 2Q (Air Quality Permit Procedures). A discussion of these regulations is provided in the following subsections.

Prevention of Significant Deterioration – 15A NCAC 2D .0530

The PSD regulations apply to major modifications at major stationary sources, which are considered those sources belonging to any one of the 28 source categories listed in the regulations that has the potential to emit more than 100 tons per year of any PSD-regulated compound, or any other source which has the potential to emit more than 250 tons per year of any PSD compound. A major modification is defined as "any change to a major stationary source that would result in a significant emissions increase of any pollutant subject to regulation under the Act." Major modifications are subject to review under the PSD regulations and must meet certain pre-construction review and permitting requirements. The Weyerhaeuser New Bern Mill belongs to one of the 28 listed categories and emits greater than 100 tons per year of a PSD-regulated air compound. Thus, the New Bern Mill is a major source.

The applicant used a structured, step-by-step procedure to evaluate PSD applicability, in accordance with PSD regulations. PSD applicability analyses have two major components, completed on a pollutant-by-pollutant basis:

1. Calculate emission increase from the project alone.
2. Calculate net creditable emission increases and decreases over the five-year contemporaneous period for those pollutants whose project increases exceed the PSD Significant Emission Rates.

PSD applicability analyses are based on changes in "annual" emission levels. The emissions increase for existing physically modified and affected emission units is calculated either as the difference between projected actual emissions and the baseline actual emissions or as the difference between past actual and future potential emissions, adjusted for emissions accommodated in the baseline years. The emissions increase is calculated as the potential emissions for newly constructed emission units. For this PSD analysis, Weyerhaeuser elected to use the difference between past actual and projected actual emissions method to evaluate PSD applicability for the No. 2 Power Boiler. An attributable emissions increase approach was utilized to conservatively estimate emissions from the associated Power Boiler.

The emissions increase for new emission units was calculated as the difference between the potential emissions and the baseline actual emissions. Baseline actual emissions for a new unit are zero, so the emission increase for the new Pilot Plant sources are the respective potential to emit (PTE).

Baseline Actual Emissions

For an existing emissions unit, baseline actual emissions means the average rate, in tons per year, at which the emissions unit actually emitted the pollutant during any consecutive 24-month period selected by the owner or operator within the 5-year period immediately preceding the date that a complete permit application is received by the Division for a permit required under this Rule. The Director may allow a different time period, not to exceed 10 years immediately preceding the date that a complete permit application is received by the Division, if the owner or operator demonstrates that it is more representative of normal source operation.

Projected Actual Emissions

Projected actual emissions means the maximum annual rate, in tons per year, at which an existing emissions unit is projected to emit a regulated NSR pollutant in any one of the 5 years (12-month period) following the date the unit resumes regular operation after the project, or in any one the 10 years following that date, if the project involves increasing the emissions unit's design capacity or its potential to emit a regulated NSR pollutant and full utilization of the unit would result in a significant emissions increase or a significant net emissions increase.

Emissions That Could Have Been Accommodated
Emissions from an existing unit that could have been accommodated by that unit can be excluded from the calculated emission increases:

> (iii)Shall exclude, in calculating any increase in emissions that results from the particular project, that portion of the unit's emissions following the project that an existing unit could have accommodated during the consecutive 24-month period used to establish the baseline actual and that are not resulting from the particular project, including any increased utilization due to product demand growth;

Thus, projected emission increases are exempted when (1) a unit could have accommodated the emissions during the baseline 24-month period, (2) the increases do not result from the particular project, and (3) the increases are related to increased product demand.

Description of Emission Calculations
A PSD applicability analysis was performed to determine which regulated compounds would be subject to PSD review. The emissions increases for the project were determined for each compound based on the difference between the projected actual emissions and the average actual emissions from October 2004– September 2006. As detailed above, the proposed project is classified as a minor modification because it will not result in potential emissions increases of any PSD compounds that exceed their respective Significant Emission Rate. No "could have been accommodated" emissions were considered.

New Source Performance Standards (NSPS) – 15A NCAC 2D .0524
NSPS applies to any stationary source for which the standards are promulgated, and which is constructed, reconstructed or modified after the effective date of the applicable standard to the affected facility. NSPS requirements are promulgated under 40 CFR 60 pursuant to Section 111 of the Clean Air Act. An existing facility can become subject to the NSPS requirements upon reconstruction or modification. A modification under NSPS is defined as any physical or operational change that results in an increase in the emission rate of any pollutant to which a standard applies.

Subpart Db
The No. 2 Power Boiler is currently an affected source, subject to NSPS Subpart Db. The proposed project does include both physical and operational changes to the No. 2 Power Boiler. However, these changes will not result in the increase of any pollutant regulated under NSPS Subpart Db, therefore the source will remain subject to the existing NSPS limitations rather than those specified for sources modified after February 28, 2005. The existing permit condition is modified to reflect the combustion of natural gas in the Boiler.

The NOx limit under the NSPS is the same for natural gas as it is for the currently-permitted – distillate fuel oil. The NOx limit for the combined firing of natural gas with fuel oil and/or residual oil is based on the individual respective heat inputs for the fuel and the individual specific fuel emission limit as detail in 40 CFR 60.44b(b).

The SO2 and PM limits are unchanged, however, the exiting condition was modified to clarify that the heat input for natural gas is not included in determining the SO2 emission concentration for compliance with Subpart Db.

National Emission Standards for Hazardous Air Pollutants (NESHAP) – 15A NCAC 2D .1100
The project is not expected to result in a increase in HAP emissions. The source is subject to 40 CFR 63 Subpart S and will be subject to Subpart DDDDD. The facility has submitted a case-by-case MACT determination for the boiler for Subpart DDDDD that is unaffected by this change.

Particulates from Fuel Burning Indirect Heat Exchangers – 2D .0503
The addition of natural gas as a fuel will lower PM emissions in the boiler, thus compliance is expected.

Control of Nitrogen Dioxide and Nitrogen Oxides Emissions – 2D .0519
Compliance with the NSPS limits should ensure compliance with 2D .0519.

Control of Toxic Air Pollutants – 2D .1100/2Q .0711
The combustion of natural gas in the boiler is currently exempt from NC Toxics review.

Notification in Areas without Zoning – 2Q .0113
The New Bern Mill is located in an area without zoning. Therefore, Weyerhaeuser must follow the requirements presented in 2Q .0113. This rule requires that the facility provide public notice prior to submitting a permit application for new or expended facility. This application is not for a new or expanded facility, thus the 2Q .0113 requirements do not apply.

XXXI. Recommendations

RCO recommends issuance of this permit.

Issue Permit No. 02590R39

NORTH CAROLINA DIVISION OF AIR QUALITY

Air Permit Review

Permit Issue Date:

Region: Washington Regional Office
County: Craven
NC Facility ID: 2500104
Inspector's Name: Betsy Huddleston
Date of Last Inspection: 06/04/2009
Compliance Code: 3 / Compliance - inspection

Facility Data

Applicant (Facility's Name): **Weyerhaeuser Company - Vanceboro Pulp And Paper**

Facility Address:

Weyerhaeuser Company - Vanceboro Pulp And Paper
1785 Weyerhaeuser Road

Vanceboro, NC 28586

SIC: 2611 / Pulp Mills
NAICS: 32211 / Pulp Mills

Facility Classification: Before: Title V **After:** Title V
Fee Classification: Before: Title V **After:** Title V

Permit Applicability (this application only)

SIP: ***Yes***
NSPS: No
NESHAP: No
PSD: No
PSD Avoidance: Yes
NC Toxics: Yes
112(r): No
Other:

Contact Data

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Application Data

Application Number: **2500104.09E**
Date Received: 03/26/2009
Application Type: Modification
Application Schedule: State

Existing Permit Data
Existing Permit Number: 02590/R37
Existing Permit Issue Date: 06/15/2009
Existing Permit Expiration Date: 12/31/2013

Review Engineer: **Jay W Evans**

Review Engineer's Signature: **Date:**

Comments / Recommendations:

Issue 02590/R38
Permit Issue Date: 08/07/2009
Permit Expiration Date: 12/31/2013

XXXII. Purpose of Application

Weyerhaeuser NR Company (Weyerhaeuser) operates an integrated bleached Kraft pulp mill near New Bern, North Carolina. The primary activity at the Weyerhaeuser New Bern Mill is pulp production (Standard Industrial Classification [SIC] code 2611), and operations include multiple fuel-fired boilers, chemical recovery

operations, wood pulping and bleaching operations, and additional operations and equipment necessary to support these operations.

The Mill proposes to install a pilot plant to remove lignin solids from a portion of the black liquor generated during the pulping process. The mill plans to sell the lignin solids. The proposed project will not increase the pulp production at the facility, but will result in the addition of new air emission sources to remove the lignin from the black liquor stream. In addition, this project requires the mill to evaluate the potential emissions from the pilot plant.

A slip stream of evaporator product black liquor will be routed to the proprietary Lignin Removal System (Pilot Plant). The liquor will go through a series of units to remove the lignin from the black liquor. The filtrate will be sent back to existing Weak Black Liquor Tanks. The lignin will eventually be dried to prepare it for the end use. The to-be-permitted dryer will be heated with propane, but at the request of the Permittee, the dryer and its control device are not included in the permit at this time.

New Emission Source
The new Pilot Plant is expected to have emissions of H2S and methyl mercaptan which are NC air toxics. Vents from the process tanks and filter press will be collected and sent to the Spray Tower. The Spray Tower has a provided treatment efficiency of 90% for TRS, H2S, and methyl mercaptan and 50% for VOCs. The constituents that are not removed by the Spray Tower are vented to the atmosphere. As required, this source was modeled for air toxics H2S and Methyl Mercaptan.

The facility originally planned to also see an increase in particulate emissions from a Lignin Dryer and the Lignin Handling System. Particulate emissions from the Lignin Dryer was to be controlled by a bagfilter. At the request of the Permittee, the Lignin Dryer will not be included in the permit at this time. The Lignin Dryer will be installed at a later date in order to allow for initial testing of the pilot Lignin Removal System and final design of the dryer bagfilter controls. However, the project emissions increases expected from the Lignin Dryer are included in the NSR/PSD analysis.

Affected Sources
Filtrate from the Pilot Plant will be returned to the weak liquor system and eventually burned in the recovery furnace. Currently the concentrated black liquor is sent to both the recovery furnace and the gasifier. After removing lignin from the black liquor, the concentrated product liquor will be processed through the recovery furnace or gasifier. It should be noted that the steaming rate (organic firing rate) of neither the recovery furnace nor the gasifier will change. The increase in processing the returned filtrate to the evaporators will result in an increased demand for steam. The mill will burn additional fuel oil in the No. 2 Power Boiler meet this need.

XXXIII. Permit Modifications/Changes
The following table describes the modifications to the current permit.

Old page	New page	Section	Change
All	All	All	Updated dates, permit number, etc.
3	3	Source List Nos. 18-19	Added Lignin Removal and Handling System
4	4	Specific Condition 4	Added Lignin Removal and Handling System to existing 2D .0521 condition
13	13	Specific Condition 20	Added Lignin System NCG Scrubber monitoring to existing condition
17	17	Specific Condition 29	Added the Pilot Lignin Removal Project to the existing 2D .0530(u) monitoring condition.
18	18	Specific Condition 30	Updated NC Toxics Condition based on updated H2S and Methyl Mercaptan modeling

XXXIV. Emissions Changes

The proposed changes will result in emissions changes for various affected sources. These changes are summarized in the table below and discussed in greater detail in the later sections of this review. In short, the emissions changes do not trigger NSR/PSD review and are expected to comply with the individual emissions limitations for the affected units.

A PSD applicability analysis was performed to determine which regulated compounds would be subject to PSD review. The emissions increases for the project were determined for each compound based on the difference between the proposed potential emissions associated with the Pilot Plant and the average actual emissions from October 2005 – September 2007. Although this project will not result in any production increases or debottlenecking, there will be affected unit emissions increases at the No. 2 Power Boiler.

Based on the applicability analysis, the proposed Pilot Plant is classified as a minor modification because it will not result in potential emissions increases of any PSD compounds that exceed their respective Significant Emission Rate. A summary of all PSD compound emissions increases and a comparison of these increases against the PSD Significant Emission Rates is presented below.

The project's emissions impacts were calculated by determining the past actual emissions the No. 2 Power Boiler was capable of accommodating. The production rate the unit was capable of accommodating was based on the highest monthly production during the 24-month baseline period (October 2005 – September 2007).

Potential emissions were calculated for the following:

- Emissions from the Lignin Removal System Pilot Plant (ES 470-001) controlled by the new Spray Tower were based on a 90% control efficiency for TRS, H2S and Methyl Mercaptan and 50% for VOCs;
- Emissions from burning propane in the to-be-permitted Lignin Dryer (ES 470-003);
- Particulate Emissions from the to-be-permitted Lignin Dryer (ES 470-003) will be controlled by a bagfilter with an efficiency of 99%;
- Emissions from the Lignin Handling Area (ES 470-002)
- Projected actual emissions from burning supplemental fuel oil in No. 2 Power Boiler (ES 161-001);

	Emissions, tpy								
	VOC	**PM**	**PM10**	**PM2.5**	**SO2**	**NOx**	**CO**	**H2S**	**TRS**
Baseline Project Emissions	3.93	21.88	21.88	21.40	111.85	155.62	72.95	0.0	0.0
Projected/Potential Project Emissions	4.81	26.71	26.71	26.12	136.52	190.02	89.08	0.38	0.39
Accommodated Emissions	4.80	26.69	26.69	26.10	136.44	189.83	88.98	0.0	0.0
Project Net Emissions Increases	0.01	0.02	0.02	0.02	0.08	0.19	0.10	0.38	0.39
NSR Significant Emission Rates	40	25	15	10	40	40	100	10	10
Major NSR Review Required	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**

The net emission changes for all emission changes were less than their respective NSR Significant Emission rates, and, therefore, major NSR review is not required. However, the applicant is required to monitor and report the basis of these projected emissions, as required in the amended, existing 15A NCAC 2D .0530 (u) condition.

XXXV. Regulatory Review

The new and existing regulations affected by these combined applications and the PSD applicability is addresses below.

The state and federal regulations potentially applicable to the proposed Pilot Plant are Prevention of Significant Deterioration (PSD) regulations in 40 CFR 52.21; New Source Performance Standards (NSPS) in 40 CFR 60; and National Emission Standards for Hazardous Air Pollutants (NESHAP) in 40 CFR 63. These federal requirements are codified in the North Carolina regulations under 15A NCAC 2D.0530, 2D.0524, and 2D.1111. Also, this project affects NC DAQ air quality regulations for stationary sources as codified in 15A of the North Carolina Administrative Code, Subchapter 2D (Air Pollution Control Requirements) and Subchapter 2Q (Air Quality Permit Procedures). A discussion of these regulations is provided in the following subsections.

Prevention of Significant Deterioration – 15A NCAC 2D .0530

The PSD regulations apply to major modifications at major stationary sources, which are considered those sources belonging to any one of the 28 source categories listed in the regulations that has the potential to emit more than 100 tons per year of any PSD-regulated compound, or any other source which has the potential to emit more than 250 tons per year of any PSD compound. A major modification is defined as "any change to a major stationary source that would result in a significant emissions increase of any pollutant subject to regulation under the Act." Major modifications are subject to review under the PSD regulations and must meet certain pre-construction review and permitting requirements. The Weyerhaeuser New Bern Mill belongs to one of the 28 listed categories and emits greater than 100 tons per year of a PSD-regulated air compound. Thus, the New Bern Mill is a major source.

The applicant used a structured, step-by-step procedure to evaluate PSD applicability, in accordance with PSD regulations. PSD applicability analyses have two major components, completed on a pollutant-by-pollutant basis:

1. Calculate emission increase from the project alone.
2. Calculate net creditable emission increases and decreases over the five-year contemporaneous period for those pollutants whose project increases exceed the PSD Significant Emission Rates.

PSD applicability analyses are based on changes in "annual" emission levels. The emissions increase for existing physically modified and affected emission units is calculated either as the difference between projected actual emissions and the baseline actual emissions or as the difference between past actual and future potential emissions, adjusted for emissions accommodated in the baseline years. The emissions increase is calculated as the potential emissions for newly constructed emission units. For this PSD analysis, Weyerhaeuser elected to use the difference between past actual and projected actual emissions method to evaluate PSD applicability for the No. 2 Power Boiler. An attributable emissions increase approach was utilized to conservatively estimate emissions from the associated Power Boiler.

The emissions increase for new emission units was calculated as the difference between the potential emissions and the baseline actual emissions. Baseline actual emissions for a new unit are zero, so the emission increase for the new Pilot Plant sources are the respective potential to emit (PTE).

Baseline Actual Emissions

For an existing emissions unit, baseline actual emissions means the average rate, in tons per year, at which the emissions unit actually emitted the pollutant during any consecutive 24-month period selected by the owner or operator within the 5-year period immediately preceding the date that a complete permit application is received by the Division for a permit required under this Rule. The Director may allow a different time period, not to exceed 10 years immediately preceding the date that a complete permit application is received by the Division, if the owner or operator demonstrates that it is more representative of normal source operation.

Projected Actual Emissions

Projected actual emissions means the maximum annual rate, in tons per year, at which an existing emissions unit is projected to emit a regulated NSR pollutant in any one of the 5 years (12-month period) following the date the unit resumes regular operation after the project, or in any one the 10 years following that date, if the project involves increasing the emissions unit's design capacity or its potential to emit a regulated NSR

pollutant and full utilization of the unit would result in a significant emissions increase or a significant net emissions increase.

Emissions That Could Have Been Accommodated
Emissions from an existing unit that could have been accommodated by that unit can be excluded from the calculated emission increases:

> (iii)Shall exclude, in calculating any increase in emissions that results from the particular project, that portion of the unit's emissions following the project that an existing unit could have accommodated during the consecutive 24-month period used to establish the baseline actual and that are not resulting from the particular project, including any increased utilization due to product demand growth;

Thus, projected emission increases are exempted when (1) a unit could have accommodated the emissions during the baseline 24-month period, (2) the increases do not result from the particular project, and (3) the increases are related to increased product demand.

Description of Emission Calculations
A PSD applicability analysis was performed to determine which regulated compounds would be subject to PSD review. The emissions increases for the project were determined for each compound based on the difference between the proposed potential emissions associated with the Pilot Plant and the average actual emissions from October 2005 – September 2007. Although this project will not result in any production increases or debottlenecking, there will be affected unit emissions increases at the No. 2 Power Boiler. As detailed in Section III above, the proposed Pilot Plant is classified as a minor modification because it will not result in potential emissions increases of any PSD compounds that exceed their respective Significant Emission Rate.

New Source Performance Standards (NSPS) – 15A NCAC 2D .0524
NSPS applies to any stationary source for which the standards are promulgated, and which is constructed, reconstructed or modified after the effective date of the applicable standard to the affected facility. NSPS requirements are promulgated under 40 CFR 60 pursuant to Section 111 of the Clean Air Act. An existing facility can become subject to the NSPS requirements upon reconstruction or modification. A modification under NSPS is defined as any physical or operational change that results in an increase in the emission rate of any pollutant to which a standard applies.

Subparts Dc, Db, and BB
The to-be-permitted Lignin Dryer will burn propane to dry the lignin to prepare it for the end user. The burner is rated less than 10 MMBTU/hr. Therefore, NSPS Subpart Dc does not apply. The No. 2 Boiler is the only affected source subject to NSPS Subpart Db. The proposed project does not include any physical or operational changes to the No. 2 Power Boiler. New equipment proposed by this project is not Subject to BB because it is not part of a source subject to this requirement.

National Emission Standards for Hazardous Air Pollutants (NESHAP) – 15A NCAC 2D .1100
The New Bern Mill is subject to the Pulp and Paper MACT (Subpart S). This proposed change does not affect the sources covered under Subpart S. The Mill is also subject to the Chemical Recovery Combustion Sources at Kraft, Soda, Sulfite and Stand Alone Semichemical Pulp Mills (Subpart MM). The Mill must comply with the "bubble limit" for all affected sources under this regulation (Permit Condition A.26.). This process will not affect the Lime Kiln, Recovery Furnace, and Smelt Dissolving Tank.

Particulates from Fuel Burning Indirect Heat Exchangers – 2D .0503
This standard does not apply because the proposed Propane Fuel Burner is a direct heat exchanger.

Particulates from Miscellaneous Industrial Processes – 2D .0515
Under this standard, particulate emissions from the Propane Burner and the to-be-permitted Lignin Dryer shall not exceed the allowable emission rates defined in 15 A NCAC 2D .0515. These limits are a function of the process weight. PM emissions are negligible from burning propane. PM emissions from these sources are expected to comply with this regulation for this pollutant based on both the process and the controls.

Sulfur Dioxide Emissions from Combustion Sources – 2D .0516
Under this standard, SO2 emissions from any combustion source are limited to 2.3 lb/MMBtu input. No SO2 emissions are anticipated from the propane burner.

Visible Emissions – 2D .0521
Under this standard, visible emissions shall not be more than 20% opacity when averaged over a six-minute period, except that six-minute periods averaging not more than 87% opacity may occur not more than once in any hour nor more than four (4) times in any 24-hour period. Emissions due to lignin pilot plant, lignin handling system, and to-be-permitted lignin dryer are expected to comply with this limit.

Control of Toxic Air Pollutants – 2D .1100/2Q .0711
NCAC 2Q .0700 requires facilities that emit toxic air pollutants (TAPs) for which they are required to have a permit under 15 NCAC 2D.1100 to demonstrate compliance with the Acceptable Ambient Levels (AALs). This project will result in one new source for air toxics: the Spray Tower. Updated facility-wide TAP modeling was conducted for H2S and methyl mercaptan and those results are incorporated into the permit. Additionally, the facility-wide modeling was updated for all toxics as a part of the application on July 8, 2009. This modeling covers both the paper mill and the adjoining lumber operation. The incorporation of the updated facility-wide modeling results was deferred at this time and will be incorporated into the existing permit condition at a later date to allow a complete review of the changes. The H2S and methyl mercaptan modeling results have been reviewed and will be incorporated into the existing permit condition for the new and affected sources.

The July 8, 2009 toxic modeling submittal renamed some prior sources and/or identified these sources as slated for removal or addition as a result of the prior-permitted Recovery Furnace Project and/or updated emission information:

- 1st Extraction Washer (ES 425-134) was changed to No. 2 Stage Washer (ES 425-024)
- 2nd Extraction Washer (ES 425-137) was changed to No. 3 Stage Washer (ES 425-036)
- ClO2 Generator was renamed from (ES 430-528) to (ES 430-542)
- The 69% Black Liquor Storage Tank (ES440-729) will be removed as part of the Recovery Furnace Project
- The Saltcake Mix Tank (ES 445-101) will vent to the precipitator following the Recovery Furnace Project
- The Smelt Dissolving Tank (ES 445-121) has a scrubber and will vent through the Recovery Furnace following the Recovery Furnace Project
- A new Tank CRP Salt Cake Return Tank (ES-440-861) will be installed as part of the Recovery Furnace Project
- The Demister Pad HCl Cleaning Chest (ES 445-202) will be removed as part of the Recovery Furnace Project
- The sulfuric acid tank (ES430-022) was removed based on the vapor pressure of the solution at ambient temperatures

Additionally, the updated July 8, 2009 TAP submittal identified several TAPs that are emitted at levels below the TPERs for each respective TAP. A new condition will be added to the permit to reflect these TAPs and their related TPERs upon a complete review as discussed above, but will not be incorporated into the permit at this time: (these changes were also reflected in the TAP updated modeling results):

NC Toxic Air Pollutant	TPER (permit exemption limit)	Units
Acetaldehyde	6.8	lb/hr
Benzo(a)pyrene	2.2	lb/yr
Carbon Tetrachloride	460	lb/yr

NC Toxic Air Pollutant	TPER (permit exemption limit)	Units
Chlorobenzene	46	lb/day
Cresol	0.56	lb/hr
Di(2-ethylhexyl)phthalate	0.63	lb/day
Ethylene Dichloride	260	lb/yr
n-Hexane	23	lb/day
Methyl Chloroform	250	lb/day
	64	lb/hr
Methyl Ethyl Ketone	78	lb/day
	22.4	lb/hr
Methyl Isobutyl Ketone	52	lb/day
	7.6	lb/hr
Methylene Chloride	0.39	lb/hr
Pentachlorophenol	0.063	lb/day
	0.0064	lb/hr
Styrene	2.7	lb/hr
Tetrachlorodibenzo-p-dioxin	0.0002	lb/yr
Tetrachloroethylene	13000	lb/yr
Toluene	98	lb/day
	14.4	lb/hr
Trichloroethylene	4000	lb/yr
Trichlorfluoromethane	140	lb/hr
Vinyl Chloride	26	lb/yr
Xylene	57	lb/day
	16.4	lb/hr

Notification in Areas without Zoning – 2Q .0113

The New Bern Mill is located in an area without zoning. Therefore, Weyerhaeuser must follow the requirements presented in 2Q .0113. This rule requires that the facility provide public notice prior to submitting the permit application.

Legal Notice – The facility published a legal notice in the New Bern Sun Journal on March 21, 2009. The notice included the name of the facility, the name and address of the applicant, and a summary of the modification. An affidavit and proof of publication are presented in the application.

Posting of Sign – The facility has posted a sign that is at least 6 square feet in size, less than ten feet from the highway right-of-way, at least six feet from the ground, contains lettering a person with 20/20 vision can view from the center of the road, and is placed parallel to the highway. The sign contains the name of the facility, the name and address of the applicant, and a summary of the modification. The sign must remain in place for at least 30 days following the submittal of the permit application. The sign was raised on March 20, 2009.

XXXVI. Recommendations

RCO recommends issuance of this permit.

Issue Permit No. 02590R38

NORTH CAROLINA DIVISION OF AIR QUALITY

Air Permit Review

Permit Issue Date:

Region: Washington Regional Office
County: Craven
NC Facility ID: 2500104
Inspector's Name: Betsy Huddleston
Date of Last Inspection: 05/08/2009
Compliance Code: 3 / Compliance - inspection

Facility Data

Applicant (Facility's Name): **Weyerhaeuser Company - Vanceboro Pulp And Paper**

Facility Address:

Weyerhaeuser Company - Vanceboro Pulp And Paper
1785 Weyerhaeuser Road

Vanceboro, NC 28586

SIC: 2611 / Pulp Mills
NAICS: 32211 / Pulp Mills

Facility Classification: Before: Title V **After:** Title V
Fee Classification: Before: Title V **After:** Title V

Permit Applicability (this application only)

SIP: ***Yes***
NSPS: Yes
NESHAP: Yes
PSD: No
PSD Avoidance: Yes
NC Toxics: Yes
112(r):
Other:

Contact Data

Facility Contact	Authorized Contact	Technical Contact
David Gardner Environmental Manager (252) 633-7427 1785 Weyerhauser Road Vanceboro, NC 28586	John Ashley Vice President (252) 633-7242 P.O. Box 1391 New Bern, NC 28563	Brad Chesson Environmental Engineer (252) 633-7230 1785 Weyerhaeuser Road Vanceboro, NC 28586

Application Data

Application Number: **2500104.08D**
Date Received: 12/29/2008
Application Type: Modification
Application Schedule: State

Existing Permit Data
Existing Permit Number: 02590/R36
Existing Permit Issue Date: 04/06/2009
Existing Permit Expiration Date: 12/31/2013

Review Engineer: **Jay W Evans**

Review Engineer's Signature: **Date:**

Comments / Recommendations:
Issue 02590/R37
Permit Issue Date:
Permit Expiration Date:

XXXVII. Purpose of Application

Weyerhaeuser NR Company (Weyerhaeuser) operates an integrated bleached Kraft pulp mill near New Bern, North Carolina. The primary activity at the Weyerhaeuser New Bern Mill is pulp production (Standard Industrial Classification [SIC] code 2611), and operations include multiple fuel-fired boilers, chemical recovery operations, wood pulping and bleaching operations, and additional operations and equipment necessary to support these operations.

This permit addresses four (4) separate applications as detailed below:

2500104.08D and 2500104.09A:
These two applications were submitted for the same purpose – to request changes to the mill as outlined below as the 2009 Recovery Furnace Upgrade Project. The facility submitted two separate applications for this Project. 2500104.08D was submitted as a non-PSD application and 2500104.09A was submitted as a PSD application. The facility made the dual submittal to facilitate the permit issuance should the Project be determined to be PSD applicable. As detailed further in this review, the Project was determined to be non-PSD based on the provided projected emissions and was processed as such. However, the PSD application was incorporated into the Non-PSD application in parts where it amended the non-PSD application, particularly in the area of NSPS applicability.

The New Bern Mill's Recovery Furnace was originally installed in 1969. The current maximum black liquor solids firing rate is approximately 3.7 million pounds per day. The proposed Recovery Furnace Upgrade project will allow the mill to increase the firing rate of black liquor solids in the Recovery Furnace to a nominal 4.2 million pounds of black liquor solids per day. The proposed project includes the following components:

- Revised air system, including tertiary air,
- Adding and replacing some pressure parts,
- Additional burners for control of HVLC and LVHC gases (including SOG) in the recovery furnace, (to allow the recovery furnace to act as backup for each)
- Adding new natural gas load burners and retaining existing oil burners,
- Chloride removal system for precipitator ash system,
- Concentrator upgrade to allow 80 percent solids firing in the Recovery Furnace,
- Electrical upgrades, and
- Replace existing smelt tanks with one larger smelt tank.
- Install a scrubber for the remaining smelt tank vent and duct the smelt tank scrubber emissions into the Recovery Furnace for improved smelt tank emissions control. The current mesh pad mist eliminators will be removed.

Following the upgrade of the Recovery Furnace, the facility has indicated that it will likely shut down the black liquor gasifier, but has not taken any credit for emissions reductions related to its shut down in this project to retain operational flexibility.

2500104.08B
Under 40 CFR 63, Subpart S, HVLC gases are collected and controlled in the No. 2 Power Boiler. This application requested authorization to utilize the Recovery Furnace (ES 445-001) as a backup source for burning HVLC gases. Portions of this application were amended by the Recovery Boiler Upgrade Project as detailed below.

2500104.06C
In June 2006, the New Bern Mill submitted a demonstration to comply with the requirements of 15A NCAC 2D .1104, "Toxic Air Pollutant Guidelines." The mill updated this toxics modeling demonstration in 2008 to reflect the current operations at the mill (i.e. currently operating emission units and existing buildings and structures), and the most recent emission factors, as updated for the 2007 Air Emissions Inventory. Note that these changes affect only the pulp mill and not the lumber mill. Portions of this application were further amended by the Recovery Boiler Upgrade Project. This permit incorporates the current modeled NC Toxics emission modeling as detailed below.

In addition to the above-provided purposes, during review of the draft permit the facility additionally made the following requests that were incorporated into the final permit:

- Removal of the decommissioned HBA Product line for the current permit, and
- Amendment of the No. 2 Power Boiler NOx emission limit to reflect the current site-specific limit per NSPS Subpart Db while co-firing fuel oil w/byproduct gas from 0.3 pounds pr mmBtu to 0.5 pounds per mmBtu.

XXXVIII. Permit Modifications/Changes

The following table describes the modifications to the current permit.

Old page	New page	Section	Change
All	All	All	Updated dates, permit number, etc.
1	1	Source List No. 2	Updated Recovery Boiler description to reflect source changes and NSPS applicability
1	1	Source List No. 3	Updated Smelt Tank(s) description to reflect source changes and NSPS applicability
3	3	Source List Nos. 17-21	Removed HBA Product Line source(s).
4	4	Specific Condition 3	Removed HBA Product Line source(s). Added new smelt tank.
5	5	Specific Condition 5	Amended to reflect current 2D .0508 and future NSPS applicability.
6-7	6-7	Specific Condition 9	Amended to reflect current 2D .0508/.0528 and future NSPS applicability.
7	7	Specific Condition 10	Removed HBA Product Line source(s).
7-8	7-8	Specific Condition 12	Removed HBA Product Line source(s). Replaced with new NSPS condition for the Recovery Boiler and Smelt Tank
8-9	9-10	Specific Condition 15	Amended to reflect sit-specific NOx limit
10	10-11	Specific Condition 17, 18	Removed HBA Product Line source(s).
11	12	Specific Condition 20	Added new smelt tank scrubber
11-14	12-14	Specific Condition 21,22	Added recovery boiler as backup controls
15	15	Specific Condition 26	Amended condition to reflect future NSPS and MACT applicability and future non-applicability of the SIP Bubble.
---	16	Specific Condition 28	Added testing allowance to demonstrate smelt tank compliance post scrubber, but before the recovery boiler.
---	17	Specific Condition 29	Added 2D .0530 (u) monitoring condition.
---	17-33	Specific Condition 30	Added NC Toxics Condition

XXXIX. Emissions Changes

The proposed changes will result in emissions changes for various affected sources. These changes are summarized in the table below and discussed in greater detail in the later sections of this review. In short, the emissions changes do not trigger NSR/PSD review and are expected to comply with the individual emissions limitations for the affected units. Additionally the applicant submitted PSD analysis for Fluoride, Lead, Sulfuric Acid, and Hydrogen Sulfide. Each of these pollutants decreased as a result of the project. The DAQ did not confirm or verify the accommodated sulfur dioxide emissions provide, however the project still represents an overall decrease based on actual sulfur dioxide emission as provide below.

	Emissions, tpy						
	VOC	**PM**	**PM10**	**SO2**	**NOx**	**CO**	**TRS**
Baseline Project Emissions	454.88	385.16	252.59	1500.80	827.91	506.69	10.32
Projected Project Emissions	515.88	262.56	132.03	1047.25	877.24	662.87	13.71
Accommodated Emissions	504.36	425.08	276.82	1500.80*	921.90	565.15	11.41

	Emissions, tpy						
Project Net Emissions Increases	11.52	-162.52	-144.79	-452.83*	-44.65	97.72	2.29
NSR Significant Emission Rates	40	25	15	40	40	100	10
Major NSR Review Required	**No**	**No**	**No**	**No**	**No**	**No**	**No**

The net emission changes for all emission changes were less than their respective NSR Significant Emission rates, and, therefore, major NSR review is not required. However, the applicant is required to monitor and report the basis of these projected emissions, including the actual CO emissions as required in the new 15A NCAC 2D. .0530 (u) condition.

XL. Regulatory Review

The new and existing regulations affected by these combined applications and the PSD applicability is addresses below.

The federal regulations potentially applicable to the proposed project(s) are Prevention of Significant Deterioration (PSD) regulations in 40 CFR 52.21; New Source Performance Standards (NSPS) in 40 CFR 60; National Emission Standards for Hazardous Air Pollutants (NESHAP) in 40 CFR 63; the Compliance Assurance Monitoring (CAM) Rule in 40 CFR 64; and Title V Operating Permit regulations in 40 CFR 70. These requirements are codified in the North Carolina regulations under 15A NCAC 2D.0530, 2D.0524, 2D.1111, and 2Q.0500. A discussion of these regulations is provided in the following subsections.

Prevention of Significant Deterioration – 15A NCAC 2D .0530

The PSD regulations apply to major modifications at major stationary sources, which are considered those sources belonging to any one of the 28 source categories listed in the regulations that has the potential to emit more than 100 tons per year of any PSD-regulated compound, or any other source which has the potential to emit more than 250 tons per year of any PSD compound. A major modification is defined as "any change to a major stationary source that would result in a significant emissions increase of any pollutant subject to regulation under the Act." Major modifications are subject to review under the PSD regulations and must meet certain pre-construction review and permitting requirements.

The Weyerhaeuser New Bern Mill belongs to one of the 28 listed categories and emits greater than 100 tons per year of a PSD-regulated air compound. Thus, the New Bern Mill is a major source. A PSD applicability evaluation was performed to determine if any PSD compounds are subject to PSD review for the proposed project.

A PSD applicability analysis was performed for the proposed Recovery Furnace Upgrade Project to determine if any regulated compounds would be subject to PSD review. Emissions increases were calculated utilizing the actual to projected actual emissions comparison allowed by 15A NCAC 2D .0530. Per the definition of projected actual emissions in 40 CFR 52.21, project emissions increases are calculated by taking into account the emissions that the emission units affected by the project could have accommodated during the baseline period.

§ 51.166 Prevention of significant deterioration of air quality.

(40)(i) *Projected actual emissions* means the maximum annual rate, in tons per year, at which an existing emissions unit is projected to emit a regulated NSR pollutant in any one of the 5 years (12-month period) following the date the unit resumes regular operation after the project, or in any one of the 10 years following that date, if the project involves increasing the emissions unit's design capacity or its potential to emit that regulated NSR pollutant, and full utilization of the unit would result in a significant emissions increase, or a significant net emissions increase at the major stationary source.

(ii) In determining the projected actual emissions under paragraph (b)(40)(i) of this section (before beginning actual construction), the owner or operator of the major stationary source:
(a) Shall consider all relevant information, including but not limited to, historical operational data, the company's own representations, the company's expected business activity and the company's highest projections of business activity, the company's filings with the State or Federal regulatory authorities, and compliance plans under the approved plan; and
(b) Shall include fugitive emissions to the extent quantifiable and emissions associated with startups, shutdowns, and malfunctions; and
(c) Shall exclude, in calculating any increase in emissions that results from the particular project, that portion of the unit's emissions following the project that an existing unit **could have accommodated** during the consecutive 24-month period used to establish the baseline actual emissions under paragraph (b)(47) of this section and that are also unrelated to the particular project, including any increased utilization due to product demand growth; or,
(d) In lieu of using the method set out in paragraphs (b)(40)(ii)(/a /) through (/c /) of this section, may elect to use the emissions unit's potential to emit, in tons per year, as defined under paragraph (b)(4) of this section.

The baseline period selected for the emissions increase calculations was November 2006 to October 2008 for all compounds. Baseline actual emissions of all modified and affected emission units were calculated for this period. Projected actual emissions were calculated based on the expected annual throughputs for each modified and affected emission unit following the project, based on a total black liquor solids throughput of 4.2 million pounds per day. Projected actual Recovery Furnace emissions following the project for some compounds were based on vendor information. Projected actual emissions for the Smelt Tank took into account that emissions from the remaining Smelt Tank will be controlled by a scrubber and injected into the Recovery Furnace following the project. Based on an energy balance, the improvements to the Recovery Furnace and the increased throughput the applicant expects increase in steam generation at the Recovery Furnace and a decrease in steam generation and associated oil usage at the Nos. 1 and 2 Power Boilers.

No emissions changes based on NCG burning location are included in the calculations. Following the project, the NCGs will be controlled in either the Lime Kiln, No. 2 Power Boiler, or the Recovery Furnace. As the VOC/HAP/TRS destruction efficiency for each unit is expected to be equally high and each unit provides SO_2 emissions control (either inherently or due to an add-on control device) emissions due to NCG combustion are not expected by the applicant to change appreciably based on location. Emissions increases due to an increased volume of NCGs being burned due to a production increase were assigned to No. 2 Power Boiler in the calculations. Of the three sources, the Power Boiler, likely has the lowest SO2 control efficiency.

The emissions that each affected emission unit (except No. 1 Power Boiler) accommodated during the baseline period were determined by examining monthly throughput data for the baseline period and annualizing the highest monthly production or throughput value to determine an equivalent annual emissions value assuming 355 days of operation. Because the No. 1 Power Boiler is a swing boiler, the highest 12-month throughput during the baseline period was chosen to represent the emissions that unit could have accommodated during the baseline. The project-related emissions increases for each affected unit were then calculated by subtracting the emissions the units accommodated during the baseline period from the projected actual emissions.

The emissions increases are as provided in the table above. Please note that although the facility may take into account the emissions that the emission units affected by the project could have accommodated during the baseline period, for sulfur dioxide, these emissions were not verified during the application process and the determination is thus based on actual baseline emissions.

New Source Performance Standards (NSPS) – 40 CFR 60 - 15A NCAC .0524
NSPS applies to any stationary source for which the standards are promulgated, and which is constructed, reconstructed or modified after the effective date of the applicable standard to the affected facility. NSPS requirements are promulgated under 40 CFR 60 pursuant to Section 111 of the Clean Air Act. An existing facility can become subject to the NSPS requirements upon reconstruction or modification. A modification

under NSPS is defined as any physical or operational change that results in an increase in the emission rate of any pollutant to which a standard applies.

NSPS Subpart BB

The NSPS for Kraft pulp mills (40 CFR 60, Subpart BB) contains emissions standards for particulate matter, opacity, and total reduced sulfur (TRS). Particulate matter emissions from recovery furnaces are limited to 0.10 g/dscm (0.044 gr/dscf) corrected to 8 percent oxygen and maximum allowable opacity is limited to less than 35 percent on a 6-minute average. TRS emissions from recovery boilers are limited to 5 ppmvd, corrected to 8 percent oxygen. The Recovery Furnace currently is not subject to Subpart BB. However, this project is considered a modification under NSPS, because the hourly BLS throughput increase could result in an increase in the PM and TRS emission rate from the Recovery Furnace.

NSPS BB also includes TRS and PM emission limits for new or modified smelt tanks. While the addition of the new smelt tank and scrubber is expected to result in lower emissions of TRS and PM, the new smelt tank will also trigger the applicability of NSPS BB for the new smelt tank.

The existing applicable limits under 15A NCAC 2D .0508 and 2D .0528 are similar to the NSPS Limits. The New Bern Mill is required under NSPS to conduct an initial performance test on the Recovery Furnace and Smelt Tank to demonstrate compliance with NSPS limits within 60 days of achieving the maximum production rate but no later than 180 days after performing the Recovery Furnace Upgrade Project.

Because the new smelt tank is routed through the recovery boiler, the facility requested, and was granted, the allowance to test the smelt tank emissions prior to the recovery boiler. It is expected that the source can demonstrate compliance through this testing; otherwise the source may be required to demonstrate overall compliance with the most stringent standard between the two sources at the recovery boiler outlet.

NSPS Subpart Db

This NSPS is applicable to units constructed or modified after June 19, 1984, that have a heat input capacity from fuels combusted in the steam generating unit of greater than 100 mmBtu/hr. The No. 2 Power Boiler is subject to this rule. On July 7, 2004, the NSPS was amended to incorporate a site-specific NOx limit for this source. Per the applicant, the existing permit condition was modified to reflect this change.

The Recovery Furnace is not currently subject to this rule. The limits in this rule apply when burning fossil fuel. The maximum fuel oil firing rate is not increasing with this project. The project proposes to add natural gas as an auxiliary fuel, but the emissions from burning natural gas are lower than those from burning oil, for the compounds regulated by NSPS Db. Therefore, NSPS Db is not applicable to the Recovery Furnace.

National Emission Standards for Hazardous Air Pollutants (NESHAP) – 40 CFR 63 (MACT)

MACT Subpart S

The New Bern Mill is subject to 40 CFR 63, Subpart S, NESHAP for the Pulp and Paper Industry. One purpose of the proposed project is to permit the Recovery Furnace as a backup control device for pulp mill NCGs and SOGs. The No. 2 Power Boiler currently is the only control device for HVLC gases. The LVHC gases and SOGs are currently burned in the Lime Kiln or No. 2 Power Boiler. This combined application requested the allowance to burn HVLC, LVHC, and SOGs in the Recovery Furnace as backup.

There are no expected net emissions increases from utilizing the Recovery Furnace to burn these gases. The Recovery Furnace is expected to control VOC and HAP emissions from these gases at the same level as the No. 2 Power Boiler and Lime Kiln. Due to the presence of TRS compounds in these gases, combustion generates SO2 emissions. The No. 2 Power Boiler scrubber controls SO2 emissions at a level of 80 percent. The nature of the Lime Kiln provides inherent SO2 control. The nature of the recovery furnace is expected to provide SO2 control of at least these levels. Therefore, there should be no emissions increases from burning these gases in the Recovery Furnace versus the No. 2 Power Boiler or Lime Kiln.

Under Subpart S, the HAP emissions from LVHC and HVLC sources are to be controlled by enclosing the sources and venting them into a closed-vent system routed to a destruction device. Subpart S requires that the

control device used to reduce total HAP emissions from LVHC and HVLC sources meet the following requirements under 63.443(d):

(1) Reduce total HAP emissions by 98 percent or more by weight; or

(2) Reduce the total HAP concentration at the outlet of the thermal oxidizer to 20 parts per million or less by volume, corrected to 10 percent oxygen on a dry basis; or

(3) Reduce total HAP emissions using a thermal oxidizer designed and operated at a minimum temperature of 1600 °F and a minimum residence time of 0.75 seconds; or

(4) Reduce total HAP emissions using one of the following:

   a. A boiler, lime kiln, or recovery furnace by introducing the HAP emission stream with the primary fuel or into the flame zone; or

   b. A boiler or recovery furnace with a heat input capacity greater than or equal to 150 million British thermal units per hour by introducing the HAP emission stream with the combustion air.

The Recovery Furnace, the No. 2 Power Boiler, and the Lime Kiln meet the requirements of 63.443(d)(4). No monitoring is necessary for control of LVHC or HVLC gases by introducing them with the primary fuel or into the flame zone. The control devices used to reduce HAP from both the HVLC and LVHC system have a 4% excess emission allowance based on the operating time of the HVLC and LVHC sources excluding periods of startup, shutdown, or malfunction [63.443(e)(3)].

MACT MM

The Recovery Furnace and Smelt Tanks are subject to the NESHAP for Chemical Recovery Combustion Sources at Kraft, Soda, Sulfite and Stand Alone Semichemical Pulp Mills (40 CFR 63, Subpart MM, or MACT II). Currently, the Mill must comply with the "bubble limit" for PM emissions from all affected sources under this regulation. However, after the proposed changes the facility will instead comply with the source-specific emission limits for each of the affected existing units.

There was a question during the review process of whether the source(s) were now considered new or existing under MACT. Because the MACT defines the affected units as a group rather than by individual unit, the smelt tank is considered existing for the purpose of MACT. This determination was confirmed by Elizabeth Palma, USEPA. This is true for MACT, but not NSPS. NSPS Subpart BB is triggered for the recovery furnace and smelt tank as discussed *infra.*

SIP Bubble for Particulate Emissions – 2D .0501 (f), (g)

Under this standard, a facility with multiple emission sources or multiple facilities within the same area may choose to meet the total state emission limitation for a given pollutant through a different mix of controls. The Recovery Area PM sources have been bubbled under this rule in lieu of complying with the emission limits under 2D .0508 for the smelt tanks. The North Smelt Tank is limited to 0.24 gr/dscf, the South Smelt Tank is limited to 0.35 gr/dscf, and the Recovery Furnace is limited to 0.0174 gr/dscf, corrected to 8% oxygen. Because this project will eliminate one smelt tank and improve the PM emissions control for the remaining smelt tank, the New Bern Mill no longer requires a SIP bubble under this rule. The remaining smelt tank will comply instead with 2D .0524 NSPS BB.

Particulates from Pulp and Paper Mills – 2D .0508

This regulation limits PM emissions from recovery furnaces, smelt tanks, and lime kilns. Currently the applicant is operating under a submitted a bubble analysis per 2D .0501 to comply with this rule, however due to the improvements to the Smelt Tank emissions control system that will result from this project, the Recovery Furnace and Smelt Tank will comply with the above NSPS BB limits and the Lime Kiln PM emissions will comply with 2D .0508. The bubble limit was in place due to the existing smelt tanks that are being replaced.

Sulfur Dioxide Emissions from Combustion Sources – 2D .0516

Under this standard, SO_2 emissions from any combustion source are limited to 2.3 lb/mmBtu input. Based on fuel type and emissions information, the affected sources should continue to comply with this limit.

Control of Visible Emissions – 2D .0521

The Recovery Furnace is currently subject to the 35% opacity limit in 15A NCAC 2D .0508. The Recovery Furnace will be subject to the 35% opacity limit in NSPS after the project modifications.

The existing smelt tanks are currently subject to a 40% opacity limit. Upon replacement, the new smelt tank will be subject to a 20% opacity standard. As discussed *infra*, the facility has requested the option to test the smelt tank post prior to the recovery furnace in order to show compliance. As this is not a NSPS opacity standard, the usual NSPS rules of combine opacity streams are not completely applicable, but may be utilized if needed in these circumstances.

Control of Toxic Air Pollutants – 2D .1100

NCAC 2Q .0700 requires facilities that emit toxic air pollutants (TAPs) for which they are required to have a permit under 15 NCAC 2D.1100 to demonstrate compliance with the Acceptable Ambient Levels (AALs). Facility-wide TAP modeling was submitted to demonstrate compliance with 2Q .0700. The latest modeling update was submitted in September 2008. In each TAP modeling demonstration, potential emissions from each source were optimized to 98 percent of the AAL for each compound over the toxic permitting emission rate (TPER). The maximum throughput of the recovery furnace and smelt tank is being increased by 22 percent as a result of the proposed project. The only TAP modeling that required revision was arsenic, because it has an optimization factor of only 1.2 (the modeled rate was 1.2 times the calculated potential emissions for all sources). Therefore, the facility-wide modeling analysis for arsenic was updated. The September 2008 submittal and the revised arsenic modeling were each reviewed and approved by the Air Quality Analysis Branch

Notification in Areas without Zoning – 2Q .0113

The Weyerhaeuser New Bern Mill is located in an area without zoning. Therefore, the mill must follow the requirements presented in 2Q .0113. This rule requires that Weyerhaeuser provide public notice prior to submitting the permit application.

Legal Notice – Weyerhaeuser was required to publish a legal notice in a newspaper of general circulation located in the area where the source is located at least two weeks prior to submitting the permit application. The notice was published on December 4, 2008, and included the name of the facility, the name and address of the applicant, and a summary of the modification. Proof of publication was presented in the application.

Posting of Sign – At least 10 days prior to the submittal of the permit application, the facility was required to post a sign that is at least 6 square feet in size, less than ten feet from the highway right-of-way, at least six feet from the ground, contains lettering a person with 20/20 vision can view from the center of the road, and is placed parallel to the highway. The sign was posted on December 5, 2008. The sign contains the name of the facility, the name and address of the applicant, and a summary of the modification.

XLI. Recommendations

A copy of the draft permit was submitted to the WARO on June 1, 2009. The region made subsequent comments that were addressed in the final permit. RCO recommends issuance of this permit.

Issue Permit No. 02590R37

NORTH CAROLINA DIVISION OF AIR QUALITY

Air Permit Review

Permit Issue Date: 04/06/2009

Region: Washington Regional Office
County: Craven
NC Facility ID: 2500104
Inspector's Name: Betsy Huddleston
Date of Last Inspection: 05/22/2008
Compliance Code: B / In Violation W/regard To Em & Compl

Facility Data

Applicant (Facility's Name): **Weyerhaeuser Company - Vanceboro Pulp And Paper**

Facility Address:

Weyerhaeuser Company - Vanceboro Pulp And Paper
1785 Weyerhaeuser Road

Vanceboro, NC 28586

SIC: 2611 / Pulp Mills
NAICS: 32211 / Pulp Mills

Facility Classification: Before: Title V **After:** Title V
Fee Classification: Before: Title V **After:** Title V

Permit Applicability (this application only)

SIP:
NSPS:
NESHAP:
PSD:
PSD Avoidance:
NC Toxics:
112(r):
Other:

Contact Data

Facility Contact	Authorized Contact	Technical Contact
David Gardner Environmental Manager (252) 633-7427 1785 Weyerhaeuser Road Vanceboro, NC 28586	John Ashley Vice President (252) 633-7242 P.O. Box 1391 New Bern, NC 28563	Brad Chesson Environmental Engineer (252) 633-7230 1785 Weyerhaeuser Road Vanceboro, NC 28586

Application Data

Application Number: **2500104.09D**
Date Received: 03/26/2009
Application Type: Modification
Application Schedule: State

Existing Permit Data
Existing Permit Number: 02590/T35
Existing Permit Issue Date: 01/13/2009
Existing Permit Expiration Date: 12/31/2013

Review Engineer: **Jeff Twisdale**

Review Engineer's Signature: **Date:**

Comments / Recommendations:
Issue 02590/T36
Permit Issue Date: 04/06/2009
Permit Expiration Date: 12/31/2013

1. Purpose of Application:

Weyerhaeuser Company – Vanceboro Pulp and Paper (WEYCO) currently operates an integrated bleached Kraft pulp mill at its Vanceboro, North Carolina facility under Permit No. 02590R35. The primary activity at this facility is softwood pulp production. Facility operations include multiple fuel-fired boilers, chemical recovery operations, wood pulping and bleaching operations, and other miscellaneous operations necessary to support these operations. WEYCO has requested

modification of the existing permit to burn No. 2 fuel oil with black liquor solids (BLS) as a fuel for the recovery furnace (ID No. 455-001). The No. 2 fuel oil will be approximately 0.1 percent (by volume) of the BLS fired and will be blended with BLS at a rate of approximately 1.0 gallons per minute (gpm) for the recovery furnace.

2. Application Chronology:

See attached Comprehensive Application Report.

3. Process Description/Proposed Project Emission Changes

The recovery furnace is a part of the process used to reclaim chemicals used in the pulping process. The combustion process oxidizes organics in the BLS to produce inorganics that collect as molten smelt.

WEYCO requests the addition of No. 2 fuel oil blended with BLS at a rate of 1.0 gpm for the recovery furnace (RF) [Note that the RF is already permitted to burn BLS and No. 6 fuel oil]. The sulfur content of No. 2 fuel oil will be 0.5 percent. In addition, a new storage tank (8,000 gallons capacity) will store No. 2 fuel oil and will be added to the insignificant activities list. This project will not replace the liquor guns; therefore, the volume of BLS that can be fired will not be increasing with this project. Replacing approximately 0.1 percent of the liquor volume with No. 2 fuel oil will not increase maximum hourly emissions from the recovery furnace because the BLS has higher emissions than No. 2 fuel oil. For example, one gallon of BLS contains approximately 0.3 pounds of sulfur compared to 0.07 pounds in a gallon of No. 2 fuel oil. Similarly, BLS contains approximately 0.008 pounds of nitrogen compared to 0.001 pounds of in No. 2 fuel oil. The solids content of BLS is also higher than No. 2 fuel oil. *{Reference: NCASI Technical Bulletin 884, Section 4.11)* Estimated actual VOC emissions include the emissions from the No. 2 fuel tank. Note that the calculations do not include No. 6 fuel oil firing as this project will not affect the amount of No. 6 oil fired in the recovery furnace. The requested amount of No. 2 fuel oil to be fired with BLS is 1.0 gallons per minute (gpm) or 525,600 gallons for the recovery furnace. The resulting emissions are calculated in the spreadsheet utilizing the DAQ fuel oil combustion spreadsheet based on AP-42 emission factors and on the requested No. 2 fuel oil usage. The permit application contained a table that summarized the emissions attributable to the proposed recovery furnace project. The analysis compared the projected actual emissions to the significant emissions thresholds; however, this was not required.

> WEYCO conducted an analysis to determine whether or not there would be any significant emissions increases at this major stationary source that would trigger Prevention of Significant Deterioration (PSD)/New Source Review (NSR). However, the determination of whether or not there is a physical change or change in the method of operation at this major stationary source that results in an increase in emissions that is considered significant should be done first. Physical change or change in the method of operation is not defined in the rule; however, several exemptions from physical change or change in the method of operation are contained in 40 CFR 51.165(a)(1)(v)(C). Paragraph 5 provides an exemption for use of alternative fuel if the unit "… was capable of accommodating before December 21, 1976, unless such change would be prohibited under any federally enforceable permit condition …". The recovery furnace was constructed prior to 1976 and were capable of combusting fuel oil upon construction completion. The current permit also specifically allows combustion of No. 6 fuel oil in the recovery furnace, and the key equipment used to accomplish the addition of No. 2 fuel oil is already in place. Also, the use of other fuels, such as No. 2 fuel oil, is not prohibited by the current Title V permit. Since No. 2 fuel oil could have been accommodated in the recovery furnace prior to 1976 and is not otherwise prohibited, the use of No. 2 fuel oil in the recovery furnace is not considered to be a physical change or change in the method of operation to the recovery furnace. Therefore, this project is not a major modification, and no further review is required under PSD regulations.

Changes made to permit 02590R35 that were incorporated into 02590R36:

PAGE(S)	CONDITION	CHANGE
Cover letter, Attachments, and Pages 1	Cover letter, Attachments and Entire Permit	Modified to reflect current permit number, issue and effective date, and associated application information, as well as new letterhead, headers and general conditions.

PAGE(S)	CONDITION	CHANGE
through 17	where applicable	
Attachment	Attachment	Added one No. 2 fuel oil storage tank (8,000 gallons capacity, **ID No. I-RB2FOT**) to the Insignificant Activities list
Page 1	Equipment List: Power & Recovery Item No. 2	Updated Recovery Furnace (**ID No. 445-001**) description to add capability of burning No. 2 fuel oil with Black Liquor Solids (BLS)

4. Regulatory Analysis

WEYCO currently operates under permit No. 02590R35 that was issued January 13, 2009. The following presents a review of potentially applicable federal and state regulations for this proposed project in Craven County that is currently in attainment for all criteria pollutants.

Federal Regulation Applicability

Prevention of Significant Deterioration (PSD) [15A NCAC 2D .0530]

Since the No. 2 fuel oil could have been accommodated in the recovery furnace prior to 1976 and the combustion of No. 2 fuel oil is not otherwise prohibited, the use of No. 2 fuel oil in the recovery furnace is not considered to be a physical change or change in the method of operation to the recovery furnace as discussed in detail above. Therefore, this project is not a major modification, and no analysis is required under PSD regulations.

Compliance Assurance Monitoring (CAM) [15A NCAC 2D .0614]

CAM (40 CFR 64) normally applies to pollutant specific emissions units (PSEUs) that are pre-control major sources and use a control device to comply with an emission limit. CAM does not apply to PSEUs that are subject to emission standards proposed pursuant to section 111 or 112 after November 15, 1990 (e.g. MACT). The recovery furnace is subject to MACT Subpart MM. Therefore, CAM does not apply.

National Emission Standards for Hazardous Air Pollutants (NESHAP) [15A NCAC 2D .1111]

WEYCO is subject to the Maximum Achievable Control Technology (MACT) emission standards, specifically 40 CFR 63 Subpart S [Pulp and Paper] and Subpart MM [Chemical Recovery Combustion Sources at Kraft, Soda, Sulfite, and Stand-Alone Semichemical Pulp Mills]. Subpart S affects mill processes such as the knotters, pulp washing systems, decker systems, screen systems, oxygen delignification systems, and LVHC systems. Subpart MM affects processes such as the Recovery Furnaces, Smelt Dissolving Tanks, and Lime Kilns. WEYCO complies with Subpart MM using the "bubble" approach where each chemical recovery emission unit has a different emission limit. This project does not require the bubble to be re-established since the recovery furnace is not being reconstructed by definition. Therefore, recovery furnace will remain as an existing source under MACT Subpart MM and eligible for inclusion in the bubble.

New Source Performance Standards (NSPS) [15A NCAC 2D .0524]

The recovery furnace is not currently subject to NSPS Subpart BB that contains emission standards for particulates, opacity and total reduced sulfur (TRS) because construction on the recovery furnace commenced prior to September 24, 1976. This proposed project will be examined as to whether or not this fuel addition for the recovery furnace would be considered a modification by definition under 40 CFR 60.14.

According to 40 CFR 60.14, upon modification, an existing facility shall become an affected facility for each pollutant to which a standard applies and for which there is an increase in the emission rate to the atmosphere. A modification is any physical change or change in the method of operation to an existing facility that results in an increase in the emission rate to the atmosphere of any pollutant to which a standard applies. This project will not replace the liquor guns; therefore, the volume of BLS that can be fired will not be increasing. Replacing approximately 0.1 percent of the liquor volume with No. 2 fuel oil will not increase maximum hourly emissions from the recovery furnace because the BLS has higher emissions than No. 2 fuel oil. For example, one gallon of BLS contains approximately 0.3 pounds of sulfur compared to 0.07 pounds in a gallon of No. 2 fuel oil. Similarly, BLS contains approximately 0.008 pounds of nitrogen compared to 0.001 pounds of in No. 2 fuel oil. The solids content of BLS is also higher than No. 2 fuel oil. *{Reference: NCASI Technical Bulletin 884, Section 4.11)* Note that the emissions estimations do not include No. 6 fuel oil firing as this project will not affect the amount of No. 6 oil fired in the recovery furnace. Therefore, NSPS Subpart BB will not be triggered because this proposed project is not considered to be a modification since there will be no increase in the emission rates to the atmosphere of any pollutant to which a standard applies.

State Regulation Applicability

Particulates from Pulp and Paper Mills – 2D .0508

This emission standard limits particulate matter emissions and opacity from the recovery furnace. The proposed project will not affect compliance with this emission standard since the combustion of No. 2 fuel would emit significantly less PM emissions than BLS or No. 6 fuel oil.

Sulfur Dioxide Emissions from Combustion Sources – 2D .0516

Under this emission standard, SO_2 emissions from any combustion source are limited to 2.3 lb/MMBtu input. The proposed project will not affect compliance with this emission standard since the No. 2 fuel oil has a sulfur content of 0.0015 percent by weight.

Control of Visible Emissions – 2D .0521

This emission standard applies to sources not subject to visible emission standards under 2D .0508 or 2D .0524 (NSPS). Therefore, 2D .0521 does not apply since the recovery furnace is subject to 2D .0508.

New Source Performance Standards – 2D .0524

NSPS applicability is addressed above.

Total Reduced Sulfur from Kraft Pulp Mills – 2D .0528

This emission standard applies to sources not subject to TRS emission standards under 2D .0524 (NSPS). 2D .0528 will continue to apply to the recovery furnace. The proposed project will not affect compliance with this rule since the No. 2 fuel oil has a sulfur content of 0.5 percent.

Prevention of Significant Deterioration – 2D .0530

PSD applicability is addressed above.

Control of Toxic Air Pollutants – 2D .1100

NCAC 2Q .0700 requires facilities that emit toxic air pollutants (TAPs), for which they are required to have a permit under 15 NCAC 2D .1100, to demonstrate compliance with the Acceptable Ambient Levels (AALs). The estimated

emissions increases in any pollutant regulated under this rule will not exceed any of those values [noting that those emissions are associated with unadulterated fuel combustion]. Therefore, no Air Toxics modeling demonstration is required for this project. Also, an application for the "Last MACT" air toxics demonstration pursuant to 2Q .0705 for WEYCO was submitted June 14, 2006; however, no final determination has been made to date.

Maximum Achievable Control Technology (MACT) – 2D .1111

MACT applicability is addressed above.

5. New/Modified Equipment

The existing permit will be modified to reflect the capability of burning No. 2 fuel oil blended with BLS in the recovery furnace. Also, the No. 2 fuel oil tank will be added to the insignificant activities list.

6. Facility Compliance Status

This facility was inspected by Betsy Huddleston of the Washington Regional Office (WaRO) on May 5, 12 and 22, 2008 and found to be in compliance with all air quality regulations.

7. Comments/Conclusions/Recommendations

All applicable DAQ requirements should be met. Therefore, this permit engineer (Jeff Twisdale) recommends issuance of this air permit (02590R36).

NORTH CAROLINA DIVISION OF AIR QUALITY

Air Permit Review

Permit Issue Date:

Region: Washington Regional Office
County: Craven
NC Facility ID: 2500104
Inspector's Name: Betsy Huddleston
Date of Last Inspection: 05/22/2008
Compliance Code: B / In Violation W/regard To Em & Compl

Facility Data

Applicant (Facility's Name): **Weyerhaeuser Company - Vanceboro Pulp And Paper**

Facility Address:

Weyerhaeuser Company - Vanceboro Pulp And Paper
1785 Weyerhaeuser Road

Vanceboro, NC 28586

SIC: 2611 / Pulp Mills
NAICS: 32211 / Pulp Mills

Facility Classification: Before: Title V **After:** Title V
Fee Classification: Before: Title V **After:** Title V

Permit Applicability (this application only)

SIP:
NSPS: X
NESHAP:
PSD:
PSD Avoidance:
NC Toxics:
112(r):
Other: No additional impacts.

Contact Data

Facility Contact	Authorized Contact	Technical Contact
David Gardner Environmental Manager (252) 633-7427 1785 Weyerhauser Road Vanceboro NC, 28586	John Ashley Vice President (252) 633-7242 P.O. Box 1391 New Bern NC, 28563	Brad Chesson Environmental Engineer (252) 633-7230 1785 Weyerhaeuser Road Vanceboro NC, 28586

Application Data

Application Number: **2500104.08C**
Date Received: 12/08/2008
Application Type: Ownership Change, Renewal and Modification
Application Schedule: State

Existing Permit Data
Existing Permit Number: 02590/R34
Existing Permit Issue Date: 09/21/2007
Existing Permit Expiration Date: 03/31/2008

Review Engineer: **Wallace Pitts**

Review Engineer's Signature: **Date:**

Comments / Recommendations:
Issue 02590/R35
Permit Issue Date: 01/13/2009
Permit Expiration Date: 12/31/2013

I Reason for Application:

Facility Description: Weyerhaeuser Company – Vanceboro Pulp and Paper (Weyerhaeuser) currently operates an integrated bleached Kraft pulp mill at its Vanceboro, North Carolina facility under Permit No. 02590R34. The primary activity at this facility is pulp production. Facility operations include multiple fuel-

fired boilers, chemical recovery operations, wood pulping and bleaching operations, and other miscellaneous operations necessary to support these operations.

This revised permit represents the consolidation of Permit Applications 2500104.07D (renewal), 2500104.08A (addition of natural gas firing to lime kiln), and 2500104.08C (ownership change).

Changes to the existing permit

The following table summarizes the changes made to the permit 02590R34 and incorporated into permit 02590R35:

Changes made to Air Permit 02590R34 and incorporated into 02590R35.

Old page	New page	Section	Change
All	All	All	Updated dates, permit number, etc.
3	3	14	Added natural gas firing to description of the lime kiln (ID No. 455-433)
6	6	A.9	Corrected typographical error in pm emission limit: changed grams/dscf to grains/dscf.
6	6-7	A.9	Added pm emission standard of 0.066 grain/dscf in accordance with 40 CFR 60.282(a)(3)(ii) and pm testing requirement.
9	9	A.16(a)	Added pm emission standard of 0.066 grain/dscf in accordance with 40 CFR 60.282(a)(3)(ii)
~	14-15	A.27	Added new section to require testing for NOx emissions under 100% oil firing and 100% natural gas firing. The testing will be conducted after the installation of the natural gas capability.

September 3, 2007 – Renewal application received

September 8, 2008 – Application to add natural gas firing capability to lime kiln received.

September 11, 2008 – Regional review received, no comments (Betsy Huddleston).

December 8, 2008 – Application for ownership change received.

January 6, 2009 – Draft permit sent to applicant and consultant.

January 7, 2009 – Consultant comments accommodated.

January 7, 2009 – Revised draft send to consultant and WaRO (Betsy Huddleston).

January 7, 2009 – WaRO comments received.

January 7, 2009 – Applications 07D (renewal) and 08A (modification) consolidated into 08C (ownership change).

January 8, 2009 – No comments from Permittee (email)

I. Project Description

Permit application 2500104.08A requested that a new natural gas burner be added so that natural gas could be one of the fuels for the lime kiln. The lime kiln is currently permitted to only burn residual fuel oil. After the modification the lime kiln will be capable of firing 100% natural gas.

Weyerhaeuser New Bern Pulp Mill

Lime Kiln Natural Gas Project Emissions Calculations

8/18/2008

PSD Applicability Analysis

The Mill will replace up to 100% of permitted fuel oil burned in the lime kiln on a heat input basis with natural gas.

II. New/Modified Equipment

The lime kiln (ID No. 455-433) will be modified through the addition of a natural gas burner.. The maximum permitted heat input of 118 mmBtu/hour will not be affected, nor will the production capacity of 327 tons CaO/day (119,355 tons CaO per year.).

IV. Emissions Changes

The installation of the natural gas firing capability will result in the following emission changes for the lime kiln:

Weyerhaeuser New Bern Pulp Mill

Lime Kiln Natural Gas Project Emissions Calculations

8/18/2008

Summary of Throughputs Used in PSD Analysis

Lime Kiln		Projected Actual	Accommodated During Baseline	Baseline (2006-2007)	2007	2006	2005	2004	2003
Production	TCaO/Yr	119,355	87,709	85,694	83,678	87,709	82,272	87,648	78,374

Maximum fuel firing:	118	MMBtu/hr	(from Title V application)
Max throughput:	327	tons/day	(from Title V application)

.

See next page also

Lime throughput will not be affected. Calculations are included below for baseline emissions, emissions the unit accommodated during the baseline period, and proposed actual emissions, which are based on the maximum lime throughput. The only emission factor dependent on fuel type is NOx.

NOx emission factors are compared below. For conservatism, the maximum NOx factor is used in the calculations.

	Comparison of NOx EFs		
Compound	**Emission Factor**		**Ref**
NOx - Fuel Oil	1.15E+00	lb/T CaO	1
NOx - Natural Gas	7.00E-01	lb/T CaO	1

Calculations

	Baseline			Baseline Actual Emissions	Emissions Accommodated During Baseline	Projected Actual Emissions	Emissions Increase	PSD SER	PSD
Compound	**Emission Factor**		**Ref**	**ton/yr**	**ton/yr**	**ton/yr**	**ton/yr**	**ton/yr**	**Review?**
Carbon Monoxide	5.50E-02	lb/T CaO	1	2.36	2.41	3.28	0.87	100	No
H2S	2.95E-02	lb/T CaO	2	1.27	1.30	1.76	0.47	10	No
Lead	1.50E-05	lb/T CaO	3	0.00	0.00	0.00	0.00	0.6	No
NO_X	1.15E+00	lb/T CaO	1	49.27	50.43	68.63	18.20	40	No
PM	2.83E-01	lb/T CaO	4	12.13	12.41	16.89	4.48	25	No
PM-10	2.45E-01	lb/T CaO	4	10.50	10.74	14.62	3.88	15	No
PM-2.5	1.81E-01	lb/T CaO	4	7.76	7.94	10.80	2.86	10	No
SO_2	3.30E-01	lb/T CaO	1	14.14	14.47	19.69	5.22	40	No
TRS (as H_2S)	3.36E-02	lb/T CaO	2	1.44	1.47	2.01	0.53	10	No
VOC	3.46E-02	lb/T CaO	3	1.48	1.52	2.06	0.55	40	No

1. NCASI Technical Bulletin No. 884, Table 4.13.
2. Avg 2007 TRS CEM value, assumes H_2S=87.9% of TRS (NCASI 849)
3. NCASI Technical Bulletin No. 858, Table 16B.
4. 2005 MACT II compliance test (filt + cond PM)

Per TB 884, Table 4.12, PM_{10}=69.6% of Filt PM + 100% of CPM

Per TB 884 Table 4.13, $PM_{2.5}$=18.6% of FPM + CPM

V. Regulatory Analysis

The mill currently operates under state air permit No. 02590R34, issued September 21, 2007. The facility's initial EPA Title V permit (02590T30) was appealed by the facility and DAQ subsequently withdrew the draft permit.

The following presents a review of potentially applicable federal and state regulations for the proposed project:

New Source Performance Specifications – 15A NCAC 2D .0524 NSPS

NSPS 40CFR 60 Subpart BB applies to the Lime Kiln (ID No. 455-433). The only emission standard under NSPS for lime kilns that is impacted by natural gas firing (gaseous fossil fuels) is the particulate standard under 40 CFR 60.282(a)(3(i). The particulate emission standard for gaseous fossil fuels is 0.066 grain/dscf at 10% oxygen, whereas the particulate standard for liquid fossil fuels is 0.13 grains/dscf @ 10% oxygen. The permittee will be required to demonstrate compliance with the particulate emission standard when firing 100% gaseous fossil fuel.

Maximum Achievable Control Technology – 15A NCAC 2D .1111

The lime kiln is subject to MACT 40 CFR63 Subpart MM. No testing will be required after the addition of natural gas firing. Subpart MM only requires retesting when there is a physical or operational modification to the air pollution control device or if the unit is shut down for more than 60 days (40 CFR 63.862(a)(1)(ii)(D). The proposed modification will not modify the air pollution control device nor will the kiln be shut down for more than 60 days. Therefore, no testing will be required under MACT Subpart MM.

Toxic Air Pollutants – 15A NCAC 2D .1100 –There will be no Air Toxics considerations since natural gas is an unadulterated fuel.

PSD (15A NCAC 2D .0530) -

According to the permit application, the firing of 100 percent natural gas will not cause a significant increase in emissions regulated under NSR/PSD. The permittee compared actual to potential while considering emissions capable of being accommodated. The largest pollutant increase will be for NOx emissions at 18.2 tons per year which is less than the 40 tons NOx per year increase which would indicate a significant increase requiring a NSR/PSD analysis. The NOx emission calculations contained in the following table are base on emission factors developed by the National Council of Air and Stream Improvenent (NCASI) Technical Bulletin No. 884 August 2004 "COMPILLATION OF CRITERIA AIR POLLUTANT EMISSIONS DATA FOR SOURCES AT PULP AND PAPER MILLS INCLUDING BOILERS"

However, DAQ notes that the range of NOX emission factors when firing 100% natural gas is from 0.30 lb NOx/ton CaO to 5.90 lb NOx/ton CaO and for 100% oil firing, they emission factors range from 0.30 lb NOx/ton CaO to 2.70 lb NOx/ton CaO (Table 4.13 of the above referenced bulletin). If the actual NOx emissions for the lime kiln (ID No. 455-061) are at the respective maximums for each fuel, then the modification will indicate a significant increase in NOx emissions which in turn would require a PSD application. Recognizing that the NOx emission factors being at their maximum values for each fuel is unlikely, DAQ recommends accepting the Permittee's emission estimates for the purposes of issuing the permit application, but is requiring the Permittee to validate their emission factor assumptions by conducting stack testing.

VI. Comments/Conclusions/Recommendations

The RCO recommends permit issuance. WaRO concurs.

NORTH CAROLINA DIVISION OF AIR QUALITY

Air Permit Review

Permit Issue Date: September 21, 2007

Region: Washington Regional Office
County: Craven
NC Facility ID: 2500104
Inspector's Name: Bernie Pittman
Date of Last Inspection: 02/20/2007
Compliance Code: C/In Compliance With Procedural Requirements

Facility Data

Applicant: **Weyerhaeuser Company - Vanceboro Pulp and Paper**
1785 Weyerhaeuser Road

Vanceboro, NC 28586

SIC: 2611 / Pulp Mills
NAICS: 32211 / Pulp Mills

Facility Classification: **Before:** Title V **After:** Title V
Fee Classification: **Before:** Title V **After:** Title V

Permit Applicability (this application only)

SIP:	***Not applicable***
NSPS:	Not applicable
NESHAP:	Not applicable
PSD:	Not applicable
PSD Avoidance:	Not applicable
NC Toxics:	Not applicable
112(r):	Not applicable
Other:	2Q .0113

Contact Data

Facility Contact

Brad Chesson
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Vanceboro, NC 28560

Authorized Contact

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Vanceboro, NC 28563

Technical Contact

Brad Chesson
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(252) 633-7230
1785 Weyerhaeuser Rd.
Vanceboro, NC 28560

Application Data

Application Number: **2500104.07B**
Date Received: 05/29/2007
Application Type: Modification
Application Schedule: State

Existing Permit Data
Existing Permit Number: 02590/R33
Existing Permit Issue Date: 07/26/2007
Existing Permit Expiration Date: 03/31/2008

Review Engineer: **David Putney**

Review Engineer's Signature: **Date:**

Comments / Recommendations:
Issue 02590/R34
Permit Issue Date: September 21, 2007
Permit Expiration Date: March 31, 2008

I Reason for Application:

Facility Description: Weyerhaeuser Company – Vanceboro Pulp and Paper (Weyerhaeuser) currently operates an integrated bleached Kraft pulp mill at its Vanceboro, North Carolina facility under Permit No. 02590R33. The primary activity at this facility is pulp production. Facility operations include multiple fuel-fired boilers, chemical recovery operations, wood pulping and bleaching operations, and other miscellaneous operations necessary to support these operations.

Proposed Modification: The Permittee submitted application 2500104.07B to:

- Install a third 500 ton high density bleached pulp storage tank at this facility (described in Form A2 of the application as No. 3 Bleached Stock 500T HD Chest with ID No. ES 425-305). The application

indicates that this tank qualifies as an insignificant activity under 2Q .0503(8) but requests that DAQ issue a construction and operation permit for this activity;

- Replace the current high consistency pump and motor with a new pump and motor equipped with a stand pipe, level indicator, and dilution;
- Replace the existing dilution pump, if necessary;
- Relocate the existing acid sewer line (the current line runs under the motor storage room which will be demolished to make room for the new tank); and
- Change the doctor on the final washer to a combo doctor.

Application 2500104.07B indicates that this modification may result in an actual facility-wide production increase of about 10,000 air-dried tons of finished pulp per year but will not result in an increase in potential facility-wide production. Potential production will not increase because the existing recovery boiler is a production bottleneck for this facility. Actual production may increase because the addition of the new tank would allow greater operational flexibility (due to the increased storage capacity) during outages in specific mill areas at different times (this is the intended purpose of the new tank).

Note that the Permittee currently utilizes 2 high density bleached pulp storage tanks (200 ton capacity, each) at this facility. The insignificant activities list associated with current Permit No. 02590R33 does not include these tanks. Therefore, all 3 tanks are added as part of this modification.

II Applicable State Regulations:

A very brief summary of the applicability of the relevant State regulations for the modification proposed (as provided in application 2500104.07B) follows:

2D .0508 "Particulates from Pulp and Paper Mills"

No sources covered by this rule (i.e. recovery furnaces, lime kilns, and smelt dissolving tanks) will be modified or added as part of the proposed project. Therefore, this rule does not apply.

2D .0515 "Particulates from Miscellaneous Industrial Processes"

No PM are expected from the proposed new tank. Therefore, this rule does not apply.

2D .0521 "Control of Visible Emissions"

No VEs are expected from the proposed new tank. Therefore, this rule does not apply.

2D .0524 "New Source Performance Standards"

These regulations do not apply to the proposed new tank - see the discussion in Section III of this document, below, for more information.

2D .0528 "Total Reduced Sulfur from Kraft Pulp Mills"

No sources covered by this rule (i.e. recovery furnaces, digester systems, evaporator systems, lime kilns, smelt tanks, and condensate stripping systems) will be modified or added as part of the proposed project. Therefore, this rule does not apply.

2D .0530 "Prevention of Significant Deterioration"

These regulations do not apply to the proposed new tank - see the discussion in Section III of this document, below, for more information.

2D .1100 "Control of Toxic Air Pollutants"

A review under the NC Toxics program is not triggered by the project proposed new tank - see the discussion in Section III of this document, below, for more information.

2D .1111 "Maximum Achievable Control Technology"

These regulations do not apply to the proposed new tank - see the discussion in Section III of this document, below, for more information.

2Q .0112 "Applications Requiring Professional Engineer Seal"

The proposed modification does not involve a control device – therefore, this rule does not apply.

2Q .0113 "Notification in Areas Without Zoning"

The subject facility is located in an area without zoning; therefore, this rule applies. Paragraph (d) of this rule requires that the Permittee publish a legal notice in a newspaper of general circulation in the area that the facility is located in at least 2 weeks prior to submitting the application. Application 2500104.07B was received on 5/29/07. The legal notice was published 4/24/07.

Paragraph (e) of this rule requires that the Permittee submit an affidavit and proof of publication of the required legal notice with the application. Application 2500104.07B did initially include the proof of publication but not the affidavit. The Permittee was informed of this deficiency and the required affidavit was subsequently received on 9/5/07.

Paragraph (f) of this rule requires that the Permittee post a sign on the subject property at least 10 days before the application is submitted. This sign must remain posted for at least 30 days after the application is submitted. Application 2500104.07B included a picture of the required sign.

III NSPS/NESHAP/PSD/Toxics/112(r)/CAM Applicability:

NSPS: Application 2500104.07B states, in part, "The NSPS for Kraft pulp mills (40 CFR 60, Subpart BB) contains emissions standards for total reduced sulfur (TRS). There are no requirements for pulp storage tanks contained in this regulation. As no units currently subject to this rule will be modified by the proposed project, compliance with this regulation will not be affected."

NESHAP: Application 2500104.07B states, in part, "The New Bern Mill is subject to 40 CFR 63, Subpart S, NESHAP for the Pulp and Paper Industry. This regulation establishes emissions limits for certain sources at Kraft mills but does not include standards for bleached pulp storage tanks. As no units currently subject to this rule will be modified by the proposed project, compliance with this regulation will not be affected."

PSD: This facility is considered major for PSD purposes since it is in one of the "named" PSD categories and has the potential to emit >100 tons of several PSD pollutants per year. This facility is located in Craven County, which is currently considered in attainment for all pollutants. According to the "actual to potential" PSD analysis provided with application 2500104.07B, this modification will not result an any PSD-regulated pollutant emission increases above the associated PSD "significant" rate. Therefore, PSD review is not triggered at this time.

Toxics: According to application 2500104.07B this modification will not result in an increase in TAP emissions above the already-modeled emission rates. Therefore, a toxics review is not triggered at this time.

112(r): According to Form A3 of application 2500104.07B this facility is not subject to the requirements of this regulation (other than General Duty) since regulated substances are not stored on site in quantities above the associated thresholds.

CAM: The proposed new tank does not have the potential to emit any pollutant at a rate above the major source threshold and does not utilize a control device. Therefore, this regulation does not apply to the subject modification.

IV Permit Modifications/Changes:

The following table summarizes the changes made in Permit No. 02590R34 resulting from Permit Application No. 1500104.07B:

Old Page(s)	New Page(s)	Condition/ Item	Description of Change(s)
Global	Global	N/A	• Change permit revision number to R34 • Change the issuance/effective dates of the permit • Amend the application number and complete date
17	17	N/A	Update the list of insignificant activities to include the new tank proposed by application 2500104.07B

V Title V Permit History:

Not applicable. The Permittee has appealed their initial Title V permit.

VI Application Fee:

The Permittee initially submitted a fee of $834 with application 2500104.07B. The Permittee was informed that the correct fee for the minor modification of a Title V permit is $867. NC DAQ subsequently received the remaining $33 on 6/8/07.

VII Compliance Status:

DAQ staff most recently visited the facility on 2/20/07 to observe a stack test. The most recent compliance inspection by DAQ staff was conducted on 7/13/06 by Betsy Huddleston (of WaRO). The Permittee was deemed to be operating in general compliance with the requirements of Permit No. 02590R31 during that inspection.

VIII Zoning Consistency:

Not applicable. Refer to the discussion of rule 2Q .0113 in Section II of this document, above, for more information.

IX Permit Review:

A draft version of Permit No. 02590R34 was sent to the Permittee and the WaRO for a review and comment period on 9/05/07.

No comments were received.

X Recommendation:

Issuance of Permit No. 02590R34 is recommended.

NORTH CAROLINA DIVISION OF AIR QUALITY

Air Permit Review

Permit Issue Date:

Region: Washington Regional Office
County: Craven
NC Facility ID: 2500104
Inspector's Name: Bernie Pittman
Date of Last Inspection: 02/20/2007
Compliance Code: C/In Compliance With Procedural Reqr

Facility Data

Applicant (Facility's Name): **Weyerhaeuser Company - Vanceboro Pulp And Paper**

Facility Address:

Weyerhaeuser Company - Vanceboro Pulp And Paper
1785 Weyerhaeuser Road

Vanceboro, NC 28586

SIC: 2611 / Pulp Mills
NAICS: 32211 / Pulp Mills

Facility Classification: Before: Title V **After:** Title V
Fee Classification: Before: Title V **After:** Title V

Permit Applicability (this application only)

SIP:
NSPS:
NESHAP: X
PSD:
PSD Avoidance:
NC Toxics:
112(r):
Other: Compliance with SOC 2006-002.

Contact Data

Facility Contact	Authorized Contact	Technical Contact
David Gardner Environmental Manager P O Box 1391 New Bern NC, 28560	John Ashley Interim Mill Manager (252) 633-7244 1785 Weyerhaeuser Road New Bern NC, 28563	Brad Chesson Environmental Engineer (252) 633-7230 P O Box 1391 New Bern NC, 28560

Application Data

Application Number: **2500104.07C**
Date Received: 07/24/2007
Application Type: Admin. Amendment
Application Schedule: State

Existing Permit Data
Existing Permit Number: 02590/R32
Existing Permit Issue Date: 10/19/2006
Existing Permit Expiration Date: 03/31/2008

Review Engineer: **Wallace Pitts**

Review Engineer's Signature: **Date:**

Comments / Recommendations:
Issue 02590/R33
Permit Issue Date: 07/26/07
Permit Expiration Date: 03/31/2008

I. Introduction and Purpose of Application:

Weyerhaeuser Company (Weyerhaeuser) operates an integrated bleached Kraft pulp mill near New Bern, North Carolina. The primary activity at the Weyerhaeuser New Bern Mill is pulp production (Standard Industrial Classification [SIC] code 2611), and operations include multiple fuel-fired boilers, chemical recovery operations, wood pulping and bleaching operations, and additional operations and equipment necessary to support these operations.

The Permittee is currently operating under Air Permit 02590R32. The initial Title V permit 02590T30 was appealed.

The Permittee is subject to a Special Order by Consent (SOC) number 2006-002 that became effective on March 30, 2006, and had an expiration date of March 31, 2007. The SOC is a result of the Permittee's failure to demonstrate compliance with the particulate emission standards for the smelt dissolving tanks [15 A NCAC 2D .0508(a)(c)]. The expiration date of the SOC was extended on February 23, 2007 to July 31, 2007. DAQ and the Permittee agreed to revise the current permit to incorporate the language contained in the SOC requiring them to demonstrate compliance with MACT Subpart MM until final permitting actions are completed. The final permitting actions required by the SOC will be incorporated into the Permittee's Title V Air Permit. This permitting action is necessary to ensure that the Permittee continues to demonstrate compliance with the NESHAP particulate emission standards under 40 CFR 63, Subpart MM "Chemical Recovery Combustion Sources until the final actions required under the SOC are fulfilled.

II. Permit Modifications/Changes

The Permittee requested that the following language be added to Permit 02590 R32:

"Prior to the date the Permittee receives (1) a permit for the alternative limits under 15A NCAC 2D.0501(f) and (g) and (2) written notice that NCDENR has approved the Subpart MM, NESHAP overall bubble limit and individual limits, the Permittee shall comply with the proposed NESHAP bubble limit and individual limits that are provided in the application submitted May 11, 2006 (Permit Modification Application 2500104.06B). In order to demonstrate its compliance, the Permittee shall meet all monitoring, recordkeeping and reporting requirements of the Chemical Recovery Combustion Sources NESHAP at Kraft Pulp Mills, 40 CFR 63, Subpart MM."

This language has been added to Permit 02590R32 as Specific Condition A 26 and Permit **02590R33** will be issued.

NORTH CAROLINA DIVISION OF AIR QUALITY

Air Permit Review

Permit Issue Date:

Region: Washington Regional Office
County: Craven
NC Facility ID: 2500104
Inspector's Name: Betsy Huddleston
Date of Last Inspection: 07/13/2006
Compliance Code: C/In Compliance With Procedural Reqr

Facility Data

Applicant (Facility's Name): **Weyerhaeuser Company - Vanceboro Pulp And Paper**

Facility Address:

Weyerhaeuser Company - Vanceboro Pulp And Paper
1785 Weyerhaeuser Road

Vanceboro, NC 28586

SIC: 2611 / Pulp Mills
NAICS: 32211 / Pulp Mills

Facility Classification: Before: Title V **After:** Title V
Fee Classification: Before: Title V **After:** Title V

Permit Applicability (this application only)

SIP:
NSPS:
NESHAP: yes – MACT Subpart S controls
PSD:
PSD Avoidance:
NC Toxics:
112(r):
Other:

Contact Data

Facility Contact	Authorized Contact	Technical Contact
David Gardner Environmental Manager P O Box 1391 New Bern NC, 28560	Tim Haynes Vice President, Mill Manager (252) 633-7244 1785 Weyerhaeuser Road New Bern NC, 28563	Brad Chesson Environmental Engineer (252) 633-7230 P O Box 1391 New Bern NC, 28560

Application Data

Application Number: **2500104.06A**
Date Received: 04/10/2006
Unconsolidated: 10/16/2006
Application Type: Modification
Application Schedule: TV- State Only

Existing Permit Data
Existing Permit Number: 02590/R31
Existing Permit Issue Date: 02/09/2005
Existing Permit Expiration Date: 03/31/2008

Review Engineer: **Jay Evans**

Review Engineer's Signature: **Date:**

Comments / Recommendations:
Issue 02590/R32
Permit Issue Date: 10/19/2006
Permit Expiration Date: 03/31/2008

1. Introduction and Purpose of Application:

Weyerhaeuser Company (Weyerhaeuser) operates an integrated bleached Kraft pulp mill near New Bern, North Carolina. The primary activity at the Weyerhaeuser New Bern Mill is pulp production

(Standard Industrial Classification [SIC] code 2611), and operations include multiple fuel-fired boilers, chemical recovery operations, wood pulping and bleaching operations, and additional operations and equipment necessary to support these operations.

The New Bern Mill is subject to 40 CFR 63, Subpart S, National Emission Standards for Hazardous Air Pollutants (NESHAP) for the Pulp and Paper Industry. This rule is part of the pulp and paper Cluster Rule, and is referred to as MACT I. The New Bern Mill is in compliance with Phase 1 of this rule, which required collection of low-volume, high-concentration (LVHC) gas sources in the pulp mill, bleach plant stages where chlorinated compounds are introduced, and pulping condensates. This application requests authorization to make modifications to the Mill that are necessary to comply with Phase 2 of the rule, which requires collection of high-volume, low-concentration (HVLC) gases in the pulp mill.

In this application, the New Bern Mill proposes to collect the following existing emission sources in the HVLC system for control in the No. 2 Power Boiler, which is equipped with a condensing heat exchanger (CHX) scrubber:

- Brownstock Washers
- Brownstock Decker
- Brownstock Washed HD Tank
- Oxygen Blow Tank
- No. 1 Wash Press
- No. 1 Wash Press Level Tank
- No. 1 Wash Press Filtrate Tank
- Oxygen Interstage Pulp Tank
- No. 2 Wash Press
- No. 2 Wash Press Level Tank
- No. 2 Wash Press Filtrate Tank

The existing Brownstock Washer Filtrate/Foam Tanks are already controlled in the HVLC system.

The date for compliance with MACT I, Phase 2 for the New Bern Mill is April 17, 2007.

2. Table of Changes:

The permit changes made a result of the application are as follows:

PAGE	CONDITION	CHANGE
2	Equipment List, Item 10	Added existing sources to HVLC control description (as underlined): High Volume Low Concentration (HVLC), non-condensible, foul gas system **(NESHAP Subpart S)** collecting from the digester system **(NSPS Subpart BI** which consists of: one continuous digester (ID No. 402-141), blow tank (ID No. 402-179), chip bin (ID No. 402-119), brownstock washer filtrate tanks (ID Nos. 402-190, 420-006 and 420-008) and foam tank; three brownstock washers (ID No. 420-010), brownstock decker (ID No. 420-044), brownstock washed HD chest (ID No. 420-325), oxygen blow tank (ID No. 420-229), No. 1

PAGE	CONDITION	CHANGE
		wash press (ID No. 420-235), No. 1 wash press level tank (ID No. 420-259), No. 1 wash press filtrate tank (ID No. 420-261), and oxygen interstage pulp tank (ID No. 420-274); and No. 2 wash press (ID No. 420-280), No. 2 wash press level tank (ID No. 420-302), and No. 2 wash press filtrate tank (ID No. 420-306) (No. 2 wash press sources - only during alternate operating scenario when the No. 1 wash press is temporarily out of service); the HVLC system is ducted to the #2 power boiler for combustion,

3. Application Chronology:

The application chronology is detailed on the attached IBEAM Report. The application was originally assigned to Betty Gatano during her six-month rotation period with the Permits Section. Initially the application was consolidated with existing TV permit applications. The application was subsequently re-assigned to Jay Evans for processing once the six-month rotation ended. However, due to the facility's request to proceed with the application in order to allow for construction during the fall Mill outage, the application was unconsolidated on October 16, 2006.

4. Regulatory Analysis:

Overview:
As provided above, the purpose of the application is to allow for the modification of existing sources as required under MACT, Subpart S. This modification involves the control of previously uncontrolled sources by routing the emissions of these sources to an incineration source. This change in operation, although required by regulation, can result in increased emissions of regulated air pollutants. The following provides an regulatory analysis of the changes requested in the application:

MACT Applicability
The New Bern Mill is subject to 40 CFR 63, Subpart S, National Emission Standards for Hazardous Air Pollutants (NESHAP) for the Pulp and Paper Industry. This rule is part of the pulp and paper Cluster Rule, and is referred to as MACT I. (MACT II is the NESHAP for Chemical Recovery Combustion Sources, 40 CFR 63, Subpart MM.) The New Bern Mill is in compliance with Phase 1 of the MACT I rule, which required collection and control of low-volume, high-concentration (LVHC) gas sources in the pulp mill, bleach plant stages where chlorinated compounds are introduced, and pulping condensates. This application requests authorization to make modifications to the Mill that are necessary to comply with Phase 2 of the MACT I rule, which requires collection of high-volume, low-concentration (HVLC) gases in the pulp mill.
Under 63.443(a)(1), HVLC pulping sources requiring collection and control of HAP emissions include the following:

(1) Each knotter and screen system with total HAP emission rates greater than the individual or combined rates as follows:
   a. Each knotter system with emissions of 0.1 pounds or more of total HAP/ODTP [63.443(a)(1)(ii)(A)],

b. Each screen system with emissions of 0.2 pounds or more of total HAP/ODTP [63.443(a)(1)(ii)(B)], OR
c. Each knotter and screen system with emissions of 0.3 pounds or more of total HAP/ODTP [63.443(a)(1)(ii)(C)].

(2) Each pulp washing system [63.443(a)(1)(iii)],

(3) Each decker system that;
a. Uses any process water other than fresh water or paper machine white water [63.443(a)(1)(iv)(A)]; OR
b. Uses any process water with a total HAP concentration greater than 400 parts per million by weight [63.443(a)(1)(iv)(B)].

(4) Each oxygen delignification system [63.443(a)(1)(v)].

Pulp washing includes all equipment used to wash pulp and separate spent cooking chemicals following the digester system and prior to the bleaching system. The pulp washing system equipment includes vacuum drum washers, diffusion washers, intermediate stock chests, and their associated vacuum pumps, filtrate tanks, foam breakers or tanks, and any other equipment serving the same function as those previously listed. Per the definition under 63.441, the pulp washing system does not include deckers, screens, knotters, stock chests, or pulp storage tanks following the last stage of pulp washing.

The HAP emissions are to be controlled by enclosing the sources and venting them into a closed-vent system routed to a destruction device. HVLC destruction requires that the control device used to reduce total HAP emissions meet the following requirements under 63.443(d):

(5) Reduce total HAP emissions by 98 percent or more by weight; or

(6) Reduce the total HAP concentration at the outlet of the thermal oxidizer to 20 parts per million or less by volume, corrected to 10 percent oxygen on a dry basis; or

(7) Reduce total HAP emissions using a thermal oxidizer designed and operated at a minimum temperature of 1600 °F and a minimum residence time of 0.75 seconds; or

(8) Reduce total HAP emissions using one of the following:
a. A boiler, lime kiln, or recovery furnace by introducing the HAP emission stream with the primary fuel or into the flame zone; or
b. A boiler or recovery furnace with a heat input capacity greater than or equal to 150 million British thermal units per hour by introducing the HAP emission stream with the combustion air.

The control devices used to reduce HAP from the HVLC system have a 4% excess emission allowance based on the operating time of the HVLC sources excluding periods of startup, shutdown, or malfunction [63.443(e)(2)].

Based on this application, the inclusion of the requested sources will allow for the control all required MACT-affected sources. As provided by the applicant, any additional sources not included in the HVLC system controls are control-exempt based on emission rate as provided above. The TV permit for the New Bern Mill will specifically include all MACT-affected sources and control scenario(s).

As provided above, the Mill is required to comply with Subpart S, Phase 2, by April 17, 2007.

PSD Applicability

The PSD regulations apply to major modifications at major stationary sources, which are considered those sources belonging to any one of the 28 source categories listed in the regulations that has the potential to emit more than 100 tons per year of any PSD-regulated compound, or any

other source which has the potential to emit more than 250 tons per year of any PSD compound. A major modification is defined as "any change to a major stationary source that would result in a significant emissions increase of any pollutant subject to regulation under the Act." Major modifications are subject to review under the PSD regulations and must meet certain pre-construction review and permitting requirements.

The Weyerhaeuser New Bern Mill belongs to one of the 28 listed categories and emits greater than 100 tons per year of a PSD-regulated air compound. Thus, the New Bern Mill is a major source. A PSD applicability analysis was performed to determine which regulated compounds would be subject to PSD review. The emissions increases for the project were determined for each compound based on the difference between the proposed potential emissions associated with the HVLC Project and the average actual emissions for the 2004-2005 time period.

This project is being undertaken specifically to comply with the control requirements of MACT Subpart S. However, because the MACT control involves the combustion of TRS-containing air streams, the project can potentially cause increases in PSD-regulated pollutants, particularly SO_2. Based on the PSD applicability analysis, the proposed HVLC Project is classified as a minor modification because it will not result in potential emissions increases of any PSD compounds that exceed their respective Significant Emission Rate.

The HVLC project's emissions impacts were calculated by the applicant by determining the past actual emissions from the sources that will be ducted to the No. 2 Power Boiler and subtracting them from the future potential emissions post project. Actual emissions were calculated using average 2004-2005 pulp production for the following sources: Brownstock Washers, Brownstock Decker, Brownstock washed HD chest, O_2 Blow Tank, 1st Wash Press, 1st Wash Press Level Tank, and 1st Wash Press Filtrate Tank. Note that the Brownstock Washer Filtrate and Foam Tanks already are ducted to the HVLC system and combusted in the No. 2 Power Boiler, so these units are not included in the emissions calculations. Actual emissions were calculated based on published NCASI emission factors and recent methanol testing results. For those sources where methanol emissions were tested, a compound to methanol ratio was developed for the VOC NCASI data set and applied to the site-specific methanol test data in order to estimate emissions of non-methanol compounds. For CO emissions, the reported NCASI emission factor was applied. This approach assumes that emissions of other compounds are relative to methanol emissions from the pulp washing and delignification systems.

Representative NCASI emission factors were chosen for the brownstock washing and O_2 delignification sources. Mills A (oxygen delignification system), H (brownstock washers), and M (brownstock decker) from the NCASI 16-Mill Study were selected (Technical Bulletins 675, 677, and 678). Emission factors from NCASI Technical Bulletin 858 (brownstock washer terpenes, HD storage, and some TRS compounds) also were used. Although the New Bern Mill currently uses fresh water at the 2nd Wash Press and the filtrate flows back through the process, the mill may wish to use evaporator condensate or stripped condensates in the future. Therefore, emission factors from mills using condensates for wash water were selected to represent worst case emissions.

Ducting the brownstock washing and oxygen delignification system sources to the No. 2 Power Boiler will reduce VOC, HAP, and CO emissions, but will increase SO_2 and H_2SO_4 emissions due to oxidation of the TRS compounds present in the gases. Therefore, for NCASI Technical Bulletin 675 and 678 factor sets where TRS compounds were not tested, other NCASI data were used in order to provide a conservative estimate of the impact of combusting the gases on SO_2 and H_2SO_4 emissions. For example, emission factors from testing at Mill A in Technical Bulletin 675 were selected as representative of oxygen delignification system sources emissions. As TRS compounds were not tested at Mill A, the TRS compound emission factors from Technical Bulletin 858 were selected to represent TRS emissions from the oxygen delignification system.

Future potential emissions were calculated based on the maximum pulping capacity of the New Bern Mill and 98 percent emissions control. Future potential emissions of VOC, CO, TRS, and H_2S for this project are less than current actual emissions. The potential increase in SO_2 emissions

was calculated by assuming 98 percent of TRS compounds in the gases ducted to the No. 2 Power Boiler are oxidized to SO_2 and controlled at a level of 80 percent in the scrubber. The potential increase in H_2SO_4 emissions was calculated assuming 1 percent of combusted sulfur is converted to H_2SO_4. Using this approach, the emissions increases of SO_2 and H_2SO_4 are below their respective PSD significant emission rates at 5 and 0.4 tons per year, respectively.

Further, it is important to note that control of the SO_2 emission caused by the TRS oxidation is not required to be considered in order to determine that this project is minor with respect to SPD modification. Based on the TRS emissions with 100 percent conversion and no controls, the SO_2 emissions increase would be approximately 22.6 tons per year. This value is also below the 40 ton per year significance level threshold.

NSPS Applicability

NSPS applies to any stationary source for which the standards are promulgated, and which is constructed, reconstructed or modified after the effective date of the applicable standard to the affected facility. NSPS requirements are promulgated under 40 CFR 60 pursuant to Section 111 of the Clean Air Act. An existing facility can become subject to the NSPS requirements upon reconstruction or modification. A modification under NSPS is defined as any physical or operational change that results in an increase in the emission rate of any pollutant to which a standard applies.

The NSPS for Kraft pulp mills (40 CFR 60, Subpart BB) contains emissions standards for total reduced sulfur (TRS) for brownstock washer systems and other sources. As this project will result in decreases in emissions of TRS from the brownstock washer system, the project is not considered a modification under NSPS and Subpart BB does not apply.

The No. 2 Power Boiler is subject to NSPS Subpart Db – Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units. 40 CFR 60.40b(f) states that any change to an existing steam generating unit for the sole purpose of combusting gases containing TRS is not considered a modification under 60.14.

SIP Applicability

NC DAQ air quality regulations for stationary sources are codified in 15A of the North Carolina Administrative Code, Subchapter 2D (Air Pollution Control Requirements) and Subchapter 2Q (Air Quality Permit Procedures).

Sulfur Dioxide Emissions from Combustion Sources – 2D .0516

Under this standard, SO2 emissions from any combustion source are limited to 2.3 lb/mmBtu input. Based on fuel type, scrubber control, and emission factor calculations, the No. 2 Power Boiler will continue to comply with this limit.

New Source Performance Standards – 2D .0524

NSPS applicability was addressed above.

Total Reduced Sulfur from Kraft Pulp Mills – 2D .0528

This emission standard applies to recovery furnaces, digester systems, evaporator systems, lime kilns, smelt tanks, and condensate stripping systems not subject to TRS emission standards under 40 CFR 60. The rule does not apply to HVLC sources; therefore, compliance with this regulation will not be affected by this project.

Prevention of Significant Deterioration – 2D .0530

PSD applicability was addressed above.

Control of Toxic Air Pollutants – 2D .1100

NCAC 2Q .0700 requires facilities that emit toxic air pollutants (TAPs) for which they are required to have a permit under 15 NCAC 2D.1100 to demonstrate compliance with the Acceptable Ambient Levels (AALs). This project will result in decreases in facility-wide TAP emissions. Facility-wide TAP modeling will be submitted prior to the compliance date to demonstrate compliance with 2Q .0700. A "Last MACT" toxics application is currently under review with the DAQ.

Maximum Achievable Control Technology – 2D .1111

MACT applicability was addressed above.

Notification in Areas without Zoning – 2Q .0113

The New Bern Mill is located in an area without zoning. Therefore, the Weyerhaeuser facility must follow the requirements presented in 2Q .0113. This rule requires that the facility provide public notice prior to submitting the permit application.

Legal Notice – The facility published a legal notice in the New Bern Sun Journal on March 8, 2006. The notice included the name of the facility, the name and address of the applicant, and a summary of the modification. An affidavit and proof of publication are presented in Appendix C to this document.

Posting of Sign – The facility has posted a sign that is at least 6 square feet in size, less than ten feet from the highway right-of-way, at least six feet from the ground, contains lettering a person with 20/20 vision can view from the center of the road, and is placed parallel to the highway. The sign contains the name of the facility, the name and address of the applicant, and a summary of the modification. The sign must remain in place for at least 30 days following the submittal of the permit application. The sign was raised on March 13, 2005

4. Existing SOC and Title V:

The facility is currently operating under a state air permit. The Title V permit for this facility is anticipated to be issued in the very near future. This initial Title V permit was subject to an administrative appeal by the facility. Further, the facility is currently under an SOC for noncompliance with 2D .0508. (see http://daq.state.nc.us/enf/soc/weyerh_soc_02032006.pdf). The SOC requires that the facility submit an application for a "SIP bubble" of the emission sources. The "SIP bubble" application is required to be issued through a Title V permit. The "SIP bubble" application and the appealed permit issues are currently under DAQ review.

5. ESM Update Summary:

No new emission sources are being added per this application. The IBEAM ESM changes based on this modification will be incorporated upon issuance of the Title V permit. Due to the Title V administrative appeal, several sources were entered into the IBEAM data system that are not specifically listed in or are consistent with the structure of the current state permit. In order to avoid duplication of sources and confusion with emission source data, all emission source changes will be made based on the Title V permit content.

6. Conclusions, Comments, and Recommendations:

The RCO and WARO recommend issuance of permit revision 02590R32

NORTH CAROLINA DIVISION OF AIR QUALITY

Air Permit Review

Permit Issue Date: 02/09/2005

Region: Washington Regional Office
County: Craven
NC Facility ID: 2500104
Inspector's Name: Betsy Huddleston
Date of Last Inspection: 07/20/2004
Compliance Code: C/In Compliance With Procedural Requirements

Facility Data

Applicant (Facility's Name): **Weyerhaeuser Company - Vanceboro Pulp & Paper**

Facility Address:

Weyerhaeuser Company - Vanceboro Pulp & Paper
1785 Weyerhaeuser Road

Vanceboro, NC 28586

SIC: 2611 / Pulp Mills
NAICS: 32211 / Pulp Mills

Facility Classification: Before: Title V **After:** Title V
Fee Classification: Before: Title V **After:** Title V

Permit Applicability (this application only)

SIP:
NSPS:
NESHAP:
PSD:
PSD Avoidance:
NC Toxics:
112(r):
Other: PCP Project - ESP replacement for Recovery Boiler - Chemical Recovery Process

Contact Data

Facility Contact	Authorized Contact	Technical Contact
David Gardner Environmental Manager P O Box 1391 New Bern, NC 28560	Robert Green Mill Manager (252) 793-8111 1785 Weyerhaeuser Road Vanceboro, NC 28586	Brad Chesson Environmental Engineer (252) 633-7230 P O Box 1391 New Bern, NC 28560

Application Data

Application Number: **2500104.04A**
Date Received: 10/05/2004
Application Type: Modification
Application Schedule: State

Existing Permit Data
Existing Permit Number: 02590/R29
Existing Permit Issue Date: 04/25/2003
Existing Permit Expiration Date: 11/30/2008

Review Engineer: **Jeff Twisdale**

Review Engineer's Signature: **Date:**

Comments / Recommendations:
Issue 02590/R31 *since 02590T30 has been appealed*
Permit Issue Date: 02/09/2005
Permit Expiration Date: 03/31/2008

III. Introduction

Weyerhaeuser Company (Weyerhaeuser) operates an integrated bleached Kraft pulp mill. Weyerhaeuser proposes to replace the existing electrostatic precipitator (ESP) installed on the existing recovery boiler. This replacement will reduce operating and maintenance costs associated with operating the ESP and ensure continued environmental compliance. Additionally, three new tanks will result from this modification including the following: 1) 4,700 gallon ash mix tank; 2) 20,000 gallon No. 2 fuel oil storage tank; and 3) 40,000 gallon No. 6 fuel storage oil tank. As detailed further in this review, the modification does qualify for the Pollution

Control Project (PCP) exclusion under EPA's July 1, 1994 guidance memorandum on "Pollution Control Projects and New Source Review (NSR) Applicability" as amended on December 31, 2002 per this application.

Because the facility's initial Title V permit is currently under appeal, this application was processed and resulted in a change to the facility's current state construction and operation permit (02590R29). Once the appeal process is finalized, the subsequent initial TV permit will have to be modified to reflect this change following the applicable procedures per 2Q .0500.

Changes to the existing permit

The following table summarizes the changes made to permit 02590R29 per this application:

Page Number, Section	Changes
Page 1, Equipment List (Item No. 2)	Modified description of the control device (ESP) on the recovery boiler - replacement of the existing ESP after installation of the new ESP
Page 3, Specific Condition A. 1.	Updated regulatory cite from 2D .0522 to 2D .1806
Page 3, Specific Condition A. 1.	Removed 2D .0958 due to non-applicability per WaRO's request
Page 7, Specific Condition A. 10.	Removed testing requirement for Power Boiler #1 per WaRO's request
Page 11, Specific Condition A. 18.	Removed regulatory language regarding 2D .0522 per WaRO's request
Page 16, Specific Condition A. 25.	Modified 15 day notification requirement for start-up of new ESP

Application Processing

The application process is detailed in the attached IBEAM Report. The facility is located in an area without zoning and was required to follow the notification procedures per 2Q .0113. The facility provided adequate demonstration that these requirements were met.

IV. Project Description

The Recovery Boiler ESP Replacement Project affects the Chemical Recovery Process at the pulp mill. The existing Recovery Boiler ESP installed in 1980 is a two cell, wet bottom unit that uses water to sluice the ash. The wet bottom design results in higher energy costs while the age of the equipment results in high maintenance costs. In addition, a recent inspection by an outside contractor indicated that the ESP is at the end of its recommended lifespan. The new ESP will be constructed just south of the existing ESP. The new ESP will be a two-chamber, dry bottom design with each chamber designed to accommodate 298,000 actual cubic feet per minute (ACFM) of airflow. There are four mechanical and four electrical fields in each chamber.

The collected material from the ESP will be transferred to the new ash mix tank (4,700 gallons of capacity) where it will be mixed with 50% black liquor. This process allows for the recovery of the saltcake (Na_2SO_4) in the ash. Also, two new fuel storage tanks will be added due to the construction / location of the new ESP.

V. New/Modified Equipment

New ESP installed on existing Recovery Boiler

The existing permit will be modified to describe the new ESP (ID No. 445-340 and 445-369) for the existing

Recovery Boiler (ID No. 445-001) - item number 2 in the existing/new permit as follows:

"one electrostatic precipitator (172,800 square feet of collecting plate area, ID No. 445-073) ***to be replaced by*** *one dry bottom type electrostatic precipitator (201,960 square feet of total collection area consisting of two chambers, ID Nos. 445-340 and 445-369) installed on a new design Recovery Boiler combusting black liquor solids and residual fuel oil (920 million Btu per hour maximum heat input rate, ID No. 445-001) per 15A NCAC 2D .0528,* ***NESHAP (Subpart MM, MACT II)****,"*

Two fuel storage tanks and one ash mix tank

Two fuel storage tanks (one 20,000 gallon No. 2 fuel oil storage tank; and one 40,000 gallon No. 6 fuel storage oil tank) and one ash mix tank will be installed at the facility. Since these tanks are new, the applicability of NSPS Subpart Kb was checked. The fuel storage tanks have greater than 19,800 gallon capacity with very low vapor pressure (0.016 psi or less) are exempt from NSPS Subpart Kb requirements except that the facility must keep records of the storage tank dimensions and capacity for the life of the source per 40 CFR 60.110b(b). The ash mix tank (less than 10,560 gallons capacity) is completely exempt from the NSPS Subpart Kb requirements.

These sources will NOT be required to be listed on the permit; therefore, the two fuel storage tanks and the ash mix tank will be added to the insignificant activities list since the sources emit less than 5 tons per year (tpy) of regulated pollutants (specifically VOCs). The ash mix tank has the most potential (estimated to be 1.23 tpy of VOC) of the three tanks, but it still well below the 5 tpy threshold. The ash mix tank will also emit some TRS; however, the estimated potential emissions (0.623 tpy) are much lower than the PSD significance level (10 tpy).

IV. Emissions Changes

The Recovery Boiler ESP replacement is expected to result in a substantial reduction in PM/PM_{10} emissions from the existing unit. The project will result in a current actual-to-projected actual PM emissions reduction [**0.031gr/dscf** based on the average (2001-2004) stack test results to **0.015 gr/dscf** based on the ESP vendor guarantee for two chamber operation]. This project will NOT increase utilization of the recovery boiler. Table IV-1 presents a summary of current ESP emissions and the emissions impact from the ESP replacement.

Table IV-1. Summary of ESP Replacement Emissions Impacts for all other regulated pollutants

Compound	Current Emission Factor		Reference	Actual Emissions (tpy)	Emissions Impact of ESP Replacement
Carbon Monoxide	1.50E+00	lb/TBLS	Stack Test (4/16/93)	448.95	None expected
Carbon Monoxide	5	lb/MGAL	AP-42(Table 1.3-1, 9/98)	2.23	None expected
Hydrogen Chloride	5.50E-02	lb/TBLS	NCASI TB858	16.46	None expected
H2S/TRS	2.10E-02	lb/TBLS	Based on 2003 TRS CEM annual average, assumes TRS=H2S	6.29	None expected
Lead	1.20E-05	lb/TBLS	NCASI TB858	3.59E-03	May be small decrease due to increased PM control
Lead	0.00151	lb/MGAL	AP-42(Table 1.3-11, 9/98)	6.72E-04	May be small decrease due to increased PM control
Mercury	1.80E-07	lb/TBLS	NCASI TB858	5.39E-05	None expected

Mercury	0.000113	lb/MGAL	AP-42(Table 1.3-11, 9/98)	5.03E-05	None expected
NOX	1.53E+00	lb/TBLS	NCASI TB646, p. 16 (2.3 lb/ADTP x ADTP/1.5 TBLS)	457.93	None expected
NOX	47	lb/MGAL	AP-42(Table 1.3-1, 9/98)	20.92	None expected
SO2	7.30E-02	lb/TBLS	Stack Test (11/4/92)	21.85	None expected
SO2	287.31	lb/MGAL	AP-42(Table 1.3-1; 1.83% S, 9/98)	127.90	None expected
Sulfuric Acid	2.00E-02	lb/TBLS	NCASI TB858	5.99	None expected
Sulfuric Acid	13.9	lb/MGAL	AP-42 (Table 1.3-1, Converted from SO3, 9/98)	6.19	None expected
Hydrogen Fluoride	0.00014	lb/MMBTU	NCASI TRI Chemical Specific Data 2003	0.01	None expected
VOC	5.46E-02	lb/TBLS	NCASI TB858 Table 14A, sum of VOC cpds	16.34	None expected
VOC	0.0432	lb/MGAL	AP-42(Table 1.3-9, 9/98, sum of VOC cpds)	0.02	None expected

* The recovery boiler emission estimates above are based on 2003 throughput of 598,595 tons of black liquor solids and 890.316 million gallons of residual fuel oil and were provided by the facility as addendum to the application.

Regulatory Analysis

Weyerhaeuser currently operates under state air permit No. 02590R29, issued December 31, 2003. The facility's federal EPA Title V permit (02590T30) was appealed on February 9, 2004 by the facility and is in the active process of being reissued. The proposed permit (02590R31) for the ESP replacement is being issued as a state construction and operating permit since the current Title V permit was appealed. Please note that the ESP changes should be incorporated into the revised Title V permit.

The following presents a review of potentially applicable federal and state regulations for the proposed Recovery Boiler ESP Replacement Project:

Particulates for Pulp and Paper Mills – 2D .0508

This standard provides a limit of 3.0 pound per air-dried ton of pulp (filterable PM), and visible emissions are limited to 35 percent opacity. The proposed project is expected to result in decreased particulate emissions. Therefore, it should NOT affect the ability of the Recovery Boiler to comply with this rule.

Sulfur Dioxide Emissions from Combustion Sources – 2D .0516

Under this standard, SO_2 emissions from any combustion source are limited to 2.3 lb/mmBtu input. The Recovery Boiler complies with this limitation based on the sulfur input from the fuel. Therefore, the proposed project should NOT affect the ability of the Recovery Boiler to comply with this rule.

New Source Performance Specifications – 2D .0524

15A NCAC 2D .0524 substantially incorporates the federal NSPS regulations (40 CFR Part 60) by reference. NSPS Subpart BB (Kraft Pulp Mills) contains standards for recovery furnaces that qualify as affected facilities. NSPS applicability is triggered by the construction of a new affected facility or the modification or reconstruction of an existing facility. The Recovery Boiler is NOT currently subject to NSPS Subpart BB, nor will the ESP replacement trigger NSPS applicability.

Modification under NSPS is defined in 40 CFR 60.14 as any physical or operational change to an existing facility which results in an increase in the emission rate to the atmosphere of any pollutant to which a standard applies. Emission rate is expressed on a kg/hr (lb/hr) potential-to-emit basis. Reconstruction is defined in 40 CFR 60.15 as "the replacement of components of an existing facility to an extent that the fixed capital costs of the replacement components exceeds 50 percent of the fixed capital cost required to construct a comparable

entirely new facility."

As documented in the application, the Recovery Boiler ESP replacement will NOT result in an increase in lb/hr emissions of any pollutant regulated under NSPS Subpart BB (PM and TRS). Furthermore, 40 CFR 60.14(e)(5) provides an exclusion from the NSPS definition of modification for "the addition or use of any system or device whose primary function is the reduction of air pollutants…" For these reasons, the ESP replacement does NOT constitute a NSPS modification.

The Recovery Boiler ESP replacement project will NOT involve the reconstruction of the affected facility (Recovery Boiler). Only the control device (ESP) is being replaced; therefore, the ESP replacement does NOT meet the criteria of being a NSPS reconstruction.

TRS from Kraft Pulp Mills – 2D .0528

Under this standard, TRS emissions from this source are limited to 20 ppm (at 10% oxygen). The Recovery Boiler complies with this limitation based on a continuous TRS and oxygen monitor (CEMS). Therefore, the proposed project should NOT affect the ability of the Recovery Boiler to comply with this rule.

Prevention of Significant Deterioration (PSD) – 2D .0530

This project qualifies for the PCP exclusion under the EPA's July 1, 1994, guidance memorandum on "Pollution Control Projects and New Source Review (NSR) Applicability" and the subsequent amendments. The amended PCP guidance states that pollution control projects are eligible for exclusion from major NSR permitting requirements if:

1. The PCP is "environmentally beneficial," and
2. The project will not cause or contribute to a violation of national ambient air quality standards (NAAQS), prevention of significant deterioration (PSD) increment, or adversely affect visibility or other air quality related value (AQRV).

The PCP guidance defines a PCP as an activity, set of work practices, or project at an existing emissions unit that reduces emissions of air pollution from the unit. The PCP Exclusion may be sought when a project is installed at an existing source where it reduces the emissions rate of one air pollutant while causing an increase in emissions of a different, "collateral" pollutant. For evaluating the environmental impact of a collateral emissions increase, the source and reviewing authority will assess the difference between the emission unit's post-change actual emissions and its pre-change baseline actual emissions. Any collateral emissions increase is then weighed against the emissions decreases to determine whether the PCP, as a whole, provides an environmental benefit. Further, the guidance specifies particular modifications that are presumed to be environmentally beneficial. The replacement of an existing ESP for particulate control is one of the projects listed as a presumptive PCP. As such the Permittee is NOT required to send the modification to the 30 day public review and comment period required for non-listed projects.

Environmentally beneficial analysis

As discussed above, the replacement of an ESP is a listed PCP under the EPA PSD guidance and as such presumptively qualifies as environmentally beneficial. The proposed Recovery Boiler ESP replacement should improve the unit's PM control efficiency and help ensure a greater margin of compliance with the MACT requirements. The ESP replacement will result in substantial reductions in PM_{10} emissions with no collateral increases in other PSD regulated air pollutants. The project will NOT result in increased Recovery Boiler capacity or utilization, nor does it provide any economic incentive to increase mill pulp and paper production.

Air Quality Analysis

The Recovery Boiler ESP replacement will NOT result in any increases of regulated air pollutant. Therefore, the project will not cause or contribute to a violation of the NAAQS or PSD increment or adversely affect any AQRV. The project is expected to result in actual reductions in PM and PM_{10} emissions from the Recovery Boiler, providing a positive air quality impact.

The minimum content requirements for PCP notices and permit applications include:

1. A description of the project;
2. The potential emissions increases and decreases of any pollutant regulated under the Act and a copy of the environmentally beneficial analysis as required;
3. A description of monitoring and recordkeeping, and all other methods, to be used on an ongoing basis to demonstrate that the project is environmentally beneficial;
4. A certification that the project will be designed and operated in a manner that is consistent with proper industry and engineering practices, in a manner that is consistent with the environmentally beneficial analysis and air quality analysis; and
5. Demonstration that the PCP will NOT have an adverse air quality impact. An air quality impact analysis is not required for any pollutant that will not experience a significant emissions increase as a result of the project.

With this permit application, Weyerhaeuser has addressed each of the PCP permit application content requirements listed above. Section II presents a description of the Recovery Boiler ESP replacement project. Section IV presents an assessment of project emissions, documenting that no increase in actual emissions of regulated air pollutants will occur as a result of the ESP replacement. This Section contains documentation of PCP status for the proposed project, including the environmentally beneficial analysis. The monitoring and recordkeeping that will be used on an ongoing basis will be the existing I&M requirements included in the existing state air permit. The revised Title V permit will include more specific monitoring requirements (e.g. voltage, current and/or spark rate) for the ESP in order to demonstrate compliance with 2D .0508 as detailed in the appealed Title V permit. Stack testing will confirm that the monitored values assure compliance. Also, additional monitoring per MACT Subpart MM will also be required after the MACT compliance date. No formal air quality analysis is required for the project because there will be no collateral increase in regulated air pollutant emissions. As detailed in the permit application, Weyerhaeuser has certified that the Recovery Boiler ESP replacement will be designed and operated in a manner that is consistent with proper industry and engineering practices and that the ESP replacement project will be considered as environmentally beneficial.

Control of Toxic Air Pollutants – 2D .1100

The North Carolina Toxic Air Pollutant (TAP) regulations under 15A NCAC 2D .1100 and 2Q .0700 require that new or modified sources realizing an increase in potential TAP emissions demonstrate compliance with established Acceptable Ambient Levels (AAL). The Recovery Boiler ESP replacement project will NOT result in an increase in permitted allowable TAP emissions from the Recovery Boiler. Therefore, no TAP compliance demonstration is required at this time.

NESHAP/MACT – 2D .1111

15A NCAC 2D .1111 incorporates the federal Maximum Available Control Technology (MACT) regulations (40 CFR Parts 63) substantially by reference. The Recovery Boiler is subject to 40 CFR 63, Subpart MM and more specifically to MACT II. MACT II was promulgated in the Federal Register on January 12, 2001 and regulates hazardous air pollutant emission from the chemical recovery combustion area of pulp mills. This standard limits existing recovery boilers to a PM emissions limit of 0.044 gr/dscf corrected to 8 percent oxygen. Based on historical emissions test data, the existing ESP currently complies with the MACT II limits. Since this project does NOT qualify as reconstruction, the existing source requirements of MACT II will continue to apply. The ESP manufacturer's guaranteed outlet loading is 0.015 gr/dscf with both chambers in operation. The Recovery Boiler ESP replacement project will ensure a greater margin of compliance with the MACT II requirements. The MACT II compliance date for Weyerhaeuser is March 13, 2005. The facility expects to use the bubble method presented in 40 CFR 63.862(a)(1)(ii) to demonstrate compliance with the MACT II limits prior to March 13, 2005. Also, the facility will reestablish the bubble limits after completion of this project per 40 CFR 63.862(a)(1)(ii)(D) since an affected air pollution control device is being replaced. The MACT II requirements should be incorporated into the revised Title V permit.

Compliance Assurance Monitoring (CAM) – 40 CFR 64

The CAM Rule (40 CFR Part 64) applies to pollutant-specific emissions units (PSEU) that are subject to an emission limit or standard, use a control device to achieve compliance with that emission limit or standard, and have potential pre-control device emissions in the amount required to classify the unit as a major source under Part 70 of the Clean Air Act (CAA). The Recovery Boiler uses the ESP to comply with emissions limits for PM. Facilities are normally required to address CAM as part of the Title V renewal process unless CAM has been previously addressed as part of a significant modification of the Title V permit. However, CAM does NOT apply (see 40 CFR 64.2(a)) because the facility does NOT hold a valid Title V permit at this time.

V. Comments/Conclusions/Recommendations

As detailed above, this type of project has been deemed "environmentally beneficial" per EPA PCP Guidance. Therefore, RCO and WaRO, per Betsy Huddleston's e-mail on 02/09/05, recommend issuance of the permit.