

**NORTH CAROLINA DIVISION OF  
AIR QUALITY**

**Air Permit Review**

Permit Issue Date: **date, 2008**

**Region:** Winston-Salem Regional Office  
**County:** Alamance  
**NC Facility ID:** 0100237  
**Inspector's Name:** Steve Moser  
**Date of Last Inspection:** 05/09/2008  
**Compliance Code:** C/In Compliance With  
 Procedural Reqr

<b>Facility Data</b>			<b>Permit Applicability (this application only)</b>
<b>Applicant (Facility's Name):</b> New South Lumber Company, Inc. - Graham Plant  <b>Facility Address:</b> New South Lumber Company, Inc. - Graham Plant 4408 Mt Hermon - Rock Creek Road Graham, NC 27253  <b>SIC:</b> 2421 / Sawmills & Planing Mills General <b>NAICS:</b> 321113 / Sawmills  <b>Facility Classification: Before:</b> Title V <b>After:</b> Title V <b>Fee Classification: Before:</b> Title V <b>After:</b> Title V			<b>SIP:</b> <b>NSPS:</b> <b>NESHAP:</b> <b>PSD:</b> <b>PSD Avoidance:</b> <b>NC Toxics:</b> <b>112(r):</b> <b>Other:</b>
<b>Contact Data</b>			<b>Application Data</b>
<b>Facility Contact</b>	<b>Authorized Contact</b>	<b>Technical Contact</b>	<b>Application Number:</b> 0100237.08B <b>Date Received:</b> 09/30/2008 <b>Application Type:</b> Renewal <b>Application Schedule:</b> TV-Renewal <b>Existing Permit Data</b> <b>Existing Permit Number:</b> 06740/T13 <b>Existing Permit Issue Date:</b> 02/04/2008 <b>Existing Permit Expiration Date:</b> 06/30/2009
Terry Bishop General Manager (336) 376-5801 4408 Mt Hermon-Rock Creek Road Graham NC, 27253	Donald Olson Chief Operating Officer (843) 236-8418 3700 Clay Pond Road Myrtle Beach SC, 29578	Terry Bishop General Manager (336) 376-5801 4408 Mt Hermon-Rock Creek Road Graham NC, 27253	
<b>Review Engineer:</b> Mark Cuilla  <b>Review Engineer's Signature:</b> <b>Date:</b> <b>date, 2008</b>		<b>Comments / Recommendations:</b> Issue 06740/T14 <b>Permit Issue Date:</b> <b>date, 2008</b> <b>Permit Expiration Date:</b> <b>date, 2013</b>	

**I. Purpose of Application**

This permitting action is a renewal of an existing Title V permit pursuant to 2Q .0513. The existing Title V permit (**06740T13**) was issued on **February 4, 2008**, and is currently scheduled to expire on **June 30, 2009**. The renewal application was received on **September 30, 2008**, or at least nine months prior to the expiration date. Therefore, the existing permit shall not expire until the renewal permit has been issued or denied. All terms and conditions of the existing permit shall remain in effect until the renewal permit has been issued or denied.

The Permittee is not requesting any permit modifications as a result of this renewal application.

**II. Facility Description**

The facility is a lumber mill where whole logs are processed into dimensional lumber. The "wet" lumber is dried in one of six permitted lumber kilns whose steam heat is provided by one of four wood fuel fired boilers.

### III. History/Background/Application Chronology

**February 4, 2008** – Permit **06740T13** was issued as an administrative amendment for the removal of all references to the recently vacated combustion source MACT (40 CFR 63, Subpart DDDDD) and for the modification of the visible emissions permit condition to reflect recent shell language changes.

**September 30, 2008** – Permit application **0100237.08B** was received for the renewal of the existing Title V air permit.

**October 10, 2008** – DRAFT permit sent to Permittee, Regional Office, Title V Coordinator for comment prior to public notice and EPA review.

**Date, 2008** – DRAFT sent to 30-day public notice and 45-day EPA review prior to issuance.

### IV. Permit Modifications/Changes and ESM Discussion

The following table describes the modifications to the current permit as part of the renewal process.

Page	Section	Description
Cover	-	-amended all dates and permit revision numbers
TOC	-	-added reference to Section 2.3 “Permit Shield for Non-applicable Requirements” for CAM non-applicability
All	Header	-amended permit revision number
3	Equipment table	-amended equipment description to match ESM listing where necessary
4	2.1 A.1.b 2.1 A.1.c	-testing cross reference correction -updated shell language
5	2.1 A.1.e 2.1 A.2.b 2.1 A.3.b	-added ID Nos. for control equipment -testing cross reference correction -testing cross reference correction
6	2.1 A.3.c.ii 2.1 A.4.a 2.1 A.4.b	-testing cross reference correction -added ID Nos. and NSPS Subpart title -updated shell language
7	2.1 B.1.b 2.1 B.2.a 2.1 B.2.b  2.1 B.2.c  2.1 B.2.d	-testing cross reference correction -added ID Nos. and NSPS Subpart title -added emission limitation option already listed in applicable regulation table -added language per WSRO request for operation of source to ensure compliance -removed specific initial performance testing language of the NSPS and replaced with generic shell language (renumbered subsequent sections accordingly)
8	2.1 B.2.g  2.1 C.1.b	-updated shell language -removed requirement to submit date of initial startup per NSPS as already being completed -updated shell language
9	2.1 C.1.c.iv 2.1 C.2.b 2.1 C.2.c	-updated shell language -testing cross reference correction -testing cross reference correction

Page	Section	Description
10	2.1 D 2.1 D.1.b 2.1 D.1.c	-modified equipment description per WSRO inspection report -testing cross reference correction -removed existing MRR language per WSRO request (as source is enclosed) and replaced with “No monitoring/recordkeeping/reporting” language
11	2.2 B (table) 2.2 B.1.a	-added MACT title -added MACT title
13-14	2.3	-added Section for CAM non-applicability
14-23	General Conditions	-updated shell conditions (v2.22.1)

It should be noted that there were no required ESM modifications as a result of this permit renewal.

## V. Regulatory Review

The facility is currently subject to the following regulations:

- 15A NCAC 2D .0504, Particulates from Woodburning Indirect Heat Exchangers
- 15A NCAC 2D .0512, Particulates from Miscellaneous Wood Products Finishing Plants
- 15A NCAC 2D .0516, Sulfur Dioxide Emissions from Combustion Sources
- 15A NCAC 2D .0521, Control of Visible Emissions
- 15A NCAC 2D .0524, New Source Performance Standards (40 CFR 60, Subpart Dc)
- 15A NCAC 2D .1100, Control of Toxic Air Pollutants
- 15A NCAC 2D .1111, Maximum Achievable Control Technology (40 CFR 63, Subpart DDDD)
- 15A NCAC 2D .1806, Control and Prohibition of Odorous Emissions
- 15A NCAC 2Q .0705, Existing Sources and SIC Calls
- 15A NCAC 2Q .0711, Emission Rates Requiring a Permit

A regulatory review for the existing sources will not be included in this document.

## VI. NSPS, NESHAPS/MACT, PSD, 112(r), CAM

**NSPS** – The facility currently operates under two separate New Source Performance Standards permit conditions as follows:

1. Boilers (**ID Nos. B-2 and B-3**) are subject to 40 CFR 60, Subpart Dc. Based on rule applicability, these boilers are only subject to daily fuel consumption record keeping requirements. Steve Moser of the WSRO noted in his latest inspection report that these records were being maintained. Continued compliance is expected. This permit renewal does not affect this status.
2. Boiler (**ID No. B-4**) is subject to 40 CFR 60, Subpart Dc. Based on rule applicability, this boiler is subject to a particulate emission limit of less than 0.03 pounds per million Btu heat input OR less than 0.051 pounds per million Btu heat input while demonstrating a 99.8 percent reduction in particulate matter AND a visible emission limit of less than 20% opacity. Steve Moser of the WSRO noted in his latest inspection report that the facility failed to indicate compliance with the 0.03 pounds per million Btu heat input limit at its first attempt at an initial performance test. Preliminary results of a second test do indicate compliance (*Results, as of the writing of the inspection report had not been approved. Test results were approved by SSCB in a July 15, 2008 letter to Terry Bishop of New South Lumber*).

In an **October 7, 2008** email to Mark Cuilla, Steve pointed out that the only difference in the two tests was that the ESP fields were operating at a substantially higher wattage during the second test. He is concerned about the long-term compliance with this boiler and requests that the renewed permit be issued with a requirement that the ESP be operated at the same power levels as this second test. In addition to these particulate requirements, the Subpart requires that the Permittee install and operate a continuous opacity monitor. This has been completed and noted in the inspection report. Other than the following modifications to the permit condition for the operation of the ESP, this permit renewal does not affect this status:

The following language has been added to the 15A NCAC 2D .0524 permit condition for this source:

*c. To ensure compliance with the emission limits above, the Permittee shall operate the source and associated control equipment in such a manner that the parameters of the approved **May 9, 2008** visible emission and particulate matter emissions tests for this source are maintained at the levels established on that test date including, but not limited to, process rates, heat inputs, fan speeds, and power levels of the ESP (ID No. ESP-4).*

Note. Mark Cuilla requested, via email, that Steve Moser review again the language suggested above in light of John Evans comments on the same. John asked about the approved parameters. Specifically, whether we had those values because it seemed like ESP voltage was the most critical. Steve replied “*we do have some idea of the power levels the ESP was operating during both of the tests....For the power levels, we observed these levels were approximately double for the second test. However, these power levels were obtained from brief readings and do not represent any sort of time integrated total, average, or other measurement that would represent the ESP performance over the test duration. In addition to the power levels of the ESP, the company is believed to have done other “tweakings” to the boiler between the two tests....The boiler also has a COM and operated with no discernable visible emissions during either test. For these reasons, I feel we need to keep this condition as generic as possible and not try and put any actual minimum power level date in the permit. If we go do an inspection and the ESP is operating at substantially the same power levels as before and little or no visible emissions were detected, I believe compliance would be probable. However, if we go and see the ESP operating at little or no power and smoking significantly I would suspect a violation and believe we would be soundly justified in requiring additional testing.*” Therefore, based on WSRO’s reply, no specific parameter ranges will be included and the language will be incorporated as originally proposed.

**NESHAPS/MACT** – The facility’s six lumber drying kilns (**ID Nos. K-1 through K-6**) currently operate under one Maximum Achievable Control Technology Standard. 40 CFR 63, Subpart DDDD “National Emission Standards for Hazardous Air Pollutants from Plywood and Composite Wood Products” applies to these sources. However per rule, these sources have no requirements other than initial notification. The Permittee has verified in the permit application that these initial notifications were submitted to DAQ on **April 26, 2006**. This permit renewal does not affect this status.

**PSD** – The facility is not currently subject to any Prevention of Significant Deterioration regulations. This permit renewal does not affect this status. However, it should be noted that the facility is classified as a PSD major source because potential emissions of VOCs exceed the 250-ton per year classification (~419 tons per year). Future modifications with potential increases of VOC emissions above the individual source threshold of 40 tons per year will trigger this facility into a full PSD review at that time.

**112(r)** – The facility is not subject to Section 112(r) of the Clean Air Act requirements because it does not store any of the regulated substances in quantities above the thresholds in the Rule. This permit renewal does not affect this status.

**CAM** – 40 CFR 64 requires that a continuous compliance assurance monitoring plan be developed for all equipment located at a major facility, that have pre-controlled emissions above the major source threshold, and use a control device to meet an applicable standard. The following table indicates the current emission source/control device relationships:

<b>Emission Source ID No.</b>	<b>Emission Source Description</b>	<b>Control Device ID No.</b>	<b>Control Device Description</b>
B-1	One wood fuel-fired boiler	MC-1	One multicyclone
B-2	One wood fuel-fired boiler	MC-2 MC-2A	Two multicyclones
B-3	One wood fuel-fired boiler	MC-3 MC-3A	Two multicyclones
B-4	One wood fuel-fired boiler	MC-4 MC-4A  ESP-4	Two multicyclones  One electrostatic precipitator
PM-2	One planer mill	C-2  BH-1	One cyclone  One bagfilter

The following table outlines the specific permit conditions for each source/control device arrangement and if the control device is installed to comply with that requirement:

<b>Emission Source ID No(s).</b>	<b>Control Device ID No(s).</b>	<b>Permit Condition(s)</b>	<b>Control Equipment Installed to Meet Permit Limit?</b>
B-1	MC-1	15A NCAC 2D .0504 15A NCAC 2D .0516 15A NCAC 2D .0521 15A NCAC 2D .1806 15A NCAC 2Q .0705 15A NCAC 2Q .0711	<b>Yes, particulate standard</b> No, sulfur dioxide standard No, not criteria pollutant No, not criteria pollutant No, not criteria pollutant No, not criteria pollutant
B-2	MC-2 MC-2A	15A NCAC 2D .0504 15A NCAC 2D .0516 15A NCAC 2D .0521 15A NCAC 2D .0524 15A NCAC 2D .1806 15A NCAC 2Q .0705 15A NCAC 2Q .0711	<b>Yes, particulate standard</b> No, sulfur dioxide standard No, not criteria pollutant No, fuel usage records No, not criteria pollutant No, not criteria pollutant No, not criteria pollutant

Emission Source ID No(s).	Control Device ID No(s).	Permit Condition(s)	Control Equipment Installed to Meet Permit Limit?
B-3	MC-3 MC-3A	15A NCAC 2D .0504 15A NCAC 2D .0516 15A NCAC 2D .0521 15A NCAC 2D .0524 15A NCAC 2D .1806 15A NCAC 2Q .0705 15A NCAC 2Q .0711	<b>Yes, particulate standard</b> No, sulfur dioxide standard No, not criteria pollutant No, fuel usage records No, not criteria pollutant No, not criteria pollutant No, not criteria pollutant
B-4	MC-4 MC-4A ESP-4	15A NCAC 2D .0516 15A NCAC 2D .0524 15A NCAC 2D .1806 15A NCAC 2Q .0705 15A NCAC 2Q .0711	No, sulfur dioxide standard <b>Yes, particulate standard</b> No, not criteria pollutant No, not criteria pollutant No, not criteria pollutant
PM-2	C-2 BH-1	15A NCAC 2D .0512 15A NCAC 2D .0521 15A NCAC 2D .1806 15A NCAC 2Q .0705 15A NCAC 2Q .0711	<b>Yes, adequate ductwork</b> No, not criteria pollutant No, not criteria pollutant No, not criteria pollutant No, not criteria pollutant

As indicated above, for each case the control equipment is installed to comply with a particulate matter standard. The Permittee estimates potential pre-control emissions of PM<sub>10</sub> from each source as follows:

**Boiler B-1** – Use of DAQ woodwaste combustion spreadsheet for a 19.1 million Btu per hour wood fuel fired boiler, a heat content of “wet wood” fuel of 5180 Btu per pound (based on 2000 emissions test), and 16,150 tons per year of fuel usage, equates to a potential PM<sub>10</sub> emission rate before controls of 19.12\* tons per year based on an emission factor of 0.237 pounds per million Btu. Well below the CAM applicability threshold. Therefore, CAM does not apply.

**Boiler B-2** – Use of DAQ woodwaste combustion spreadsheet for a 28.7 million Btu per hour wood fuel fired boiler, a heat content of “wet wood” fuel of 5180 Btu per pound (based on 2000 emissions test), and 24,268 tons per year fuel usage, equates to a potential PM<sub>10</sub> emission rate before controls of 24.92\* tons per year based on an emission factor of 0.203 pounds per million Btu. Well below the CAM applicability threshold. Therefore, CAM does not apply.

**Boiler B-3** – Use of DAQ woodwaste combustion spreadsheet for a 28.7 million Btu per hour wood fuel fired boiler, a heat content of “wet wood” fuel of 5180 Btu per pound (based on 2000 emissions test), and 24,268 tons per year fuel usage, equates to a potential PM<sub>10</sub> emission rate before controls of 20.21\* tons per year based on an emission factor of 0.161 pounds per million Btu. Well below the CAM applicability threshold. Therefore, CAM does not apply.

**Boiler B-4** – Use of DAQ woodwaste combustion spreadsheet for a 57.6 million Btu per hour wood fuel fired boiler, a heat content of “wet wood” fuel of 5180 Btu per pound (based on 2000 emissions test), and 48,704 tons per year fuel usage, equates to a potential PM<sub>10</sub> emission rate before controls of 20.64\* tons per year based on an emission factor of 0.007 pounds per million Btu. Well below the CAM applicability threshold. Therefore, CAM does not apply.

\*Boiler emission calculations are based upon the rated heat input, in million Btu per hour. A heat content of 5180 Btu per pound (based on the 2000 emission test) for wood residue is used to develop the process weight rate associated with the fuel transfer and fuel silos. The controlled filterable particulate emission factors for boilers **B-1**, **B-2**, and **B-3** were acquired from emission testing during November and December 2000. These emission factors were input into the NC DENR Woodwaste Combustion Emissions Calculator Revision G 6/01/2006 spreadsheet to calculate uncontrolled and controlled PM, PM<sub>10</sub>, and PM<sub>2.5</sub> emissions. Emissions testing for boiler **B-4** was conducted on May 9, 2008. Emissions are again estimated using DAQ spreadsheets.

**Planer mill (ID No. PM-2)** – Use of DAQ woodworking spreadsheet with a potential “in duct” woodwaste calculated at 9,200 pounds per hour from 46,000 maximum board feet per hour, 2.5 pounds PM per board foot, 8% total waste, 100% waste being vented to the ductwork, and 0 pounds per PM<sub>10</sub> per pound of total particulate from planing operations equates to no expected PM<sub>10</sub> emissions from this source. Therefore, CAM does not apply.

In order to clarify this position in the permit, the following “Non-applicable requirements” language has been included in the renewed permit as Section 2.3 A:

**2.3- Permit Shield for Nonapplicable Requirements**

- A. *One wood fuel-fired boiler (ID No. B-1) with associated multicyclone (ID No. MC-1)*
- One wood fuel-fired boiler (ID No. B-2) with associated multicyclones (ID Nos. MC-2 and MC-2A) installed in series*
- One wood fuel-fired boiler (ID No. B-3) with associated multicyclones (ID Nos. MC-3 and MC-3A) installed in series*
- One wood fuel-fired boiler (ID No. B-4) with associated multicyclones (ID Nos. MC-4 and MC-4A) and electrostatic precipitator (ID No. ESP-4) all in series*
- One planer mill (ID No. PM-2) with associated cyclone (ID No. C-2) in series with one bagfilter (ID No. BH-1)*

The following table provides a summary of limits and standards for the emission source(s) described above:

<b>Regulated Pollutant</b>	<b>Limits/Standards</b>	<b>Applicable Regulation</b>
-	Compliance Assurance Monitoring	15A NCAC 2D .0614

- 1. **15A NCAC 2D .0614: COMPLIANCE ASSURANCE MONITORING** - Pursuant to 15A NCAC 2Q .0512(a)(1)(B) “Permit Shield and Application Shield, with the issuance of this permit (06740T14), the following stipulation of non-applicability has been made:
  - a. 15A NCAC 2D .0614 does not apply to these sources (**ID Nos. B-1 through B-4, and PM-2**) because each source’s potential pre-control emissions do not exceed the major source thresholds for that pollutant. See 40 CFR 64.2(a)(3). Therefore, CAM has been determined to not be applicable to these specific sources or their associated control devices as described above.

## VII. Facility Wide Air Toxics

The facility is subject to both 15A NCAC 2Q .0711, Emission Rates Requiring a Permit and 15A NCAC 2D .1100, Control of Toxic Emissions. The Permittee has made a demonstration that facility-wide emissions of acetaldehyde are below the toxic pollutant emission rate of 6.8 pounds per hour. In addition, modeled emission rates for Acrolein, formaldehyde, and phenol have been established for the six lumber drying kilns (**ID Nos. K-1 through K-6**). Steve Moser of the WSRO states in his latest inspection report that the facility appears to be in compliance with each of these permit conditions. This permit renewal does not affect this status.

The permit also includes a specific condition for 15A NCAC 2Q .0705, Existing Facilities and SIC Calls. A modeling demonstration submitted on **August 30, 2006** and modified **February 22, 2007** has demonstrated that facility-wide emissions of toxics are either below their respective TPER or are in compliance with 2D .1100. This permit condition is the result of the facility being subject to Maximum Achievable Control Technology standards. 15A NCAC 2Q .0705 requires that the Permittee be in compliance with NC Air Toxics on the same deadline as it is required to be in compliance with its last known MACT. For this facility, Subpart DDDD represents the last MACT, excluding the one for combustion sources, to apply to the facility. This permit renewal does not affect this status.

## VIII. Facility Emissions Review

The following table represents the latest years emission inventory from the facility:

Pollutant(s)	2006 Actual Emissions (tpy)	2007 Actual Emissions (tpy)
CO	42.49	41.68
NO <sub>x</sub>	52.21	51.22
PM <sub>10</sub>	46.23	44.63
SO <sub>2</sub>	5.93	5.81
VOC	217.25	232.59
Total HAP/TAP	26.71	25.07

## IX. Stipulation Review

In his **May, 9, 2008** inspection report, Steve Moser of the WSRO noted the following issues/concerns:

1. “Conditions 2.1 D.2.a and d of the current air permit require the facility to monitor the emissions from the debarker once per month for visible emissions and document if these emissions are normal or above normal. These observations must be documented in a logbook....The bark stripping ring of this machine is totally enclosed, and we feel this machine is not likely to produce visible emissions, or if any visible emissions are produced, operating parameters would not vary (as in the case of a combustion source). This permit condition does not seem reasonable, and we suggest it be considered for removal upon reopening of the permit.” *Agree, condition will be removed as suggested.*

Steve also notes “Based on the inspection and data reviewed the facility appears to be in compliance.”

In addition as noted above in the history/background section of this Document, Steve Moser has commented that the renewed permit should be modified to require that the Permittee operate the ESP at voltages comparable to those used during the most recent stack test for particulate. *Agree, condition will be modified as suggested.*

#### **X. Public Notice/EPA and Affected State(s) Review**

Pursuant to 15A NCAC 2Q .0521, a notice of the DRAFT Title V Permit shall be placed in a newspaper of general circulation in the area where the facility is located. 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. Pursuant to 15A NCAC 2Q .0522, a copy of each permit application, each proposed permit and each final permit shall be provided to EPA. Also pursuant to 2Q .0522, a notice of the DRAFT Title V Permit shall be provided to each affected State at or before the time notice provided to the public under 2Q .0521 above. The State of Virginia and the Forsyth County Local Program are affected areas within 50 miles of the facility.

#### **XI. Conclusions, Comments, and Recommendations**

A professional engineer's seal was not required for this renewal.

A consistency determination was not required for this renewal.

WSRO recommends issuance of the permit and **was presented** with a DRAFT permit prior to notice and issuance (See History Section of this Document for a listing of dates).

RCO concurs with WSRO's recommendation to issue the renewed air permit.