

**Air Permit Review**

**Permit Issue Date: Draft October 29, 2010**

**Region:** Raleigh Regional Office  
**County:** Person  
**NC Facility ID:** 7300061  
**Inspector's Name:** Steven Carr  
**Date of Last Inspection:** 09/01/2010  
**Compliance Code:** 3 / Compliance - inspection

<b>Facility Data</b>	<b>Permit Applicability (this application only)</b>
<p><b>Applicant (Facility's Name):</b> Louisiana-Pacific Corp - Roxboro</p> <p><b>Facility Address:</b>  Louisiana-Pacific Corp - Roxboro  10475 Boston Road  Roxboro, NC 27573</p> <p><b>SIC:</b> 2493 / Reconstituted Wood Products  <b>NAICS:</b> 321219 / Reconstituted Wood Product Manufacturing</p> <p><b>Facility Classification: Before:</b> Title V <b>After:</b> Title V  <b>Fee Classification: Before:</b> Title V <b>After:</b> Title V</p>	<p><b>SIP:</b> N/A  <b>NSPS:</b> N/A  <b>NESHAP:</b> N/A  <b>PSD:</b> N/A  <b>PSD Avoidance:</b> N/A  <b>NC Toxics:</b> N/A  <b>112(r):</b> N/A  <b>Other:</b> 15A NCAC 2D .1109  <i>[112(j) – Part 2 MACT Hammer for Boilers &amp; Process Heaters]</i></p>

<b>Contact Data</b>			<b>Application Data</b>
<b>Facility Contact</b>	<b>Authorized Contact</b>	<b>Technical Contact</b>	<p><b>Application Number:</b> 7300061.09C  <b>Date Received:</b> 09/08/2009  <b>Application Type:</b> 112(j) Part I  <b>Application Schedule:</b> TV-Significant  <b>Existing Permit Data</b>  <b>Existing Permit Number:</b> 07760/T16  <b>Existing Permit Issue Date:</b> 05/12/2010  <b>Existing Permit Expiration Date:</b> 02/28/2013</p>
Ross Reed Plant Environmental Manager (336) 599-8080 10475 Boston Road Roxboro, NC 27574	Wayne Young Plant Manager (336) 599-8080 10475 Boston Road Roxboro, NC 27574	Ross Reed Plant Environmental Manager (336) 599-8080 10475 Boston Road Roxboro, NC 27574	

<p><b>Review Engineer:</b> Judy Lee</p> <p><b>Review Engineer's Signature:</b> _____ <b>Date:</b> _____</p>	<p style="text-align: center;"><b>Comments / Recommendations:</b></p> <p><b>Issue</b> 07760/T17  <b>Permit Issue Date:</b> _____  <b>Permit Expiration Date:</b> 02/28/2013</p>
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**1. Purpose of Application**

*Louisiana-Pacific Corp - Roxboro* located in Roxboro, Person County, North Carolina, Application number (No.) 7300061.09C, received on September 8, 2009, is a Part 2 MACT "Hammer" application for two wood fuel/recycled resinated wood fuel/natural gas-fired thermal oil heaters (40 million Btu per hour heat input rate each).

**2. Facility Description [insert from previous review]**

At the Roxboro plant, LP owns and operates an oriented strand-board (OSB) manufacturing facility. The typical size of OSB is 4 feet by 8 feet. The thickness of the boards ranges from 1/4 inch to 1 1/8 inches. The OSB manufacturing process consists of the following steps: (i) tree length logs are delivered to the mill and are debarked, (ii) waferizers reduce the logs into thin wafers that are dried in large triple pass rotary dryers heated by the bark burner and thermal oil heaters (TOH), (iii) wafers are blended with resins and wax, (iv) a large heated hydraulic press compresses the boards to the desired thickness, and (v) boards are trimmed to specification, labeled and packaged. The OSB is sold to domestic clients including Lowes, Home Depot and other building supply stores.

The facility operates 24 hours/day, 7 days/week, and 50 weeks/year. The facility shuts down operation once every week or two for approximately four hours to perform routine maintenance on the plant's equipment. Currently 143 employees work at the plant.

### 3. Application Chronology

Please see the attached Comprehensive Application Reports for 7300061.09C and email correspondence for more details.

### 4. Permit Modification Changes and ESM Discussion

Changes to LP's current permit (**permit number 07760T16**) for the proposed modification are summarized in the following table:

\*\*\*\*insert from permit

*ESM was modified accordingly during the review process.*

### 5. New Equipment/Change in Emissions and Regulatory Review

No new equipment or change in emissions are associated with this modification; however, due to new regulatory guidance the following two sources are being modified in the current permit:

ID Nos. TOH-1 and TOH-2

Primary Operating Scenario (POS)

two wood fuel/recycled resinated wood fuel/natural gas-fired thermal oil heaters (40 million Btu per hour heat input rate each) exhausting directly to the bark burner and indirectly supplying heat to the presses

In addition to state regulations, these sources are subject to the following federal regulations when operating under the POS:

- NSPS Subpart Dc
- MACT Subpart DDDD

Alternate Operating Scenario (AOS)

two wood fuel/recycled resinated wood fuel/natural gas-fired thermal oil heaters (40 million Btu per hour heat input rate each) exhausting to stacks while firing natural gas only

Due to new guidance during the AOS, the following sources will be subject to the requirements of 15A NCAC 2D .1109(c). This permit modification addresses the applicable requirements while operating under the AOS, including:

- 112(j) – Part 2 MACT Hammer for Boilers & Process Heaters

### Facility Emissions Review

As previously stated, there is no change in emissions for this modification. The following table represents the latest years' actual emissions from IBEAM, *Emissions Inventory: Annual Emissions Report* for inventory years 2007 and 2008, as well as the emissions from the most recent modification.

Pollutant	PSD/NSR Significant Emission Rates (tpy)	2008 Emissions Inventory (tpy)	2007 Emissions Inventory (tpy)	Techshield Proposed Emissions (tpy)
CO	100	41.25	128.6	NR
NOx	40	84.54	144.12	NR

Pollutant	PSD/NSR Significant Emission Rates (tpy)	2008 Emissions Inventory (tpy)	2007 Emissions Inventory (tpy)	Techshield Proposed Emissions (tpy)
PM		48.33	116.94	NR
PM <sub>10</sub> /PM <sub>2.5</sub>	15	46.74	95.86	NR
SO <sub>2</sub>	40	7.12	5.58	NR
VOC (ozone precursor)	40	88.11	148.86	1.02
HAP		27.54	53.07	0.88
TAP		15.87	18.00	0.16

NR = Not Reported

**In addition to requirements provided in Section 3 – General Conditions, the facility is currently subject to the following regulations:**

- 15A NCAC 2D .0503, Particulates from Fuel Burning Indirect Heat Exchangers (TOH AOS)
- 15A NCAC 2D .0512, Particulates from Miscellaneous Wood Products Finishing
- 15A NCAC 2D .0515, Particulates from Miscellaneous Industrial Processes
- 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 Part 60 Subpart Dc & Subpart Kb)
- 15A NCAC 2D .0958, Work Practices for Sources of Volatile Organic Compounds
- 15A NCAC 2D .1100, Control of Toxics Air Pollutants
- 15A NCAC 2D .1111, Maximum Achievable Control Technology (40 CFR 63, Subpart DDDD and QQQQ)
- 15A NCAC 2D .1806, Control and Prohibition of Odorous Emissions
- 15A NCAC 2Q .0317, Avoidance Conditions for 15A NCAC 2D .0530, PREVENTION OF SIGNIFICANT DETERIORATION
- 15A NCAC 2Q .0705, Existing Facilities and SIC Calls
- 15A NCAC 2Q .0711, Emission Rates Requiring a Permit

***Regulations reviewed/added/updated/modified significantly as part of this modification are:***

2D .0503 “Particulates from Fuel Burning Indirect Heat Exchangers”

Maximum heat input of all fuel burning indirect heat exchangers,  $Q = [40 + 40] = 80$  million Btu per hour heat input capacity, was used to determine the allowable emission limit,  $E =$  pounds per million Btu heat input for the affected process heaters, (ID Nos. TOH-1 and TOH-2) while operating under the Alternative Operating Scenario (AOS).

Using the following equation:

$$E = 1.09Q^{-0.2594} = 1.09(80)^{-0.2594} = 0.349756 \text{ lbs/million Btu} = 0.35 \text{ lbs/million Btu}$$

Where,  $E$  = allowable emission rate in pounds per million Btu, and  
 $Q$  = maximum heat input in million Btu per hour

Worst-case total particulate matter emissions are estimated to be 0.00798 pounds per million Btu while firing natural gas (see calculation below). Based on EPA’s AP-42 Chapter 1 Introduction to External Combustion Sources, 1.4. Natural Gas Combustion, 1.4.1. General: The average gross heating value of natural gas is approximately 1,020 British thermal units per standard cubic foot (Btu/scf), usually varying from 950 to 1,050 Btu/scf. The Particulate Matter (PM) Emission factor provided in Table 1.4-2. Emission Factors for Criteria Pollutants and Greenhouse Gases from Natural Gas Combustion, is 7.6 lb/10<sup>6</sup> scf PM (Total):

$$\frac{\left(7.6 \frac{lbPM_{total}}{mmscf}\right)}{1,020 \frac{MMBtu}{mmscf}} = 0.007451 \frac{lbPM_{total}}{mmBtu} \text{ Average Emission Rate for natural gas combustion}$$

<sup>1</sup>Appendix A of AP-42 has a typical heating value for natural gas of 1,050 Btu/scf

$$\frac{\left(7.6 \frac{lbPM_{total}}{mmscf}\right)}{1,050 \frac{MMBtu}{mmscf}} = 0.007238 \frac{lbPM_{total}}{mmBtu}$$

Because worst-case PM emission rates are estimated to be less than the allowable PM emission rate, no monitoring, recordkeeping, or reporting shall be required to demonstrate compliance with this limitation. Compliance is demonstrated with this regulation since estimated emissions are less than the allowable.

15A NCAC 2D .0516 “Sulfur Dioxide Emissions from Combustion Sources”

This regulation applies to sulfur dioxide (SO<sub>2</sub>) emissions from any source of combustion that is discharged from any stack. Allowable emissions per this regulation are 2.3 pounds per million Btu heat input. However, a source subject to an emission standard for sulfur dioxide in Rules 2D .0524, .0527, .1110, .1111, .1205, .1206, or .1210 of this Subchapter shall meet the standard in that rule.

However, 2D .0524 does not specify an emission standard for sulfur dioxide from natural gas combustion; therefore, by default the facility is subject to 2D .0516.

The affected boilers are subject to the 2.3 pounds per million Btu heat input allowable emissions standard under 2D .0516.

In addition, AP-42 Chapter 1 Introduction to External Combustion Sources, Table 1.4-2, EMISSION FACTORS FOR CRITERIA POLLUTANTS AND GREENHOUSE GASES FROM NATURAL GAS COMBUSTION, the SO<sub>2</sub> Emission Factor (lb/10<sup>6</sup> scf) = 0.6; thus, SO<sub>2</sub> emissions from natural gas are estimated to be less than 2.3 lb/MMBtu, as follows:

$$\frac{\left(0.6 \frac{lbSO_2}{mmscf}\right)}{1,020 \frac{MMBtu}{mmscf}} = 0.0006 \frac{lbSO_2}{mmBtu}$$

Because worst-case SO<sub>2</sub> emission rates are estimated to be less than the allowable SO<sub>2</sub> emission rate, no monitoring, recordkeeping, or reporting shall be required to demonstrate compliance with this limitation.

Compliance is demonstrated with this regulation since estimated emissions are less than the allowable.

2D .0521 “Control of Visible Emissions”

This Rule shall apply to all fuel burning sources and to other processes that may have a visible emission. However, sources subject to a visible emission standard in Rules .0506, .0508, .0524, .0543, .0544, .1110, .1111, .1205, .1206, .1210, or .1211 of this Subchapter shall meet that standard instead of the standard contained in this Rule.

However, 2D .0524 does not specify an emission standard for visible emissions from natural gas combustion; therefore, by default the facility is subject to 2D .0521.

(d) For sources manufactured after July 1, 1971, visible emissions shall not be more than 20 percent opacity when averaged over a six-minute period. However, except for sources which are required to install, operate, and maintain continuous opacity monitors, six-minute averaging periods may exceed 20 percent opacity if: (1) No six-minute period exceeds 87 percent opacity; (2) No more than one six-minute period exceeds 20 percent opacity in any hour; and (3) No more than four six-minute periods exceed 20 percent opacity in any 24-hour period.

Because natural gas firing is associated with inherently low visible emissions, no monitoring, recordkeeping, or reporting shall be required to demonstrate compliance with this limitation.

**15A NCAC 2D .1109 –Case-by-Case MACT** – 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.

On September 14, 2009, 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.

No control technologies for the control of CO, metals, Hg, or HCl were identified for natural gas fired boilers in the state of North Carolina, nor were any such technologies identified in a North Carolina query using U.S. EPA’s Air Control Net software (v4.1). The NC DAQ has determined that MACT is the use of best work practice standards for natural gas combustion sources of this size, consistent with the provisions in CAA § 112(d)(2)(D). Best work practice standards in this case shall include the annual inspection and maintenance of the boiler as follows:

*To assure compliance, the Permittee shall perform an annual boiler inspection and maintenance as recommended by the manufacturer, or as a minimum, the inspection and maintenance requirement shall include the following:*

- i. Inspect the burner, and clean or replace any components of the burner as necessary;*
- ii. Inspect the flame pattern and make any adjustments to the burner necessary to optimize the flame pattern; and,*
- iii. Inspect the system controlling the air-to-fuel ratio, and ensure that it is correctly calibrated and functioning properly.*

*The Permittee shall conduct at least one tune-up per calendar year to demonstrate compliance with this requirement. The Permittee shall be deemed in noncompliance with 15A NCAC 2D .1109 if the affected boilers are not inspected and maintained as required above.*

In addition, the Permittee will be required to record the results of the annual inspection in a logbook (written or electronic format), which shall be retained on-site and made available to an authorized representative upon request.

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

**NSPS** – The facility is currently subject to NSPS requirements:

- Subpart Dc for two thermal oil heaters (ID Nos. TOH-1 and TOH-2) – POS only
- Subpart Kb for six volatile organic liquid storage tanks (12,000 gallon capacity each), which are now considered insignificant due to new Subpart Kb exemptions October 15, 2003, Federal Register (Volume 68, No. 199).

This permit modification does not require NSPS analysis.

**NESHAPS/MACT** – The potential emissions of HAP exceeds the major source thresholds of 25 tpy of any combination of HAPs and 10 tpy of any single HAP; therefore, the facility is required to comply with MACT Standards.

During this modification we are addressing 2D .1109 –Case-by-Case MACT, as indicated in Section 5 above. All applicable requirements associated with emission standards, performance testing, monitoring, record keeping, and reporting will be included in the revised permit.

**Attainment Status**

Based on the EPA’s December 26, 2007 publication in the Federal Register, Vol. 72, No. 246, Approval and Promulgation of Implementation Plans and Designation of Areas for Air Quality Planning Purposes; North Carolina; Redesignation of the Raleigh-Durham-Chapel Hill 8-Hour Ozone Nonattainment Area to Attainment for Ozone, Person County was re-designated as ATTAINMENT. No permit change is required.

**PM emissions** – Based on NC DAQ’s Planning and Attainment for PM<sub>2.5</sub> Nonattainment Areas, the only counties designated as non attainment are Catawba, Davidson and Guilford.

**PSD/NAAQS**

The facility is currently classified as a ***MINOR*** stationary source for the purpose of the Prevention of Significant Deterioration (PSD) permitting program (see 15A NCAC 2D .0530). The facility’s permit currently contains PSD avoidance limits of less than 250 tons per year (tpy) each for volatile organic compounds (VOC) emissions, particulate matter (PM/PM<sub>10</sub>) emissions, nitrogen oxides (NOx) emissions and carbon monoxide (CO) emissions.

**PSD** – Person County has been triggered for PSD increment tracking for PM<sub>10</sub> and SO<sub>2</sub>. However, there are NO significant increases in emissions associated with this modification.

**112(r)** – The facility is not subject to Section 112(r) of the Clean Air Act requirements because it does not store, process or use any of the 112 (r) regulated substances in quantities above the thresholds in the Rule.

**CAM** – A Compliance Assurance Monitoring (CAM) (40 CFR Part 64) determination is not required for this modification.

**7. Facility Wide Air Toxics**

The facility must comply with the emission limitations and other requirements of 2D .1100 and 2Q .0711.

Once sources at a facility that are subject to a MACT standard trigger their “last MACT”, the Permittee must submit a permit application that includes an evaluation for all toxic air pollutants covered under 15A NCAC 2D .1104 for all sources at the facility, excluding those sources exempt from evaluation under 15A NCAC 2Q .0702. Please see discussion in previous review for issued Permit No. 07760T16.

**8. Statement of Compliance**

Mr. Steven Carr, Raleigh Regional Office (RRO), last inspected the facility on September 1, 2010.

[Insert from inspection report]

**INSPECTION SUMMARY:** On September 1, 2010, I (Steve Carr) arrived at 1:45 p.m. at the site to perform a compliance inspection. There were no visible emissions, odors, or deposition observed. We met with Mr. Ross Reed, Plant Environmental Manager, to conduct a compliance inspection. Upon my arrival on site, we all sat down to review all of the specific conditions in the facility’s current air permit and evaluate the facility’s record keeping procedures. Afterwards, Mr. Reed directed us on a tour of the facility where we observed all of the plant’s equipment.

Overall, the facility appeared to be operating well from an air quality standpoint on the day of the inspection. Comments about observations made during the inspection are provided below for each of the emission sources and specific conditions listed in the facility's current air permit.

**FIVE YEAR ENFORCEMENT HISTORY:** Louisiana-Pacific has been issued one Notice of Violation (NOV) according to DAQ records. On June 20, 2006, the company was issued an NOV for a late submittal of their 2005 annual compliance certification. No civil penalties were assessed against the company for this violation.

**CONCLUSIONS/RECOMMENDATIONS:** Based on observations made during the September 1, 2010 inspection, Louisiana-Pacific appeared to be in compliance with the requirements of their Title V permit. It is recommended that the facility be inspected again in one year.

## 9. Stipulation Review

Raleigh Regional Office (RRO) had the following comments:

- *Insert comments here*

Based on email response from Mr. Charles McEachern, RRO on XXXX.

## 10. 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 pursuant 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.

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

***Public Notice to the EPA and Affected States of the DRAFT Title V Permit began on XXXX, 2010 and ended on XXXX, 2010.***

Comments Received on the Draft Permit –

- *Insert comments here*

***Public Notice of the DRAFT Title V Permit ran from XXXX, 2010 to XXXX, 2010.***

Comments Received on the Draft Permit –

- *Insert comments here*

## 11. Conclusions, Comments, and Recommendations

- ✓ A professional engineer's seal was not required for this modification
- ✓ A consistency determination was not required for this modification.
- ✓ RRO recommends issuance of the permit and DOES request a DRAFT permit prior to issuance as specified under Section 9 above. All of RRO's recommends have been addressed at this time.
- ✓ RCO concurs with RRO's recommendation to issue the revised air permit No. 07760T17.

A draft permit and review were emailed to Mr. McEachern, RRO on October XX, 2010 for review.

A draft permit was emailed to LP on October XX, 2010 for review and comments.

**Recommendations**

This permit modification application for LP located in Roxboro, Person 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. 07760T17**