

**NORTH CAROLINA DIVISION OF
AIR QUALITY**

Air Permit Review

Region: Fayetteville Regional Office
County: Montgomery
NC Facility ID: 6200015
Inspector's Name: Robert Kennedy
Date of Last Inspection: 03/10/2005
Compliance Code: 3/In Compliance - Inspection

Permit Issue Date:

Facility Data			Permit Applicability (this application only)	
Applicant (Facility's Name): Jordan Lumber & Supply Co Facility Address: Jordan Lumber & Supply Co 1939 Highway 109 South Mt Gilead, NC 27306 SIC: 2421 / Sawmills & Planing Mills General NAICS: 321912 / Cut Stock, Resawing Lumber, and Planing Facility Classification: Before: Title V After: Title V Fee Classification: Before: Title V After: Title V			SIP: NSPS: NESHAP: PSD: PSD Avoidance: NC Toxics: 112(r): Other:	
Contact Data			Application Data	
Facility Contact	Authorized Contact	Technical Contact	Application Number: 6200015.05B Date Received: 09/30/2005 Application Type: Renewal Application Schedule: TV-Renewal Existing Permit Data Existing Permit Number: 03469/T14 Existing Permit Issue Date: 11/06/2002 Existing Permit Expiration Date: 02/28/2006	
Jay Jordan (910) 439-6151 P O Box 98 Mt. Gilead NC, 27306	Robert Jordan III Co-Owner (910) 439-6121 P O Box 98 Mount Gilead NC, 27306	Jay Jordan (910) 439-6151 P O Box 98 Mt. Gilead NC, 27306		
Review Engineer: William Willets Review Engineer's Signature: _____ Date: _____		Comments / Recommendations: Issue 03469/T15 Permit Issue Date: Permit Expiration Date:		

1. Purpose of Application

This revision is for the renewal of an existing Title V permit pursuant to 2Q .0513. The existing Title V permit (03469T15) was issued on November 4, 2005 and is currently scheduled to expire on February 28, 2006. The renewal application was received on September 30, 2005.

2. Facility Description

Jordan Lumber & Supply Company (Jordan) is a large sawmill that produces dimension lumber from southern yellow pine. Boilers are fueled on hardwood bark that is brought in from chip mills. Southern yellow pine logs are brought to site, and cut into lumber by one of two sawmills. The old saw mill is for large logs; the new sawmill is for smaller logs. All wood waste is dropped and conveyed; nothing is pneumatically transported, thus no emissions. Lumber is then sent to one of 7 kilns. The kilns are steam-heated from four hardwood-bark fired boilers. Chips, sawdust and bark are sold. The outer slabs from the sawmill are chipped at the end of the sawmill production line; miscellaneous pieces (off-spec, rejected) are ground in a tub grinder near the new sawmill. Dried lumber is sent through the planer for final dimension cutting. Planer dust and chips from a wood hog beside the planers are pneumatically conveyed to a silo, controlled by a fabric filter.

This facility is a Title V facility because facility-wide PM-10, CO and VOC emissions are each greater than 100 tons per year. The facility also has potential emissions of HAPs greater than 10 tons per year (single HAP) and 25 tons per year (aggregate HAPs). Primary HAP constituents include methanol, formaldehyde and phenol.

3. Application Chronology

September 30, 2005 – Renewal application was received by the Division of Air Quality (DAQ), Raleigh Central Office (RCO).

4. Permit Modification/Changes

The initial Title V permit (03469T13) was issued on March 13, 2001. Subsequent to the initial Title V permit, two modifications were issued as permits 03469T14 and 03469T15.

Permit No. 03469T14 added a kiln (ID No. K-6) and allowed restarting a kiln (ID No. K-7) and converting it from direct fired to steam heated. The permit modification:

- removed the testing requirement for boiler B04 as testing was completed,
- removed reference to 2Q .0711 for acetaldehyde and methyl ethyl ketone as it was believed that the PTE for all permitted equipment was below the TPER levels,
- added a 2D .0530 PSD avoidance condition for kilns 5,6 & 7 and
- added modeled 2D .1100 rates for formaldehyde and phenol for kilns 6 & 7 and revised rates for kilns 1 through 5.

Permit No. 03469T15 added one new steam heated drying kiln, one new natural gas/landfill gas-fired boiler (ID No. B05), and allowed conversion of two existing steam heated drying kilns (ID Nos. K-1 and K-2) to direct wood-fired drying kilns. The permit modification:

- added SIP, 40 CFR Part 60 Subpart Dc and 40 CFR Part 63 Subpart DDDDD language for the new natural gas/landfill gas-fired boiler,
- added PSD BACT limits for new PSD affected sources and sources that relaxed previous PSD avoidance limits,
- added 40 CFR Part 63 Subpart DDDD language for the new kiln,
- added PSD avoidance limits for PM, PM-10, NO_x and CO and
- revised North Carolina toxic air pollutant limits based on new modeling and emission factors.

The following table represents the changes to the current Title V permit:

Page No.	Condition No.	Change
Cover Letter	NA	Updated Permit number, dates and removed the reference to Part II.
Page 1	Title Page	Updated Permit and application numbers, dates and removed the reference to Part II.
Page 2	Table of Contents	Removed the reference to Part II.
Page 20	Part I Section 3	Updated all General Conditions
Page 21	Part II	Removed Part II

5. Regulatory Review

The facility is subject to the following regulations:

2D .0503 "Particulates from Fuel Burning Indirect Heat Exchangers"*

2D .0504 "Particulates from Wood Burning Indirect Heat Exchangers"

2D .0512 "Particulates From Wood Products Finishing Plants"

2D .0515 "Particulates From Miscellaneous Industrial Processes"*

2D .0516 "Sulfur Dioxide Emissions from Combustion Sources"

2D .0521 "Control Of Visible Emissions"

2D .0524 "New Source Performance Standards"*

2D .0530 "Prevention of Significant Deterioration"*

2D .0958 "Work Practices for Sources of Volatile Organic Compounds"

2D .1100 "Control of Toxic Air Pollutants"*

2D .1111 "Maximum Achievable Control Technology"*

2D .1806 "Control And Prohibition of Odorous Emissions"* (originally 2D .0522)

2Q .0317 "Avoidance Conditions"*

*Rules marked with an asterisk are newly applicable or have changed significantly from the initial Title V permit and are reviewed here.

2D .0503 "Particulates from Fuel Burning Indirect Heat Exchangers"

This rule is applicable to the natural gas/landfill gas-fired 77.6 mmBtu/hr boiler (ID No. B05). The emission limit under this rule is defined by the equation $E = 1.090 Q^{-0.2594}$, where E is the allowable particulate emission rate in lb/mmBtu and Q is the maximum heat input in mmBtu/hr. For this boiler, the allowable particulate emission rate is 0.35 lb/mmBtu. From AP-42 Table 1.4-2 dated 1998, the particulate emission factor for natural gas combustion in small boilers (< 100 mmBtu/hr) is 1.9 lb/10⁶ scf. Dividing that number by 1,020 per footnote a of the table results in an emission rate of 3.4×10^{-4} lb/mmBtu. As such, when firing only natural gas or landfill gas, this boiler will comply with 2D .0503.

2D .0515 "Particulates From Miscellaneous Industrial Processes"

This rule is applicable to the two gasified wood-fired lumber kilns (ID Nos. K-1 and K-2). The emission limit under this rule is defined by the equation $E = 4.1 P^{0.67}$, where E is the allowable particulate emission rate in lb/hr and P is the process rate in tons/hr (tph). For each of these kilns, the process rate of 5.96 tph is calculated from a 30-hour charge time for 143,000 board feet of southern yellow pine with a density of 2.5 pounds per board foot. The allowable particulate emission rate is then 13.6 lb/hr. From the October 2005 preliminary PSD determination, the particulate emission factor for the gasified wood-fired kilns is 0.14 lb/1000 board feet or 0.67 lb/hr. Therefore compliance with 2D .0515 is indicated.

2D .0524 "New Source Performance Standards"

In addition to the three wood-fired boilers that were previously subject to this rule, the rule is also applicable to the natural gas/landfill gas-fired boiler. No emission standards or monitoring apply to this boiler. Only reporting and recordkeeping requirements including those under 40 CFR Part 60 Subpart A "General Provisions" apply.

2D .0530 "Prevention of Significant Deterioration"

The June 2005 PSD permit application resulted in BACT limits for VOCs from the new kiln and from kilns relieved of their PSD avoidance conditions. The BACT limits are 3.97 lb VOC/million board feet, as pinene for the steam heated kilns and 4.29 lb VOC/MBF, as pinene for the gasified wood-fired kilns. No add-on controls are required.

2D .1100 "Control of Toxic Air Pollutants"

As a result of revised emission factors for lumber drying kilns, emission estimates for North Carolina toxic air pollutants (TAPs) from the Jordan Lumber facility were revised. Air dispersion modeling was performed to demonstrate that 2D .1104 acceptable ambient level guidelines for the relevant TAPs would not be exceeded. Modeled emission rates were included in the permit as state only enforceable emission limits.

2D .1111 "Maximum Achievable Control Technology"

This rule is currently applicable to both the natural gas/landfill gas-fired boiler and to the new kiln (ID No. K-8). Subpart DDDDD of 40 CFR Part 63 requires the boiler to meet a CO emission limit of 400 ppm on a dry basis corrected to 3 percent oxygen (three run average). Testing is required to demonstrate compliance with the MACT standard. Additionally the Permittee must develop a start-up, shutdown and malfunction plan in accordance with 40 CFR 63.7540(c). Recordkeeping and reporting requirements also apply.

The new steam-heated kiln is only subject to the notification requirement under Subpart DDDD.

2D .1806 "Control And Prohibition of Odorous Emissions"

The initial Title V permit cited state only enforceable odor requirements under 2D .0522. This rule was repealed in April 2001 and replaced with 2D .1806. This new rule is part of a suite of odor control rules that provide for the application of maximum feasible controls for odor emissions when substantiated complaints occur. The new rule is also state only enforceable.

2Q .0317 "Avoidance Conditions"*

The initial Title V permit contained PSD avoidance for VOC emissions from existing kilns. The June 2005 PSD application relaxed those limits and established BACT limits for VOC emissions from the kilns. In addition, the June 2005 application established PSD avoidance limits for PM, PM-10, NO_x and CO to avoid triggering those pollutants for PSD review. The limits were based on the facility's baseline criteria pollutant emissions plus a less than significant increase in emissions for each of the affected pollutants.

6. NSPS, NESHAPS, PSD, Attainment Status, 112(r), CAM

NSPS

Specifics of these rules were discussed above.

NESHAP/MACT

Specifics of these rules were discussed above.

PSD

This facility is major Prevention of Significant Deterioration (PSD) source.

Attainment Status

This facility is located in Montgomery County, which is in attainment for all criteria pollutants.

112(r)

This facility is not subject to Section 112(r) of the Clean Air Act because they do not store more than the threshold amount of any regulated chemical on site.

CAM

Compliance Assurance Monitoring (CAM) is not applicable to this facility. The only sources with active control devices are the four wood-fired boilers (ID Nos. B01 through B04) controlled by multicyclones. Three of the pyrolytic-type boilers is rated at 26.8 mmBtu/hr and the fourth is rated at 28.8 mmBtu/hr. From AP-42 Table 1.6-1, the maximum uncontrolled PM-10 emission factor for bark and wet wood 0.50 lb/mmBtu. At a heat input rate of 28.8 mmBtu/hr for 8,760 hr/yr, potential uncontrolled PM-10 emissions are 63 tpy. Thus CAM is not applicable to the wood-fired boilers.

7. Facility Wide Air Toxics

Specifics of these rules were discussed above.

8. Facility Compliance Status

The facility was inspected by Bob Kennedy, FRO on March 10, 2005. The facility "... appeared to be in compliance with all requirements outlined in air permit 03469T14."

9. Statement of Compliance

The DAQ has reviewed the compliance status of this facility. Based on the latest inspection the facility was in compliance with all applicable requirements. The applicant has certified that the facility will be in compliance with all applicable requirements at the time of permit issuance and will continue to comply with these requirements. The applicant has also certified that the facility will be in compliance with any applicable requirements taking effect during the term of the permit and will meet such requirements on a timely basis.

10. Facility Emissions Review

Potential facility-wide emissions presented in the June 2005 PSD application are shown below.

Pollutant	Potential Emissions (tpy)
CO	275
NO _x	107
PM (TSP)	127
PM-10	116
PM-2.5	75.7
SO ₂	10.5
VOC	748
Largest HAP (methanol)	35.8
Total HAPs	58.5

11. Stipulation Review

All stipulations are standard for this type of facility.

12. Public Notice / EPA and Affected State Review

Pursuant to 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 2Q .0522, a copy of each permit application, each proposed permit and each final permit pursuant shall be provided to EPA.

13. Conclusions, Comments, and Recommendations

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

A consistency determination was not required for this renewal.

FRO recommends issuance of the permit per Robert Kennedy's P&O dated October 26, 2005. The P&O contained two recommendations for the Title V renewal. First, FRO recommended testing one of the

pyrolytic boilers (e.g. B01) and the stoker boiler (B04) during the permit term. Second, FRO recommends specifying a date by which the permittee must have the MACT SSM plan in place.

RCO concurs with the inclusion of particulate matter testing for the wood-fired boilers.

The requirements for startup, shutdown and malfunction (SSM) plans is spelled out in 40 CFR §63.6(e)(3) and include the development of an SSM plan by the compliance date for the relevant standard. As such, RCO will include the requirement that the plan be developed no later than the initial startup of the boiler.

FRO also commented on the emission factors (and consequently the BACT limits) for the lumber kilns. It appears that a possible error in the draft T15 permit, Section 2.1 E was corrected to make the emission factors consistent. All reference to steam-heated kilns use the current NCASI emission factor of 3.9 lb VOC/mbft and gasified wood-fired kilns use 4.29 lb VOC/mbft.

RCO concurs with FRO's recommendation to issue air permit.