

## Application Review

**Issue Date: DRAFT**

**Region:** Fayetteville Regional Office  
**County:** Montgomery  
**NC Facility ID:** 6200015  
**Inspector's Name:** Jeffrey D. Cole  
**Date of Last Inspection:** 07/09/2020  
**Compliance Code:** 3 / Compliance - inspection

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|---|--|
| <p style="text-align: center;"><b>Facility Data</b></p> <p><b>Applicant (Facility's Name):</b> Jordan Lumber &amp; Supply, Inc.</p> <p><b>Facility Address:</b><br/>                 Jordan Lumber &amp; Supply, Inc.<br/>                 1959 Highway 109 South<br/>                 Mt. Gilead, NC 27306</p> <p><b>SIC:</b> 2421 / Sawmills &amp; Planing Mills General<br/> <b>NAICS:</b> 321912 / Cut Stock, Resawing Lumber, and Planing</p> <p><b>Facility Classification: Before:</b> Title V <b>After:</b> Title V<br/> <b>Fee Classification: Before:</b> Title V <b>After:</b> Title V</p> | <p style="text-align: center;"><b>Permit Applicability (this application only)</b></p> <p><b>SIP:</b> 15A NCAC 02D .0503, .0504, .0512, .0516, .0521, .0524, .0530, .0530(u), .1111, .1806<br/> <b>NSPS:</b> Dc<br/> <b>NESHAP:</b> DDDDD, ZZZZ, DDDD<br/> <b>PSD:</b><br/> <b>PSD Avoidance:</b> 02Q .317 for PM, PM10, NOx, CO<br/> <b>NC Toxics:</b><br/> <b>112(r):</b><br/> <b>Other:</b></p> |
|---|--|

| Contact Data   |  |   | Application Data   |
|--|--|---|--|
| <p style="text-align: center;"><b>Facility Contact</b></p> Susan Huneycutt<br>Executive Assistant<br>(910) 439-8119<br>PO Box 98<br>Mt. Gilead, NC 27306 | <p style="text-align: center;"><b>Authorized Contact</b></p> Robert Jordan IV<br>Vice President / COO<br>(910) 439-8108<br>PO Box 98<br>Mt. Gilead, NC 27306 | <p style="text-align: center;"><b>Technical Contact</b></p> Susan Huneycutt<br>Executive Assistant<br>(910) 439-8119<br>PO Box 98<br>Mt. Gilead, NC 27306 | <p><b>Application Number:</b> 6200015.20A, 6200015.22A<br/> <b>Date Received:</b> 08/18/2020 and 02/15/2022<br/> <b>Application Type:</b> Renewal, minor modification<br/> <b>Application Schedule:</b> TV-Renewal</p> <p style="text-align: center;"><b>Existing Permit Data</b></p> <p><b>Existing Permit Number:</b> 03469/T29<br/> <b>Existing Permit Issue Date:</b> 02/09/2021<br/> <b>Existing Permit Expiration Date:</b> 02/28/2021</p> |

**Total Actual emissions in TONS/YEAR:**

| CY   | SO2  | NOX   | VOC    | CO     | PM10  | Total HAP | Largest HAP                          |
|------|------|-------|--------|--------|-------|-----------|--------------------------------------|
| 2018 | 7.41 | 82.12 | 454.38 | 102.01 | 63.55 | 43.66     | 20.32<br>[Methanol (methyl alcohol)] |
| 2017 | 6.50 | 79.65 | 442.78 | 81.75  | 80.33 | 41.66     | 19.94<br>[Methanol (methyl alcohol)] |
| 2016 | 2.78 | 32.79 | 438.39 | 31.17  | 45.51 | 36.12     | 19.13<br>[Methanol (methyl alcohol)] |
| 2015 | 5.47 | 52.25 | 490.51 | 51.20  | 50.06 | 43.01     | 22.86<br>[Methanol (methyl alcohol)] |
| 2014 | 5.57 | 55.81 | 443.59 | 54.29  | 51.01 | 39.80     | 20.51<br>[Methanol (methyl alcohol)] |

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| <p><b>Review Engineer:</b> Jenny Sheppard</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> 03469/T30<br/> <b>Permit Issue Date:</b> DRAFT<br/> <b>Permit Expiration Date:</b> DRAFT</p> |
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**1. Purpose of Application**

Jordan Lumber & Supply, Inc. (Jordan) is currently operating under permit 03469T30, which was issued on February 9, 2021, and expired on February 28, 2021. The renewal application was received on August 18, 2020, or at least six months prior to the expiration date. The existing permit continues to be effective until the issuance of this permit renewal pursuant to 15A NCAC 02Q .0513. The permit application is deemed complete for processing. An additional application was received on February 18, 2022, requesting kiln 1 be changed from direct gasified wood-fired to steam heated and the removal of kiln 8. This application will be consolidated into the renewal.

**2. Facility Description**

Jordan produces dimension lumber from green southern yellow pine. The logs divided and sent to one of two sawmills, the logs are debarked and then cut to specified lengths. The rough-cut lumber from the sawmills is stacked and dried in either four steam-heated kilns (ID Nos. K-1, K-3 through K-5) or one indirect steam-heated continuous double track kiln (ID No. K-6) or one direct gasified wood-fired lumber kilns (ID No. K-2) or one direct gasified wood-fired/natural gas-fired continuous kiln (ID No. K-7). The green lumber is dried in the kilns for 18-24 hours, depending on the initial moisture content, age, and size of the wood. The dried lumber is finished by planning and trimming in two planer mills (ID Nos. P01 and P02).

Bark from the logs is sold to customers that process it into landscaping material. Scrap lumber is ground into chips and sold to Unilin. The remaining green wood chips and planer shavings are sold and shipped off site as byproducts.

Steam for the steam-heated kilns (ID Nos. K-1, K-3 through K-6) is provided by four wood-fired boilers (ID Nos. B01 through B04) and natural gas-fired boiler (ID No. B05). The wood-fired boilers are fueled by hardwood bark that is brought in from chip mills.

**3. History/Background/Application Chronology**

|                    |   |
|--------------------|---|
| March 7, 2016      | Renewal and Significant modification issued 03469T23 by Betty Gatano.   |
| August 31, 2016    | Significant Part I Modification issued 03469T24 by Betty Gatano, covert kiln K-7 to direct gasified wood/natural gas-fired continuous lumber kiln.  |
| October 23, 2017   | Significant Part II Modification issued 03469T25 by Betty Gatano, public notice for kiln K-7 and updated BACT limits for kilns (ID Nos. K-1 through K-8)  |
| November 8, 2018   | TV Minor Modification issued 03469T26 by Gautam Patnaik, add electrostatic precipitators (ID Nos. ESP-1 and ESP-2) to the boilers (ID Nos. B01 through B04).  |
| March 29, 2019     | PSD/NSR Application issued 03469T27 Gautam Patnaik/Booker Pullen, convert kiln K-6 from batch operation to continuous.  |
| August 18, 2020    | Renewal application submitted   |
| October 30, 2020   | TV Administrative Amendment issued 03469T28 by Gautam Patnaik, request to correct the heat input rate for boiler (ID No. B04) changed in error in the issuance of T26.  |
| February 9, 2021   | PSD/NSR application issued 03469T29 by Betty Gatano, request to increase production in kiln K-7.  |
| September 15, 2021 | Requested confirmation on correct name for the facility, permit has Jordan Lumber & Supply, Co however, Secretary of State and facility letterhead have the name listed as Jordan Lumber & Supply, Inc. Confirmed by Susan Huneycutt of Jordan Lumber & Supply, Inc. on September 16, 2021. |

December 17, 2021 Draft renewal permit meeting with supervisor, concern about not receiving permit modification request for lumber kiln 1 (ID No. K-1, re permit as steam heated) and lumber kiln 8 (ID No. K-8, be removed as it was never constructed) as was indicated would be submitted by the facility in the review for 03469T28 and again in 03469T29.

February 4, 2022 Meeting with Jordan Lumber about Kilns 1 and 8

February 11, 2022 Call with Joe Sullivan to discuss application submittal and timing

February 18, 2022 Application to re permit kiln 1 (ID No. K-1) as steam-heated and remove kiln 8 (ID No. K-8) received. To be consolidated into renewal.

January 13, 2023 Draft permit review process begins

**4. Permit Modifications/Changes and TVEE/ESM Changes/Discussion**

| <b>Page(s)</b> | <b>Section</b>      | <b>Description of Change(s)</b>  |
|----------------|---------------------|--|
| Throughout     |                     | Converted to new permit format, corrected facility name, updated permit number, and issue date   |
| Cover letter   |                     | Updated to latest permit shell format, added Notice of Right to Contest to cover letter, and moved insignificant activities to Section 3 of the permit.  |
| 1 through 3    |                     | Updated Facility name, permit numbers, application number, signature line, and to current permit shell format. Updated table of contents. Moved List of Acronyms to page 3.  |
| 4 and 5        | Section 1, Table    | Updated format for table note, removed bullet, corrected control device ID for boiler B03, modified the description for kiln 1 (ID No. K-1) and removed kiln 8 (ID No. K-8) from the permit per the application submitted in February 2022. Fixed format of table note for kiln 7 (ID No.7).   |
| 6 through 24   | Section 2 All       | Updated all formatting to match permit shell and current permitting procedures. Starting in Section 2.1 A through 2.2 B updating all conditions to current language and other permit language as it applies.   |
| 6 through 13   | Section 2.1 A       | Updated conditions 02D .0504 and .0521, added standard testing paragraph (c.) removed testing condition that referenced 112(j), removed “RESERVED” and renumbered conditions below the reserved section, corrected rule, and section references (CFR and specific condition)   |
| 14 through 15  | Section 2.1 B       | Updated conditions 02D .0512 and .0521.  |
| 16             | Section 2.1 C       | Per the applicants request the two major changes for this section, removed kiln 8 (ID No. K-8) from 02D .0530 condition since it was never built, and the applicant requested it be removed from the permit and added Kiln 1 (ID No. K-1) to this section of 2.1 since the conversion to a direct gasified wood-fired kiln was never completed submitted February 2022. Removed condition 02D .1111 for MACT initial notification for Kiln 8 |
| 17 through 20  | Section 2.1 D       | Removed kiln 1 (ID No. K-1) from this section of the permit. Updated conditions 02D .0515, .0516, .0521, .0530, and .0530(u) (updated format and clarification on emission sources subject)  |
| 21 through 24  | Section 2.1 E       | Updated conditions 02D .0503, .0516, .0521, .0524, and .1111   |
| 25 through 26  | Section 2.2 A and B | Updated formatting and conditions to match permit shell and conditions shell formatting  |
| 27             | Section 2.3         | Updated formatting with equipment and condition formatting, minor edits  |

| Page(s)    | Section   | Description of Change(s)   |
|------------|-----------|--|
| 28         | Section 3 | Move Insignificant Activities to this section. Updated formatting with equipment and table formatting, minor edits |
| 29 thru 37 | Section 4 | General Conditions updated to current language (version 6.0, 01/07/2022)   |

## 5. Regulatory Review

The facility is subject to the following regulations:

- 15A NCAC 02D .0503, Particulates from Fuel Burning Indirect Heat Exchangers
- 15A NCAC 02D .0504, Particulates from Wood Burning Indirect Heat Exchangers
- 15A NCAC 02D .0512, Particulates from Wood Products Finishing Plants
- 15A NCAC 02D .0515, Particulates from Miscellaneous Industrial Processes
- 15A NCAC 02D .0516, Sulfur Dioxide Emissions from Combustion Sources
- 15A NCAC 02D .0521, Control of Visible Emissions
- 15A NCAC 02D .0524, New Source Performance Standards (40 CFR 60, Subparts Dc)
- 15A NCAC 02D .0530, Prevention of Significant Deterioration, Best Achievable Control Technology (BACT) Requirements (VOC)
- 15A NCAC 02D .1111, Maximum Achievable Control Technology: (40 CFR 63, Subparts DDDD, DDDDD, and ZZZZ)
- 15A NCAC 02D .1806, Control and Prohibition of Odorous Emissions – State only
- 15A NCAC 02Q .0317, Avoidance Condition for 15A NCAC 02D .0530 Prevention of Significant Deterioration (Particulate Matter, Particulate Matter as PM10, Nitrogen Oxides (NO<sub>x</sub>), Carbon Monoxide(CO))
- 15A NCAC 02D .0530(u), Use of Projected Actual Emissions to Avoid Applicability of Requirements of PSD Permit Shield for Nonapplicable Requirements, 15A NCAC 02D .0524, 40 CFR Part 60 Subpart JJJJ

A regulatory review for these current permit conditions will be included in this document note the applicability to these has not changed from when it was originally established. Where applicable, the permit conditions have been modified to reflect current working shell conditions. A review of any new conditions will also be included in this section.

Jordan Lumber is subject to the regulations cited above and a summary of the applicability and requirements will be discussed below. The permit will be updated to reflect the most current stipulations for all applicable regulations.

Permit Section 2.1 E.1 - 15A NCAC 02D .0503, Particulates from Fuel Burning Indirect Heat Exchangers – The natural gas-fired boiler (ID No. B05) is subject to 02D .0503. Allowable PM emissions are determined from the equation  $E = 1.090(Q)^{-0.2594}$ , where E equals the allowable emission limit for particulate matter (PM), in pounds per million Btu, and Q equals the maximum heat input in million Btu per hour. Because this boiler is the only fuel burning boiler onsite, Q equals 31.5 million Btu per hour, which is the heat input for the boiler. With this Q, allowable PM emissions for this boiler are 0.45 pounds per million Btu.

Permit Section 2.1 A.1 - 15A NCAC 02D .0504, Particulates from Wood Burning Indirect Heat Exchangers – The wood-fired boilers (ID Nos. B01 through B04) are subject to 02D .0504. Allowable PM emissions are determined from the equation  $E = 1.1698(Q)^{-0.2230}$ , where E equals the allowable emission limit for PM (in pounds per million Btu (lb/million Btu)) and Q equals the maximum heat input in million Btu per hour. The allowable PM emissions from the wood-fired boilers are shown in the following table.

| <b>Emission Source</b>   | <b>Heat Input (million Btu per hour)</b> | <b>Maximum Heat Input (Total) (million Btu per hour)</b> | <b>Emission limit (pounds per million Btu)</b> |
|--|--|--|--|
| Wood-fired boiler with pyrolytic-type burners and without flyash reinjection (ID Nos. B01 – B03) | 26.8, each                               | 80.4   | 0.44   |
| Wood-fired boiler with a stoker-type burner and without flyash reinjection (ID No. B04)          | 28.8                                     | 109.2  | 0.41   |

In addition to inspection and maintenance requirements, Jordan Lumber is required to conduct PM emission testing of the boilers (ID Nos. B01 through B04) to demonstrate compliance with 02D .0504. The following table summarizes this testing and other PM emission testing conducted on the wood-fired boilers at Jordan Lumber.

| <b>Emission Source ID</b> | <b>Dates</b>    | <b>PM Emission Result (pounds per million Btu)</b> | <b>Allowable Emission Rate (pounds per million Btu)</b> |
|---------------------------|-----------------|--|---|
| B01                       | August 18, 2020 | 0.005  | 0.44  |
| B02                       | August 18, 2020 | 0.005  |   |
| B03                       | August 19, 2020 | 0.003  | 0.41  |
| B04                       | August 19, 2020 | 0.003  |   |

Permit Section 2.1 B.1 - 15A NCAC 02D .0512, Particulates from Wood Products Finishing Plants – Two planer/hog wood waste collection systems (ID Nos. P01 and P02) are subject to 02D .0512. Jordan Lumber is required to conduct inspection and maintenance of the bagfilters on these sources to ensure compliance. No changes to the monitoring, recordkeeping, or reporting requirements during this renewal.

Permit Section 2.1 D.1 - 15A NCAC 02D .0515, Particulates from Miscellaneous Industrial Processes – The two direct gasified wood-fired lumber drying kilns (ID Nos. K-1, K-2, K-6, and K-7) are subject to 02D .0515. Jordan Lumber is required to maintain production rate in tons per hour to comply with the rule. No reporting is required to demonstrate compliance with this particulate matter standard.

Permit Sections 2.1 A, D, and E - 15A NCAC 02D .0516, Sulfur Dioxide from Combustion Sources – The wood-fired boilers (ID Nos. B01 through B04), the natural gas-fired boiler (ID No. B05), the direct gasified wood-fired lumber kiln and the direct gasified wood-fired/natural gas-fired lumber kiln (ID Nos. K-2 and K-7), are subject to 02D .0516. No monitoring, recordkeeping, or reporting is required when firing natural gas, wood, or LPG because of the low sulfur content of the fuels. These fuels are inherently low enough in sulfur that continued compliance is expected. Kiln 1 (ID No. K-1) has been removed from this section and relocated to Section 2.1 C of the permit since will no longer be permitted as a direct gasified wood-fired kiln but is now permitted as steam-heated. No changes to the monitoring, recordkeeping, or reporting are required under this permit renewal for the remaining kilns in Section 2.1 D or the boilers in Section 2.1 A and Section 2.1 E.

Permit Section 2.1 A, B, D, and E - 15A NCAC 02D .0521, Control of Visible Emissions –The following equipment was manufactured after July 1, 1971 and must not have visible emissions of more than 20 percent opacity when averaged over a six-minute period, except as specified in 15A NCAC 02D .0521(d).

Four wood-fired wood boilers (ID Nos. B01 through B04) - To ensure compliance with 02D .0521, the facility is required to conduct daily visible emission observations. In addition, Jordan Lumber has installed a continuous opacity monitoring system to comply with 40 CFR Part 63 Subpart DDDDD. According to the latest review of the COMS report dated July 27, 2021 the wood-fired boilers have demonstrated ongoing compliance with the 10% opacity operating limit listed in Section 2.1 A.5.6.r therefore continued compliance with 02D .0521 opacity standard is expected.

Two planer/hog wood waste collection systems (ID Nos. P01 and P02) - To ensure compliance with 02D .0521, the facility is required to conduct visible emissions observation once every six months. No changes to the monitoring, recordkeeping, or reporting are required under this permit renewal, and continued compliance is expected.

One direct gasified wood-fired lumber kiln (ID No. K-2), one direct gasified wood-fired/natural gas-fired lumber kiln (ID No. K-7), one indirect steam-heated lumber kiln (ID No. K-6), and natural gas fired-boiler (ID No. B05) currently there are no monitoring, recordkeeping, or reporting is required to demonstrate compliance with 02D .0521. Continued compliance is anticipated.

One natural gas-fired boiler (ID No. B05) currently there are no monitoring, recordkeeping, or reporting is required to demonstrate compliance with 02D .0521. Continued compliance is anticipated.

Permit Sections 2.1 A and E - 15A NCAC 02D .0524, New Source Performance Standards (NSPS) – The wood-fired boilers (ID Nos. B01 through B04) and the natural gas-fired boiler (ID No. B05) are subject to “Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units,” 40 CFR Part 60, Subpart Dc. For the emission sources listed, the facility shall record and maintain record of fuel(s) amount(s) fired. Continued compliance is expected. More discussion on NSPS is found in Section 6.

Permit Sections 2.1 C and D - 15A NCAC 02D .0530, Prevention of Significant Deterioration (PSD) – The three steam-heated lumber kilns (ID Nos. K-3 through K-5), one direct gasified wood-fired lumber kiln (ID No. K-2), one indirect steam-heated lumber kiln (ID No. K-6), and one direct gasified wood-fired/natural gas-fired lumber kiln (ID No. K-7) are subject to Best Available Control Technology (BACT) for VOCs under 02D .0530. Continued compliance is expected. More discussion on PSD and BACT is found in Section 6.

Permit Sections 2.1 A, C, D, and E - 15A NCAC 02D .1111, Maximum Achievable Control Technology (MACT) – The facility is subject to the following MACTs:

One direct gasified wood-fired lumber drying kilns (ID No. K-2), five steam-heated lumber kilns (ID Nos. K-1, K-3 through K-6), and one direct gasified wood-fired/natural gas-fired lumber kiln (ID No. K-7) – “NESHAP for Plywood and Composite Wood Products,” 40 CFR Part 63 Subpart DDDD. Continued compliance is expected.

LPG-fired emergency generator (ID No. I-EG) – “NESHAP for Stationary Reciprocating Internal Combustion Engines,” 40 CFR Part 63 Subpart ZZZZ. Moved to Insignificant activities list August 31, 2016 application 6200015.16A

Four wood-fired boilers (ID Nos. B01 through B04) and natural gas-fired boiler (ID No. B05) – “NESHAP for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters,” 40 CFR Part 63 Subpart DDDDD (MACT Subpart DDDDD). Continued compliance is expected. More discussion on these MACTs is provided under Section 6.

Permit Section 2.1 D.5 15A NCAC 02D .0530(u) – This condition was added with application 6200015.20B which requested an increase in production for kiln 7 and the facility has used projected actual emissions of NOx to avoid applicability of prevention of significant deterioration requirements for the project to convert lumber kiln (ID No. K-7). No changes are needed under this permit renewal, and continued compliance is anticipated.

Permit Section 2.2 A.1 - 15A NCAC 02D .1806, Control and Prohibition of Odorous Emissions – This condition is applicable facility-wide and is state enforceable only. No changes are needed under this permit renewal, and continued compliance is anticipated.

Permit Section 2.2 A.2 - 15A NCAC 02Q .0317, Avoidance Conditions – Jordan Lumber has accepted an avoidance condition for 02D .0530, PSD, for PM, PM<sub>10</sub>, NO<sub>x</sub>, and CO and applies to kiln 2 through 7 (ID Nos. K-2 through K-7) and boiler 1 through 4 (ID Nos. B01 through B04). Kilns 1 and 8 have been removed from this requirement as part of the application submitted in February of 2022. Continued compliance is expected. More discussion on PSD avoidance is provided under Section 6.

Permit Section 2.2 B.1 - 15A NCAC 02D .0530(u) - This condition was added with application 6200015.18A (T27) which requested to convert kiln 6 (ID No. K-6) from batch steam kiln to a continuous steam kiln and the facility has used projected actual emissions of PM, PM<sub>10</sub>, PM<sub>2.5</sub>, NO<sub>x</sub>, SO<sub>2</sub>, and CO to avoid applicability of prevention of significant deterioration requirements for the project to convert lumber kiln 6 (**ID No. K-6**). No changes are needed under this permit renewal, and continued compliance is anticipated.

Permit Section 2.3 A – 15A NCAC 02Q .0512(a)(1)(B), permit shield for 40 CFR Part 60, Subpart JJJJ – This condition is to shield the Permittee from applicability of 15A NCAC 02D .0524, 40 CFR Part 60 Subpart JJJJ - Standards of Performance for Stationary Spark Ignition Internal Combustion Engines (SI ICE) for LPG-gas fired emergency generator (ID No. I-EG) since the existing emergency generator was manufactured and in operation prior to June 12, 2006 and pre-dates the applicability of this NSPS.

**6. NSPS, NESHAPS/MACT, NSR/PSD, 112(r), CAM, attainment status**

**NSPS**

The four wood-fired boilers (ID Nos. B01 through B04) and the natural gas-fired boiler (ID No. B05) are subject to the NSPS for Small Industrial, Commercial, Institutional Steam Generating Units, 40 CFR Part 60 Subpart Dc. This subpart applies to boilers constructed, modified, or reconstructed after June 9, 1989 and have a maximum design heat input capacity > 10 million Btu per hour and < 100 million Btu per hour. The requirements for boilers subject to NSPS Subpart Dc vary based on the size of the boiler and fuel type fired. The table below summarizes the boilers and their requirements under NSPS Subpart Dc.

| <b>Boiler</b>  | <b>Size</b>                      | <b>Requirements</b>  |
|--|----------------------------------|--|
| Wood-fired boilers<br><b>(ID Nos. B01 through B03)</b> | 26.8 million Btu per hour (each) | No SO <sub>2</sub> standards for wood-fired boilers.<br>No PM or opacity standards for wood-fired boilers less than 30 million Btu per hour.   |
| Wood-fired boiler<br><b>(ID No. B04)</b>               | 28.8 million Btu per hour        | Amount of wood-fired daily (or alternatively monthly) must be recorded per 40 CFR 60.48c(g)(1) and (2).  |
| Natural gas-fired boiler<br><b>(ID No. B05)</b>        | 31.5 million Btu per hour        | No SO <sub>2</sub> , PM, or opacity standards for natural gas-fired boilers.<br>Amount of natural gas fired daily (or alternatively monthly) must be recorded per 40 CFR 60.48c(g)(1) and (2). |

The permit currently requires the facility to record the amount of wood-fired in the boilers (ID Nos. B01 through B04) daily and amount of fuel to be recorded monthly as specified under 40 CFR 60.48c(g)(2). No changes to these requirements.

For the natural gas-fired boiler, the facility is required to record the amount of each fuel fired in this boiler (**ID No. B05**) during each operating day. As an alternative, the Permittee can elect to record and maintain records of the amount of each fuel combusted during each calendar month.

## NESHAPS/MACT

Jordan Lumber is a major source for HAPs and is subject to NESHAP for Major Sources: Industrial, Commercial, and Institutional Boilers,” 40 CFR Part 63 Subpart DDDDD, NESHAP for Plywood and Composite Wood Products,” 40 CFR Part 63 Subpart DDDD, and “NESHAP for Stationary Reciprocating Internal Combustion Engines,” 40 CFR Part 63 Subpart ZZZZ, these requirements will be discussed in this section.

### **MACT Subpart DDDDD**

The wood-fired boilers (ID Nos. B01 through B04) will be subject to the “NESHAP for Major Sources: Industrial, Commercial, and Institutional Boilers,” 40 CFR Part 63 Subpart DDDDD beginning on May 20, 2019. The requirements under MACT Subpart DDDDD are being added at this time per 40 CFR 63.56(b), which states “if the Administrator promulgates a relevant emission standard under section 112(d) or (h) of the Act that is applicable to a source after the date a permit is issued pursuant to 40 CFR 63.52 or 40 CFR 63.54, the permitting authority must incorporate requirements of that standard in the title V permit upon its next renewal.”

All four boilers (ID Nos. B01 through B04) are in the subcategory for “Stoker/sloped/others designed to burn wet biomass fuel”. They are also considered existing boilers because they were constructed prior to June 4, 2010. Existing boilers in the above subcategory have to meet the following emission limits:

| <b>Pollutant</b> | <b>Emission Limit</b>   |
|------------------|---|
| HCl              | 2.2E-02 pounds per million Btu of heat input  |
| Hg               | 5.7E-06 pounds per million Btu of heat input  |
| CO               | 1,500 ppm by volume on a dry basis corrected to 3 percent oxygen; 3-run average or (720 ppm by volume on a dry basis corrected to 3 percent oxygen, 30-day rolling average) |
| PM or TSM        | 3.7E-02 pounds per million Btu of heat input or 2.4E-04 pounds per million Btu of heat input  |

Beginning on May 20, 2019, the facility began complying with the MACT Subpart DDDDD standards for these boilers. Jordan Lumber has conducted an initial compliance test within 180 days of May 20, 2019 on boilers (ID Nos. B01 through B04) to demonstrate compliance with these limits. Subsequent testing will be required annually. As specified in 40 CFR 63.7515, if performance tests for a given pollutant for at least 2 consecutive years show emissions at or below 75 percent of the emission limit for the pollutant, the facility may elect to conduct performance tests for the pollutant every third year. Alternatively, the facility can demonstrate compliance via fuel sampling for HCL, Hg and/or TSM (if chosen rather than filterable PM), with subsequent fuel sampling to be performed monthly if applicable. The facility also has to conduct an annual tune-up on the boilers, a one-time energy assessment, and monitoring, recordkeeping and reporting as required by MACT Subpart DDDDD.

The natural gas boiler (ID No. B05) is subject to MACT Subpart DDDDD as a new source under the MACT since it was constructed after June 6, 2010 and it falls under the subcategory for “Units designed to burn gas 1 fuels.” Jordan Lumber has to conduct annual tune-ups and recordkeeping and reporting as required by MACT Subpart DDDDD.

### **MACT Subpart DDDD**

The one permitted direct gasified wood-fired lumber kiln (ID No. K-2), one permitted direct gasified wood-fired/natural gas-fired continuous lumber kiln (ID No. K-7), one permitted indirect steam-heated continuous double track lumber kiln (ID No. K-6) and four permitted steam-heated lumber kilns (ID Nos. K-1, K-3 through K-5) are subject to the “NESHAP for Plywood and Composite Wood Products,” 40 CFR Part 63 Subpart DDDD. The only requirement under MACT Subpart DDDD for these emission sources is an initial notification, which has been submitted for all kilns except for the steam-heated drying kiln (ID No. K-8). This kiln has not yet been installed and the facility has requested its removal from the permit (6200015.22A). The permit condition requiring submittal of an initial notification within 15 days of startup for kiln 8 will be

removed from the permit. No changes to the permit are required under this permit renewal, and compliance is anticipated.

#### **MACT Subpart ZZZZ**

The LPG-fired emergency generator (ID No. I-EG) is subject to the “NESHAP for Stationary Reciprocating Internal Combustion Engines,” 40 CFR Part 63 Subpart ZZZZ. This engine is an existing engine, constructed before June 2006. It is less than 500 HP and is located at a major source of HAPs. The following provides an overview of the requirements under MACT Subpart ZZZZ for this engine:

- Install a non-resettable hour meter on the engine and record hours of operation.
- Change oil and filter every 500 hours of operation or annually, whichever comes first.
- Inspect spark plugs every 1,000 hours of operation or annually, whichever comes first.
- Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace if necessary.
- Operate a maximum of 100 hours for maintenance and readiness testing.
- Conduct other required recordkeeping and reporting.

Continued compliance is expected.

#### **Prevention of Significant Deterioration (PSD)**

##### **Timeline of modifications for kilns at Jordan Lumber since the issuance of the Initial Title V permit.**

Initial TV, 2001 - T13 - Kilns 1 through 4 (K-1 thru K-4) PSD Avoidance for VOCs, Kiln 5 (K-5) only odor 2D .0522.

Modification T14, 2002 - Added Kilns 6 and 7 and added PSD Avoidance for K-5 thru K-7.

PSD T15, 2005 - Converted two steam heated kilns (K-1 and K-2) to gasified wood-fired kilns with BACT limit of 4.29 pounds of VOC per thousand board feet and added Kiln 8 and BACT limit for remaining all 6 steam heated kilns (K-3 thru K-8) of 3.97 pounds of VOCs per thousand board feet.

Admin Amend T16, 2005 - For correction of Semiannual report date.

Renewal T17, 2006 - No changes.

Modification T18, 2006 - Boiler replacement, corrected heat input rate for Kilns 1 and 2.

Admin. Amend T19, 2009 - Remove vacated Boiler MACT.

Renewal T20, 2009 - Discussion in the review of BACT limits being wrong and the correct limits being 4.09 pounds of VOCs per thousand board feet for steam heated kilns and 4.34 pounds of VOCs per thousand board feet for gasified wood-fired kilns but change was not made at that time.

Minor Mod T21, 2013 - Addition of emergency generator and boiler.

TV Admin T22, 2013 - Removal of testing date for 2D .0504 and .0521 and change to coincide with 2D .1109 test requirement.

Renewal & Sign. Mod T23, 2016 - Part II for boiler B05 added in T21, removal of Air Toxics requirements.

Significant Mod Part I T24, 2016 - Update BACT limits and convert Kiln 7 (K-7) from steam heated to natural gas fired. BACT limits in permit modified to 4.09 pounds of VOC per thousand board feet for steam heated kilns and 4.34 pounds of VOCs per thousand board feet for gasified wood-fired and/or natural gas-fired kilns (Kiln 7 fired both).

Significant Mod. Part II T25, 2017 - Part II for converting Kiln 7 (K-7), modified description to direct gasified wood-fired/natural gas-fired continuous lumber kiln.

Minor Mod. T26, 2018 - Added two ESP to control boilers.

PSD Mod T27, 2019 - Convert kiln 6 from batch to continuous double track steam heated kiln which increases the process rate from 45 million board feet per year to 93 million board feet per year. PSD BACT limit for Kiln 6 (K-6) is 4.09 pounds of VOCs per thousand board feet.

Admin Amend T28, 2020 - Correction of the boiler rating for B04, facility also requested Kiln 1 (K-1) description be modified from gasified wood-fired to steam heated since the kiln had never been converted and is still operating as a steam heated kiln and not as described in original PSD permit T15 issued in 2005.

PSD Mod T29, 2021 - Increase production rate of Kiln 7 (K-7) from 45 million board feet per year to 67.34 million board feet per year, the review implies that an application addendum to change the description of Kiln 1 (K-1) back to steam heated as it was originally permitted and has never been converted to gasified wood-firing.

#### Renewal Application Review

As part of the renewal process, the previous permit reviews and compliance inspection reports were reviewed for historical PSD discussions and compliance history. In an email on October 8, 2020, Joe Sullivan indicated he would submit an addendum to the renewal application. Betty, Gautam, and I have not been able to find any addendum submitted. According to all of the Compliance inspections reports since 2005, the facility has operated kiln 1 (ID No. K-1) as a steam heated lumber kiln instead of a gasified wood-fired lumber kiln as described in permits T15 through T29 (2005 to present).

On February 15, 2022, an application was submitted to re permit kiln 1 (ID No. K-1) as it has not been converted to a gasified wood-fired kiln as permitted in the 2005 PSD application. This application also requested the removal of kiln 8 (ID No. K-8) as it was never constructed. Below is an overview of the operation of Kiln 1 from the application submitted.

#### Overview of Kiln 1 from application 6200015.22A

In 2005, Jordan Lumber submitted a Prevention of Significant (PSD) construction permit application, which included conversion of lumber kilns K-1 and K-2 from steam heating to direct-fired service. A construction permit was issued for that change by the DAQ. Subsequent to permit issuance, only Kiln K-2 was converted to direct-fired service and Kiln K-1 remained a steam-fired kiln.

Kiln K-1, along with Kilns K-3 through K-5 and K-6 are also steam heated kilns. All of these steam heated kilns are supplied steam from a combined steam supply system (header) using steam produced by Boilers 1 through 5.

Although Kiln K-1 was never modified, additional steam capacity was added to the steam header supply system by virtue of the addition of Boiler 5 pursuant to the 2005 application. In reality, Boiler 5 is utilized primarily to maintain consistent steam pressure at the steam supply header and serve as a backup boiler in the event Boilers 1 through 4 are down. However, there is a theoretical annualized increase in lumber production, though nominal, that could occur in K-1 by virtue of the addition of Boiler 5. VOC was already triggered under the PSD regulations pursuant to the 2005 permit application and best available control technology (BACT) requirements do not apply to unmodified/affected units. Hence, even though K-1 could be considered as contributing to emissions increases as part of the original PSD permit application as affected emissions unit, BACT no longer applies to K-1 as an unmodified emissions unit and there are otherwise no impacts to the original PSD permitting determinations made by DAQ due to the kiln remaining in steam heated service.

Based on our review of the current permit, the following changes should be made to the permit as a result of changing Kiln K-1 back to steam heated status:

**Permit Changes**

1. Kiln K-1 should be removed from Section 2.1.D and moved to Section 2.1.C. Since K-1 was never physically modified, only the reference to the odor regulations in Section 2.2.A.1 should apply in the tabular summary of applicable requirements.
  2. K-1 should be removed from the production and wood burning tracking requirements of Sections 2.2.A.2.c.i and ii., respectively. It should be noted that even though K-1 was not modified as part of PSD, the wood combusted in Boilers BO1 through B04 used for all of the steam-heated kilns as well as criteria pollutant emissions has been, and will continue to be, conservatively included in data reported under Sections 2.2.A.2.a and 2.2.A.2.c.iii.
  3. K-1 should be removed from Section 2.2.A.2.e.ii.
- All references to Kiln K-8 should be removed from Jordan's operating permit.

The PSD conditions have been updated to reflect the current operation of sources at the facility based on the changes described above. The facility is a PSD major source for VOC, with actual emissions greater than 250 tons per consecutive 12-month period. Jordan Lumber is subject to BACT for six of its seven remaining lumber drying kilns (ID Nos. K-2 through K-7). Specifically, kiln 2 (ID No. K-2) is subject to a VOC emission rate of less than 4.34 pounds per thousand board feet, as pinene. Kiln 3 through kiln 5 (ID Nos. K-3 through K-5) are subject to a VOC emission rate of less than 4.09 pounds per thousand board feet, as pinene. Kiln 6 (ID No. K-6) is subject to a VOC emission rate of less than 4.09 pounds per thousand board feet, as pinene. Kiln 7 (ID No. K-7) are subject to a VOC emission rate of less than 4.34 pounds per thousand board feet, as pinene. These conditions were placed into the permit as part of various PSD modifications for the construction of a steam-heated drying kiln and a natural gas/landfill gas fired boiler in November 2005. The preliminary BACT determination for Jordan Lumber provides more details about these BACT limits.<sup>1</sup> This permit renewal does not affect the status, however, kiln 1 and kiln 8 will be removed from the conditions but no other changes to the BACT permit condition are required. Continued compliance is anticipated.

At that same time the BACT limits were added for VOC, the permit was also modified to include a PSD avoidance condition for PM, PM<sub>10</sub>, NO<sub>x</sub>, and CO. The avoidance condition emission limits represent the then actual baseline amounts (from June 2003 through May 2005) plus the PSD significance levels for each respective pollutant. The table below summarizes the PSD avoidance limits. The preliminary BACT determination for Jordan Lumber provides more details about the development of these PSD limits.<sup>1</sup>

| <b>Pollutants</b>   | <b>Planer Emissions (Tons/year)</b> | <b>Kiln Emissions (Tons/year)</b> | <b>Wood-fired Boiler Emissions (Tons/year)</b> | <b>Total Facility Emissions (Tons/year)</b> | <b>PSD Significance Level (Tons)</b> | <b>Avoidance Limit (Tons/year)</b> |
|---|-------------------------------------|-----------------------------------|--|---|--------------------------------------|------------------------------------|
| PM  | 2.83                                | 1.69                              | 114  | 119   | 25                                   | 144                                |
| PM <sub>10</sub>  | --                                  | 1.69                              | 105  | 106   | 15                                   | 121                                |
| NO <sub>x</sub>   | --                                  | --                                | 68.4   | 68.4  | 40                                   | 108.4                              |
| CO  | --                                  | --                                | 187  | 187   | 100                                  | 287                                |
| <b>Notes:</b><br>The baseline emissions were determined from actual baseline amounts from June 2003 through May 2005. |                                     |                                   |  |   |                                      |                                    |

This permit renewal does not affect the PSD status of the facility. The emissions sources listed in the original PSD condition will be adjusted to reflect the removal of kiln 1 (ID No. K-1) from Section 2.1 D.7 of the current permit since it was never converted per the 2005 PSD application and subsequent modification. No other changes are required, and continued compliance is anticipated.

<sup>1</sup> William Willets (September 2009).

**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 112(r). This permit renewal does not affect the 112(r) status of the facility.

**CAM**

40 CFR Part 64 is applicable to any pollutant-specific emission unit, if the following three conditions are met:

- the unit is subject to any (non-exempt: e.g. pre November 15, 1990, Section 111 or Section 112 standard) emission limitation or standard for the applicable regulated pollutant.
- the unit uses any control device to achieve compliance with any such emission limitation or standard.
- the unit's pre-control potential emission rate exceeds either 100 tpy (for criteria pollutants) or 10/25 tpy (for HAPs).

The permit review for the most recent TV permit renewal confirmed that CAM was not applicable to Jordan Lumber because potential, pre-controlled PM<sub>10</sub> emissions from the boilers and planer/wood hog are less than the major source threshold, as calculated per DAQ spreadsheets. Additional controls (ESPs, ID Nos. ESP-1 and ESP-2) for the boilers (ID Nos. B01 through B04) were added in November 2018 permit T26, application 6200015.18B and it was reconfirmed that CAM does not apply to the facility.

**RACT/Attainment status** – Jordan Lumber in Montgomery County, and not in an area that has been re-designated as attainment for the 2008 and 1997 ozone standards. This does not apply.

**7. Facility Wide Air Toxics**

The permit currently includes a list of NC Air Toxics that were reviewed for emissions above their respective toxic pollutant emission rates (TPERs). There are no increases of any of the toxics associated with the 5<sup>th</sup> wheel welding operations as a result no modeling was performed and all non-NESHAP sources remain below the TPERs. This permit renewal does not affect this status.

**8. Facility compliance status / Statement of compliance**

This facility was last inspected by Jeffery Cole of MRO on June 8, 2022. The facility appeared to be in compliance with all air quality requirements.

Below is a summary of the compliance history since the last renewal was issued.

| <b><u>Five Year Violation History:</u></b> |                           |   |  |
|--|---------------------------|---|--|
| <b><u>Date</u></b>                         | <b><u>Letter Type</u></b> | <b><u>Rule Violated</u></b>   | <b><u>Violation Resolution Date</u></b>                                      |
| 04/21/2016                                 | NOV                       | 02D .1111 MACT DDDDD  | 05/09/2016   |
| 04/21/2016                                 | NOV                       | 02D .0504 Particulates Wood Burning Indirect Heat Exchangers                                | 05/09/2016   |
| 04/21/2016                                 | NOV                       | 02D .1109 112(j) Case by Case MACT  | 05/09/2016   |
| 05/16/2016                                 | NOV/NRE                   | 02D .1109 112(j) Case by Case MACT  | Civil Penalty 07/28/2016   |
| 06/27/2016                                 | NOV                       | 02D .1111 MACT DDDDD, initial tune up B05   | Letter 04/26/2017 stating ACC submitted 03/20/2017, Civil Penalty 03/16/2017 |
| 09/16/2016                                 | NOV                       | 02D .1111 MACT DDDDD, late source testing submittal B04                                     | Submitted late on 09/09/2016, Civil Penalty 03/16/2017                       |
| 12/02/2016                                 | NOV/NRE                   | Late reporting/notifications and deficient recordkeeping                                    | Civil Penalty 03/16/2017   |
| 03/03/2017                                 | NOV                       | 02D .1111 MACT DDDDD, late submittal of boiler B05 annual compliance report (second notice) | Letter 04/26/2017 stating ACC submitted 03/20/2017                           |
| 03/21/2017                                 | NOV/NRE                   | Late 2016 ACC   | Letter 04/26, 2017 stating ACC submitted 03/20/2017                          |
| 12/20/2018                                 | NOV/NRE                   | 02D .1109 112(j) Case by Case MACT  | Rescinded (NRE) 1/30/2019  |

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

A notice of the DRAFT Title V Permit shall be made pursuant to 15A NCAC 02Q .0521. The notice will provide for a 30-day comment period, with an opportunity for a public hearing. Consistent with 15A NCAC 02Q .0525, the EPA will have a concurrent 45-day review period. Copies of the public notice shall be sent to persons on the Title V mailing list and EPA. Pursuant to 15A NCAC 02Q .0522, a copy of each permit application, each proposed permit and each final permit shall be provided to EPA. Also, pursuant to 02Q .0522, a notice of the DRAFT Title V Permit shall be provided to each affected State at or before the time notice is provided to the public under 02Q .0521 above. The State of Virginia and the Forsyth County Local Program are affected state/local program within 50 miles of the facility.

*(The following comments were received: To be completed after notice comment period)*

**10. Conclusions, Comments, and Recommendations**

A professional engineer’s seal was not required for the renewal application.

A consistency determination was not required for the renewal application.

The facility was sent a draft permit to review on April 6, 2023 and on April 11, 2023 Susan Huneycutt of Jordan Lumber on behalf of Mr. Robert Jordan and Hunter Jackson of AECOM submitted their comments on the draft by email. The comments incorporated into the draft were clarifications in the descriptions of the kilns, corrections to wording in 2.1 A for the configuration of the control devices for the boilers, and some minor typographical errors.

The FRO was sent a draft permit to review on April 5, 2023. Comments were due by COB on April 17, 2023, no comments on the drafts were received.

FRO recommends issuance of the permit and was sent a DRAFT permit prior to issuance. RCO concurs with FRO’s recommendation to issue the renewed air permit. All applicable DAQ air requirements should be met. I recommend issuance of the air permit.