GEORGIA
DEPARTMENT OF NATURAL RESOURCES
ENVIRONMENTAL PROTECTION DIVISION

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# NARRATIVE

TO: Jeng-Hon Su

FROM: Susan Jenkins

DATE: September 25, 2024

| | |
|---|---|
| Facility Name: | **Pollard Lumber Company, Inc.** |
| AIRS No.: | 073-00023 |
| Location: | Appling, GA (Columbia County) |
| Application #: | 29299 (**Expedited**) |
| Date of Application: | May 7, 2024 (Updated July 9, 2024, August 11, 2024, August 29, 2024, and September 19, 2024) |

## Background Information

Pollard Lumber Company, Inc. (hereinafter "facility") operates a lumber mill producing kiln dried lumber located at 5863 Washington Road, Appling, Georgia. Currently, the facility operates under Permit Nos. 2421-073-0023-S-01-0 (issued October 26, 2005) and 2421-073-0023-S-01-1 (issued December 8, 2009) for the operation of a lumber mill.

*Log Preparation:* Tree length southern yellow pine logs are brought to the facility and stored temporarily in the log yard. Logs are then cut to preferred sizes, and the bark is removed by the debarker (DB01). Once removed, the bark is mechanically conveyed to piles and ultimately sold. Larger bark pieces are conveyed to a screener (SC01) and then a bark hog (HG01) to be reduced to mulch. The mulch is then conveyed to a pile to be sold.

*Sawmill Operation:* Debarked logs are then conveyed to the Sawmill (SAW) where they are cut and trimmed to the desired dimensions. Wood scrap from the sawmill is conveyed to a chipper (CH01) to be processed into woodchips. The chips are then conveyed to a screener (SC02) to be separated from the sawdust. The chips are mechanically conveyed to a truck bin (BIN1) to be sold. Sawdust from the screener (SC02) and sawmill (SAW) is either conveyed to a sawdust truck bin (BIN2) to be sold or into a sawdust fuel bin (BIN3) to be used onsite for fuel.

Rough-sawn lumber from the sawmill is dried in an existing direct-fired continuous drying kiln (CDK, K02). Lumber Drying Kiln 2 (K02) is equipped with a 20 MMBtu/hr wood-fired burner. After drying, the lumber is sent to the Planer Mill (PLM) to be finished into dimensional lumber.

Note: Existing Kiln 1 (K01), which was also a direct-fired CDK burned down in a fire and is no longer in use.

*Planer Mill/Grinding Mill/Wood Flour Mill:* The Planer Mill (PLM) also produces shavings and wood scrap. Shavings from the Planer Mill are pneumatically conveyed to Cyclone 1 (C01) via a 125-hp fan. Cyclone 1 (C01) is equipped with an airlock. A 30 hp fan transfers grinder material to the peerless bin collection system via Cyclone 4 (C04) which is outfitted with an airlock. The shavings collected from Cyclone 1 are pneumatically conveyed by Cyclone 4 (C04) to a shavings bin (BIN4) and Hammer Mills 1-2 (HM01-HM02). Cyclones 1 and 4 exhaust to the outdoor atmosphere. The Hammer Mills process the shavings into wood flour which is pneumatically conveyed via Baghouse 2 (BH2) to a wood flour silo to be sold.

Wood scrap from the Planer Mill (PLM) is sent to the Grinder Mill (GM) to be processed into shavings. The shavings from the Grinder Mill (GM) are pneumatically conveyed to either Shavings Bin BIN5 (via Cyclone C02) or Shavings Bin BIN4 (via Cyclone C03). Emissions from Cyclone C02 and Cyclone C03 exhaust to the outdoor atmosphere via Baghouse 1 (BH1). The collected materials from Baghouse 1 (BH1) are pneumatically conveyed back to Cyclone 2.

*Wood Treatment Operations:* The facility also has wood treating operations (owned and operated by T2 Earth) that have been permitted under Pollard Lumber Company since 1984. A detailed process description was taken from a letter dated February 12, 2002, from Pollard Lumber Co., Inc. to the Division (J. Yntema) and incorporated in this narrative as follows: "The lumber is loaded onto lumber trams. The lumber is moved into a large horizontal treating cylinder via small rail. The cylinder door is sealed, and a vacuum is applied to remove most of the air from the cylinder and the wood cells. Preservative solution is then pumped into the cylinder with the pressure raised to about 150 pounds per square inch, forcing the solution into the wood.

"Following pressure release, the solution is pumped back into a storage tank for later re-use. A vacuum is drawn within the treating cylinder to remove excess solution from the wood to control drippage following treatment. At the end of the process, the cylinder door is opened and the lumber is pulled out. The area immediately under the rail is called a steel chemical containment drip track area. The drip track is built of steel plate and is sloped to allow drippage to flow back to the steel-lined normally wetted process pit under the door of the cylinder. Liquid materials collected in the normally wetted process pit are returned to the process tankage for re-use. After the treated material has sat on the drip track area and the lumber has become surface dry." Next, the treated wood product is sent to Kiln 2 (K02) for further drying.

The facility initially used chromated copper arsenate (CCA) as the wood preservation chemical which is classified as a *wood preservative pesticide*. The use of CCA's was discontinued by the facility around 2002 to comply with federal regulations. The same letter noted above (2/12/2002) served as notification to the Division that the facility would use a NW100® wood preservative which is a waterborne, copper-based preservative system (a blended concentrate of copper ethanolamine and alkybenzyldimethylammonium chloride (BAC)).

*Miscellaneous Operations:* The facility is permitted for painting, emergency generators, and underground storage tanks (UST) for storage of gasoline and/or diesel fuel.

**Purpose of Application**

The facility submitted an **expedited** air permit application, assigned number 29299, dated May 7, 2024, to the Division. The applicant was deficient as received. Appendix A of this narrative summarizes the correspondence between the Division and the application in order to resolve the deficiencies.
The facility resolved all of the application deficiencies as of September 19, 2024.

Application No. 29299 is for the following actions (based on resolution of the application deficiencies through September 19, 2024);

| New or Existing? | Description | Action Per Application # 29299 |
|---|---|---|
| New | Steam Kiln 1 (K03), an indirect-fired CDK | Requests authorization of the construction and operation |
| New | Green Sawdust fired boiler (BL01) | |
| New | Electrostatic Precipitator (ESP, ESP1) to control emissions from the boiler (BL01) | |
| New | Facility requests facility-wide PSD Avoidance emissions limits for CO and VOC.<br><br>Facility requests facility-wide MACT Avoidance emissions limits. | Incorporate in facility's air permit. |
| Existing | NPR Application No. 28971<br>Approved Sept. 18, 2023 | Incorporate in facility's air permit |
| Existing | Clarify that the Grinder Mill exhausts to either cyclone C02 or cyclone C03 and not both. | Incorporate in facility's air permit. |
| Existing | The Hammer Mill process the shavings into wood flour which is pneumatically conveyed via Baghouse 2 (BH2) to a wood flour silo to be sold. | Incorporate in facility's air permit. |
| Existing | Painting operations as defined in Application # 7075 (Dec. 15, 1994). Ingredients include isobutane, propane, titanium dioxide, xylene, VM&P naphtha, and toluene. | Clarification that the paint is only applied occasionally as needed for maintenance of equipment. |
| Existing | Wood Treatment Operation (T2T) | The facility no longer uses NW100$^{R}$ wood preservative. |
| Existing | Direct-fired Lumber Drying Kiln 1 (K01) with 20 MMBtu/hr heat input capacity wood-fired burner | Remove from the permit |
| Existing | Application of Millbrite 50 Yellow 230 (a colorant/weather protector) use in the planer mill | |
| Existing | Storage tank T04-10,000 gallons of 1.3% chromated copper arsenate (CCA/$H_2O$) as a fixed roof tank | |
| Existing | Storage tank T05-10,000 gallons of 0.8% CCA/$H_2O$ as a fixed roof tank | |
| Existing | Storage tank T06-7,500 gallons of 50% CCA/$H_2O$ as a fixed roof tank | |

## Updated Equipment List

The facility-wide equipment list (existing, removed, proposed) has been updated as specified in the following table. Removal of equipment is denoted by a strikethrough and proposed equipment is denoted by the use of **bold** font.

| Emission Units | | | | Associated Control Devices | |
|---|---|---|---|---|---|
| **Source Code** | **Description** | **Installation Date** | **Located Indoors or Outdoors?** | **Source Code** | **Description** |
| Log Preparation and Sawmill Operations | | | | | |
| LOGS | Logyard | 1984 | Fugitive-Outdoors | N/A | N/A |
| DB01 | Debarker | 1984 | Fugitive-Outdoors | N/A | N/A |
| MBC | Mechanical Bark Conveyance | 1984 | Fugitive-Outdoors | N/A | N/A |
| SC01 | Bark Screener | 1984 | Fugitive-Outdoors | N/A | N/A |
| HG01 | Bark Hog | 1984 | Fugitive-Outdoors | N/A | N/A |
| DBPL | Bark/Mulch Pile | 1984 | Fugitive-Outdoors | N/A | N/A |
| SAW | Debarked logs are cut and trimmed to the desired dimensions. | 1984 | 95% Indoors Fugitive | N/A | N/A |
| CH01 | Green Wood Chipper 1 | 1984 | Fugitive-Outdoors | N/A | N/A |
| SC02 | Green Wood Chip Screener | 1984 | Fugitive-Outdoors | N/A | N/A |
| MCC | Mechanical Chip Conveyance | 1984 | Fugitive-Outdoors | N/A | N/A |
| BIN1 | Green Wood Chip Truck Bin | 1984 | Fugitive-Outdoors | N/A | N/A |
| TXFR1 | Loading of Green Wood Chips from BIN1 to Trucks | 1984 | Fugitive-Outdoors | N/A | N/A |
| MSDC | Mechanical Sawdust Conveyance | 1984 | Fugitive-Outdoors | N/A | N/A |
| BIN2 | Green Sawdust Truck Bin | 1984 | Fugitive-Outdoors | N/A | N/A |
| TXFR2 | Loading of Green Sawdust From BIN2 to Trucks | 1984 | Fugitive-Outdoors | N/A | N/A |
| BIN3 | Green Sawdust Fuel Bin to Supply Kiln K02 Burner and to Supply Boiler BL01 | 1984 | Fugitive-Outdoors | N/A | N/A |
| **Lumber Drying** | | | | | |
| ~~K01~~ | ~~Existing Lumber Drying Kiln~~ **To be Permanently Shut down and Demolished** | ~~1984~~ | ~~N/A~~ | ~~N/A~~ | ~~N/A~~ |
| K02 | Direct-Fired Continuous Drying Kiln equipped with a 20 MMBtu/hr Green Sawdust burner<br><br>Potential Drying Capacity is 73 MMBF/yr and 8,333 BF/hr at 8,760 hrs./yr<br><br>Kiln receives lumber from Source Codes SAW and TRT | 1986 | N/A | N/A | N/A |

| Emission Units | | | | Associated Control Devices | |
|---|---|---|---|---|---|
| **Source Code** | **Description** | **Installation Date** | **Located Indoors or Outdoors?** | **Source Code** | **Description** |
| **K03*** | **Indirect-Fired Steam Kiln 1 to receive heat energy from Boiler BL01**<br><br>**Potential Drying Capacity is 73 MMBF/yr and 8,333 BF/hr at 8,760 hrs./yr**<br><br>**Kiln receives lumber from Source Codes SAW and TRT** | **TBD** | **N/A** | **N/A** | **N/A** |
| **Planer Mill-Produces Dimensioned Lumber, Wood Scrap, and Shavings** | | | | | |
| PLM | Planer Mill: 100% Indoors Fugitive Produces dimensioned lumber, shavings, and wood scrap | 1988 | 100% Indoors Fugitive | N/A | N/A |
| C01<br>C04 | Shavings are pneumatically conveyed to these cyclones which separates shavings from lighter wood waste for transfer to BIN4 or HM01/HM02 | 2023<br>2023 | Stack Exhausts | N/A | N/A |
| TXFR4 | Dry Wood Planer Shavings Transfer to Trucks | 1988 | Fugitive-Outdoors | N/A | N/A |
| **Grinding Mill-Produces Shavings and Fines** | | | | | |
| GM | Wood Scrap is pneumatically conveyed to the Grinder Mill (GM). GM produces shavings and fines. | 1988 | 100% Indoors Fugitive | N/A | N/A |
| C02 | Shavings are pneumatically conveyed to Cyclone C02 which separates heavier shavings from lighter shavings. The heavier collected material is sent to BIN5. The lighter material is sent to BH1 which separates the materials and sends the collected material to BIN5. BH1 is equipped with a Stack | 1988 | Enclosed | BH1 | Baghouse |
| C03 | Fines are pneumatically conveyed to Cyclone C03 which separates heavier fines from lighter fines. The heavier collected material is sent to BH1 which separates the materials and sends the collected material to BIN5. BH1 is equipped with a Stack. The lighter fines from C03 are pneumatically conveyed to BIN4. | 1988 | Enclosed | BH1 | Baghouse |
| BIN5 | Shavings Bin from C02 and BH1. | 1988 | Fugitive-Outdoors | N/A | N/A |
| TXFR5 | Dry Wood Planer Shavings Transfer to Trucks | 1988 | Fugitive-Outdoors | N/A | N/A |
| **Wood Flour Mill** | | | | | |
| HM01<br>HM02 | Hammermill 1<br>Hammermill 2<br><br>*Fed by Cyclone 4* | 2002 | 100% Indoors Fugitive | BH2 | Baghouse 2<br>*Collected material is transferred to BIN6. BH2 was installed in 2008* |
| BIN6 | Wood Flour Bin | 2002 | Fugitive-Outdoors | N/A | N/A |
| TXFR6 | Wood Flour Transfer to Trucks from BIN6 | 2002 | Fugitive-Outdoors | N/A | N/A |

| Emission Units | | | | Associated Control Devices | |
|---|---|---|---|---|---|
| **Source Code** | **Description** | **Installation Date** | **Located Indoors or Outdoors?** | **Source Code** | **Description** |
| **Pressure Wood Treatment Operations (T2Earth)** | | | | | |
| T2T | Wood Treatment Operation (includes chemical tanks and totes, water tanks, work tanks, pumps, wood treating cylinder, steel collection pan, steel containment pan, and rail line) | 1982 | 100% Indoors | N/A | N/A |

*proposed within current application

**Storage Tanks**

| Source Code | Capacity (gallons) | Contents | Installation Date | True Vapor Pressure (psia) |
|---|---|---|---|---|
| T01 | 10,000 | Underground Storage Tank (UST) storing gasoline | Unk. | ~7.8 to 9.0 |
| T02 | 10,000 | UST storing diesel fuel | Unk. | ~1.52 |
| T03 | 10,000 | UST storing diesel fuel | Unk. | ~1.52 |
| ~~T04~~ | ~~10,000~~ | ~~1.3% CCA/$H_2O$ as a fixed roof tank~~ | ~~Unk.~~ | ~~Unk.~~ |
| ~~T05~~ | ~~10,000~~ | ~~0.8% CCA/$H_2O$ as a fixed roof tank~~ | ~~Unk.~~ | ~~Unk.~~ |
| ~~T06~~ | ~~7,500~~ | ~~50% CCA/$H_2O$ as a fixed roof tank~~ | ~~Unk.~~ | ~~Unk.~~ |

*proposed within current application

**Fuel Burning Sources**

| Source Code | Input Heat Capacity (MMBtu/hr) | Description | Installation Date | Construction Date | APCD |
|---|---|---|---|---|---|
| **BL01*** | **48.3** | **48.3 MMBtu/hr Green Sawdust Boiler to Supply Heat Energy to Steam Kiln 1 (K03)**<br>**Receives Green Sawdust from BIN3** | **TBD** | **TBD** | **ESP1* (Electrostatic Precipitator)** |
| EN01 | 0.630 | Diesel Fired Emergency Generator | 2017 | 2000 | N/A |
| EN02 | 0.644 | Diesel Fired Emergency Generator | 2017 | 2005 | N/A |

*proposed within current application

## Emissions Summary

The Division carefully reviewed the earlier emission factors and the "new" emission factors to be used for the computation of actual VOC and individual HAP emissions since the facility will remain a Synthetic Minor (SM) Source upon the permitting of the proposed project. Note: The facility requested an SM limit for VOC and CO emissions of less than 100 tons per year (tpy), each, and they will track all potential VOC and CO emission sources. The facility requested an SM limit for individual and total HAPs of 10 tpy and 25 tpy, respectively, and they will track all potential HAP emission sources.

**Existing Facility**

Direct-Fired Continuous Dry Kiln 2 (K02): Kiln 2 (K02) is equipped with a 20 MMBtu/hr green sawdust fired burner. Note: The units of lb/Mbf represent pounds per 1000 board feet.

| Pollutant | Earlier Emission Factors | Application #29299 Emission Factor | Application #29299 Source of Data |
|---|---|---|---|
| CO | 0.60 lb/MMBtu[1] | 0.73 lb/Mbf | NCASI |
| NOx | 0.22 lb/MMBtu[1] | 0.28 lb/Mbf | NCASI |
| PM | 0.33 lb/MMBtu[1] | 0.14 lb/Mbf | NCASI |
| $PM_{10}$ | 0.073 lb/MMBtu[1] | 0.104 lb/Mbf | NCASI |
| $PM_{2.5}$ | 0.0735 lb/MMBtu[1] | 0.099 lb/Mbf | NCASI |
| $SO_2$ | 0.025 lb/MMBtu[1] | 0.025 lb/MMBtu | US EPA AP-42 Table 1.6-2 |
| VOC | 2.56 lb/MBF[2] | 2.62 lb/Mbf | Performance Test conducted by the facility on 4/30/2008 on Lumber Drying Kiln 1 (K01). This is a WPP1 emission factor and is adjusted to include weight of methanol and formaldehyde. GA EPD allows the use of this VOC emission factor for Kiln 2 (K02). |
| Acetaldehyde | 0.028 lb/MBF[1] | 0.045 lb/Mbf | NCASI |
| Acrolein | N/A | 0.006 lb/Mbf | NCASI |
| Arsenic | N/A | 2.2E-05 lb/MMBtu | US EPA AP-42, Table 1.6-4 |
| Formaldehyde | 0.04 lb/MBF[1] | 0.031 lb/Mbf | Performance Test conducted by the facility on 4/30/2008. |
| Hydrogen Chloride | N/A | 0.019 lb/MMBtu | US EPA AP-42, Table 1.6-3 |
| Methanol | 0.16 lb/MBF[1] | 0.161 lb/Mbf | NCASI |
| Phenol | N/A | 0.0103 lb/Mbf | NCASI |
| Propionaldehyde | N/A | 0.00292 lb/Mbf | NCASI |
| GHG ($CO_2e$) | N/A | 1,901 metric tons/hr | 40 CFR 98 Tables C-1 and C-2 using GWP in Table A-1 |

Wood Processing Operations (Log Preparation, Sawmill, Planer Mill, Grinder Mill, and Wood Flour Mill): These operations are sources of PM, $PM_{10}$, and $PM_{2.5}$ emissions (primarily fugitive in nature). The facility utilized applicable emission factors from *EPA Region 10 Memorandum: Particulate Matter Potential to Emit Emission Factors for Activities at Sawmills, Excluding Boilers, Located in Pacific Northwest Indian Country, May 2014*.

Wood Treatment Operation (T2T): No air emissions are anticipated from the wood treatment operation.

Storage Tanks: Fixed-roof UST's can emit VOCs and HAP through two types of losses: breathing losses and working losses. VOC and HAP emissions can be estimated using the equations and algorithms outlined in Chapter 7 of EPA's AP-42: Compilation of Air Emission Factors; or via the TANKS Estimation Software, Version 4.09d.

[1] Application # 15665
[2] Application # 18889

Emergency Generators: Emissions of PM/$PM_{10}$/$PM_{2.5}$, NOx, $SO_2$, CO, VOC, and individual HAP emissions are based on AP-42 and/or vendor data.

**Proposed Project**

Proposed Indirect-fired CDK (aka: Steam Kiln 1, K03):

Proposed Steam Kiln 1 (K03) potential emissions were calculated based on a potential drying capacity of the kiln of 73 million board feet (MMBF) per year operating 8,760 hours per year. Since Kiln K03 is an indirectly heated kiln that does not combust fuel itself, it does not emit any NOx, CO, $SO_2$, arsenic, hydrogen chloride, and total greenhouse gases (Total GHG). The emission factors for VOC, PM/$PM_{10}$/$PM_{2.5}$, HAPs are all from the National Council for Air and Stream Improvement (NCASI). The HAPs of interest include acetaldehyde, acrolein, formaldehyde, methanol, phenol, and propionaldehyde.

| Pollutant | Emission Factor | Source of Data |
|---|---|---|
| PM | 0.14 lb/Mbf | NCASI |
| $PM_{10}$ | 0.104 lb/Mbf | NCASI |
| $PM_{2.5}$ | 0.099 lb/Mbf | NCASI |
| VOC | 4.0 lb/Mbf | NCASI |
| Acetaldehyde | 0.0054 lb/Mbf | NCASI |
| Acrolein | 0.006 lb/Mbf | NCASI |
| Formaldehyde | 0.0149 lb/Mbf | NCASI |
| Methanol | 0.236 lb/Mbf | NCASI |
| Phenol | 0.0103 lb/Mbf | NCASI |
| Propionaldehyde | 0.00292 lb/Mbf | NCASI |

Proposed Boiler 1 (BL01):

The proposed boiler will combust green sawdust in a burner rated at 48.3 MMBtu/hr heat input. The boiler will exhaust to the outdoor atmosphere through an electrostatic precipitator (ESP, ESP1) to control PM emissions. The facility notes that the boiler will not be equipped with a bypass stack. The Division will assume that a bypass stack will exist for safety purposes.

Emission factors for CO, NOx, $SO_2$, PM, VOC, and specific HAP emission factors are from AP-42 (Chapter 1.6). The HAPs considered include acetaldehyde, acrolein, arsenic, formaldehyde, hydrogen chloride, methanol, phenol, and propionaldehyde. Operation of the ESP during operation of Boiler 1 is not required for the facility to maintain its SM status when only looking at the potential to emit of non-fugitive filterable PM (FPM) emissions from the facility. Note: Uncontrolled and controlled FPM emissions are set equal to uncontrolled and controlled total $PM_{10}$ (TPM10) and total $PM_{2.5}$ (TPM2.5), respectively.

**Facility-Wide Emissions**
(in tons per year)

| Pollutant | Uncontrolled Potential Emissions | | | Controlled Potential Emissions |
|---|---|---|---|---|
| | Includes? | Before Mod. | After Mod. | After Mod. |
| PM/$PM_{10}$/$PM_{2.5}$ | -All uncontrolled non-fugitives | 7.28 | 88 | 21 |
| NOx | -All uncontrolled non-fugitives | 38.5 | 56.76 | 56.76 |
| $SO_2$ | -All uncontrolled non-fugitives | 4.40 | 7.48 | 7.48 |
| CO | -All uncontrolled non-fugitives | <99 | **<100** | **<100** |
| VOC | -All uncontrolled non-fugitives | <99 | **<100** | **<100** |
| Max. Individual HAP | -All uncontrolled non-fugitives | 7.80 | **14.65** | **<10** |
| Total HAP | -All uncontrolled non-fugitives | 17.0 | **26.39** | **<25** |
| Total GHG (if applicable) | -All uncontrolled non-fugitives | 37,000 | 57,000 | 57,000 |

## Regulatory Applicability

Avoidance of 40 CFR 70 for Emissions of CO: Existing Condition 2.5 limits potential emissions of CO from the entire facility to less than 99 tons per consecutive twelve-month period by limiting the combined operating hours of Kilns 1 and 2 (K01 and K02) to 16,600 hours per consecutive twelve-month period.

The Division will incorporate a new facility-wide CO emissions limit of less than 100 tons per consecutive twelve-month period with no limit on the hours per year of operation. The operation of Kiln 2 (K02), the Boiler (BL01), and emergency generators are included in this facility-wide emissions limit.

Avoidance of 40 CFR 70 for Emissions of VOC: Existing Condition 2.1 limits potential emissions of VOCs from Kilns 1 and 2 (K01 and K02) to less 99 than tons per consecutive twelve-month period.

The Division will incorporate a new facility-wide VOC emissions limit of less than 100 tons per consecutive twelve-month period. The operation of Kiln 2 (K02), Steam Kiln 1 (K03), the Boiler (BL01), storage tanks, painting operations, and emergency generators are included in this facility-wide emissions limit.

Avoidance of 40 CFR 70 for Emissions of PM/$PM_{10}$/$PM_{2.5}$: The potential uncontrolled, non-fugitive, emissions for PM are less than 100 tons per consecutive twelve-month period. The operation of the proposed ESP (ESP1) on the Boiler (BL01) is not required for Avoidance of 40 CFR 70.

Area Source Classification Under 40 CFR 63: The Division will incorporate a new facility-wide individual HAP and total HAP emissions limits of less than 10 tons (individual) and 25 tons (total HAPs) per consecutive twelve-month period so that the facility retains its area source classification under 40 CFR 63. The operation of Kiln 2 (K02), Steam Kiln 1 (K03), the Boiler (BL01), storage tanks, painting operations, and emergency generators are included in this facility-wide emissions limit.

Georgia Rule 391-3-1-.02(2)(b) - "Visible Emissions" ("Georgia Rule (b)"): Georgia Rule (b) will remain an applicable requirement for limiting the visible emissions of all applicable emissions units to 40 percent capacity. Georgia Rule (b) does not apply to emissions units which meet the definition of *fuel-burning equipment* per Georgia Rule 391-3-1-.01(cc); nor to fugitive emission units.

Georgia Rule 391-3-1-.02(2)(e) – "Particulate Emissions from Manufacturing Operations" ("Georgia Rule (e)"): Georgia Rule (e) will remain an applicable requirement for limiting PM emissions from all applicable emissions units based on a process weight input rate formula.

Note: Georgia Rule (e) does not apply to emissions units which meet the definition of *fuel-burning equipment* per Georgia Rule 391-3-1-.01(cc); nor to fugitive emission units.

The following table summarizes the Georgia Rule (e) allowable emissions (lb/hr) and the data is used to determine whether any control devices are required for compliance. The data in this table is taken from Table 4.2 of Application # 29299.

| Non-Fugitive Source | Allowable PM Emissions (lb/hr) | Maximum PM Emissions (lb/hr) |
|---|---|---|
| Lumber Drying Kiln 2 (K02) | 31.54 | 1.167 |
| Steam Kiln 1 (K03) | 31.54 | 1.167 |
| Dry Hammermills (HM01-HM02) which are controlled by BH2 | 7.514 | 0.00247 |
| Cyclone C01 | 7.514 | 0.494 |
| Cyclones C02 and C03 which are controlled by BH1 | 7.514 | 0.00247 |
| Cyclone C04 | 7.514 | 0.00247 |

Georgia Rule 391-3-1-.02(2)(d) - "Fuel Burning Equipment": Georgia Rule (d) applies to the proposed Boiler (BL01) and this state rule limits PM and visible emissions from *fuel-burning equipment* as defined in Georgia Rule 391-3-1-.01(cc). The burner in Kiln 2 (K02) is a direct-fired burner which means that this burner does not meet the definition of Georgia Rule 391-3-1-.01(cc). The Georgia Rule (d) PM emission limit is compared to the uncontrolled and controlled PM emissions from the proposed Boiler (BL01) as summarized in the following table.

| Parameter | PM Emissions, lb/MMBtu | Source of Emission Value |
|---|---|---|
| Allowable Emission Limit | 0.2275 | Section 4.2.2 of Application # 29299 |
| Uncontrolled Emissions | 0.347 | Table 3.4B of Application # 29299 |
| Controlled Emissions | 0.030 | Table 3.4B of Application # 29299 |

The facility will be required to control PM emissions from the Boiler (BL01) with the proposed ESP, for Georgia Rule (d) compliance purposes. The facility's updated air permit will require the installation, monitoring, and operation of the following devices on a state-only requirement: (1) The total secondary voltage (kV) for each field of the proposed ESP (ESP1); and (2) total secondary amperage (ma) for each field of the ESP (ESP1). The facility shall conduct initial performance tests to verify compliance with

Georgia Rule (d). In addition, the facility shall monitor and record the secondary voltage (kV) and secondary amperage (ma) parameters and calculate the total secondary power (watt) at least once every 15 minutes during the entire period of the PM performance tests. The data obtained during said performance tests shall be used to establish a minimum hourly average total secondary power that indicates proper operation of the ESP (ESP) to meet the applicable PM emission limits.

Georgia Rule 391-3-1-.02(2)(g) – "Sulfur Dioxide": This state rule limits the fuel sulfur content of *fuel-burning sources*. The *fuel-burning* sources at the facility include Kiln 2 (K02) wood-fired burner, the proposed wood-fired boiler (BL01), and the emergency generators. Green sawdust contains negligible amounts of sulfur and therefore its use should easily be less than 2.5 weight percent (Georgia Rule (g) allowable). The diesel fuel combusted at the facility contains less than 0.5% sulfur and therefore would comply with the GA Rule (g) sulfur content limit.

40 CFR 60 Subpart Dc – "Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units" ("NSPS Dc"): NSPS Dc applies to the Boiler (BL01) because the boiler is constructed after June 9. 1989 and has a maximum heat input capacity of 100 MMBtu/hr or less, but greater than or equal to 10 MMBtu/hr. Boiler BL01 will have a maximum heat input capacity of 48.3 MMBtu/hr and will be fired exclusively with wood.

*Standard for PM:* NSPS Dc limits the PM emissions to less than or equal to 0.030 lb/MMBtu, per 40 CFR 60.43c(e)(1), because the boiler will be constructed after February 28, 2005, and will be fired with wood at a maximum heat input capacity greater than 30 MMBtu/hr. NSPS Dc limits the visible emissions from the boiler to less than 20 percent opacity (6-minute average), except for one 6-minute period per hour of not more than 27 percent opacity, per 40 CFR 60.43c(c), because the boiler will combust wood at a maximum heat input capacity of greater than 30 MMBtu/hr.

*Monitoring Requirements*: NSPS Dc requires the installation, calibration, maintenance and operation of a continuous opacity monitoring system (COMS) (measurement technique, monitoring frequency, and indicator of performance) for measuring the opacity of the emissions discharged to the atmosphere and record the output of the system per 40 CFR 60.47c(a). The facility must conduct a performance evaluation of said COMS according to the requirements of 40 CFR 60.13 and according to Performance Specification 1 of 40 CFR 60, Appendix B. The Permittee shall reduce all COMS data to 6-minute averages, and the 6-minute opacity averages shall be calculated from 36 or more data points equally spaced over each 6-minute period per 40 CFR 60.13.

*Compliance Demonstration Method:* The facility shall conduct an initial performance test for PM and visible emissions within 180 days of startup of said boiler in accordance with 40 CFR 60.45c(a). Compliance with the opacity standard shall be determined by conducting observations in accordance with Method 9 or as provided in 40 CFR 60.11(e)(5) which allows for the use of a COMS. For purposes of determining initial compliance, the minimum total time of observations shall be 3 hours (30 6-minute averages) for the performance test. The opacity observations shall be conducted concurrently with the initial performance test for PM emissions. If the Permittee submits for compliance purposes continuous opacity monitoring system (COMS) data results produced during the performance test under 40 CFR 60.8 in lieu of Method 9 observation data, the Permittee shall comply with 40 CFR 60.11(e)(1) and (5).

*Notification, Recordkeeping and Reporting Requirements*: 40 CFR 60.7(c) requires the facility to submit *excess emissions and monitoring systems performance reports* and summary report forms to the Division since the facility is required to install a COMS device. All such reports shall be postmarked by the 30$^{th}$ day

following the end of each six-month period. Written reports of *excess emissions* shall include the information specified in 40 CFR 60.7(c)(1)-(4). The summary report shall contain the information and be in the format show in figure 1 of 40 CFR 60.7(d). Note: NSPS Dc does not define an excess emission for opacity when the monitoring method is via COMS. Nonetheless, the updated facility permit will define a *deviation* as any 6-minute average opacity that is greater than 20 percent opacity, except for one 6-minute period per hour of not more than 27 percent opacity. This is included in Condition 7.4c.iv.

The NSPS Dc reporting and recordkeeping requirements for the proposed boiler include the following: (1) submit notification of the date of construction and actual startup as well as the parameters specified in 40 CFR 60.48c(a); (2) the performance test data from the initial and any subsequent performance tests and the performance evaluation of the COMS using the applicable performance specifications in accordance with 40 CFR 60.48c(b); (3) *excess emissions and monitoring systems performance report* for any excess emissions from the boiler (BL01) that occur during the reporting period; (4) record and maintain records of the amount of wood combusted in the boiler during each operating month. Note: The use of a COMS does not require, by NSPS Subpart Dc, the development and submission of a *site-specific monitoring plan*.

<u>40 CFR 63 Subpart JJJJJJ – "National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources" (NESHAP 6J):</u> NESHAP 6J applies to the Boiler (BL01) because the boiler meets the definition of *industrial boiler* (per 40 CFR 63.12237); is classified under the subcategory of *biomass* (per 40 CFR 63.11200(b)); and is located at an area source of HAPs. Boiler BL01 is classified as a *new area source boiler* (i.e., commenced construction of the boiler after June 4, 2010) and has a maximum heat input capacity of 48.3 MMBtu/hr. The boiler will be equipped with an *oxygen trim system* that will maintain an optimum air-to-fuel ratio.

*Emission Standards and Work and Management Standards:* The filterable PM (FPM) emission standard of 0.030 lb FPM/MMBtu applies to the proposed boiler (BL01) because the boiler will have a maximum heat input capacity of greater than 30.0 MMBtu/hr in accordance with 40 CFR 63.11201(a) and Item #3 of Table 1. This emission limit applies at all times the boiler is operating, except during periods of startup and shutdown as defined in 40 CFR 63.11237, during which time the facility must comply with only Table 2 of NESHAP 6J. The work/management practice requirements include the minimization of the boiler's startup and shutdown periods and conduct startups and shutdowns according to the manufacturer's recommended procedures in accordance with 40 CFR 63.11201(b), Item #1 of Table 2, and 40 CFR 63.11223(g). If manufacturer's recommended procedures are not available, the facility must follow recommended procedures that are available. The facility is also required to conduct a tune-up of the boiler at least once every 5 years as specified in 40 CFR 63.11223 in accordance with 40 CFR 63.11201(b) Item #15 of Table 2. The 5-year time period applies, rather than biennially, because the boiler will be operated with an *oxygen trim system*.

*Operating Limits*: 40 CFR 63.11201(c), 40 CFR 63.11224(b), and Item #2 of Table 3 contains the operating limits for ESP (ID No. ESP1). The facility may either maintain opacity to less than or equal to 10 percent opacity (daily block average) or maintain the 30-day rolling average total secondary electric power of ESP1 at or above the minimum total secondary electric power determined in the most recent performance test (per Condition 6.6). Either operating limit would apply because the facility uses a control device (ESP1) to comply with the 0.030-lb/MMBtu PM emission limit. The two operating limit options are included in Condition 2.10.

The facility must maintain the boiler operating load (i.e., fuel feed data or steam generation rate) such that it does not exceed 110 percent of the average operating load determined and recorded during the most recent performance stack test per 40 CFR 63. 11201(c), 40 CFR 63.11212(c), and Item #7 of Table 3.

*Monitoring Requirements:* If the facility chooses the operating limit specified in Condition 2.10a., the facility must install, operate, and maintain a COMS (the *measurement technique and monitoring frequency*) according to the procedures in 40 CFR 63.11224(e)(1)-(8) upon startup of said boiler. The COMS, in this case, is the *indicator of performance* for the operation of the proposed ESP (ESP1) per Table 3 (Item # 2). The facility must conduct a *performance evaluation* of said COMS according to the requirements of 40 CFR 63.8 and according to Performance Specification 1 of 40 CFR 60, Appendix B.

If the facility chooses the operating limit specified in Condition 2.10b., the facility must calculate the hourly secondary power (in Watts) and reduce the hourly secondary power to 30-day rolling averages.

The facility must install, operate and maintain a continuous monitoring system (CMS) for the boiler operating load parameter (i.e., fuel feed rate or steam generation data) according to the procedures in 40 CFR 63.11224(d)(1)-(4) upon startup of said boiler.

The facility must monitor and collect data, according to 40 CFR 63.11221 and the *site-specific monitoring plan (SSMP).*

*Initial Compliance Requirements*: The facility must demonstrate initial compliance with the PM emission limit by conducting performance (stack) tests, as applicable, according to 40 CFR 63.11212 and Table 4 to NESHAP 6J no later than 180 days after startup of said boiler (BL01) per 40 CFR 63.11210(a) and 40 CFR 63.11210(d). The facility must establish the initial boiler operating load operating parameter during the initial performance test.

The facility must develop a *site-specific monitoring plan (SSMP)* according to the requirements of 40 CFR 63.11205(c) and 40 CFR 63.11224(c) for the COMS and CMS (i.e., boiler operating load). In addition, the facility must conduct a *performance evaluation* of the COMS and CMS in accordance with the *SSMP*.

The facility must complete an initial performance tune-up, as specified in 40 CFR 63.11223, no later than 61 months after the initial startup of said boiler per 40 CFR 63.11210(g) and 40 CFR 63.112223(c).

*Subsequent Compliance Demonstrations*: The facility must conduct subsequent performance tests according to 40 CFR 63.11212 on a triennial basis (no more than 37 months after the most recent PM emissions performance test) per 40 CFR 63.11220(a). Relaxed testing frequency is allowed under 40 CFR 63.11220(c). The facility must conduct subsequent performance tune-ups of the boiler, according to 40 CFR 63.11223(c), and keep records as required in 40 CFR 63.11225(c). Boiler BL01 will be equipped with an *oxygen trim system* that mains an optimum air-to-fuel ratio and the facility must conduct subsequent performance tune-ups at least once every 5 years as specified in 40 CFR 63.11223(b)(1)-(7). Each 5-year tune-up must be conducted no more than 61 months after the previous tune-up.

*Deviation Definition(s):* NESHAP 6J defines the following *deviations* for purposes of the proposed project: (1) except for periods of monitoring system malfunctions or monitoring system out-of-control periods, repairs associated with monitoring system malfunctions or monitoring systems out-of-control periods, and required monitoring system quality assurance or quality control activities (including, as applicable, calibration checks, required zero and span adjustments, and scheduled CMS maintenance as defined in the

Permittee's *SSMP*), failure to collect monitoring data is a *deviation* of the monitoring requirements per 40 CFR 63.11221(d); (2) operation of the boiler above one or both of the operating limits per 40 CFR 63.11222(a)(1); and (3) each instance in which the Permittee does not meet each emission limit and operating limit in Tables 1 and 3 of NESHAP 6J that apply per 40 CFR 63.11222(b).

*Notification, Reporting, and Recordkeeping Requirements*: The facility must maintain the records specified in 40 CFR 63.11225(c)(1)-(7), as applicable. The facility must prepare and submit the following to the Division: (1) Notification of intention to conduct a performance test and CMS performance evaluation at least 60 calendar days before the performance test is scheduled per 40 CFR 63.7(b); CMS evaluation per 40 CFR 63.8. and 40 CFR 63.11225(a); (2) Initial Notification must be submitted within 120 days after startup of said boiler per 40 CFR 63.9(b), (c), (d), (e), and 40 CFR 63.11225(a)(2), as applicable; (3) A Notification of Compliance Status (NOCS) within 60 days of initial performance testing for PM in accordance with 40 CFR 63.9(h) and 40 CFR 63.11225(a)(4), as applicable. This NOCS does not need to incorporate the tune-ups. This NOCS shall also include the date of the performance test and a summary of the test results; and (4) Prepare, by March 1 of each year, and submit to the Division upon request, an Annual Compliance Certification Report (ACCR) for the previous calendar year containing information specified in 40 CFR 63.11225(b)(1)-(4). The facility must submit this report by March 15 if they have any deviation as described in 40 CFR 63.11225(b)(3). Note that, in the proposed permit, the Division has required the submittal of the ACCR by February 28 of each year, in order to streamline the submittal of any exceedance/excursion reporting date specified in Condition 7.2.

## Permit Conditions

A new consolidated air permit has been developed. The following table summarizes the new air permit.

| New Condition No. | Existing Condition No. | Note(s) |
|---|---|---|
| 2.1 | 2.1 | **Modified**<br>Facility-wide VOC emissions limit of less than 100 tons during any consecutive twelve-month period for avoidance of 40 CFR 70. This emissions limit includes the operation of Lumber Drying Kiln 2 (K02), Steam Kiln 1 (K03), the boiler (BL01), storage tanks, painting operations, and emergency generators. |
| 2.2 | N/A | **New**<br>Facility-wide individual HAP and total HAP emissions limits of less than 10 tons and 25 tons, respectively, during any consecutive twelve-month period for avoidance of 40 CFR 70 and area source classification under 40 CFR 63. This emissions limit includes the operation of Lumber Drying Kiln 2 (K02), Steam Kiln 1 (K03), the boiler (BL01), storage tanks, painting operations, and emergency generators. |
| 2.3 | 2.5 | **Modified**<br>Facility-wide CO emissions limit of 100 tons during any consecutive twelve-month period for avoidance of 40 CFR 70. This emissions limit includes the operation of Lumber Drying Kiln 2 (K02), Steam Kiln 1 (K03), the boiler (BL01), and emergency generators. |
| 2.4 | N/A | **New**<br>Limits the fuel combusted in the Lumber Drying Kiln 2 (K02) and the proposed boiler (BL01) to only wood. This requirement will subsume the fuel-sulfur content limit of Georgia Rule (g) because wood contains much less sulfur than 2.5 weight percent. |
| 2.5 | 2.3 | **Modified** |

| New Condition No. | Existing Condition No. | Note(s) |
|---|---|---|
| | 2.4 | Establishes Georgia Rule (b) as the applicable opacity limit for the non-fugitive emitting sources at the facility, excluding the fuel-burning equipment. |
| 2.6 | 2.2 | **Modified**<br>Establishes Georgia Rule (e) as the applicable PM emission limit (lb/hr) for the non-fugitive emitting sources at the facility, excluding the fuel-burning equipment. The modified condition includes the applicable formulas for all applicable equipment installed after July 2, 1968. |
| 2.7 | N/A | **New**<br>Establishes 40 CFR 60 Subparts A and Dc and 40 CFR 63 Subparts A and JJJJJJ as applicable requirements for the proposed boiler (BL01). |
| 2.8.a. | N/A | **New**<br>Establishes the Georgia Rule (d) allowable PM emission limit in lb/MMBtu for the proposed boiler (BL01). |
| 2.8.b. | N/A | **New**<br>Establishes the NSPS Dc and NESHAP 6J allowable PM emission limits for the proposed boiler (BL01). The numerical value of these PM emission limits is equivalent. In addition, these numerical emission limits do not apply during periods of startup, shutdown, or malfunction. |
| 2.8.c. | N/A | **New**<br>Establishes the Georgia Rule (d) and NSPS Dc visible emissions standards for the proposed boiler (BL01). The numerical value of these opacity standards is equivalent. In addition, these numerical emission limits do not apply during periods of startup, shutdown, or malfunction. |
| 2.9 | N/A | **New**<br>Establishes the NESHAP 6J work practice standard for operation of the proposed boiler (BL01) during periods of startup and shutdown. |
| 2.10 | N/A | **New**<br>Establishes the NESHAP 6J operating limit (either options of 10 percent opacity and ESP1 secondary power) associated with operation of the proposed ESP (ESP1). |
| 2.11 | N/A | **New**<br>Establishes the NESHAP 6J operating limit associated with performance testing of the proposed boiler at less than or equal to 110% of the average operating load recorded during the most recent performance stack test. |
| 2.12 | N/A | **New**<br>Requires the facility to equip the boiler (BL01) with an *oxygen trim system* that mains an optimum air-to-fuel ratio in order for the frequency of tune-ups to be at least once every 61 months per NESHAP 6J. |
| 2.13 | N/A | **New**<br>Requires the facility to operate the power vents whenever the associated continuous drying kilns are in operation. This is required to validate the 80% of kiln emissions would exit through the power vents as shown in the Toxic Impact Assessment. |
| 3.1 | 3.1 | **Modified**<br>Establishes the work practice standard for fugitive sources per Georgia Rule (n)1. |
| 3.2 | 3.2 | **No Change**<br>Establishes the opacity standard for fugitive sources per Georgia Rule (n)2. |
| 4.1 | 4.2 | **No Change**<br>Requires the facility to perform routine maintenance on all air pollution control equipment along with associated recordkeeping requirements. |

| New Condition No. | Existing Condition No. | Note(s) |
|---|---|---|
| 4.2 | N/A | **New**<br>Requires the facility to perform routine maintenance on the proposed boiler (BL01) along with associated recordkeeping requirements. This information is used, in part, to determine if the NESHAP 6J tune-up must be re-done after the maintenance has been performed on said boiler |
| 4.3 | 4.1 | **Modified**<br>Requires the facility to operate the cyclones (C01, C02, C03, and C04), and baghouses (BH1 and BH2) at all times that an associated emission unit is being operated, as applicable. Note: This language is mean to not require the simultaneous operation of cyclones C02 and C03 concurrently during operation of the Grinder Mill (GM). |
| 4.4 | 4.3 | **No Change**<br>Requires the facility to maintain an inventory of filter bags such that adequate supplies of bags are on hand to replace any defective bags in a baghouse. |
| 4.5 | N/A | **New**<br>Requires the facility to install and operate a electrostatic precipitator (ESP1) on the proposed boiler (BL01) during all periods of operation of said boiler.<br><br>Requires the facility to comply with the operating limits specified in Condition 2.10. |
| 5.1 | 5.2<br>6.1.e. | **Modified**<br>This condition language is updated based on recent air permits. |
| 5.2 | N/A | **New**<br>Requires the facility to maintain applicable records associated with the startup, shutdown, and malfunction of the boiler (BL01) in accordance with 40 CFR 60.7(b) and 40 CFR 60.13(e); Requires the facility to maintain applicable records associated with the malfunction of the air pollution control equipment; and any periods during which a continuous monitoring system or monitoring device is inoperative. |
| 5.3 | N/A | **New**<br>Monitoring Requirements: Monitoring and recording of the secondary voltage and secondary amperage for the electrostatic precipitator (ESP, ID No. ESP1).<br><br>If the facility chooses the operating limit specified in Condition 2.10b., the facility must calculate the hourly secondary power and reduce it to 30-day rolling averages. |
| 5.4 | 5.3 | **Modified**<br>Requires the facility to perform the prescribed operation and maintenance checks and retrain a record suitable for inspection or submittal for each week or portion of each week of operation of the associated emission unit(s) and their associated cyclones. |
| 5.5 | 5.3 | **Modified**<br>Requires the facility to develop and implement a Preventative Maintenance Program for the baghouses operated at the facility. This PMP shall include the specified information along with the prescribed operation and maintenance checks. |
| 5.6.a. | N/A | **New**<br>Requires the facility to install, calibrate, maintain, and operate a COMS for measuring and recording the opacity of the emissions discharged to the atmosphere from the boiler (BL01, via ESP1) as required by NSPS Dc and NESHAP 6J (optional in NESHAP 6J). The COMS data shall be reduced to 6-minute averages and recorded to 6-minute averages calculated from 36 or more data points equally spaced over each 6-minute period as required by NSPS Dc and NESHAP 6J. Also, the COMS continuous data shall be reduced and recorded on a daily black average, except as provided in 40 CFR 63.11221(c). |

| New Condition No. | Existing Condition No. | Note(s) |
|---|---|---|
| 5.6.b. | N/A | **New**<br>Requires the facility to install, calibrate, maintain, and operate a CMS for measuring and recording the boiler operating load (i.e., fuel feed data or steam generation data) for the boiler (BL01) per NESHAP 6J. The continuous data shall be reduced and recorded to 30-day rolling averages using Equation 3 of 40 CFR 63.11224). All data must be used that is collected during all periods, except certain data as specified in 40 CFR 63.11221(c). |
| 5.7 | N/A | **New**<br>Requires the facility to develop a *site-specific monitoring plan* (SSMP) according to 40 CFR 63.11205(c) and 40 CFR 63.11224(c)(1)-(4) for the COMS and CMS required by Condition 5.3. The facility shall submit this SSMP to the Division, upon request, at least 60 days before your initial *performance evaluation* of the COMS and CMS.<br><br>Note that NSPS Dc does not require the development of an SSMP since the COMS is not classified as a *digital opacity monitoring system*. |
| 5.8 | N/A | **New**<br>Requires compliance with 40 CFR 63.11221 as it pertains to the continuous monitoring systems (CMS) required by Condition 5.6. |
| 5.9 | N/A | **New**<br>Requires the facility to conduct a tune-up of the Boiler BL01 at least once every 5 years per 40 CFR 63.11223(c) because the boiler is equipped with an *oxygen trim system* that maintains an *optimum air-to-fuel ratio*. The initial tune-up must be completed within 61 months of startup of said boiler. Subsequent tune-ups shall be conducted at least once every 61 months from the most recent tune-up. |
| 5.10 | N/A | **New**<br>Specifies the procedures to follow in conducting the boiler tune-ups required in Condition 5.9. |
| 6.1 | 6.1.c. | **Modified**<br>Condition language is updated for clarity purposes. |
| 6.2 | 6.1.b. | **Modified**<br>Condition language is updated based on the NSPS and NESHAP requirements. |
| 6.3 | 6.1.a.<br>6.1.d. | **Modified**<br>Condition language is modified to denote the applicable performance test methods for determining compliance with the applicable state rule and/or federal regulation. |
| 6.4 | N/A | **New**<br>NSPS and NESHAP requirements regarding the submission of performance tests. This condition language is added for purposes of compliance with NSPS and NESHAP requirements. |
| 6.5 | N/A | **New**<br>Establishes the initial performance testing for PM emissions for purposes of NSPS Dc and NESHAP 6J. Establishes the subsequent performance testing for PM emissions for purposes of NESHAP 6J. |

| New Condition No. | Existing Condition No. | Note(s) |
|---|---|---|
| 6.6 | N/A | **New**<br>Requires the monitoring of the total secondary voltage and total secondary amperage for each field of the ESP and calculate the total secondary power every 15 minutes during the entire period of the testing required by Condition 6.5.<br><br>Use this data to determine, record, and establish the three-hour average total secondary total secondary power that indicates proper operation of the ESP. |
| 6.7 | N/A | **New**<br>Establishes the initial performance tests for visible emissions from the boiler. |
| 6.8 | N/A | **New**<br>Requires the facility follow the procedures, per 40 CFR 63.11212, for purposes of Condition 6.5. |
| 6.9 | N/A | **New**<br>Requires the facility establish the unit-specific maximum operating load, for purposes of NESHAP 6J, during the performance tests required by Condition 6.5. If the facility chooses to comply with the operating limit specified in Condition 2.10b., the facility must establish the minimum 3-hr average total secondary power as required in Condition 6.6. |
| 7.1 | N/A | **New**<br>Establishes the requirement of Georgia Rule 391-3-1-.02(6)(b)1.(iv). |
| 7.2 | N/A | **New**<br>Establishes the requirements of Georgia Rule 391-3-1-.02(6)(b)1., 40 CFR 60.7(c), and 40 CFR 63.10(e). |
| 7.3 | N/A | **New**<br>Establishes the requirement of Georgia Rule 391-3-1-.02(6)(b)1. as it pertains to sampling, analytic techniques, and/or measurements. |
| 7.4 | N/A | **New**<br>Defines excess emissions, exceedances, and deviations for purposes of Condition 7.2. Note that NESHAP 6J includes definitions for deviations. |
| 7.5 | 7.1<br>7.2<br>7.3 | **Modified**<br>Establishes the recordkeeping of the applicable activity factors for purposes of computing actual emissions of CO, VOC, and individual HAP emissions. |
| 7.6<br>7.7<br>7.8<br>7.9 | N/A | **New**<br>Establishes the requirement to compute monthly CO emissions from Lumber Drying Kiln 2 (K02) and the fuel-burning sources. Establishes the requirement to compute the consecutive twelve-month CO emissions from the entire facility. Establishes the notification requirements associated with the monthly and consecutive twelve-month CO emissions from the entire facility. |
| 7.10<br>7.11<br>7.12<br>7.13<br>7.14<br>7.15<br>7.16 | N/A | **New**<br>Establishes the requirement to compute monthly VOC emissions from Lumber Drying Kiln 2 (K02), Steam Kiln 1 (K03), storage tanks, painting operations, and the fuel-burning sources. The VOC emission factors for Lumber Drying Kiln 2 (K02) and Steam Kiln 1 (K03) are prescribed in Condition 7.11. Establishes the requirement to compute the consecutive twelve-month VOC emissions from the entire facility. Establishes the notification requirements associated with the monthly and consecutive twelve-month VOC emissions from the entire facility. |

| New Condition No. | Existing Condition No. | Note(s) |
|---|---|---|
| 7.17<br>7.18<br>7.19<br>7.20<br>7.21<br>7.22<br>7.23 | N/A | **New**<br>Establishes the requirement to compute monthly individual HAP emissions from Lumber Drying Kiln 2 (K02) and Steam Kiln 1 (K03) on a combined individual HAP basis using specified individual HAP emission factors in Condition 7.18.<br><br>Establishes the requirement to compute the monthly combined HAP emissions from Lumber Drying Kiln 2 (K02) and Steam Kiln 1 (K03) on a tons per month basis.<br><br>Note: The facility only needs to computing monthly individual HAP emissions of acetaldehyde, acrolein, arsenic, formaldehyde, hydrogen chloride, methanol, phenol, and propionaldehyde.<br>---<br>Establishes the requirement to compute the monthly individual HAP emissions from the *fuel-burning sources*, on a combined basis, for *all applicable* HAPs.<br><br>Establishes the requirement to compute the monthly combined HAP emissions from the *fuel-burning sources* on a tons per month basis.<br><br>---<br>Establishes the requirement to compute the monthly individual and combined HAPs emissions from the *storage tanks and any other individual HAP emitting source* on a tons per month basis.<br><br>---<br>Establishes the requirement to compute the total monthly individual HAP emissions from the entire facility. Establishes the requirement to compute the total combined HAP emissions from the entire facility.<br><br>---<br>Establishes the requirement to compute the consecutive twelve-month total individual HAP emissions from the entire facility. Establishes the requirement to compute the consecutive twelve-month total HAP emissions from the entire facility. Establishes notification requirements associated with exceedances of Condition 2.2. |
| 7.24<br>7.25 | N/A | **New**<br>Establishes the requirement to compute the one-hour average and the 3-hour rolling averages of the total secondary power from the Condition 5.3 monitoring data. |
| 7.26 | N/A | **New**<br>NSPS Dc monthly recordkeeping of the amount of wood combusted in the boiler. |
| 7.27 | N/A | **New**<br>NESHAP 6J (40 CFR 63.11225(a)-(c)) recordkeeping requirements associated with the construction and operation of the boiler. |
| 7.28 | N/A | **New**<br>NSPS Dc and NESHAP 6J notification requirements as they pertain to the boiler. |
| 8.1 | 8.1 | **No Change**<br>Special Condition |
| 8.2 | N/A | **New**<br>Requires the facility calculate and pay and annual Permit fee to the Division |
| 8.3 | 8.2 | **Modified**<br>Updated referenced Air Quality Permit Numbers that are revoked. |

| New Condition No. | Existing Condition No. | Note(s) |
|---|---|---|
| N/A | 8.3 | **Deleted** |

**Toxic Impact Assessment**

The facility evaluated eight TAPs including acetaldehyde, acrolein, arsenic, formaldehyde, hydrogen chloride, methanol, phenol, and propionaldehyde based on discussions with the Division during the pre-application meeting.

*MER Applicability Analyses:* There is the presumption that potential emissions of the applicable TAPs (from mainly unobstructed vertical discharge source characterizations) will comply with the applicable Acceptable Ambient Concentration Screening Levels (AAC) when those potential emissions are below the Minimum Emission Rates (MERs). If the potential emission of the applicable TAP is less than 80% of the total PTE from unobstructed vertical discharge, then the MER does not apply and modeling is required. If the potential emission of the applicable TAP is greater than or equal to 80% of the total PTE from unobstructed vertical discharge, then the MER does apply. According to Application No. 29299, (1) the kiln (K02 and K03) stacks and boiler (BL01) stack are unobstructed, (2) both kilns are equipped with vertically oriented power vents, and (3) the Division generally accepts the assumption that 80% of kiln emissions will exhaust through the stacks if power vents are operated (while the other 20% would exit through kiln doors); therefore, the Division agrees that the MER method would apply to the facility.

Modeling is required to assess compliance with the applicable AAC when the PTE equals or exceeds the applicable MER. Table TIA.1 summarizes the MER applicability analysis and whether the TAP needs to be modeled:

| **TIA.1: MER Applicability Analyses** | | | |
|---|---|---|---|
| **TAP** | **PTE (lb/yr)** | **MER (lb/yr)** | **Need to be Modeled?** |
| Acetaldehyde | 3,798 | 1,107.2 | Yes |
| Acrolein | 2,568 | 4.87 | Yes |
| Arsenic | 13.16 | 0.0567 | Yes |
| Formaldehyde | 3,782 | 267 | Yes |
| Hydrogen chloride | 11,368 | 4,866.6 | Yes |
| Methanol | 29,300 | 30,126.7 | No |
| Phenol | 1,525 | 2,199.9 | No |
| Propionaldehyde | 439 | 1,946.6 | No |

*Modeled Emission Rates:* The Division assessed the credibility of the modeled emission rates as specified in Tables 5.11A and 5.11B of the application and concurs with the applicant's conclusion.

*TAP MGLC Assessment:* The facility derived the maximum ground level concentration (MGLC) for each TAP required to be modeled using the AERMOD modeling system as part of their air permit application dated May 7, 2024. The Air Protection Branch Data and Modeling Unit (DMU) assessed the facility's setup and execution of the AERMOD modeling system for the facility as a whole for compliance with the Georgia Air Toxics Guideline. The MGLC predicted by AERMOD for each averaging period for each TAP is compared to the AAC in order to determine compliance with the Guideline. Table TIA.2 summarizes the results of DMU's execution of the AERMOD modeling run.

| Table TIA.2: TAP MGLC Assessment | | | | | |
|---|---|---|---|---|---|
| **TAP** | **Averaging Period** | **AAC[3] (µg/m³)** | **Max Modeled Conc. (µg/m³)** | **Receptor UTM Zone: 17** | |
| | | | | **Easting (meter)** | **Northing (meter)** |
| acetaldehyde | 15-minute | 4,500 | 63.6594156 | 382,200.00 | 3,720,500.00 |
| | Annual | 4.55 | 0.4735100 | 382,278.25 | 3,720,464.56 |
| acrolein | 15-minute | 23 | 8.7021528 | 382,200.00 | 3,720,500.00 |
| | Annual | 0.35 | 0.1113200 | 382,278.25 | 3,720,464.56 |
| arsenic | 15-minute | 0.2 | 0.0744480 | 382,200.00 | 3,720,500.00 |
| | Annual | 0.000233 | **0.0006800** | 382,278.25 | 3,720,464.56 |
| Formaldehyde | 15-minute | 245 | 44.3053512 | 382,200.00 | 3,720,500.00 |
| | Annual | 1.10 | 0.37469000 | 382,278.25 | 3,720,464.56 |
| hydrogen chloride | 15-minute | 700 | 64.2938076 | 382,200.00 | 3,720,500.00 |
| | Annual | 20 | 0.591400 | 382,278.25 | 3,720,464.56 |

The results show that the predicted MGLV for arsenic exceeds the annual AAC. The MGLCs for all other TAPs were below the AACs.

*Site-Specific Risk Analysis:* Since the modeled annual MGLC for arsenic exceeds the AAC at the fence line, a risk analysis was conducted at the nearby residences and businesses. The DMU reviewed the applicant's site-specific risk analysis (residential and business area risk analyses) and Tables TIA.3 and TIA.4 specify DMU's modeling results.

| Table TIA.3: TAP Risk Assessment Residential Area Analysis | | | | | | |
|---|---|---|---|---|---|---|
| **TAP** | **Averaging Period** | **AAC (µg/m³)** | **Modeled Conc. (µg/m³)** | **Receptor UTM Zone: 17** | | **Receptor ID** |
| | | | | **Easting (meter)** | **Northing (meter)** | |
| arsenic | Annual | 0.000233 | 0.0001462 | 382,020.00 | 3,720,805.00 | R1 |
| | | | 0.00013331 | 381,986.00 | 3,720,819.00 | R2 |
| | | | 0.0000590 | 381,606.00 | 3,720,787.00 | R3 |
| | | | 0.0000589 | 381,464.00 | 3,721,132.00 | R4 |
| | | | 0.0000406 | 381,044.00 | 3,721,405.00 | R5 |
| | | | 0.0000428 | 383,602.00 | 3,720,564.00 | R6 |

[3] SSPP approved the applicant's case-by-case request to use an alternative annual acceptable ambient concentration (AAC) of 0.35 µg/m³ for acrolein.

| Table TIA.4: TAP Risk Assessment Business Area Analysis | | | | | | |
|---|---|---|---|---|---|---|
| **TAP** | **Averaging Period** | **AAC (µg/m³)** | **Modeled Conc. (µg/m³)** | **Receptor UTM Zone: 17** | | **Receptor ID** |
| | | | | **Easting (meter)** | **Northing (meter)** | |
| arsenic | 24-hour | 0.0111 | 0.0007133 | 381,774.00 | 3,720,873.00 | B1 |
| | | | 0.0006106 | 381,675.00 | 3,720,904.00 | B2 |
| | | | 0.0004905 | 381,459.00 | 3,721,342.00 | B3 |
| | | | 0.0011383 | 382,722.00 | 3,720,236.00 | B4 |
| | | | 0.0020013 | 382,746.00 | 3,720.353.00 | B5 |

* SSPP approved applicant's case-by-case request to use a 24-hour AAC for arsenic that was derived from 10 µg/m$^3$ (OSHA Annotated Table Z-1). The alternative value is derived as follows: (10 µg/m$^3$)(300*3)= 0.0111 µg/m$^3$ where 300 is a safety factor for carcinogens, 1/3 (= 8/24) is to convert 8-hour TWA value into 24-hour threshold.

Figure 1 illustrates the maximum modeled annual ground level concentrations for arsenic across 5 years (2018-2022) overlaid on a satellite map with the 6 closest residential area receptors. Figure 2 illustrates the maximum 24-hour ground level concentrations for arsenic across 5 years (2018-2022) overlaid on a satellite map with the 5 closest business area receptors.

*Conclusion:* Based on the Division's review of the applicant's TAP modeling, the Division concurs with the applicant that the facility will comply with the Guideline based on the proposed project.

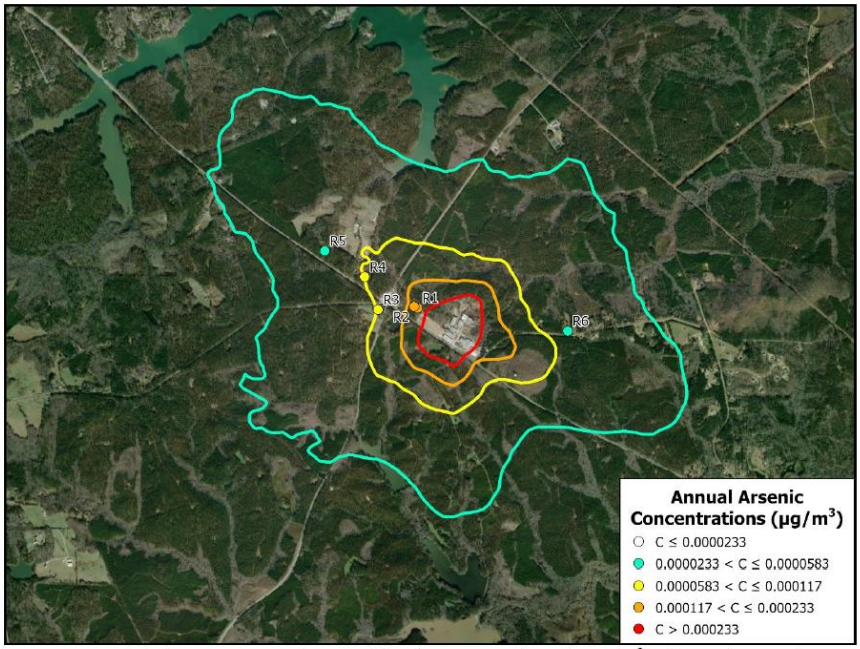


**Figure 1.** Modeled average annual ground-level concentrations (in µg/m$^3$) of arsenic over five years (2018 to 2022) overlaid on a satellite map with the closest residential areas (R1 through R6). The red line indicates the annual AAC for arsenic (0.000233 µg/m$^3$).

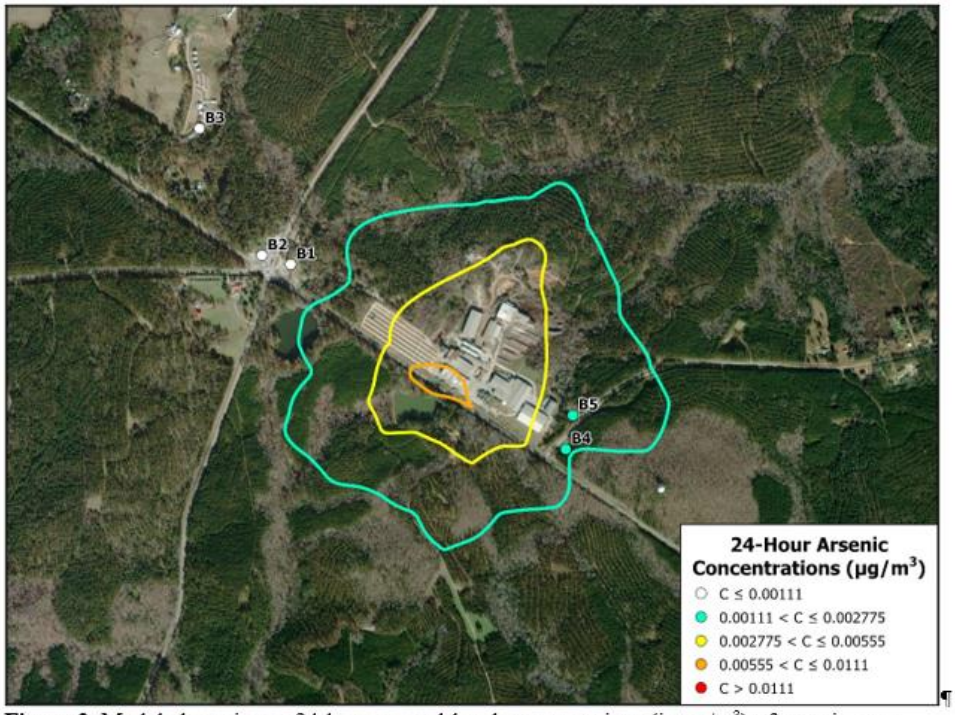


**Figure 2**. Modeled maximum 24-hour ground-level concentrations (in µg/m³) of arsenic over five years (2018 to 2022) overlaid on a satellite map with the closest business areas (B1 through B5). The orange line indicates 50% of the 24-hour AAC for arsenic or 0.00555 µg/m³.

## Summary & Recommendations

Application No. 29299 is being processed as an **expedited** synthetic minor permit application. The facility requests authorization to construct and operate an indirect-fired CDK (denoted as Steam Kiln 1, K03), a boiler rated at 48.3 MMBtu/hr to be fired with wood and an ESP to control emissions from the boiler. In addition, this permitting action recognizes equipment updates as well as the incorporation of the recent NPR action. The Division worked with the facility to resolve application deficiencies with resolution occurring on September 19, 2024. The Division issued a Public Advisory for this application and this advisory expired on June 14, 2024. No comments were received.

Synthetic Minor Permit No. 2421-073-0023-S-02-0 was prepared as a new permit for the proposed modification and continued operation of the facility. Stationary Source Compliance Program (SSCP) will continue to be in charge of inspections.

**Addendum to Narrative**

The 30-day public review started on month day, year and ended on month day, year. Comments were/were not received by the Division.

//If comments were received, state the commenter, the date the comments were received in the above paragraph. All explanations of any changes should be addressed below.//

## APPENDIX A

| Date | Description of Information Request | Date of Resolution |
|---|---|---|
| 05/15/2024 | Application is missing a process description of T2T operation in order for a VOC/HAP SM limit to be imposed.<br><br>Application is missing written substantiation of NSPS Dc and NESHAP 6J applicability analysis; emission standards, and applicable testing, monitoring, recordkeeping, and reporting requirements. | 06/18/2024-Note A<br>07/09/2024-Note B |
| 07/30/2024 | Will the proposed boiler be equipped with a bypass stack? | 07/31/2024-Note C |
| 08/07/2024<br>08/13/2024 | Does the facility want a facility-wide CO emissions limit of less than 100 tpy? Or does the facility want an equipment specific limit?<br><br>Does the facility want a facility-wide VOC emissions limit of less than 100 tpy? Or does the facility want an equipment specific limit?<br><br>Does the facility want a facility-wide individual/total HAP emissions limit of less than 10/25 tpy? Or does the facility want an equipment specific limit? | 08/12/2024-Note D<br>08/21/2024-Note E |
| 08/13/2024 | The application is missing an existing permitted equipment list so that the Division can ascertain which of this equipment need to be included in the facility-wide SM emissions limit. Therefore, the Division reviewed the permitting file for this facility and generated an existing permitted equipment list. The Division asked the applicant to edit this equipment list. | 08/21/2024-Note F |
| 08/12/2024<br>08/19/2024 | The application is missing written substantiation of the VOC, CO, and individual HAP emission calculations from the existing permitted equipment.<br><br>The Division asked that the application provide an updated electronic application (with strikeout and underline) to include the NSPS Dc and NESHAP 6J missing information, existing permitted equipment list, and missing emissions calculations for existing permitted equipment list. | 08/29/2024-Note G |
| 08/28/2024 | Facility/consultant review of pre-draft package. | 09/12/2024-Note H<br>09/19/2024-Note I |

| Date of Resolution | Note(s) |
|---|---|
| 06/21/2024<br>Note-A | The facility notified the Division, via email, of the following information:<br>*T2T operation is a wood treatment operation<br>*Proposed boiler will be equipped with an oxygen trim system<br>*Facility will install a COMS per NSPS Dc.<br>*Missing pertinent NESHAP 6J information. |

| Date of Resolution | Note(s) |
|---|---|
| 07/09/2024<br>Note-B | The facility notified the Division, via email, of their chosen operating limit as it pertains to the operation of the ESP (i.e., the installation and operation of a COMS, per Table 3 Item #2a).<br><br>**Note: The facility asked for flexibility to use either NESHAP 6J operating limit for operation of the ESP per Table 3 Item #2 on September 19, 2024. This flexibility is not added to the permit because the facility needs to commit to one of these operating limits for practical enforceability purposes.**<br><br>Facility submitted an updated SIP Form 3.03 for the proposed ESP. |
| 07/31/2024<br>Note-C | Facility notified the Division, via email, that the proposed boiler will not be equipped with a bypass stack. *The Division finds this hard to believe and will therefore include record keeping in the permit regarding the facility utilizing the bypass of the ESP stack.* |
| 08/12/2024<br>Note-D | The facility notified the Division, via email, that the facility includes two diesel fired emergency generators. |
| 08/21/2024<br>Note-E | The facility notified the Division, via email, that the facility wants a facility-wide PSD Avoidance limit for emissions of CO and VOC.<br><br>The facility notified the Division, via email, that the facility wants a facility-wide MACT Avoidance limit for emissions of individual and total HAPs. |
| 08/21/2024<br>Note-F | The facility notified the Division, via email, of the necessary updates to the permitted existing equipment list.<br><br>The facility submitted, via email, of an updated Section 2-Process Description and PFD of the May 2024 application. |
| 08/29/2024<br>Note-G | Applicant submitted an updated SM air permit application (hardcopy and electronic). |
| 09/12/2024<br>Note-H | The facility updated the existing Section 2-Process Description of the 08/29/2024 application by denoting that the Grinder Mill will not send wood waste to both cyclones C02 and C03 at the same time.<br><br>The facility updated its NESHAP 6J ESP operating parameter so that the facility can use any of those allowed by NESHAP 6J.<br><br>The facility requested that the draft permit allow for the applicant to use lower VOC and individual HAP emission factors for the proposed kiln if supported by Division approved testing. |
| 09/19/2024<br>Note-I | Facility submitted an updated Section 2-Process and Facility Description of the application (hardcopy and electronic) denoting the change to the Grinder Mill wood waste process conveyance systems. |