

**LANE REGIONAL AIR PROTECTION AGENCY
TITLE V OPERATING PERMIT
REVIEW REPORT**

1010 Main Street
Springfield, OR 97477

Source Information:

| | |
|-------|------------|
| SIC | 2436, 2421 |
| NAICS | 321212 |

| | |
|-----------------------------------|--------|
| Source Categories (Part and code) | B - 68 |
|-----------------------------------|--------|

Compliance and Emissions Monitoring Requirements:

| | |
|-----------------------|--------------|
| Unassigned emissions | NA |
| Emission credits | NA |
| Compliance schedule | NA |
| Source test [date(s)] | May 11, 2011 |

| | |
|--------------------|----|
| COMS | NA |
| CEMS | NA |
| Ambient monitoring | NA |

Reporting Requirements

| | |
|--------------------------------|----------|
| Annual report (due date) | March 15 |
| Emission fee report (due date) | March 15 |
| SACC (due date) | July 30 |
| Quarterly report (due dates) | NA |

| | |
|----------------------------|-------------|
| Monthly report (due dates) | NA |
| Excess emissions report | Immediately |
| Other reports | Semi-annual |

Air Programs

| | |
|-------------------------|----------------------------------|
| NSPS (list subparts) | NA |
| NESHAP (list subparts) | A, DDDD, EEEE, FFFF, DDDDD |
| CAM | NA |
| Regional Haze (RH) | NA |
| Synthetic Minor (SM) | NA |
| Part 68 Risk Management | NA |
| Title V | Yes |

| | |
|-----------------------------------------------|----|
| ACDP (SIP) | X |
| Major HAP source | X |
| Federal major source | NA |
| New Source Review (NSR) | NA |
| Prevention of Significant Deterioration (PSD) | NA |
| Acid Rain | NA |
| Clean Air Mercury Rule (CAMR) | NA |

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LIST OF ABBREVIATIONS USED IN THIS REVIEW REPORT

| | | | |
|---------|-----------------------------------------------|-------------------|---------------------------------------------------------|
| AQMA | Air Quality Management Area | MM | million |
| ASTM | American Society of Testing and Materials | NA | not applicable |
| BDT | bone dry ton | NESHAP | National Emission Standard for Hazardous Air Pollutants |
| CAM | Compliance Assurance Monitoring | NO _x | oxides of nitrogen |
| CEMS | continuous emissions monitoring system | NSPS | New Source Performance Standard |
| CFR | Code of Federal Regulations | NSR | New Source Review |
| CMS | continuous monitoring system | O ₂ | Oxygen |
| CO | carbon monoxide | OAR | Oregon Administrative Rules |
| COMS | continuous opacity monitoring system | ORS | Oregon Revised Statutes |
| DEQ | Oregon Department of Environmental Quality | O&M | operation and maintenance |
| dscf | dry standard cubic feet | Pb | lead |
| EF | emission factor | PCD | pollution control device |
| EPA | United States Environmental Protection Agency | PM | particulate matter |
| EU | emissions unit | PM ₁₀ | particulate matter less than 10 microns in size |
| FCAA | Federal Clean Air Act | PM _{2.5} | particulate matter less than 2.5 microns in size |
| gr/dscf | grains per dry standard cubic feet | PSD | Prevention of Significant Deterioration |
| HAP | hazardous air pollutant | PSEL | Plant Site Emission Limit |
| ID | identification code | SACC | Semi Annual Compliance Certification |
| I&M | inspection and maintenance | SO ₂ | sulfur dioxide |
| LRAPA | Lane Regional Air Protection Agency | ST | source test |
| MB | material balance | VE | visible emissions |
| Mlb | 1000 pounds | VMT | vehicle mile traveled |
| | | VOC | volatile organic compound |

INTRODUCTION

1. This is a minor modification addendum to the Title V permit for this facility to add one (1) 6.3 MMBtu/hr natural gas-fired boiler to Emission Unit 5 (EU5). The boiler is capable of burning No. 6 oil as a backup fuel, but the facility has not requested the ability burn No.6 oil in the permit.
2. In accordance with OAR 340-218-0120(1)(f), this review report is intended to provide the legal and factual basis for the draft permit conditions. In most cases, the legal basis for a permit condition is included in the permit by citing the applicable regulation. In addition, the factual basis for the requirement may be the same as the legal basis. However, when the regulation is not specific and only provides general requirements, this review report is used to provide a more thorough explanation of the factual basis for the draft permit conditions.

PERMITTEE IDENTIFICATION

3. Jasper Wood Products, LLC operates a facility performing wood-treating, drying, plywood production and other wood-working activities. The facility was previously operated by Cascade Pacific Industries, Inc. – Wood Treating Division and Progressive Panel. An addendum to change the name/ownership to the current name and owners was issued on December 13, 2001. The facility operates approximately 8,400 hours per year (24 hours per day, 7 days per week, and 50 weeks per year).
4. **Major Source Status:** The facility exceeded the 10 ton/year of any single Hazardous Air Pollutant (HAP) major source threshold based upon actual emissions of methanol for one or more 12-month rolling periods in early 2009. Because the facility did not request and obtain synthetic minor limits for HAPs prior to the September 30, 2007 compliance date for the Plywood and Composite Wood Products (PCWP) National Emission Standards for Hazardous Air Pollutants (NESHAPs) – Subpart DDDD, the facility became a major source and became subject to the PCWP NESHAP and Title V permitting by way of the “once-in-always-in” EPA policy.

FACILITY DESCRIPTION

5. The Jasper Wood Products, LLC location operates three separate processes. The Natron Wood Division manufactures plywood, The Jasper Wood Treating Division treats wood with Therm-Ex fire retardant and Chromated Copper Arsenic (CCA) for wood preservation, and Jasper Wood Division manufactures kiln dried wood and operates a planer, finger jointer, and millwork building.
6. The facility consists of a maintenance shop, fire suppression system, administrative offices, plywood mill, CCA and Therm-Ex treating areas, and buildings housing the boilers, planer, resaws, finger jointer and millwork machinery.
7. The facility has a Modul-pak wood-fired boiler providing steam to operate the kilns. Additional steam for the facility is provided by two (2) Cleaver-Brooks natural gas boilers that can utilize distillate fuel or fuel oil as a backup fuel. A 100Hp Aztec boiler provides steam for plywood presses.
8. The facility can produce 50,500,000 square feet of 3/8” plywood per year. The plywood is produced from dried veneer purchased or brought on site from the Natron veneer dryer (Permit No. 207512). Plywood is putty patched and touch sanded as necessary for market.
9. Some plywood and green/dry sawn lumber is treated on site with Therm-Ex, Therm-Fx or CCA to act as a fire retardant or wood preservative. The process involves pressure injecting the chemicals using autoclaves for pressure injection. After treatment, residual water and chemical is recycled into tanks for use in the next batch of treating. Some treated wood is placed in the kilns to dry and then packaged or stored outside for transport

10. The mill also does some finish millwork consisting of sizing sawing, planing, finger jointing and moulding.

EMISSIONS UNIT AND POLLUTION CONTROL DEVICE IDENTIFICATION

11. The emissions units and control devices at this facility are the following:

| EU ID | Emission Unit Description | Pollution Control Device Description |
|-------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|
| EU-1 | Six (6) Dry Kilns | None |
| EU-2 | Material-handling System | One Cyclone and Baghouse (Pneumafil Baghouse controlling Planer) |
| EU-3 | Sander and skinner saw | Baghouse (Torit and Day Baghouse) |
| EU-4 | Wood-fired Boiler, 24.8 MMBtu/hr, Modul-pak | Baghouse (Industrial Boiler Baghouse) |
| EU-5 | Two (2) natural gas-fired boilers: <ul style="list-style-type: none"> • Natural Gas-fired Boiler with No. 2 Oil Backup, 20.9 MMBtu/hr, Cleaver Brooks • Natural Gas-fired Boiler, 6.3 MMBtu/hr Cleaver Brooks (capable of burning No. 6 oil as backup but not permitted to do so). | None |
| EU-6 | No. 2 Oil-fired Boiler, 100Hp or 3.3 MMBtu/hr, Aztec | None |
| EU-7 | Three (3) Wood Preserving Autoclaves | None |
| EU-8 | Two (2) Plywood Presses (1 Baldwin and 1 Williams-White) | None |
| EU-9 | Resaw Building | Baghouse (Carter Day Baghouse controlling West Plains and Baker Resaw) |
| EU-10 | Two (2) Moulders | Baghouse (Carter Day baghouse controlling millwork building devices) |
| EU-11 | Paved Road | None |
| EU-12 | Hogged Fuel Pile | None |
| EU-13 | Putty Patching Operations | None |

12. Categorically insignificant activities include the following:

- Constituents of a chemical mixture present at less than 1% by weight of any chemical or compound regulated under OAR Chapter 340, Divisions 200 through 268, excluding Divisions 248 and 262, or less than 0.1% by weight of any carcinogen listed in the U.S. Department of Health and Human Service's Annual Report on Carcinogens when usage of the chemical mixture is less than 100,000 pounds/year
- Evaporative and tail pipe emissions from on-site motor vehicle operation
- Distillate oil, kerosene, and gasoline fuel burning equipment rated at less than or equal to 0.4 million Btu/hr
- Natural gas and propane burning equipment rated at less than or equal to 2.0 million Btu/hr
- Office activities

- Janitorial activities
- Personal care activities
- Groundskeeping activities including, but not limited to building painting and road and parking lot maintenance
- Instrument calibration
- Maintenance and repair shop
- Automotive repair shops or storage garages
- Air cooling or ventilating equipment not designed to remove air contaminants generated by or released from associated equipment
- Refrigeration systems with less than 50 pounds of charge of ozone depleting substances regulated under Title VI, including pressure tanks used in refrigeration systems but excluding any combustion equipment associated with such systems
- Temporary construction activities
- Warehouse activities
- Accidental fires
- Air vents from air compressors
- Electrical charging stations
- Fire brigade training
- Instrument air dryers and distribution
- Fire suppression
- Routine maintenance, repair, and replacement such as anticipated activities most often associated with and performed during regularly scheduled equipment outages to maintain a plant and its equipment in good operating condition, including but not limited to steam cleaning, abrasive use, and woodworking
- Electric motors
- Storage tanks, reservoirs, transfer and lubricating equipment used for ASTM grade distillate or residual fuels, lubricants, and hydraulic fluids
- Natural gas, propane, and liquefied petroleum gas (LPG) storage tanks and transfer equipment
- Pressurized tanks containing gaseous compounds
- Vacuum sheet stacker vents
- Fire suppression and training
- Hazardous air pollutant emissions of fugitive dust from paved and unpaved roads except for those sources that have processes or activities that contribute to the deposition and entrainment of hazardous air pollutants from surface soils
- Health, safety, and emergency response activities
- Emergency generators and pumps used only during loss of primary equipment or utility service due to circumstances beyond the reasonable control of the owner or operator, or to address a power emergency as determined by LRAPA
- Non-contact steam vents and leaks and safety and relief valves for boiler steam distribution systems
- Non-contact steam condensate flash tanks;
- Non-contact steam vents on condensate receivers, deaerators and similar equipment;
- Boiler blowdown tanks;
- Ash piles maintained in a wetted condition and associated handling systems and activities;
- Combustion source flame safety purging on startup;

EMISSION LIMITS AND STANDARDS, TESTING, MONITORING, AND RECORDKEEPING

13. ACDP Conditions: There are no changes to any conditions that existed in the ACDP.
14. Facility-wide Requirements:
 - 14.a. Condition 4 of the permit establishes 'reasonable precautions' for the minimization of fugitive, visible particulate matter for this facility. Monitoring and recordkeeping for this requirement includes periodic visible emission surveys and corrective action if a source of visible emissions is identified.
 - 14.b. Conditions 6 and 7 of the permit states two (2) of LRAPA's limits for emissions that can create nuisance problems: odors and large-size fallout particulate matter. Monitoring for this condition is the maintenance of a complaint log and timely resolution.
15. Federal Requirements:
 - 15.a. Accidental Release Prevention (Part 68): Condition 9 of the permit is a standard Title V permit condition related to the Federal Risk Management Planning program (40 CFR Part 68). The condition requires that Title V sources comply with 40 CFR 68 if changes at the facility make it subject.
 - 15.b. NESHAP: The dry kiln, plywood press, and wood putty emission units are subject to the requirements of the Plywood and Composite Wood Products (PCWP NESHAP or Subpart DDDD). Because the facility had actual single HAP emissions greater than the 10 ton/year major source threshold and did not have federally enforceable permit HAP limits in place at the time of the compliance date for existing sources under the PCWP NESHAP, the facility is subject to Subpart DDDD as well as several other major source NESHAPs.
 - 15.c. More information about NESHAPs and federal requirements is contained in Items 27, 28, 29, and 31 of this review report.
16. LRAPA Requirements:
 - 16.a. 0.1 gr/dscf and 20% Opacity Requirements: Particulate and visible emissions requirements applicable to all sources are included in the permit.
 - 16.b. The Modul-pak wood-fired boiler (EU-4) was installed after June 1, 1970 and, therefore, does not qualify for the 40% opacity limit for "existing fuel burning equipment utilizing wood waste" in Section 32-010-2. The wood-fired boiler in EU-4 is required to meet the 20% opacity limit that applies to all other sources of visible emissions at the facility.
17. Aggregate Insignificant activities:
 - 17.a. There are no emission units designated by the facility as Aggregate Insignificant Activities.

PLANT SITE EMISSION LIMITS, BASELINE EMISSION RATE AND SIGNIFICANT EMISSION RATE

18. **Baseline Emission Rate:** Baseline emission rates were established in a previous permit issuance and were based upon the emissions from a wood-fired boiler operating at 140 million pounds of steam per year, three (3) cyclones processing 21,412 BDT of wood waste per year, and four (4) dry kilns drying 30 million board

feet per year. The baseline emission rates were adjusted with the ACDP renewal to reflect most-current emission factors to estimate actual emissions. The detail sheets contain more information on the basis of the calculations.

19. **PM_{2.5} and GHG Baseline Emission Rate:** Permanent rules adopted April 25, 2011 specify that a PM_{2.5} and/or GHG PSEL and netting basis be established for each permitting action involving public notice after July 1, 2011. However, because there is no public notice for a minor modification, there is no PSEL or baseline emission rate established for PM_{2.5} and/or GHG.
20. Provided below is a summary of the baseline emissions rate, netting basis, plant site emission limits, and emissions capacity.

| Pollutant | Baseline Emission Rate (tons/yr) | Plant Site Emission Limit (PSEL) | | | Significant Emission Rate (tons/yr) |
|------------------|----------------------------------|----------------------------------|-------------------------|------------------------|-------------------------------------|
| | | Previous PSEL (tons/yr) | Proposed PSEL (tons/yr) | Increase over baseline | |
| PM | 7.1 | 12.7 | 24 | 18 | 25 |
| PM ₁₀ | 6.4 | 12.7 | 14 | 7 | 15 |
| SO ₂ | 1.0 | 40.0 | 39 | 39 | 40 |
| NO _x | 21.7 | 60.7 | 61 | 39 | 40 |
| CO | 70.0 | 99.0 | 99 | 29 | 100 |
| VOC | 18.1 | 48.4 | 57 | 39 | 40 |

- 20.a. The PM, PM₁₀, SO₂, and CO PSELs are being set at the Generic PSEL level in accordance with LRAPA Title 42.
21. **Netting Basis:** The “netting basis”, as defined in LRAPA Title 12, is equivalent to the Baseline Emission Rate.
22. **Unassigned Emissions:** This facility has no (zero tons per year) unassigned emissions as defined in LRAPA Title 12 and specified in LRAPA Title 42.
23. **Emission Reduction Credits:** This facility has no Emission Reduction Credits as allowed by LRAPA Title 41.

HAZARDOUS AIR POLLUTANTS

24. The actual HAP emissions from the facility estimated to have been emitted in 2009 are shown in the table below. These emissions are calculated on the basis of proposed operation parameters and must be recalculated by the facility if production increases.

| Hazardous Air Pollutants | Potential Emissions (tons/yr) |
|-------------------------------------------------|-------------------------------|
| Acetaldehyde | 2.6 |
| Formaldehyde | 0.4 |
| Methanol | 5.9 |
| Phenol | 0.4 |
| Propionaldehyde | 0.2 |
| Miscellaneous "Boiler HAPs" (see detail sheets) | 0.6 |
| Total HAPs | 10.2 tons/yr |

25. **Major Source of HAPs:** The facility is a major source for HAPs because for the calendar year 2007, the potential to emit of a single HAP (methanol) was greater than 10 tons/year and the facility did not have federally enforceable permit limits to limit HAP emissions below the 10 tons of a single HAP at the compliance date for the Plywood and Composite Wood Products (PCWP) National Emission Standard for HAPs (NESHAP). The compliance date for existing PCWP sources was September 30, 2007.
26. **Subpart DDDD – Plywood and Composite Wood Products (PCWP) NESHAP:** The facility operates an affected source under the PCWP NESHAP including, but not limited to, the presses and dry kilns. Under the PCWP NESHAP there are no control requirements or work practice standards for the dry kilns. Likewise, there are no control requirements or work practice standards for the plywood presses (there are control requirements for "reconstituted wood product presses" but not plywood presses). The primary ongoing applicable requirement under the PCWP NESHAP is for the facility's "group-1 miscellaneous coating operations" including the application of wood putty patches to plywood. The facility is required to use only non-HAP coatings defined as having HAP contents below 0.1 percent by mass for Occupational Safety and Health Administration-defined carcinogens as specified in 29 CFR 1910.1200(d)(4), and below 1.0 percent by mass for other HAP compounds.
27. **Subpart EEEE – Organic Liquid Distribution (OLD) NESHAP:** When the facility changed wood treatment chemicals in 2007, the treatment chemical methanol content was increased to 5% methanol by weight (and increased the potential to emit for a single HAP above major source thresholds) and the facility became subject to the Organic Liquid Distribution MACT of 40 CFR 63 Subpart EEEE. The facility made one of their treatment chemicals onsite and sent it internally and externally out in containers and hence had a loading facility. As per Section 63.2342(c), an area source that does not commence construction but increases its emissions or its potential to emit such that it becomes a major source of HAPs must comply with the rule by three (3) years after the area source becomes a major source. Because the facility has switched to a wood treatment chemical with a HAP content of less than 5%, the facility is not distributing an organic liquid as defined in the rule. The permit requires that the facility comply with the OLD NESHAP and notify LRAPA prior to use of a compound with a content of HAP that is greater than or equal to 5% by weight.
28. **Subpart FFFF – Miscellaneous Organic Chemical Manufacturing NESHAP (MON):** When the facility changed wood treatment chemicals in 2007, the facility also became subject to the MON because they made one of their treatment chemicals onsite. The facility no longer operates a MON process and, even had they continued to make the affected HAP-containing treatment chemical, there were no equipment

affected by the standard; the sole requirement for the facility to comply was to have submitted an Initial Notification. Should the facility change operation such that they operate a source subject to the MON, any new applicable requirements will be included in the permit.

29. **Subpart DDDDD – Boiler NESHAP:** The Modul-pak wood-fired boiler will likely be subject to the Boiler NESHAP published in the Federal Register on March 21, 2011. Any applicable requirements will be added to the permit when the requirements become certain.

GENERAL BACKGROUND INFORMATION

30. **Located in an Attainment Area:** The facility is located outside the Eugene Springfield Air Quality Management Area and in an area that has been designated as attainment for PM₁₀, ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, and lead.
31. **New Source Performance Standards (NSPS):** At the time of this permit issuance, there are no Part 60 Regulations (NSPS) for which the facility is subject.
- 31.a. The 20.3 MMBtu/hr Cleaver Brooks boiler was installed in 1968 and therefore pre-dates the Subpart Dc applicability date.
- 31.b. The new 6.3 MMBtu/hr Cleaver Brooks boiler will be installed after the 1989 Subpart Dc applicability date but the maximum hourly design heat input is less than the 10 MMBtu/hr Subpart Dc applicability threshold.

COMPLIANCE HISTORY

32. Following is a summary of the enforcement activity related to the facility chronologically since 1993.
- On April 6, 1993, Notice of Violation and Intent to Assess Civil Penalty (NCP) No. 93-06 was issued to the facility (then Cascade Pacific Industries). The NCP was issued for violations relative to the construction and operation of a new medium-density fiberboard milling and lamination operation without first obtaining construction approval or permit modification. Violation resolved by the submittal of appropriate permit.
 - On March 18, 1994, the facility (Cascade Pacific Industries) was issued NCP 94-16 for a main bin materials-handling cyclone opacity violation and for failure to minimize emissions from material handling. Violation resolved via use of opacity meter.
 - On July 28, 1995, the facility (Cascade Pacific Industries) was issued a Notice of Non-Compliance (NON) No. 1103 for operating the baghouse with leaking bags. Violation corrected by the facility through the installation of proper bags.
 - On August 10, 1995, the facility (Cascade Pacific Industries) was issued NON-1094 for failure to maintain records as described in permit. Violation corrected by the facility maintaining records as described in permit.
 - On February 27, 1996, the facility (Cascade Pacific Industries) was issued NON-1203 for commencement of construction of an air contaminant source (millwork plant) without first obtaining approval from LRAPA. Facility resolved the violation through the submittal of proper forms, paying associated fees and requesting LRAPA review and approval of the construction.
 - On June 12, 2003, the facility (Jasper Wood Products) was issued NON-2564 for removal of an air contaminant control device (scrubber) without notifying LRAPA or modifying the permit. Violations were resolved in SFO-03-2564, issued on February 13, 2004, and closed January 14, 2005. Remaining violation

was later resolved through the installation of a new scrubber system. Scrubber system was replaced with a baghouse by March 31, 2006.

- On June 5, 2005, the facility (Jasper Wood Products) was issued NCP 05-2727 for failure to operate air pollution control equipment while operating process equipment. Violation resolved in SFO 05-2727 and closed on April 21, 2006. Facility was required to maintain water flow to scrubber during operation of sources required by the permit to be controlled by the scrubber. Scrubber was replaced with a baghouse by March 31, 2006.
- On December 12, 2008 the facility was issued NON-3018 for modifying a source without first submitting appropriate construction and modification notice – modification resulted in potential/actual emissions of HAP methanol to trigger PCWP NESHAP and Title V permitting requirements. The modification was a result of a change in wood treatment chemical from one with 0.03% methanol content to one with 3% methanol content. NCP-09-3018 was issued to the facility for the violation on January 29, 2009 and SFO 09-3018 was issued to the facility March 11, 2009 requiring the facility to pay a \$7,940 civil penalty and apply for a Title V permit. The facility paid the civil penalty in-full on March 23, 2009.
- On May 11, 2010, the facility was issued NON-3198 for failure to submit a Title V application within 12 months of being subject to Title V permit program. The facility submitted the Title V application on June 11, 2010. On July 27, 2010 the facility was issued Notice of Violation and Notice of Civil Penalty Assessment (NCP 3198). A civil penalty was assessed in the amount of \$4,200. On August 16, 2010 the facility submitted a memo seeking reduction in the civil penalty amount. On August 19th, the facility was issued a Stipulated Final Order (SFO No. 10-3198) including a reduced civil penalty amount of \$3,000. On September 3, 2010 the facility paid \$3,000 to Lane County and the file was closed.

SOURCE TEST RESULTS

33. The Modul-Pak wood-fired boiler (EU-4) was tested on February 28, 2005, for CO and NO_x to verify emission factors. Results for CO equated to approximately 0.31 lb/1000 lb steam (5.3 lb/hr). Results for NO_x equated to approximately 0.25 lb/1000 lb steam (4.3 lb/hr)

The permit requires CO, NO_x, and PM₁₀ emission factor verification testing for the Modul-pak wood-fired boiler within 180 days of issuance of the ACDP renewal/modification (ACDP was issued November 12, 2010) or by May 11, 2011. The permit was modified by addendum on August 10, 2011 to extend the testing deadline to August 31, 2011.

PUBLIC NOTICE

34. The draft permit was on public notice from April 14, 2011 to May 13, 2011. No written comments were submitted during the 30-day comment period. No public hearing was requested during the 30-day comment period. This proposed permit has been sent to EPA for a 45-day review period. LRAPA is request and EPA may agree to an expedited review of 5 days if there were no substantive or adverse comments during the comment period. In any event, the public will have 105 days (45-day EPA review period plus 60 days) from the date the proposed permits is sent to EPA to appeal the permit with EPA. The permit will be issued following EPA's review.
35. Minor Modification Addendum to add the new 6.3 MMBtu/hr natural gas-fired boiler: In accordance with OAR 340-218-0170(2)(c), this proposed permit has been sent to EPA for a 45-day review period. The permit will be issued following EPA's review.

EU-4 Wood Fired Boiler - Modul Pak, 24.8 MMBtu/hr

| Pollutant | Max Design capacity (lbs steam/hr) | Emission Factor (lbs/1000 lbs steam) | Hourly Emissions (pounds) | 8,760 hours per year | |
|-----------|------------------------------------|--------------------------------------|---------------------------|-------------------------|-------------------------|
| | | | | Annual Emissions (tons) | Annual Emissions (tons) |
| PM | 20,704 | 0.4 | 0.4 | 0.4 | 1.8 |
| PM10 | 20,704 | 0.2 | 0.2 | 0.2 | 0.9 |
| SO2 | 20,704 | 0.014 | 0.3 | 0.3 | 1.3 |
| NOx | 20,704 | 0.31 | 6.4 | 6.4 | 28.1 |
| CO | 20,704 | 1 | 20.7 | 20.7 | 90.7 |
| VOC | 20,704 | 0.13 | 2.7 | 2.7 | 11.8 |

Boiler Operates approximately 7,304 hours per year (the boiler is regularly shut down for 28 hours per week)
 Maximum Design Rate is 20,700 lbs steam/hour
 Boiler is operated at a maximum of 90 psi, the standard design pressure for the boiler is 150 psig.
 Fuel burned as estimated by the manufacturer, is 7,145 lb/hr at 50% moisture content.
 Emission Factors are from General ACDP for Wood-Fired Boilers except for CO
 CO Fuel Cell factor used since closer to 2/28/05 source test result of 0.31 lb CO/M lbs steam
 PM/PM10 emissions assume baghouse provides similar control as to that of ESP (95%)

EU-5 Cleaver-Brooks 20.9 MMBtu/hr Boiler-Natural Gas w/No.2 Oil Backup, and Cleaver Brooks 6.3 MMBtu/hr natural gas-fired boiler Gas

| Pollutant | Max Design capacity (cubic ft/hr) | Emission Factor (lbs/10 ⁶ ft ³) | Conversion Factor (tons/lb) | 8760 hours per year | |
|-----------|-----------------------------------|--------------------------------------------------------|-----------------------------|-------------------------|-------------------------|
| | | | | Annual Emissions (tons) | Annual Emissions (tons) |
| PM/PM10 | 29,852 | 7.6 | 0.0005 | 0.0005 | 1.0 |
| SO2 | 29,852 | 0.6 | 0.0005 | 0.0005 | 0.1 |
| NOx | 29,852 | 100 | 0.0005 | 0.0005 | 13.1 |
| CO | 29,852 | 84 | 0.0005 | 0.0005 | 11.0 |
| VOC | 29,852 | 5.5 | 0.0005 | 0.0005 | 0.7 |

Boilers have a collective maximum design rate of 27.22 million BTU/hr or 29,852 cuft of gas/hr
 Emission factors are from AP-42 Tables 1.4-1 and 1.4-2, 7/98 for small, uncontrolled boilers
 20.9 MMBtu/hr boiler is a Cleaver-Brooks boiler which was constructed in 6/26/68.
 6.3 MMBtu/hr boiler is a Cleaver Brooks boiler constructed in 2011

EU-5 Oil

| Pollutant | Max Design capacity (gallons/hr) | Emission Factor (lbs/1000 gallons) | Conversion Factor (tons/lb) | 8760 hours per year | |
|-----------|----------------------------------|------------------------------------|-----------------------------|-------------------------|-------------------------|
| | | | | Annual Emissions (tons) | Annual Emissions (tons) |
| PM/PM10 | 164 | 3.3 | 0.0005 | 0.0005 | 2.4 |
| SO2 | 164 | 71 | 0.0005 | 0.0005 | 50.9 |
| NOx | 164 | 20 | 0.0005 | 0.0005 | 14.3 |
| CO | 164 | 5 | 0.0005 | 0.0005 | 3.6 |
| VOC | 164 | 0.2 | 0.0005 | 0.0005 | 0.1 |

The Cleaver-Brooks boiler is also capable of burning No. 2 Diesel.
 Boiler has a maximum design capacity of 163.7 gallons/hour based on 140,000 BTU/gal for No. 2 oil
 #2 Oil factors are from AP-42 Tables 1.3-1 and 1.3-3 dated 9/98.

EU-6 Aztec 100 Hp (3.3 MMBtu/hr) Oil-fired Boiler

| Pollutant | Max Design capacity (gallons/hr) | Emission Factor (lbs/1000 gallons) | Conversion Factor (tons/lb) | Annual Emissions (tons) | |
|-----------|----------------------------------|------------------------------------|-----------------------------|-------------------------|-------------------------|
| | | | | Annual Emissions (tons) | Annual Emissions (tons) |
| PM/PM10 | 24 | 3.3 | 0.0005 | 0.0005 | 0.3 |
| SO2 | 24 | 71 | 0.0005 | 0.0005 | 7.5 |
| NOx | 24 | 20 | 0.0005 | 0.0005 | 2.1 |
| CO | 24 | 5 | 0.0005 | 0.0005 | 0.5 |
| VOC | 24 | 0.2 | 0.0005 | 0.0005 | 0.0 |

1 boiler HP = 33,472 BTU/hour and 1 gallon No. 2 oil = 140,000 BTU
 #2 Oil Factors are from AP-42 Tables 1.3-1 and 1.3-3 dated 9/98

EU-8 Two Plywood Presses

New Williams-White 30-opening Hot Plywood Press (1 Baldwin press existing since 2006, one new in June 2010)

| Pollutant | Max Design Capacity (MSF/hour) | Emission Factor (lb/MSF) | Annual Emissions (tons) | 8760 hours/year | |
|-----------------|--------------------------------|--------------------------|-------------------------|-------------------------|-------------------------|
| | | | | Annual Emissions (tons) | Annual Emissions (tons) |
| VOC | 16.4 | 0.07 | 0.07 | 0.07 | 5.0 |
| Acetaldehyde | 16.4 | 0.007 | 0.007 | 0.007 | 0.5 |
| Formaldehyde | 16.4 | 0.003 | 0.003 | 0.003 | 0.2 |
| Methanol | 16.4 | 0.04 | 0.04 | 0.04 | 2.9 |
| Phenol | 16.4 | 0.006 | 0.006 | 0.006 | 0.4 |
| Propionaldehyde | 16.4 | 0.003 | 0.003 | 0.003 | 0.2 |

Everette Billie of Jasper Wood Products estimates both presses maximum throughput is 143,270 MSF/year or 16.4 MSF/hour
 Emission Factors are from ODEQ general permit for sawmills and plywood/veneer sources.

EU-1 Dry Kilns (6)

| Pollutant | Max throughput (bd feet/year) | Emission Factor (lb/1000 bd feet) | Conversion Factor (ton/lb) | Annual Emissions (tons) | |
|--------------|-------------------------------|-----------------------------------|----------------------------|-------------------------|-------------------------|
| | | | | Annual Emissions (tons) | Annual Emissions (tons) |
| VOC | 36,000,000 | 1.7 | 0.0005 | 0.0005 | 30.6 |
| PM/PM10 | 36,000,000 | 0.05 | 0.0005 | 0.0005 | 0.9 |
| Methanol | 36,000,000 | 0.128 | 0.0005 | 0.0005 | 2.3 |
| Formaldehyde | 36,000,000 | 0.003 | 0.0005 | 0.0005 | 0.1 |
| Acetaldehyde | 36,000,000 | 0.113 | 0.0005 | 0.0005 | 2.0 |

Operate a maximum of 8,760 hours per year.
 Dries a maximum of 36 million board feet per year. Limit remains unchanged from previous permit.
 Emission factors are from General ACDP using highest factor per species (hemlock)

EU-2 Three Cyclones with Pneumafil Baghouse

| Pollutant | Max Annual Throughput (BDT/year) | Max Monthly Throughput (BDT/month) | Emission Factor (lbs/BDT) | Annual Emissions (tons/year) | |
|-----------|----------------------------------|------------------------------------|---------------------------|------------------------------|------------------------------|
| | | | | Annual Emissions (tons/year) | Annual Emissions (tons/year) |
| PM/PM10 | 13,500 | 1550 | 0.04 | 0.04 | 0.3 |

Operates a maximum of 8,760 hours/year and controls emissions from planer only.
Total throughput obtained from the previous permit calculations.
Baghouse emission factor of 0.04 lbs/BDT is based upon DEQ emission factor (11/15/93)

EU-3 Torit and Day Baghouse (Sanders and Skinner Saws)

| Device | Pollutant | Max Annual Throughput (BDT/year) | Max Monthly Throughput (MSF/year) | Emission Factor (lbs/BDT) | Annual Emissions (tons/year) |
|--------|--------------|----------------------------------|-----------------------------------|---------------------------|------------------------------|
| Total | PM/PM10 | 13,500 | NA | 0.04 | 0.3 |
| Sander | VOC | NA | 40,000 | 0.18 | 3.6 |
| Sander | Methanol | NA | 40,000 | 0.012 | 0.2 |
| Sander | Formaldehyde | NA | 40,000 | 0.002 | 0.0 |
| Sander | Acetaldehyde | NA | 40,000 | 0.003 | 0.1 |
| Saw | VOC | NA | 78,000 | 0.088 | 3.4 |
| Saw | Methanol | NA | 78,000 | 0.012 | 0.5 |
| Saw | Formaldehyde | NA | 78,000 | 0.003 | 0.1 |
| Saw | Acetaldehyde | NA | 78,000 | 0.0009 | 0.0 |
| Total | VOC | NA | NA | NA | 7.0 |
| Total | Methanol | NA | NA | NA | 0.7 |
| Total | Formaldehyde | NA | NA | NA | 0.2 |
| Total | Acetaldehyde | NA | NA | NA | 0.1 |

Emission factors from AQGP-010 for sanders and saws with baghouse control
Throughputs provided by facility

EU-10 Two (2) Moulders and various saws with Carter Day Baghouse (Millwork Bldg)

| Pollutant | Max Annual Throughput (BDT/year) | Max Monthly Throughput (BDT/monthly) | Emission Factor (lbs/BDT) | Monthly Emissions (lbs/month) | Annual Emissions (tons/year) |
|-----------|----------------------------------|--------------------------------------|---------------------------|-------------------------------|------------------------------|
| PM/PM10 | 3,452 | 294.5 | 0.04 | 11.78 | 0.1 |

Operates a maximum of 8,760 hours/year
Baghouse emission factor of 0.04 lbs/BDT is based upon DEQ emission factor (11/15/93)

EU-9 Baker and WestPlains Resaws (3) w/ Baghouse

| Pollutant | Max Annual Throughput (BDT/year) | Max Monthly Throughput (BDT/month) | Emission Factor (lbs/BDT) | Monthly Emissions (lbs/month) | Annual Emissions (tons/year) |
|-----------|----------------------------------|------------------------------------|---------------------------|-------------------------------|------------------------------|
| PM/PM10 | 55 | 5.5 | 0.04 | 0.22 | 0.001 |

Operates a maximum of 8,760 hours/year
Baghouse captures approximately 28 units of sawdust per year.
Baghouse throughput is calculated to be 55BDT/year based upon 1 unit shavings = 2.0 BDT
Baghouse emission factor of 0.04 lbs/BDT is based upon DEQ emission factor (11/15/93)
For operational flexibility the throughput is allowed to match that of the two moulders.

EU-7 Wood Treating: 3 Autoclaves for Wood Treatment

| Pollutant | Max Annual Throughput (pounds/year) | Max Monthly Throughput (pounds/month) | Emission Factor (lbsVOC/lb solution) | Annual Emissions (tons/year) |
|-----------|-------------------------------------|---------------------------------------|--------------------------------------|------------------------------|
| VOC | 120,000 | 10230 | 0 | 0.0 |

Thermex-FR fire retardant (Chemco Acquisition Inc. MSDS) contains 0% VOC by weight

EU-12 Hogged Fuel Pile

| Pollutant | Throughput (BDT/year) | Emission Factor (lb/BDT) | Annual Emissions (tons/yr) |
|-----------|-----------------------|--------------------------|----------------------------|
| PM/PM10 | 16,450 | 0.48 | 3.9 |
| VOC | 16,450 | 0.33 | 2.7 |

Source estimates a maximum throughput of 32,900 tons/year on a wet basis, BDT total assumes 50% moisture
PM/PM10 emission factor from sources Title V application with "GP Estimate" reference
VOC emission factor is derived from facility's Title V application with "NCASI Tech Bull. 723 Pg 14, converted from as-carbon to as-VOC (x1.22)

EU-13 Putty Patching Operations

| Pollutant | Throughput (gallons/yr) | Emission Factor (lb/gallon) | Annual Emissions (ton/yr) |
|--------------|-------------------------|-----------------------------|---------------------------|
| VOC | 2,750 | 0.18 | 0.2 |
| Formaldehyde | 2,750 | 0.058 | 0.1 |

Emission factors are from MSDS provided by manufacturer

| Pollutant | Baseline | Potential to Emit (tons/year) | Annual PSEL | PSEL Increase over | |
|-----------------|----------|-------------------------------|-------------|--------------------|-----|
| | | | | Baseline | SER |
| PM | 7.1 | 9.8 | 24 | 17 | 25 |
| PM10 | 6.4 | 8.9 | 14 | 8 | 15 |
| SO2 | 1 | 59.7 | 40 | 39 | 40 |
| NOx | 21.7 | 57.6 | 61 | 39 | 40 |
| CO | 70 | 105.8 | 99 | 29 | 100 |
| VOC | 18.1 | 51.3 | 57 | 39 | 40 |
| Acetaldehyde | NA | 2.6 | NA | NA | NA |
| Formaldehyde | NA | 0.4 | NA | NA | NA |
| Methanol | NA | 5.9 | NA | NA | NA |
| Phenol | NA | 0.4 | NA | NA | NA |
| Propionaldehyde | NA | 0.2 | NA | NA | NA |
| Total HAPs | NA | 9.6 | NA | NA | NA |

EU-11 Paved Road Emissions were estimated to be 0.01 tons/yr PM/PM10 and are not included in this spreadsheet
Boiler HAPs are not included in the summary of HAPs since the totals were minimal

Jasper Wood Products Wood Boiler HAPs

| | Emission Factor (lb/ton fuel) | Annual Throughput (tons/year) | Annual Emission (pounds/year) |
|-------------------------------------|----------------------------------|----------------------------------|----------------------------------|
| Acenaphthene | 4.10E-06 | 50,847 | 0.2 |
| Flourene | 8.22E-06 | 50,847 | 0.4 |
| Fluoranthene | 1.83E-05 | 50,847 | 0.9 |
| Benzoanthracene | 3.27E-06 | 50,847 | 0.2 |
| Benzofluoranthenes | 7.65E-07 | 50,847 | 0.0 |
| Benzopyrene | 6.75E-08 | 50,847 | 0.0 |
| Benzoperylene | 1.41E-06 | 50,847 | 0.1 |
| Chrysene | 4.52E-07 | 50,847 | 0.0 |
| Inenopyrene | 3.60E-07 | 50,847 | 0.0 |
| Acenaphthylene | 4.76E-05 | 50,847 | 2.4 |
| Methyl anthracene | 1.40E-04 | 50,847 | 7.1 |
| Acrolein | 4.00E-06 | 50,847 | 0.2 |
| Formaldehyde | 8.20E-03 | 50,847 | 416.9 |
| Acetaldehyde | 1.92E-03 | 50,847 | 97.6 |
| Benzene | 9.95E-03 | 50,847 | 505.9 |
| Napthalene | 3.39E-03 | 50,847 | 172.4 |
| 2,3,7,8-Tetrachlorodibenzo-p-dioxir | 3.60E-11 | 50,847 | 0.0 |
| 2-chlorophenol | 5.13E-07 | 50,847 | 0.0 |
| 2,4-dinitrophenol | 4.23E-06 | 50,847 | 0.2 |
| 4-nitrophenol | 2.97E-06 | 50,847 | 0.2 |
| | | | 1204.9 pounds |
| | | = | 0.6 tons |

Emission factors are from AP-42 Table 1.6-4, 2/99 for wood waste boilers with PM controls.

Annual throughput obtained by converting max steam rate to units/hr combusted.

Total potential wood-fired steaming rate is 16,700 + 20,700 = 37,400 lb steam/hour

1 lb steam = 970 BTU, 100,000 BTU = 1 therm, 125 therms = 1 unit hog fuel, 1 unit hog fuel = 2.0 BDT

Sanderdust

Baseline Emission Rates

Wood-fired Boiler (Suspension Fuel Cell)

| Pollutant | Max Design capacity (lbs steam/year) | Emission Factor (lbs/1000 lbs steam) | Annual Emissions (tons) |
|-----------|--------------------------------------|--------------------------------------|-------------------------|
| PM | 140,000,000 | 0.4 | 1.4 |
| PM10 | 140,000,000 | 0.2 | 0.7 |
| SO2 | 140,000,000 | 0.014 | 1.0 |
| NOx | 140,000,000 | 0.31 | 21.7 |
| CO | 140,000,000 | 1 | 70.0 |
| VOC | 140,000,000 | 0.13 | 9.1 |

Emission Factors are from General ACDP for Fuel Cell
 PM/PM10 emissions assume baghouse provides similar control as to that of ESP (95%)
 Boiler was uncontrolled in baseline year but rate is reduced assuming control is needed to meet rules

Three (3) Cyclones

| Pollutant | Max Annual Throughput (BDT/year) | Emission Factor (lbs/BDT) | Annual Emissions (tons/year) |
|-----------|----------------------------------|---------------------------|------------------------------|
| PM/PM10 | 21,412 | 0.5 | 5.4 |

Emission factor from General ACDP for medium-efficiency cyclone
 Throughput is estimate of actual planer shavings and sawdust

Four (4) Dry Kilns

| Pollutant | Max throughput (bd feet/year) | Emission Factor (lb/1000 bd feet) | Conversion Factor (ton/lb) | Annual Emissions (tons) |
|-----------|-------------------------------|-----------------------------------|----------------------------|-------------------------|
| VOC | 30,000,000 | 0.6 | 0.0005 | 9.0 |
| PM/PM10 | 30,000,000 | 0.02 | 0.0005 | 0.3 |

Estimate of throughput is from 1984 permit application
 VOC and PM/PM10 factors are from General ACDP for predominant species dried (doug fir)

SUMMARY

| Pollutant | Baseline |
|-----------|----------|
| PM | 7.1 |
| PM10 | 6.4 |
| SO2 | 1.0 |
| NOx | 21.7 |
| CO | 70.0 |
| VOC | 18.1 |