



Steve Bullock, Governor
Tracy Stone-Manning, Director

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December 5, 2013

Ellen Porter
Roseburg Forest Products
P.O. Box 1088
Roseburg, OR 97470

Dear Ms. Porter:

Montana Air Quality Permit #2303-19 is deemed final as of December 5, 2013, by the Department of Environmental Quality (Department). This permit is for Roseburg Forest Products' Missoula Particleboard facility. All conditions of the Department's Decision remain the same. Enclosed is a copy of your permit with the final date indicated.

For the Department,

A handwritten signature in black ink that reads "Julie A. Merkel".

Julie A. Merkel
Air Permitting Supervisor
Air Resources Management Bureau
(406) 444-3626

A handwritten signature in black ink that reads "Craig Henrikson".

Craig Henrikson
Environmental Engineer
Air Resources Management Bureau
(406) 444-6711

JM:CH
Enclosure

Montana Department of Environmental Quality
Permitting and Compliance Division

Montana Air Quality Permit #2303-19

Roseburg Forest Products
Missoula Particleboard
P.O. Box 4007
Missoula, MT 59806

December 5, 2013



MONTANA AIR QUALITY PERMIT

Roseburg Forest Products
Missoula Particleboard
P.O. Box 4007
Missoula, MT 59806

MAQP: #2303-19
Administrative Amendment (AA)
Received: 10/22/2013
Department's Decision on AA: 11/19/2013
Permit Final: 12/5/2013
AFS #: 063-0002

A Montana Air Quality Permit (MAQP), with conditions, is hereby granted to Roseburg Forest Products (Roseburg), pursuant to Sections 75-2-204, 211, and 215 of the Montana Code Annotated (MCA), as amended, and the Administrative Rules of Montana (ARM) 17.8.740, *et seq.*, as amended, for the following:

SECTION I: Permitted Facilities

A. Plant Location

Roseburg is located in Section 8, Township 13 North, Range 19 West, in Missoula County, Montana. The facility processes raw wood fiber into particleboard by refining the fiber, adding resin, and pressing the mat into boards. This plant also contains a remanufacturing section, which includes an edge banding line that utilizes an adhesive product to bind tape to the edge of the particleboard. A detailed description of the permitted equipment is contained in the permit analysis.

B. Current Permit Action

On October 16, 2013, the Department received a de minimis request to install two baghouses on the board cooler vents to replace the single baghouse (BH 74) which had been permitted under MAQP #2303-18. The de minimis request was approved on October 22, 2013. The permit language has been modified to reflect an increase in flowrate from the board cooler vents; two baghouses in place of a single baghouse with a higher control efficiency which will be used for particulate control and exhaust through a common exhaust stack.

SECTION II: Limitations and Conditions

A. Plant-Wide Conditions

1. Roseburg shall not cause or authorize to be discharged into the atmosphere from any stack or vent any visible emissions that exhibit an opacity of 20% or greater averaged over 6 consecutive minutes (ARM 17.8.304).
2. The Final Dryers, press, and board coolers shall each be limited to a total of 8,500 hours of operation during any rolling 12-month period (ARM 17.8.749).
3. Roseburg shall operate and maintain all control equipment as specified (ARM 17.8.749).
4. Roseburg shall comply with all applicable standards and limitations, and the reporting, recordkeeping, and notification requirements contained in 40 Code of Federal Regulations (CFR) 63, Subpart JJ – National Emission Standards for Wood Furniture Manufacturing Operations (ARM 17.8.342 and 40 CFR 63, Subpart JJ).

5. Roseburg shall comply with all applicable standards and limitations, and the reporting, recordkeeping, and notification requirements contained in 40 CFR 63, Subpart DDDD, National Emission Standard for Hazardous Air Pollutants: Plywood and Composite Wood Products (ARM 17.8.342 and 40 CFR 63, Subpart DDDD).
6. Roseburg shall comply with all applicable standards and limitations, and the reporting, recordkeeping, and notification requirements contained in 40 CFR 63, Subpart DDDDD, National Emission Standard for Hazardous Air Pollutants: Boiler and Process Heaters (ARM 17.8.342 and 40 CFR 63, Subpart DDDDD).
7. Roseburg shall comply with all applicable standards and limitations, and the reporting, recordkeeping, and notification requirements contained in 40 CFR 63, Subpart ZZZZ, National Emission Standard for Hazardous Air Pollutants: Reciprocal Internal Combustion Engines (ARM 17.8.342 and 40 CFR 63, Subpart ZZZZ).

B. Sander Dust Boiler

1. Roseburg shall not cause or authorize to be discharged into the atmosphere from the Sander Dust abort stack any visible emissions that exhibit an opacity of 20% or greater averaged over 6 consecutive minutes (ARM 17.8.304).
2. Emissions from the Sander Dust Boiler shall be controlled with a low NO_x burners and baghouse and shall not exceed (ARM 17.8.749):
 - a. Particulate matter (PM) emissions shall not exceed 5.9 pounds per hour (lb/hr), and 4.7 lb/hr of particulate matter with an aerodynamic diameter of 10 microns or less (PM₁₀).
 - b. Oxides of nitrogen (NO_x) shall not exceed 35.7 lb/hr.
 - c. Carbon monoxide (CO) emissions shall not 18.8 lb/hr.
3. Roseburg shall not combust more than 14 MMBtu/hour of LFG at any given time, in either the Sander Dust Boiler or the Solagen Burner (ARM 17.8.749).

C. Solagen Burner

1. Roseburg shall not combust more than 26,280 tons of sander dust in the Solagen Burner during any rolling 12-month period (ARM 17.8.749).
2. Roseburg shall not combust more than 352.1-million standard cubic feet (MMscf) of natural gas in the Solagen Burner during any rolling 12-month period (ARM 17.8.749).
3. Emissions from the Solagen Burner shall not exceed the following (ARM 17.8.749):

NO _x	31.5 pounds per hour (lb/hr)
CO	15.6 lb/hr
VOC	0.09 lb/hr

4. Roseburg shall not combust more than 14 MMBtu/hr of LFG, at any given time, in the Sander Dust Boiler, or the Solagen Burner (ARM 17.8.749).

D. Roemmc Burner

1. Roseburg shall not combust more than 23,000 tons of sander dust in the Roemmc Burner during any rolling 12-month period (ARM 17.8.749).
2. Emissions from the Roemmc Burner shall not exceed the following (ARM 17.8.749 and ARM 17.8.752):

NO _x	115.0 lb/hr
CO	100.0 lb/hr
VOC	0.35 lb/hr

E. Dryers ((Final Dryers: DRY100, DRY101, DRY102, DRY103, DRY200) and Predryer)

1. Each Final Dryer shall be equipped with multiclone control that is operated and maintained to meet the emission limits as specified by conditions II.E.2, II.E.3 and II.E.7 below (ARM 17.8.752).
2. Total PM/PM₁₀ emissions from the Final Dryer stack (includes DRY100 - DRY103) shall not exceed 20.5 lb/hr (ARM 17.8.749).
3. Total PM/PM₁₀ emissions from the DRY 200 stack shall not exceed 6.50 lb/hr (ARM 17.8.752).
4. The Predryer shall be equipped with a WESP and an RTO that is operated and maintained to meet the limits as specified by conditions II.E.5, and II.E.7 (ARM 17.8.752).
5. PM/PM₁₀ emissions from the Predryer shall not exceed 6.21 lb/hr (ARM 17.8.749).
6. Roseburg shall install and operate temperature sensors at the inlet of the dry rotary dryers (Final Dryers). The temperature sensors shall have a remote readout and audible alarm. The alarm system shall be audible to the dryer operator and the operator(s) of the combustion units. The alarm system shall become activated when the 24-hour block average inlet dryer temperature exceeds 600 °F. Data from the temperature sensors shall be maintained for a period of at least 5 years and shall be available to the Department upon request (ARM 17.8.749 and 40 CFR 63, Subpart DDDD).
7. Roseburg shall not cause or authorize to be discharged into the atmosphere from any dryer any visible emissions that exhibit an opacity of 20% or greater averaged over 6 consecutive minutes (ARM 17.8.752).
8. The production from the Predryer (DRY500) shall not exceed 200,000 bone dry tons (BDT) per rolling 12-month period (ARM 17.8.749).

F. Baghouse Emission Limitations

1. All emission points equipped with baghouses, as listed in the table below, are required to meet an emission limitation of 0.005 grains per dry standard cubic foot (gr/dscf) of exhaust gas for total particulate and 0.005 gr/dscf of exhaust gas for PM₁₀ except for BH 74A and BH 74B which shall meet 0.002 gr/dscf for PM and 0.002 gr/dscf for PM₁₀. (ARM 17.8.749, ARM 17.8.752).

Baghouse Name	Number	Flow Rate (cfm)	Controlled Point
Outside truck dump	BH 50	27,470	Outside Truck Dump
Green Material	BH 52	21,000	Raw Material handling
Furnish Building	BH 56	20,000	Furnish Building
Prescreen	BH 62	25,000	Prescreen
Wet Bins	BH 64	25,000	Wet Bins
M & D Face	BH 70	28,000	M & D
M & D Core	BH 72	28,000	M & D
Board cooler	BH 74A and BH74B	120,000 total	Board Cooler
Reject System BH	BH 100	40,000	Line 1 Reject System
Forming Line Cleanup	BH 101A&B	26,000 Each	Forming Line and Milling and Drying
Forming Line Cleanup Receiver	BH 101R	4,000	Forming Line and Milling and Drying
Board Trim Saws	BH 102 A & B	28,800 Each	5 x 25& 5x16 saw and hog
Eight-Head Sander	BH 302 A & B	47,000 Each	Eight Head Sander System
Eight-Head Relay	BH 302R	10,000	Sander System Relay
Schelling and Bullnose Saw Baghouse	BH 401	27,000	Shelling & Bullnose Saw System, Edge Bander Line
Melamine Baghouse	BH 500	21,000	Dust and Melamine Trim

2. All sander dust handling systems are to be enclosed and equipped with baghouse control. No outside storage of sander dust shall be allowed (ARM 17.8.749).

G. Particle Board Press and Press Vents (Press Vents A, B, C, D)

1. Emissions from the particleboard presses shall be controlled by a biofilter, except as allowed under the approved Routine Control Device Maintenance Exemption (ARM 17.8.342 and 40 CFR 63, Subpart DDDD).
2. The combined emissions from all four batch press vent fans shall be limited to 4.40 lb/hr of total PM/PM₁₀ (ARM 17.8.752).

H. Board Cooler Vents (Vents 1, 2, 3)

1. Roseburg shall not cause or authorize to be discharged into the atmosphere any visible emissions that exhibit an opacity of 20% or greater averaged over 6 consecutive minutes (ARM 17.8.308).
2. PM/PM₁₀/PM_{2.5} emissions from the board cooler vents shall be controlled by two baghouses (BH 74A and BH74B) and are limited to 0.002 gr/dscf for PM and PM₁₀ which exhaust to a common stack (ARM 17.8.749).

I. Fugitive Emissions and Raw Material Handling

1. Roseburg shall not cause or authorize to be discharged into the atmosphere from any fugitive sources, any visible emissions that exhibit an opacity of 20% or greater averaged over 6 consecutive minutes (ARM 17.8.308).
2. Roseburg shall not cause or authorize the use of any street, road, or parking lot without taking reasonable precautions to control emissions of airborne particulate matter (ARM 17.8.308[2]).
3. Paving or a dust suppressant shall be applied to all routinely used haul roads within the plant area. If a dust suppressant is used, it shall be reapplied at least once per year. Additional applications of dust suppressants may be required if fugitive dust exceeds 20% opacity from the haul roads at any time (ARM 17.8.308).
4. Contaminated floor sweepings may not be stored outside. Material stored in the contaminated floor sweepings building shall be limited to no more than 50 units (370 cubic yards) (ARM 17.8.749).
5. Roseburg shall plant and maintain vegetation on the sides and trees along the top of the earthen berm constructed around the raw material pile to reduce dust emissions. Sufficient dust control measures shall be applied to the storage pile to ensure that the visible emissions from the storage pile do not exhibit an opacity of 20% or greater averaged over 6 consecutive minutes (ARM 17.8.749).
6. Roseburg shall utilize baghouses (BH 52, BH 56, BH 62, BH 64) to control fugitive emissions from raw material handling (ARM 17.8.749).
7. Fugitive particulate emissions from the raw material storage pile, including unloading, conveying to the pile, and transfer back to the mill, shall not exceed 455 lb/day daily maximum and 14.7 tons/year for total particulate emissions. These same emissions shall not exceed 178 lb/day daily maximum and 5.28 tons/year for PM₁₀. Compliance with these limitations shall be determined as follows (ARM 17.8.749):

$$E = 0.50 (I) (e) [0.33(1-n_{td}) + 0.33(1-n_{rs}) + 0.33(1-n_{rp})]$$

Where:

E = Total fugitive emissions from the raw material pile (lb)

I = Total raw material delivered to plant (bone-dry tons)

e = PM_{10} emission factor of 0.36 lb/ton, or a PM emission factor of 1.0 lb/ton, $PM_{2.5}$ emission factor of 0.15 lb/ton

n_{td} = Control efficiency at the outdoor truck dump expressed as a ratio (i.e. 99% = 0.99)

n_{rs} = Control efficiency at the radial stacker expressed as a ratio

n_{rp} = Control efficiency at the pile reclaim expressed as a ratio

Notes:

a. The control efficiencies, as revised in MAQP #2303-18, are as follows:

<u>Description</u>	<u>Control Efficiency</u>	<u>Controls</u>
Outdoor truck dump	99%	Covered surge bin and trailer lift with baghouse system
Pile reclaim	90%	Covered hopper and earthen berm
Radial stacker	50%	Reduced drop height and berm

b. The 0.33 is utilized to account for different control efficiencies at each emission point within the process, assuming that 1/3 of the emissions originate from the truck dump, 1/3 of the emissions originate from the pile reclaim, and 1/3 of the emissions originate from the radial stacker. The constant of 0.50 at the beginning of the equation is utilized because approximately 50% of the raw material passes through the outside truck dump and the outdoor pile.

c. If the inside truck dump is shut down, or not otherwise used for an entire day, the constant of 0.50 shall be replaced with a constant of 1.00 to determine compliance for that day.

d. If the inside truck dump is shutdown, or otherwise not used for 1 or more entire days, compliance with the annual average limitation shall be determined as follows:

i. Calculate the allowable emissions for the days when the inside truck dump is shut down, using the associated raw material delivery data and the constant of 1.00.

ii. Calculate the allowable emissions for the days when the inside truck dump is operated, using the associated raw material delivery data and the constant of 0.50.

iii. Add (i) and (ii) above.

e. Roseburg shall keep daily records of the total bone-dry tons of raw material received at the Missoula plant. Roseburg shall also keep records of any days when either truck dump is not operating for any reason.

- f. Roseburg shall maintain a cover over the lift portion of the outside truck dump to increase the collection efficiency of the truck dump baghouse (ARM 17.8.749).
- g. Roseburg shall maintain a cover over the reclaim hopper to reduce fugitive dust emissions (ARM 17.8.749).

J. Regenerative Thermal Oxidizer

- 1. Roseburg shall operate and maintain an RTO to control VHAP emissions from the Predryer (ARM 17.8.749).
- 2. Roseburg shall not cause or authorize to be discharged into the atmosphere from the RTO:
 - a. Any visible emissions that exhibit an opacity of 10% or greater averaged over 6 consecutive minutes (ARM 17.8.752); and
 - b. Any particulate matter emissions in excess of 0.10 gr/dscf (ARM 17.8.752).

K. Testing Requirements

- 1. Roseburg shall test the Sander Dust Boiler emissions for NO_x and CO, concurrently, to demonstrate compliance with the emission limits contained in Section II.B.2. Testing shall be conducted within 180 days of initial startup (following the installation of the new low NO_x burners) and then the testing shall continue on an every 2-year basis, or another testing/monitoring schedule as may be approved by the Department. All source testing shall occur while Roseburg is using sander dust as the fuel (ARM 17.8.105 and ARM 17.8.749).
- 2. Roseburg shall test the Sander Dust Boiler emissions for PM/PM₁₀ to demonstrate compliance with the emission limits contained in Section II.B.2. Testing shall be conducted within 180 days of initial startup (following the installation of the new low NO_x burners and baghouse) and then testing shall continue on an every 2-year basis, or another testing/monitoring schedule as may be approved by the Department. The source testing shall occur while Roseburg is using sander dust as the fuel for the Boiler (ARM 17.8.105 and ARM 17.8.749).
- 3. Roseburg shall test the Solagen Burner emissions for NO_x and CO, concurrently, to demonstrate compliance with the NO_x and CO emission limits contained in Section II.C.3. The testing shall continue on an every 5-year basis or another testing/monitoring schedule as may be approved by the Department. The source testing shall occur while Roseburg is using sander dust as the fuel for the Solagen Burner unless otherwise approved by the Department (ARM 17.8.105 and ARM 17.8.749).
- 4. Roseburg shall test the Roemmc Burner emissions for NO_x and CO, concurrently, to demonstrate compliance with the NO_x and CO emission limits contained in Section II.D.2. The testing and compliance demonstration shall take place at least once every 5 years for each unit or on another testing/monitoring schedule as may be approved by the Department (ARM 17.8.105 and ARM 17.8.749).

5. Roseburg shall conduct source testing on the Final Dryers and Predryer for PM/PM₁₀ and demonstrate compliance with the requirements in Section II.E. Following the completion of the line 1 modernization project, testing shall occur on the Final Dryers (DRY 100 – 103, and DRY 200) within 180 days of initial startup, and then testing and compliance demonstration shall take place at least once every 5 years for each unit or on another testing/monitoring schedule as may be approved by the Department (ARM 17.8.105).
6. Roseburg shall conduct testing of the RTO and biofilter in accordance with 40 CFR 63, Subpart DDDD (40 CFR 63, Subpart DDDD and ARM 17.8.342).
7. Roseburg shall conduct testing of the biofilter for PM/PM₁₀ to demonstrate compliance with press vent emission limits in Section II.G.2. Following the completion of line 1 modernization project, testing shall occur within 180 days of initial startup and then testing and compliance demonstration shall take place at least once every two years, or on another testing/monitoring schedule as may be approved by the Department (ARM 17.8.105 and ARM 17.8.749).
8. Roseburg shall conduct testing of the Board Cooler Baghouses (BH74A and BH74B) to demonstrate compliance with press vent emission limits in Section II.H.2. Following the completion of line 1 modernization project, testing shall occur within 180 days of initial startup and then testing and compliance demonstration shall take place as required by the Department, or on another testing/monitoring schedule as may be approved by the Department (ARM 17.8.105 and ARM 17.8.749).
9. The Department may require additional testing (ARM 17.8.105).
10. All compliance source tests shall conform to the requirements of the Montana Source Test Protocol and Procedures Manual (ARM 17.8.106).

L. Emission Monitoring Requirements

The Department reserves the right to require opacity monitors at the Solagen Burner abort stack, Sander Dust Boiler abort stack, the Roemmc sander dust burner abort stack, and the RTO abort stack. The decision to require this monitoring shall be based upon whether or not the Department has reason to believe a violation of the opacity standard exists. If excess emissions exist or may exist at these locations, further opacity monitoring may be required.

M. Operational Reporting Requirements

1. Roseburg shall supply the Department with annual production information for all emission points, as required by the Department in the annual emission inventory request. The request will include, but is not limited to, all sources of emissions identified in the most recent emission inventory report and sources identified in this permit.

Production information shall be gathered on a calendar-year basis and submitted to the Department by the date required in the emission inventory request. Information shall be in the units required by the Department. The information may be used to calculate operating permit fees based on actual emissions from the facility, and/or to verify compliance with permit limitations (ARM 17.8.505).

2. Roseburg shall notify the Department of any construction or improvement project conducted, pursuant to ARM 17.8.745, that would include *the addition of a new emissions unit*, change in control equipment, stack height, stack diameter, stack flow, stack gas temperature, source location, or fuel specifications, or would result in an increase in source capacity above its permitted operation. The notice must be submitted to the Department, in writing, 10 days prior to start up or use of the proposed de minimis change, or as soon as reasonably practicable in the event of an unanticipated circumstance causing the de minimis change, and must include the information requested in ARM 17.8.745(1)(d) (ARM 17.8.745).
3. Roseburg shall document, by month, the hours of operation of the Final Dryers, press and board coolers. By the 25th day of each month, Roseburg shall total the hours of operation for each dryer, the press, and the board cooler for the previous month. The monthly information will be used to verify compliance with the rolling 12-month limitation in Section II.A.2. A written report of the compliance verification shall be submitted along with the annual emissions inventory (ARM 17.8.749).
4. Roseburg shall document, by month, the tons of sander dust combusted in the Solagen Burner. By the 25th day of each month, Roseburg shall total the sander dust combusted in the Solagen Burner for the previous month. The monthly information will be used to verify compliance with the rolling 12-month limitation in Section II.C.1. A written report of the compliance verification shall be submitted along with the annual emissions inventory (ARM 17.8.749).
5. Roseburg shall document, by month, the volume of natural gas combusted in the Solagen Burner. By the 25th day of each month, Roseburg shall total the volume of natural gas combusted by the Solagen Burner for the previous month. The monthly information will be used to verify compliance with the rolling 12-month limitation in Section II.C.2. A written report of the compliance verification shall be submitted along with the annual emissions inventory (ARM 17.8.749).
6. Roseburg shall document, by month, the tons of sander dust combusted in the Roemmc Burner. By the 25th day of each month, Roseburg shall total the sander dust combusted in the Roemmc Burner for the previous month. The monthly information will be used to verify compliance with the rolling 12-month limitation in Section II.D.1. A written report of the compliance verification shall be submitted along with the annual emissions inventory (ARM 17.8.749).
7. Roseburg shall document, by month, the production from the Predryer. By the 25th day of each month, Roseburg shall total the production from the Predryer for the previous month. The monthly information will be used to verify compliance with the rolling 12-month limitation in Section II.E.8. A written report of the compliance verification shall be submitted along with the annual emissions inventory (ARM 17.8.749).
8. All records compiled in accordance with this permit must be maintained by Roseburg as a permanent business record for at least 5 years following the date of the measurement. The records must be available at the plant site for inspection by the Department and must be submitted to the Department upon request (ARM 17.8.749).

N. Notification Requirements

1. Roseburg shall provide written notification to the Department within 15 days after the facility begins initial construction of the project (ARM 17.8.340 and ARM 17.8.749).
2. Roseburg shall provide written notification to the Department within 15 days after the startup date of each new baghouse, the continuous pre-press, the forming line, the press upgrades, reconfiguration of Dryer 200 and the new low NOx burners and baghouse for the Sander Dust Boiler (ARM 17.8.340 and ARM 17.8.749).

Section III: General Conditions

- A. Inspection - Roseburg shall allow the Department's representatives access to the source at all reasonable times for the purpose of making inspections or surveys, collecting samples, obtaining data, auditing any monitoring equipment (Continuous Emissions Monitoring System (CEMS), Continuous Emissions Rate Monitoring Systems (CERMS)) or observing any monitoring or testing, and otherwise conducting all necessary functions related to this permit.
- B. Waiver - The permit and all the terms, conditions, and matters stated herein shall be deemed accepted if Roseburg fails to appeal as indicated below.
- C. Compliance with Statutes and Regulations - Nothing in this permit shall be construed as relieving Roseburg of the responsibility for complying with any applicable federal or Montana statute, rule or standard, except as specifically provided in ARM 17.8.740, *et seq.* (ARM 17.8.756).
- D. Enforcement - Violations of limitations, conditions and requirements contained herein may constitute grounds for permit revocation, penalties or other enforcement as specified in Section 75-2-401, *et seq.*, MCA.
- E. Appeals - Any person or persons jointly or severally adversely affected by the Department's decision may request, within 15 days after the Department renders its decision, upon affidavit setting forth the grounds therefore, a hearing before the Board of Environmental Review (Board). A hearing shall be held under the provisions of the Montana Administrative Procedures Act. The filing of a request for a hearing does not stay the Department's decision, unless the Board issues a stay upon receipt of a petition and a finding that a stay is appropriate under Section 75-2-211(11)(b), MCA. The issuance of a stay on a permit by the Board postpones the effective date of the Department's decision until conclusion of the hearing and issuance of a final decision by the Board. If a stay is not issued by the Board, the Department's decision on the application is final 16 days after the Department's decision is made.
- F. Permit Inspection - As required by ARM 17.8.755, Inspection of Permit, a copy of the air quality permit shall be made available for inspection by Department personnel at the location of the permitted source.
- G. Permit Fees - Pursuant to Section 75-2-220, MCA, failure to pay the annual operation fee by Roseburg may be grounds for revocation of this permit, as required by that section and rules adopted thereunder by the Board.

- H. Duration of Permit – Construction or installation must begin or contractual obligations entered into that would constitute substantial loss within 3 years of permit issuance and proceed with due diligence until the project is complete or the permit shall expire (ARM 17.8.762).

Montana Air Quality Permit (MAQP) Analysis
Roseburg Forest Products
MAQP #2303-19

I. Introduction/Process Description

A. Site Location

Roseburg Forest Products (Roseburg) Missoula Particle Board plant is located in Section 8, Township 13 North, Range 19 West, in Missoula County, Montana. Roseburg's particle board plant is located within the boundaries of the particulate matter with an aerodynamic diameter of 10 microns or less (PM₁₀) nonattainment area.

B. Source Description

This plant processes raw wood fiber into particle board by refining the fiber, adding resin, and pressing the mat into boards. The raw material, primarily wood shavings from the planning process in sawmills, is transported to Missoula by truck. This material is unloaded at the plant and moved by conveyor to the dryers and the press line, or out to the storage pile. The material is retrieved from the pile by front-end loader and conveyed to the dryers and the press line. Approximately 50% of the plant production is stored in this pile during the year. The wood fiber is then dried, blended with a resin, and introduced to the press line for particle board production. Many baghouses and cyclones are used in the wood fiber handling systems. Sawdust and sander dust is used as fuel for the boiler and sander dust burners. This plant also contains a Remanufacturing (Reman) section, which includes an edge banding line that utilizes an adhesive product to bind tape to the edge of the particleboard. In addition, this facility applies melamine to its manufactured particleboard. Melamine application involves placing a sheet of melamine paper on the top and bottom surfaces of a particleboard mat and pressing the paper and particleboard in a hot press. The melamine paper that overhangs the particleboard is then trimmed with a saw. A list of the permitted equipment associated with this facility is listed below.

C. Process Equipment and Control Equipment

1. Five direct-contact Final Dryers with multiclone control (DRY 100, 101, 102, 103 and 200). Each of the dryers has a rated capacity of 20,000 pounds per hour (lb/hr) on a dry basis (annual average hourly rate). These dryers are heated with the exhaust gases from the Sander Dust Boiler and the Roemmc Burner). The Sander Dust Boiler has a capacity of 52-million British thermal units per hour (MMBtu/hr) and the Roemmc Burner capacity is 50-MMBtu/hr. These burners also can be fueled with natural gas and the Sander Dust Boiler can be fueled with LFG. The boiler combustion unit has an abort stack to divert the hot gases to the atmosphere in case of fire or other problems. The Roemmc combustion unit has an open abort stack, which allows excess combustion gases to escape to the atmosphere under normal operation, and in case of fire or other problems.
2. One direct-contact Predryer with cyclone control. The Predryer has a rated annual capacity of 200,000 BDT/yr (46,000 lb/hr of dry furnish) and is heated with the exhaust from the Solagen Burner. The Solagen burner heat input capacity is 45 MMBtu/hr when firing exclusively gas and 43.8 MMBtu when burning sander dust (including pilot fuel heat input). The Solagen Burner can be fueled with LFG. The Solagen combustion unit has an open abort stack, which allows excess combustion gases to escape to the atmosphere under normal

operation, and in case of fire or other problems. Particulate emissions from the Predryer are controlled through a wet electrostatic precipitator (WESP). Volatile organic hazardous air pollutant (VHAP) emissions from the Predryer are controlled by a regenerative thermal oxidizer (RTO). The RTO runs on natural gas and has a burner capacity of 8 MMBtu/hr.

3. A steam-heated batch hydraulic press is used to compress the particle board mat to the desired thickness. Air emissions generated from the pressing of the mat are controlled by a biofilter. The emissions generated from pressing at this location are also controlled by the biofilter.
4. One melamine press with an annual production capacity of 90,000 thousand feet per year (Mft/yr), and a melamine natural gas burner with a 3 MMBtu/hr capacity.
5. One edge banding line, including an edge bander with a capacity to process 60.4 million lineal feet per year.
6. Wood Residual Baghouses

Baghouse Name	Number	Flow Rate (cfm)	Controlled Point
Outside truck dump	BH 50	27,470	Outside Truck Dump
Green material	BH 52	21,000	Raw material
Furnish Building	BH 56	20,000	Furnish Building
Prescreen	BH 62	25,000	Prescreen
Wet Bins	BH 64	25,000	Wet Bins
M & D Face	BH 70	28,000	M & D
M & D Core	BH 72	28,000	M & D
Reject System BH	BH 100	40,000	Line 1 Reject System
Forming Line Cleanup	BH 101A&B	26,000 Each	Forming Line and Milling and Drying
Forming Line Cleanup Receiver	BH 101R	4,000	Forming Line and Milling and Drying
Board Trim Saws	BH 102A & B	28,800 Each	5X25 Saws & Hog 5X16 Saws & Hog
Eight-Head Sander	BH 302 A & B	47,000 Each	Eight Head Sander System
Eight-Head Relay	BH 302R	10,000	Sander System Relay
Schelling and Bullnose Baghouse	BH 401	27,000	Shilling & Bullnose Saw System, Edge Bander Line
Melamine Baghouse	BH 500	21,000	Dust and Melamine Trim

7. Fugitive dust from receiving, storing, and handling of raw material wood particles. This includes the receiving of shavings and sawdust by truck, unloading and conveying to the press line, the indoor storage area, or the outdoor

storage pile via the radial stacker. It also includes fugitive emissions from the reclaiming of this material from the outdoor storage pile by front-end loader and conveying back to the press line.

D. Permit History

On September 16, 1986, Louisiana-Pacific (L-P) was granted a general permit for their particle board plant, including the plant expansion and other related equipment, located near Missoula in Missoula County. The application was assigned **MAQP #2303**.

This particle board plant existed in the Missoula area prior to 1968 and operated under **MAQP #1274**. The original mill had a capacity of 100-million square feet of 3/4-inch particle board. L-P expanded the mill capacity in 1987 by 50%, using the offsets provided by the closure of the Evans Products plant. The expanded mill has a capacity of 150-million square feet of 3/4-inch particle board. The existing mill consisted of four rotary dryers, heated by the exhaust gases from the sander dust boiler and a sander dust burner. The old press line utilized a batch press with a capacity of 100-million square feet, 3/4-inch basis. The 1987 expansion added two new wood particle dryers, two new predryers with a Coen sander dust burner, and a new press line with a continuous press. A Geka natural gas heater was also added to heat the new press line.

The first permit modification, to add general fugitive dust control measures to the facility, was issued on March 20, 1992, and was given **MAQP #2303-M**. On July 1, 1987, the Environmental Protection Agency (EPA) promulgated new ambient air quality standards for PM₁₀. The annual standard is 50 micrograms per cubic meter and the 24-hour standard is 150 micrograms per cubic meter. These standards were, in turn, adopted by the Montana Board of Health and Environmental Sciences on April 15, 1988. Due to violations of these standards, Missoula was designated as a PM₁₀ nonattainment area. As a result of this designation, the Montana Department of Health and Environmental Sciences and the Missoula County Air Pollution Control Agency developed a plan to control these emissions and bring the area into compliance with the federal and state ambient air quality standards.

In order to identify the emission sources that were contributing to the violation of the PM₁₀ standard, Missoula County conducted a chemical mass balance study (CMB) of the area. The mill was not identified as a significant contributor to the problem by this method, but fugitive dust was a problem at the plant and was addressed at all other point sources in nonattainment areas. Therefore, a permit modification was required in order to add general fugitive dust control measures to this facility.

Since the State Implementation Plan (SIP) process did not identify this source as a significant contributor to the Missoula nonattainment problem, no emission limitations were changed in the permit; only cyclone-controlled and fugitive dust sources were addressed in more detail. **MAQP #2303-M** replaced **MAQP #2303**.

On August 9, 1993, **MAQP #2303-02** was issued to L-P for an alteration to their existing air quality permit to install a baghouse and controls to reduce emissions from an existing outside truck dump at the Missoula Particle board facility in Missoula, Montana. The outside truck dump was located at the southeastern end of the facility, at 3300 Raser Drive.

The baghouse would pull approximately 27,470 cubic feet per minute (cfm) of air through the top of the existing surge bin on the truck dump. The surge bin is partially shrouded to allow air to enter along the top and sides of the truck when in the dumping

position. The air is pulled towards the back and top of the shrouded surge bin and through the baghouse system. The efficiency of the baghouse is estimated to be 99.99 percent (%); however, the reduction of fugitive dust emissions was reduced by the amount of air that could be drawn through the baghouse system. With proper manifold ducting and skirting, an estimated average reduction of 90% of fugitive emissions was expected. MAQP #2303-02 replaced MAQP #2303-M.

L-P was issued **MAQP #2303-03** on March 10, 1995, to replace two existing baghouses at the Missoula facility with two new baghouses. L-P replaced the existing 26,680-cfm Clark baghouse on source PC 401A (forming machine) with a new 35,000-cfm Day Division Model 376 RFW-10 baghouse. In addition, L-P replaced the existing 26,680-cfm Clark baghouse on source PC 401B (forming machine) with a new 5,400-cfm Day Division Model 48 RFW-8 baghouse. The permit alteration resulted in a decrease of particulate matter (PM) emissions of approximately 10 tons per year because the new baghouses had a combined flow less than the combined air flow from the two existing baghouses. MAQP #2303-03 replaced MAQP #2303-02.

MAQP #2303-04 was issued to L-P on March 9, 1997, to alter the allowable particulate emission limitations for the baghouses, cyclones, particle board press vents, and the continuous press vents to more accurately reflect the actual particulate emissions from these sources. The majority of the emission limitations were decreased, although the cyclone and press vent fan limits were increased. Overall, the allowable emissions of the facility decreased by approximately 208 tons of particulate.

In addition, the alteration allowed L-P to increase the outside storage capacity of the contaminated floor sweepings enclosure from 50 cubic yards to 50 units (370 cubic yards). Conditions in MAQP #2303-03 required that a control strategy for particulate be employed, which resulted in no increase in associated fugitive emissions. The control strategy proposed by L-P included containing the contaminated floor sweepings within the three-sided enclosure and covering the exposed sides with a screen. The Department of Environmental Quality (Department) approved this control strategy with the caveat that if the fugitive emissions were not controlled by the screen, the Department would require an alternative control strategy be employed. Finally, MAQP #2303-04 clarified permit conditions, updated the facility's configuration, incorporated MAQP #1274, and updated the permit with current rule citations and permit language.

The following changes were also made, based on comments received after issuance of the Preliminary Determination (PD) and Department Decision (DD):

1. The condition specifying information contained in the 1986 permit application was removed from the permit. However, in order to satisfy all requirements of the condition, Section II.C.1 was added to the permit and D.1 then included a table listing the baghouses required to be operated on the various sources.
2. Section II.G.6.b was reworded for clarification at the request of L-P.
3. Minor changes were made to the permit to clarify permit language. See the analysis for MAQP #2303-04 for a complete description of the changes.

MAQP #2303-05 was issued to L-P on June 29, 1997, after they requested that the Department modify their air quality permit to clarify language concerning the electric eye in the sander dust boiler abort stack. The language was changed to require corrective action when emissions to atmosphere exceeded 20%. The electric eye monitors the boiler

exhaust gas, even when it is not being emitted directly to atmosphere. A sentence stating that data from the monitor need not be recorded unless required by the Department was also put back into the permit.

MAQP #2303-06 was issued on July 6, 1998. L-P requested that the Department modify the requirements for the contaminated floor sweepings from a fixed screen, for the control of fugitives, to a fixed roof enclosure. Emissions were expected to decrease with this modification, as the new roof would improve the control of fugitives, offering more protection than the screen system being replaced. The new roof also facilitated the loading and unloading of sweepings from the three-sided bunker. The above floor sweepings bunker was allowed by the previous permit, and this permit modification simply updated the permit to recognize the improvement to the storage bunker.

MAQP #2303-07 was issued to L-P on May 17, 1999. This permit alteration allowed them to rebuild the Line 1 press. The rebuilt press was expected to result in smoother board from Line 1, and thus a decrease in the amount of sanding necessary. The reduced sanding was expected to decrease the sander dust burned at the facility. L-P decided to make up the additional heat requirement with natural gas.

The rebuild of the press allowed L-P to increase production of Line 1 from approximately 131 MMft/year to 160 MMft/year. All emissions resulting from the debottlenecking were considered, to determine whether the change would result in a major modification subject to the requirements of the New Source Review Program (NSR) and, in particular, the Prevention of Significant Deterioration (PSD) requirements.

L-P proposed, and the Department agreed, to base the actual emissions from the facility on the years 1993 and 1994. The years 1993 and 1994 were considered most representative for Line 1 because of the degradation of the press during the last several years. Based on the past actual to future potential test, the emissions from the press project would exceed significance levels for both PM and PM₁₀. However, because of the addition of new control equipment, L-P reduced the net emissions increase of particulate matter and PM₁₀ to less than significance levels. Therefore, the requirements of the NSR/PSD program did not apply to this project.

As part of this permit action, L-P proposed to implement the following emission controls at the facility:

1. A cover and curtains over the Line 2 Reject Dump;
2. A cover over the reclaim hopper;
3. A cover over the lift portion of the outside truck dump;
4. A baghouse in milling and drying (M & D) to control three dryer loop vents and the coarse refiner loop vent;
5. A reduction in the allowable emissions from the dryers and from the raw material handling fugitives;
6. A limit on the amount of sander dust which may be combusted in the Coen Burner; and
7. Changing the process of wax addition to the sawdust from prior to the dryers to after the dryers to reduce evaporative losses.

The method of calculating the emissions from the raw material handling at the facility was also modified in this permit. The control efficiencies for several of the processes increased because of the additional controls required by the permit.

The control efficiency for the outside truck dump increased from 90% to 99% because L-P was required to install a full cover over the lift portion of the truck dump. The control efficiency for the pile reclaim hopper increased from 0% to 50% because L-P constructed an earthen berm around the exposed sides of the pile and was required by permit to install a cover over the hopper. The control efficiency for the radial stacker increased from 25% to 50% because of the construction of the earthen berm.

The testing requirements for the dryers and predryers were modified in this permit to require the testing of each dryer and predryer once every 5 years. The previous testing requirement was inconsistent with other sources. MAQP #2303-07 replaced MAQP #2303-06.

MAQP #2303-08 was issued to L-P on August 24, 2000. L-P identified three previous changes to the facility that should have undergone PSD permitting, but did not. On January 7, 2000, L-P requested an alteration to MAQP #2303-07 that included all three actions. The Department requested additional information from L-P and received the final submittal on June 9, 2000.

On November 8, 1978, a complete application was submitted by L-P to install a 50-MMBtu/hr Roemmc sander dust/natural gas-fired burner, replace the original bullnose line with Bullnose #1, and make various changes to baghouses and wood waste handling systems. In 1986-1987, L-P installed a second production line (Line 2) with associated sources, a 35-MMBtu/hr Coen sander dust/natural gas-fired burner, Predryers 1 and 2, and the GEKA200. In 1991, L-P installed Bullnose #2. The changes made in each of these years triggered the NSR program for PSD regulations; however, none of the changes were permitted at the time through the PSD regulations. In 1978, L-P triggered the PSD regulations for carbon monoxide (CO) and Oxides of Nitrogen (NO_x). In 1986-1987, L-P triggered the PSD regulations for NO_x and Volatile Organic Compounds (VOCs). In 1991, L-P triggered the PSD regulations for VOCs. MAQP #2303-08 permitted the 1978, 1986-1987, and 1991 changes in accordance with the PSD regulations and replaced MAQP #2303-07.

On March 2, 2001, L-P was issued **MAQP #2303-09** to change the emission limits for the Roemmc Burner. Based on more recent source test information, L-P requested new emission limits for the Roemmc Burner that more accurately reflected the emissions from the unit. The emission limits for NO_x, CO, and VOC were increased for the Roemmc Burner in this permit action. Furthermore, the Department removed the requirements and limitations regarding cyclones from the permit, because there were no longer any cyclones that were considered emitting units. All cyclones were either completely removed from the facility or are no longer attached and in use at the facility. Because the previous PSD permit determination (#2303-08) was made using the information that was submitted/discussed with L-P, the Department determined that the changes required another analysis of the PSD issue as they related to the Roemmc Burner. All affected portions of the previous application that changed were required to be resubmitted using the new emission limits that L-P proposed. MAQP #2303-09 replaced MAQP #2303-08.

On April 24, 2001, the Department received an application (**MAQP Application #2303-10**) from L-P for the addition of three temporary natural gas-fired turbines. The turbines were capable of generating approximately 4.5 megawatts of electrical power per turbine.

L-P requested to install the generators/turbines to offset the high cost of power at the time. After submittal of the permit application, but before issuance of a preliminary determination, L-P submitted a request to withdraw the permit application.

MAQP #2303-11 was issued on August 7, 2002, based on a de minimis modification notice and corresponding modification request to minimize the fire hazard in their Milling and Drying (M&D) operations. The proposal was to install an additional pneumatic line to collect dust in the M&D belt room. The new line connects to the existing M&D baghouse (BH55). Although the emission limit for the baghouse would remain the same, the flow through the baghouse would change from 18,000 dry standard cubic feet per minute (dscfm) to 32,000 dscfm. The permit change was necessary to change the flowrate limit on the baghouse. In addition, the source test frequency for the Roemmc Burner was changed to once every 5 years. L-P requested the change to account for safety concerns that arise during the testing of the Roemmc. **MAQP #2303-11** replaced **MAQP #2303-09**.

On February 21, 2003, L-P and Roseburg submitted a request to transfer the permit for the facility from L-P to Roseburg. The permitting action was an administrative amendment and updated rule citations in the permit. **MAQP #2303-12** replaced **MAQP #2303-11**.

MAQP #2303-13 was issued to Roseburg on December 14, 2005. This permit allowed Roseburg to reconfigure the particleboard predry process by removing one of two predryers and replacing the existing Coen sander dust burner with a new direct-fired, low- NO_x burner with dryer gas recirculation. In addition, a wet electrostatic precipitator (WESP) was installed on the predryer exhaust to control combustion and dryer emissions.

The single predryer was configured so that approximately 50% of its exhaust gases would be reintroduced into the duct immediately preceding the predryer drum. This configuration allowed the heat to be used more efficiently by increasing the humidity in the predryer to increase heat transfer. Configuring the predry system in this manner resulted in the ability to dry a greater quantity of green sawdust at a higher inlet temperature. Dried sawdust is directed to a storage silo that is controlled with a baghouse. **MAQP #2303-13** replaced **MAQP #2303-12**.

On August 14, 2007, the Department received a complete **MAQP** application from Roseburg requesting that the Department modify **MAQP #2303-13**. Roseburg proposed to install an RTO to control emissions of VHAP from its existing wood-fired green furnish predryer. This RTO would be installed on the outlet of the existing wet electrostatic precipitator and fueled by natural gas.

In addition, this permit incorporated de minimis changes that had occurred at Roseburg's facility since the issuance of the previous permit. On February 24, 2005, Roseburg notified the Department of a proposed de minimis change that included the construction of a melamine application line. New equipment associated with this melamine line included a conveyor line, a hot press, a natural gas-fired burner, and a baghouse. All potential emissions for this change were estimated to be less than the 15 tons per year de minimis threshold. **MAQP #2303-14** replaced **MAQP #2303-13**.

After issuance of the PD, the Department received comments from Roseburg regarding ambient monitoring requirements and bake out provisions for the RTO. Roseburg asked that the ambient monitoring requirements included in Attachment 1 be removed from the current permit as the required monitoring had already been completed. In addition, Roseburg asked that the Department qualify the permit limitations found in Section II.K

of the permit to accept periods of time necessary to perform a bake out of the RTO, a necessary preventative maintenance activity. In response to these comments, the Department removed the ambient monitoring requirements included in Attachment 1 from the current permit. No changes were made to the RTO permit limitations, however, as the Department believes bake out of the RTO is a routine maintenance activity that is exempt from air quality permit requirements per the Administrative Rules of Montana (ARM) 17.8.744(1)(k).

On September 16, 2008, the Department received a complete application from Roseburg requesting that the Department modify MAQP #2303-14. In order to comply with the Plywood and Composite Wood Product Maximum Achievable Control Technology (MACT) rule, Roseburg installed a RTO to control emissions of VHAP from its existing wood-fired green furnish predryer. This RTO was installed on the outlet of the existing wet electrostatic precipitator and is fueled by natural gas. The installation of the RTO was permitted under MAQP #2303-14, which included a provision limiting the particulate matter emitted from the RTO to 0.10 grains per dry standard cubic foot (gr/dscf) corrected to 12% carbon dioxide (CO₂) and calculated as if no auxiliary fuel had been used. This limit was a Best Available Control Technology (BACT)-derived limit intended to be consistent with ARM 17.8.316. However, after MAQP #2303-14 was issued, Roseburg discovered that the RTO was not capable of achieving this BACT-derived limit. Therefore, Roseburg proposed to modify the particulate BACT limit for the RTO. The Department updated the permit based on the revised BACT analysis.

Roseburg also requested an extension of 180 days in which to test the particulate on the RTO given the difficulty in meeting the permitted stack testing timeline. The Department reviewed the request and determined that an additional 180 days to test the RTO was not warranted. While the particulate limit on the RTO was being modified under this permit action, there was no change to the test methods required to demonstrate compliance with this limitation. Since the permit condition required testing of the RTO within 180 days of initial startup, the Department did not anticipate any difficulty in meeting the permitted stack testing timeline.

In addition, several de minimis changes occurred at this facility since the previous permitting action. The de minimis changes included: the replacement of two saws (the Jenkins 5x16 production saw and the old, existing Giben saw) with a 1991 Giben 12' Angular Panel saw, the installation of a biofilter on the particleboard presses to comply with the Plywood and Composite Wood Product MACT rule, and the installation of an edge banding line in the Reman area of the facility. The edge banding line consists of an edge bander with a capacity of 60.4 million lineal feet per year that utilizes an adhesive product to bind tape to the edge of the particleboard. The emissions change associated with each of these projects were below the de minimis level of 15 tons per year, as specified in ARM 17.8.745. Therefore, an MAQP was not required. The Department updated the permit to reflect these de minimis changes. **MAQP #2303-15** replaced MAQP #2303-14.

On March 30, 2012, Roseburg submitted a permit application for a modification of MAQP #2303-15 and a renewal application for the Title V Operating Permit (OP) #2303-06. The MAQP application was deemed complete on April 16, 2012. In addition to this application, this permit action incorporates several de minimis requests previously approved by the Department as discussed below.

On May 1, 2009, the Department approved a de minimis change to allow Roseburg to utilize 14 MMBtu/hr of land fill gas (LFG) from Allied Waste. Roseburg proposed to burn this fuel in the Sander Dust Boiler and possibly the Solagen Sander Dust Burner.

On February 6, 2012, Roseburg submitted a de minimis request to repurpose the Six-Head Sander Baghouses (BH 300 A & B) to collect dust from the Line 1 Blending and Forming area, and the Line 1 M & D shaker screens and dryer conveyor area. On February 8, 2012, the Department determined the request did not meet the requirements of the de minimis rule pursuant to ARM 17.8.745.

In addition to those items listed above, the permit action included: (1) removal of Line 2 and all associated equipment (including the GEKA 200 Burner) from the MAQP and OP; (2) removal of Dryer stack's #5 and #6 because they were no longer used; (3) changes to the baghouse references in Section I.H.1 to Roseburg's naming convention and numbering system; (4) removal of the cyclone from the predryer because the cyclone is used as product recovery rather than control; (5) adding the RTO in addition to the WESP as control for the predryer because all the exhaust gases are routed here; (6) changing the reference from the wood particle dryer to the wood particle rotary dryer; (7) removal of a portion of the remanufacturing process; (8) changing the temperature requirement on the dryer alarm system from 1100 degrees Fahrenheit (°F) to 600 °F to coincide with 40 Code of Federal Regulations (CFR) 63, Subpart DDDD; and (9) changing the testing requirement on the Solagen Burner from 2-year testing to a 5-year testing requirement.

Additionally, Roseburg requested that the Department change referral of the 'dryer stacks' to the 'Line 1 Dryer stack'. Both permits listed six (6) dryers and Roseburg requested the Department remove the #5 and #6 dryers. Also, because the remaining four dryers were routed to a common stack (Line 1 dryer stack), Roseburg requested a combined emission limit of 19.4 pounds per hour for all the dryers. **MAQP #2303-16** replaced MAQP #2303-15.

On June 18, 2012, the Department received a request to amend MAQP #2303-16 to clarify some items in the permit. Specifically, Roseburg requested an administrative amendment to change Section II.E.5 from "Roseburg shall install and operate temperature sensors at the inlet of each wood particle rotary dryer" to "Roseburg shall install and operate temperature sensors at the inlet of each wood particle dry rotary dryer (Final Dryers)." Additionally, in MAQP #2303-16 the Department previously listed one of the changes to the permit as: "change the reference from the wood particle dryer to the wood particle rotary dryer," and Roseburg thought it would be more accurate if the reference to "Wood Particle Dryers (Dryers 1, 2, 3, and 4)" in Section II.E. changed to "Final Dryers." **MAQP #2303-17** replaced MAQP #2303-16.

Roseburg Forest Products submitted an application fee of \$500 on February 25, 2013, and an application for modification to the MAQP and the Title V Operating Permit on February 27, 2013, with additional information submitted through July 2, 2013.

This project enabled the conversion of the existing facility through the use of equipment at the site, along with some additional equipment or equipment upgrades. Roseburg's plant modernization was being done to achieve greater efficiency and lower operating costs. With the plant modernization, the overall production capacity will be 217,333 thousand square feet per year (Msf/yr) (3/4 inch basis).

The line 1 modernization project included a new pre-screening system to provide better size classification. The screening, milling and drying equipment was reconfigured to include the installation of a disk screen system with an air density separator to remove large pieces of wood, rocks and metal; installation of metering bins on the dryers to help obtain accurate, consistent material flow to the dryers; re-route the conveyor system downstream of DRY 200 (final dryer) ; reconfigure the refiners in milling and drying.

Additionally, the existing forming line is being replaced with one taken from an idled Roseburg facility. It will include a forming line equipped with a continuous prepress and flying cut off saw that will result in increased line speed, reduced wood usage, resin, waste and mat rejects. A new hydraulic system will be installed on the press that will increase the speed and reduce energy consumption. The board cooler vents will now be ducted to two baghouses rather than emitting directly to atmosphere and the Sander Dust Boiler will be equipped with a new low-oxides of nitrogen (NO_x) burner and a new baghouse. Installation of the new burners will decrease the boiler's maximum heat input capacity from 55 million British thermal units per hour (MMBTu/hr) to 52 MMBtu/hr.

Additional changes included the addition of eight (8) new baghouses to control particulate emissions from several sources and to provide general cleanup of various areas of current fugitive dust. These include:

- BH52 – Green Material transfers (Predryer baghouse) at 21,000 dry standard cubic feet per minute (dscfm);
- BH56 – Furnish Building baghouse at 20,000 dscfm;
- BH62 – Prescreen baghouse at 25,000 dscfm;
- BH64 – Wet bins baghouse at 25,000 dscfm;
- BH70- M&D face baghouse at 28,000 dscfm;
- BH72- M&D core baghouse at 28,000 dscfm;
- BH74A and BH74B –Board Cooler baghouses 120,000 dscfm total; and
- BH76 – Sander Dust Boiler baghouse (boiler flowrate of 34,000 acfm).

Also, as part of the plant modernization project, Roseburg plans to remove the following baghouses from the facility:

- BH55 – Milling and Drying baghouse;
- BH60 – Predryer baghouse;
- BH100R – Line 1 reject system relay baghouse;
- BH400 – Reman flat line sander relay baghouse; and
- BH401R – Schilling and Bullnose system relay receiver baghouse.

These changes allow Roseburg to increase production of Line 1 from approximately 160,000 Mft/year to 217,333 Mft/year. All emissions resulting from the debottlenecking were considered, to determine whether the change would result in a major modification subject to the requirements of the NSR and, in particular, the PSD requirements.

Roseburg based the actual emissions from the facility on the years 2004 and 2005. According to Roseburg, during the years 2000-2003 most Montana industries (Roseburg included) were subject to extremely high electricity rates, particularly during “peak” hours. As a result of the particleboard manufacturing process being very electricity intensive, production was often curtailed during peak hours. Electricity markets, and therefore rates, normalized in mid to late 2003. In 2004-2005, production returned to normal. However in early 2006, the most recent recession began. According to the National Bureau of Economic Research, the recession officially began in 2007; however, the housing industry, on which the Missoula facility is dependent, was adversely impacted much earlier. As discussed in the “Monthly Labor Review” (April 2011), housing starts began declining in January 2006.

By the end of second quarter of 2006, the effect was being felt and production was forced to be scaled back, dropping nearly 10 percent compared to the prior year. In 2007, the downward trend continued, but there was still some hope of a fast turnaround and

Roseburg invested in inventory. However, according to Roseburg this turnaround did not materialize and production dropped. Roseburg noted that the recession (as far as this facility is concerned) is not yet clearly over but there are signs suggesting that the housing sector is beginning to recover. Accordingly, due to the unusual energy and economic impacts that have occurred during the past 13 years, Roseburg chose the years 2004 and 2005 as the most representative of normal facility production.

Based on the past actual to future potential test, the emissions from the project would exceed significance levels for PM, PM₁₀, PM_{2.5}, and VOCs. However, because of the addition of new control equipment, the shutdown of the paintline and Bullnose #1 and #3 painting operations, and removal of Line 2 and associated equipment, Roseburg reduced the net emissions increase to less than significance levels for all pollutants. Therefore, the requirements of the NSR/PSD program did not apply to this project. **MAQP #2303-18** replaced MAQP #2303-17.

E. Current Permit Action

On October 16, 2013, the Department received a de minimis request to install two baghouses on the board cooler vents to replace the single baghouse which had been permitted under MAQP #2303-18. The de minimis request was approved on October 22, 2013. The permit language has been modified to reflect an increase in flowrate from the board cooler vents, two baghouses and a higher control efficiency for the two new baghouses which will be used for particulate control but exhaust through a common exhaust stack. **MAQP #2303-19** replaces MAQP #2303-18.

F. Additional Information

Additional information, such as applicable rules and regulations, BACT/Reasonably Available Control Technology (RACT) determinations, air quality impacts, and environmental assessments, is included in the analysis associated with each change to the permit.

II. Applicable Rules and Regulations

The following are partial quotations of some applicable rules and regulations that apply to the facility. The complete rules are stated in the ARM and are available, upon request, from the Department. Upon request, the Department will provide references for locations of complete copies of all applicable rules and regulations or copies where appropriate.

A. ARM 17.8, Subchapter 1 - General Provisions, including, but not limited to:

1. ARM 17.8.101 Definitions. This rule includes a list of applicable definitions used in this chapter, unless indicated otherwise in a specific subchapter.
2. ARM 17.8.105 Testing Requirements. Any person or persons responsible for the emissions of any air contaminant into the outdoor atmosphere shall, upon written request of the Department, provide the facilities and necessary equipment (including instruments and sensing devices) and shall conduct tests, emission or ambient, for such periods of time as may be necessary using methods approved by the Department.

3. ARM 17.8.106 Source Testing Protocol. The requirements of this rule apply to any emission source testing conducted by the Department, any source, or other entity as required by any rule in this chapter, or any permit or order issued pursuant to this chapter, or the provisions of the Clean Air Act of Montana, 75-2-101, *et seq.*, Montana Code Annotated (MCA).

Roseburg shall comply with the requirements contained in the Montana Source Test Protocol and Procedures Manual, including, but not limited to, using the proper test methods and supplying the required reports. A copy of the Montana Source Test Protocol and Procedures Manual is available from the Department upon request.

4. ARM 17.8.110 Malfunctions. (2) The Department must be notified promptly by telephone whenever a malfunction occurs that can be expected to create emissions in excess of any applicable emission limitation, or to continue for a period greater than 4 hours.
5. ARM 17.8.111 Circumvention. (1) No person shall cause or permit the installation or use of any device or any means which, without resulting in reduction in the total amount of air contaminant emitted, conceals or dilutes an emission of air contaminant that would otherwise violate an air pollution control regulation. (2) No equipment that may produce emissions shall be operated or maintained in such a manner that a public nuisance is created.

B. ARM 17.8, Subchapter 2 - Ambient Air Quality, including, but not limited to:

1. ARM 17.8.204 Ambient Air Monitoring
2. ARM 17.8.210 Ambient Air Quality Standards for Sulfur Dioxide
3. ARM 17.8.211 Ambient Air Quality Standards for Nitrogen Dioxide
4. ARM 17.8.212 Ambient Air Quality Standards for Carbon Monoxide
5. ARM 17.8.213 Ambient Air Quality Standard for Ozone
6. ARM 17.8.214 Ambient Air Quality Standard for Hydrogen Sulfide
7. ARM 17.8.220 Ambient Air Quality Standard for Settled Particulate Matter
8. ARM 17.8.221 Ambient Air Quality Standard for Visibility
9. ARM 17.8.222 Ambient Air Quality Standard for Lead
10. ARM 17.8.223 Ambient Air Quality Standard for PM₁₀

Roseburg must maintain compliance with the applicable ambient air quality standards.

C. ARM 17.8, Subchapter 3 - Emission Standards, including, but not limited to:

1. ARM 17.8.304 Visible Air Contaminants. This rule requires that no person may cause or authorize emissions to be discharged to an outdoor atmosphere from any source installed after November 23, 1968, that exhibit an opacity of 20% or greater averaged over 6 consecutive minutes.
2. ARM 17.8.308 Particulate Matter, Airborne. (1) This rule requires an opacity limitation of less than 20% for all fugitive emission sources and that reasonable precautions are taken to control emissions of airborne particulate matter. (2) Under this rule, Roseburg shall not cause or authorize the use of any street, road, or parking lot without taking reasonable precautions to control emissions of airborne particulate matter. (4) This rule requires reasonable precautions for fugitive emission sources and RACT for existing fugitive emission sources located in a nonattainment area.

3. ARM 17.8.309 Particulate Matter, Fuel Burning Equipment. This section requires that no person shall cause, allow, or permit to be discharged into the atmosphere particulate matter caused by the combustion of fuel in excess of the amount determined by this rule.
4. ARM 17.8.310 Particulate Matter, Industrial Process. This section requires that no person shall cause, allow, or permit to be discharged into the atmosphere particulate matter in excess of the amount set forth in this rule.
5. ARM 17.8.316 Incinerators. This rule requires that no person may cause or authorize emissions to be discharged into the outdoor atmosphere from any incinerator, particulate matter in excess of 0.10 grains per standard cubic foot of dry flue gas, adjusted to 12% carbon dioxide and calculated as if no auxiliary fuel had been used. Further, no person shall cause or authorize to be discharged into the outdoor atmosphere from any incinerator emissions that exhibit an opacity of 10% or greater averaged over 6 consecutive minutes. This rule does not apply to the RTO because Roseburg has applied for and received an air quality permit in accordance with ARM 17.8.770 and MCA 75-2-215 for this unit.
6. ARM 17.8.322 Sulfur Oxide Emissions--Sulfur in Fuel. (4) Commencing July 1, 1972, no person shall burn liquid or solid fuels containing sulfur in excess of 1 pound of sulfur per million Btu fired. (5) Commencing July 1, 1971, no person shall burn any gaseous fuel containing sulfur compounds in excess of 50 grains per 100 cubic feet of gaseous fuel, calculated as hydrogen sulfide at standard conditions.
7. ARM 17.8.324(3) Hydrocarbon Emissions--Petroleum Products. No person shall load or permit the loading of gasoline into any stationary tank with a capacity of 250 gallons or more from any tank truck or trailer, except through a permanent submerged fill pipe, unless such tank is equipped with a vapor loss control device as described in (1) of this rule, or is a pressure tank as described in (1) of this rule.
8. ARM 17.8.340 Standard of Performance for New Stationary Sources. This section incorporates, by reference, 40 CFR Part 60, Standards of Performance for New Stationary Sources (NSPS). The source, as defined and applied in 40 CFR Part 60, shall comply with the requirements of:
 - a. 40 CFR 60, Subpart A – General Provisions
 - b. 40 CFR 60, Subpart Dc - Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units may apply.
9. ARM 17.8.342 Emission Standards for Hazardous Air Pollutants for Source Categories. The source, as defined and applied in 40 CFR Part 63, shall comply with the requirements of 40 CFR Part 63, as listed below:
 - a. 40 CFR 63, Subpart A – General Provisions.
 - b. 40 CFR 63, Subpart JJ – National Emission Standards for Wood Furniture Manufacturing Operations.

- c. 40 CFR 63, Subpart DDDD - National Emission Standards for Hazardous Air Pollutants: Plywood and Composite Wood Products.
 - d. 40 CFR 63, Subpart DDDDD - National Emission Standards for Hazardous Air Pollutants: Boiler and Process Heaters.
 - e. 40 CFR 63, Subpart ZZZZ - National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (RICE).
- D. ARM 17.8, Subchapter 4 – Stack Height and Dispersion Techniques, including, but not limited to:
- 1. ARM 17.8.401 Definitions. This rule includes a list of definitions used in this chapter, unless indicated otherwise in a specific subchapter.
 - 2. ARM 17.8.402 Requirements. Roseburg must demonstrate compliance with the ambient air quality standards with a stack height that does not exceed Good Engineering Practices (GEP).
- E. ARM 17.8, Subchapter 5 – Air Quality Permit Application, Operation, and Open Burning Fees, including, but not limited to:
- 1. ARM 17.8.504 Air Quality Permit Application Fees. This section requires that an applicant submit an air quality permit application fee concurrent with the submittal of an air quality permit application. A permit application is incomplete until the proper application fee is paid to the Department. Roseburg submitted the required application and fee for the current permit action.
 - 2. ARM 17.8.505 Air Quality Operation Fees. An annual air quality operation fee must, as a condition of continued operation, be submitted to the Department by each source of air contaminants holding an air quality permit, excluding an open burning permit, issued by the Department; and the air quality operation fee is based on the actual or estimated actual amount of air pollutants emitted during the previous calendar year.
- An air quality operation fee is separate and distinct from an air quality permit application fee. The annual assessment and collection of the air quality operation fee, described above, shall take place on a calendar-year basis. The Department may insert into any final permit issued after the effective date of these rules, such conditions as may be necessary to require the payment of an air quality operation fee on a calendar-year basis, including provisions which pro-rate the required fee amount.
- F. ARM 17.8, Subchapter 7 – Permit, Construction and Operation of Air Contaminant Sources, including, but not limited to:
- 1. ARM 17.8.740 Definitions. This rule is a list of applicable definitions used in this chapter, unless indicated otherwise in a specific subchapter.
 - 2. ARM 17.8.743 Montana Air Quality Permits--When Required. This rule requires a facility to obtain an air quality permit or permit modification if they construct, modify or use any air contaminant sources that have the potential to emit (PTE) greater than 25 tons per year of any pollutant. Roseburg has the potential to emit more than 25 tons per year of PM, PM₁₀, PM_{2.5}, NO_x, CO, and VOCs; therefore, an air quality permit is required.

3. ARM 17.8.744 Montana Air Quality Permits--General Exclusions. This rule identifies the activities that are not subject to the Montana Air Quality Permit program.
4. ARM 17.8.745 Montana Air Quality Permits—Exclusion for De Minimis Changes. This rule identifies the de minimis changes at permitted facilities that do not require a permit under the Montana Air Quality Permit Program.
5. ARM 17.8.748 New or Modified Emitting Units--Permit Application Requirements. (1) This rule requires that a permit application be submitted prior to installation, modification, or use of a source. A permit application was not required for the current permit action because the permit change is considered an administrative permit change. (7) This rule requires that the applicant notify the public by means of legal publication in a newspaper of general circulation in the area affected by the application for a permit. An affidavit of publication of public notice was not required for the current permit action because the permit change is considered an administrative permit change.
6. ARM 17.8.749 Conditions for Issuance or Denial of Permit. This rule requires that the permits issued by the Department must authorize the construction and operation of the facility or emitting unit subject to the conditions in the permit and the requirements of this subchapter. This rule also requires that the permit must contain any conditions necessary to assure compliance with the Federal Clean Air Act (FCAA), the Clean Air Act of Montana (Act), and rules adopted under those acts.
7. ARM 17.8.752 Emission Control Requirements. This rule requires a source to install the maximum air pollution control capability that is technically practicable and economically feasible, except that BACT shall be utilized. The required BACT analysis is included in Section III of this permit analysis.
8. ARM 17.8.755 Inspection of Permit. This rule requires that air quality permits shall be made available for inspection by the Department at the location of the source.
9. ARM 17.8.756 Compliance with Other Requirements. This rule states that nothing in the permit shall be construed as relieving Roseburg of the responsibility for complying with any applicable federal or Montana statute, rule, or standard, except as specifically provided in ARM 17.8.740, *et seq.*
10. ARM 17.8.759 Review of Permit Applications. This rule describes the Department's responsibilities for processing permit applications and making permit decisions on those permit applications that do not require the preparation of an environmental impact statement.
11. ARM 17.8.762 Duration of Permit. An air quality permit shall be valid until revoked or modified, as provided in this subchapter, except that a permit issued prior to construction of a new or modified source may contain a condition providing that the permit will expire unless construction is commenced within the time specified in the permit, which in no event may be less than 1 year after the permit is issued.

12. ARM 17.8.763 Revocation of Permit. An air quality permit may be revoked upon written request of the permittee, or for violations of any requirement of the Clean Air Act of Montana, rules adopted under the Clean Air Act of Montana, the Federal Clean Air Act (FCAA), rules adopted under the FCAA, or any applicable requirement contained in the Montana State Implementation Plan (SIP).
13. ARM 17.8.764 Administrative Amendment to Permit. An air quality permit may be amended for changes in any applicable rules and standards adopted by the Board of Environmental Review (Board) or changed conditions of operation at a source or stack that do not result in an increase of emissions as a result of those changed conditions. The owner or operator of a facility may not increase the facility's emissions beyond permit limits unless the increase meets the criteria in ARM 17.8.745 for a de minimis change not requiring a permit, or unless the owner or operator applies for and receives another permit in accordance with ARM 17.8.748, ARM 17.8.749, ARM 17.8.752, ARM 17.8.755, and ARM 17.8.756, and with all applicable requirements in ARM Title 17, Chapter 8, Subchapters 8, 9, and 10.
14. ARM 17.8.765 Transfer of Permit. This rule states that an air quality permit may be transferred from one person to another if written notice of intent to transfer, including the names of the transferor and the transferee, is sent to the Department.
15. ARM 17.8.770 Additional Requirements for Incinerators. This rule specifies the additional information that must be submitted to the Department for incineration facilities subject to 75-2-215, MCA.

G. ARM 17.8, Subchapter 8 - Prevention of Significant Deterioration of Air Quality, including, but not limited to:

1. ARM 17.8.801 Definitions. This rule is a list of applicable definitions used in this subchapter.
2. ARM 17.8.818 Review of Major Stationary Sources and Major Modifications -- Source Applicability and Exemptions. The requirements contained in ARM 17.8.819 through ARM 17.8.827 shall apply to any major stationary source and any major modification, with respect to each pollutant subject to regulation under the FCAA that it would emit, except as this subchapter would otherwise allow.

This facility is not a listed source, but emissions are greater than or equal to 250 tons per year; therefore, the facility is major. This modification will not cause a net emission increase greater than significant levels and therefore, does not require a NSR analysis.

H. ARM 17.8, Subchapter 9 - Permit Requirements for Major Stationary Sources or Modifications Located Within Nonattainment Areas, including, but not limited to:

ARM 17.8.901 Definitions. This rule is a list of applicable definitions used in this subchapter.

This permit action will not result in a significant emission increase for any pollutant, so it is not considered to be a major modification. Therefore, the requirements of this subchapter do not apply.

I. ARM 17.8, Subchapter 12 - Operating Permit Program Applicability, including, but not limited to:

1. ARM 17.8.1201 Definitions. (23) Major Source under Section 7412 of FCAA is defined as any stationary source having:
 - a. PTE > 100 tons/year of any pollutant;
 - b. PTE > 10 tons/year of any one Hazardous Air Pollutant (HAP), PTE > 25 tons/year of a combination of all HAPs, or lesser quantity as the Department may establish by rule; or
 - c. Sources with the PTE > 70 tons/year of PM₁₀ in a serious PM₁₀ nonattainment area.

2. ARM 17.8.1204 Air Quality Operating Permit Program Applicability. (1) Title V of the FCAA Amendments of 1990 requires that all sources, as defined in ARM 17.8.1204 (1), obtain a Title V Operating Permit. In reviewing and issuing MAQP #2303-18 for Roseburg, the following conclusions were made:
 - a. The facility's PTE is greater than 100 tons/year for PM, PM₁₀, PM_{2.5}, NO_x, CO, and VOC.
 - b. The facility's PTE is greater than 10 tons/year for any one HAP and greater than 25 tons/year for all HAPs.
 - c. This source is not located in a serious PM₁₀ nonattainment area.
 - d. This facility is subject to 40 CFR 60, Subparts A and Dc.
 - e. The facility is subject to current NESHAP standards (40 CFR 63, Subparts A, JJ, DDDD, ZZZZ, and DDDDD).
 - f. This source is not a Title IV affected source, nor a solid waste combustion unit.
 - g. This source is not an EPA designated Title V source.

Based on these facts, the Department determined that the facility is subject to the Title V Operating Permit Program. This permit action also requires a significant modification to the Title V Operating Permit and has been assigned Title V Operating Permit #OP2303-08. Additionally, on April 2, 2012, Roseburg submitted an application (Title V Operating Permit #OP2303-07) for renewal and the Department issued this as a draft on May 20, 2013.

J. MCA 75-2-103, Definitions provides, in part, as follows:

1. "Incinerator" means any single or multiple-chambered combustion device that burns combustible material, alone or with a supplemental fuel or catalytic combustion assistance, primarily for the purpose of removal, destruction, disposal, or volume reduction of all or any portion of the input material.

2. "Solid waste" means all putrescible and nonputrescible solid, semisolid, liquid, or gaseous wastes, including, but not limited to...air pollution control facilities...

K. MCA 75-2-215, Solid or hazardous waste incineration - additional permit requirements:

1. MCA 75-2-215 requires air quality permits for all new solid waste incinerators; therefore, Roseburg must obtain an air quality permit.
2. MCA 75-2-215 requires the applicant to provide, to the Department's satisfaction, a characterization and estimate of emissions and ambient concentrations of air pollutants, including hazardous air pollutants from the incineration of solid waste. The Department determined that the information submitted in this application is sufficient to fulfill this requirement.
3. MCA 75-2-215 requires that the Department reach a determination that the projected emissions and ambient concentrations constitute a negligible risk to public health, safety, and welfare. The Department completed a health risk assessment based on an emissions inventory and ambient air quality modeling for this proposal. Based on the results of the emission inventory, modeling, and the health risk assessment, the Department determined that Roseburg's proposal complies with this requirement.
4. MCA 75-2-215 requires the application of pollution control equipment or procedures that meet or exceed BACT. The Department determined that the (RTO) constitutes BACT.

III. BACT Determination

A BACT determination is required for each new or modified source. Roseburg shall install on all new or modified source the maximum air pollution control capability, which is technically practicable and economically feasible, except that BACT shall be utilized.

A BACT determination was not required for the current permit action because the permit change is considered an administrative permit change. A BACT determination was completed under MAQP#2303-18 for the original baghouse (BH74) being replaced by two baghouses under this action.

IV. Emission Inventory

Particulate and PM₁₀ (Potential to Emit (PTE))

Source	Particulate (TPY)	PM ₁₀ (TPY)
Final Dryers (DRY 100-103, DRY 200)	114.7	114.7
#1 Predryer (DRY 500)	27.2	27.2
Truck Dump (BH50)	5.16	5.16
Reject system Baghouse (BH100)	7.51	7.51
Green Material transfer Baghouse (BH 52)	3.94	3.94
Furnish Building Baghouse (BH 56)	3.75	3.75
Prescreen Baghouse (BH 62)	4.69	4.69
Wet Bin Baghouse (BH 64)	4.69	4.69
M & D Face Baghouse (BH 70)	5.26	5.26
M & D Core Baghouse (BH 72)	5.26	5.26

Source	Particulate (TPY)	PM ₁₀ (TPY)
Board Trim System 5x25 (BH 102 A)	5.41	5.41
Forming Line Cleanup (BH 101 A&B)	9.8	9.8
Forming Line Cleanup Receiver (BH101R)	0.75	0.75
Board Trim System 5x16 (BH 102B)	5.41	5.41
Eight-head Sander (BH 302 A & B)	17.6	17.6
Eight-head Receiver (BH 302R)	1.9	1.9
Schelling and Bullnose Receiver (BH 401)	5.1	5.1
Raw Material Handling	14.7	5.28
Melamine Burner (INTEC)	0.1	0.1
Melamine Baghouse (BH 500)	3.9	3.9
Regenerative Thermal Oxidizer (RTO)	0.3	0.3
Total Emissions	247.13	237.71

Gaseous Pollutants

Source	(TPY)			
	SO _x	NO _x	VOC	CO
Sander dust boiler	5.7	156	3.9	82.3
Roemmc dust burner ¹	1.7	503.7	1.6	438.0
Dryers ¹			225	
Solagen dust burner ²				
Sander dust	4.6	136.7	0.3	66.6
Natural gas	0.01	2.2	0.1	1.8
Predryer ²			74.0	
Baghouses ¹			20.2	
Melamine Burner ³	0.01	1.3	0.1	1.1
Melamine Press ³			0.03	
RTO ⁴	0.02	6.7	0.2	8.1
Edge Banding Line			3.73	
Totals	12.04	806.6	329.2	598

¹ See Permit Applications #2303-08, #2303-09, #2303-16, and #2303-18 for more detail.

² See Permit Application #2303-13 and supporting documentation for more detail.

³ See De Minimis Notification letter dated January 13, 2006 for more detail.

⁴ See Permit Application #2303-14 and supporting documentation for more detail.

Source	(Potential to Emit (PTE, in TPY))						
	PM	PM ₁₀	PM _{2.5}	SO _x	NO _x	VOC	CO
Sander Dust Boiler*	25.8	20.4	14.6	5.7*	156*	3.9*	82.3*
Final Dryers (100-103)	87.1	87.1	65.3			146*	
Final Dryer (200)	27.6	27.6	20.7			78.5*	
Board Cooler Vents	8.7	8.7	4.4			10.2	9.7
Press Vent Emissions	18.7	18.7	18.7		0.90	58.9	51.2
Raw Material Handling (fugitives)	14.7	5.28	0.79				
Total (not including fugitives)	167.9	162.5	123.7	5.7	156.9	298	143.2

*duplicate of gaseous emissions above

Sander Dust Boiler

Heat Input Capacity: 52 MMBtu/hr capacity

Fuel: NG or sander dust

Control Equipment: Baghouse

PM Condensable (tons/yr) 2.98 tpy

PM, filterable (controlled):

Emission factor: 0.100 lb/MMBtu Vendor Guarantee

Emissions: 5.20 lb/hr

22.78 tons/year

Total PM (filterable + Condensable) = 25.8 tpy

PM₁₀ (controlled):

Emission factor: 0.08 lb/MMBtu RFP Information

Emissions: 4.16 lb/hr

18.22 tons/year

Total PM₁₀ (filterable + Condensable) = 20.4 tpy

PM_{2.5} (controlled):

Emission factor: 0.05 lb/MMBtu RFP Information

Emissions: 2.60 lb/hr

11.39 tons/year

PM_{2.5} (filterable + condensable) = 14.6 tpy

Sulfur Dioxide:

Emission Factor: 0.025 lb/mmBtu AP-42 TABLE 1.6-2, Rev 9/03

Emissions: 1.300 lb/hr

4.69 tons/year

Nitrogen Oxides (NO_x, using low NO_x burners)

Emission Factor: 0.687 lb/mmBtu (Roseburg Information)
Emissions: 35.7 lb/hr
130.03 tons/year

Volatile Organic Compounds (VOC)

Emission Factor: 0.017 lb/mmBtu AP-42 TABLE 1.6-2, Rev 9/03
Emissions: 0.88 lb/hr
3.87 tons/year

Carbon Monoxide (CO)

Emission Factor: 0.362 lb/mmBtu Roseburg Information
Emissions: 18.8 lb/hr
82.34 tons/year

Roemmc Sander Dust Burner

Heat Input Capacity: 50 MMBtu/hr capacity
(Refer to Permit Applications #2303-08 and #2303-09 and supporting documentation for more detail.)

Assumed sander dust property: 8500 Btu/lb of sander dust.

Fuel Consumption: 23,000 tons of sander dust per year (permit limit)

Maximum rated design capacity = 2.94 tons/hour (per Roseburg Title V App)

SO₂ 0.15 lb/ton burned (1-02-009-04, wood-fired boiler)
(23,000 ton/yr)(0.15 lb/ton)(1 ton/2000 lb) = 1.73 TPY

NO_x 115.0 lb/hr (permit limit based on informational testing and application submittal on 12/19/00)
(115.0 lb/hr)(8760 hr/yr)(1 ton/2000 lb) = 503.7 TPY

VOC 0.12 lb/ton burned (AP-42, Table 1.6-3, 2/99)
(0.12 lb/ton)(2.94 tons/hour) = 0.35 lb/hr
(0.35 lb/hr)(8760 hr/yr)(1 ton/2000 lb) = 1.55 TPY

CO 100.0 lb/hr (permit limit based on informational testing and application submittal on 12/19/00)
(100.0 lb/hr)(8760 hr/yr)(1 ton/2000 lb) = 438.0 TPY

Final Dryers (Dry 100 -103 and Dry 200)

DRY100-DRY103 - calcs based on using 3 face dryers and 1 core dryers

8,500	hours/year (operational permit limit)
119,858	BDT/yr (estimate Face material)
87,368	BDT/yr (estimate Core material)
207,226	BDT/yr (Total for all DRYERS)

PM Emissions:

Emission Factor: 20.50 lb/hr (Roseburg info)
Emissions: 20.5 lb/hr *8500 hours/year * 1 ton/2000 lb = 87.13 tpy

PM₁₀ Emissions:

Emission Factor: 20.50 lb/hr (Roseburg info)
Emissions: 20.5 lb/hr *8500 hours/year * 1 ton/2000 lb = 87.13 tpy

PM_{2.5} Emissions:
 Emission Factor: 15.40 lb/hr Roseburg assumed 75% of PM₁₀ is PM_{2.5}
 Emissions: 15.4 lb/hr * 8500 hours/year * 1 ton/2000 lb = 65.45 tpy

VOC

Emission Factor (face): 1.87 lb/BDT (per Roseburg)
 Emission Factor (core): 0.78 lb/BDT (per Roseburg)

Emissions (face): 1.87 lb/BDT * 119,858 BDT/yr * ton/2000 lb = 112.07 tpy
 Emissions (core) 0.78 lb/BDT * 87,368 BDT/yr * ton/2000 lb = 34.07 tpy

DRY200(calcs based on using as a face dryer)

8,500 hours/year (operational permit limit)
 84,000 BDT/yr (estimated face material)

PM Emissions:

Emission Factor: 6.50 lb/hr (based on source test and ratio of production increases)
 Emissions: 6.500 lb/hr * 8500 hours/year * 1 ton/2000 lb = 27.63 tpy

PM₁₀ Emissions:

Emission Factor: 6.50 lb/hr (based on source test and ratio of production increases)
 Emissions: 6.500 lb/hr * 8500 hours/year * 1 ton/2000 lb = 27.63 tpy

PM_{2.5} Emissions:

Emission Factor: 4.88 lb/hr (based on source test and ratio of production increases)
 Emissions: 4.88 lb/hr * 8500 hours/year * 1 ton/2000 lb = 20.74 tpy

VOC Emissions:

Emission Factor: 1.87 lb/BDT (Roseburg Information)
 Emissions: 1.87 lb/BDT * 84,000 BDT/yr * tons/2000 lb = 78.54 tpy

Board Cooler Vents

Operational Limit 8,500 Hours/Year, max
 291,226.00 BDT/yr
 217,333 Msf/yr

PM/PM₁₀ (controlled): 1200000 dscfm
 Emission Factor: 0.002 gr/dscf design
 Emissions: 2.05 lb/hr, or 8.7 tpy

PM_{2.5} Emissions:

Emission Factor: 0.001 gr/dscf (Roseburg assumed 50% of PM is PM_{2.5})
 Emissions: 4.4 tpy
 1.03 lb/hr

VOC Emissions:

Emission Factor: 2.39 lb/hr
 Emissions: 2.39 lb/hr * 8500 hours/year * 1 ton/2000 lb = 10.15 tpy

CO Emissions

Emission factor: 2.29 lb/hr
 Emissions: 2.29 lb/hr * 8500 hours/year * 1 ton/2000 lb = 9.7 tpy

Solagen Burner (Sander Dust)

Heat input capacity: 42.2 MMBtu/hr

See Permit Application #2303-13 and supporting documentation for more detail. The emissions from the Solagen burner were calculated assuming a worst-case scenario where the annual heat requirement of the Solagen burner would be met by burning sander dust.

Total Annual Heat Requirements: $42.2 \text{ MMBtu/hr} * 8760 \text{ hr/yr} = 369672 \text{ MMBtu/yr}$
 $(42.2 \text{ MMBtu/hr}) / (8500 \text{ Btu/lb}) = 4965 \text{ lb/hr} = 2.5 \text{ tons of dust/hr}$

SO_x 0.025 lb/MMBtu (AP-42 factor)
 $(0.025 \text{ lb/MMBtu})(42.2 \text{ MMBtu/hr}) = 1.055 \text{ lb/hr}$
 $(1.055 \text{ lb/hr})(8760 \text{ hr/yr})(1 \text{ ton}/2000 \text{ lb}) = 4.6 \text{ tpy}$

NO_x 0.74 lb/MMBtu (Manufacturer emission factor)
 $(0.74 \text{ lb/MMBtu})(42.2 \text{ MMBtu/hr}) = 31.2 \text{ lb/hr}$
 $(1.055 \text{ lb/hr})(8760 \text{ hr/yr})(1 \text{ ton}/2000 \text{ lb}) = 136.7 \text{ tpy}$

VOC 0.02 lb/ton burned (AP-42, Table 1.6-3, 9/03)
 $(0.02 \text{ lb/ton})(2.5 \text{ ton/hr}) = 0.05 \text{ lb/hr}$
 $(26,280 \text{ ton/yr})(0.02 \text{ lb/ton})(1 \text{ ton}/2000 \text{ lb}) = 0.3 \text{ tpy}$

CO 0.36 lb/MMBtu (Manufacturer emission factor)
 $(0.36 \text{ lb/MMBtu})(42.2 \text{ MMBtu/hr}) = 15.2 \text{ lb/hr}$
 $(15.2 \text{ lb/hr})(8760 \text{ hr/yr})(1 \text{ ton}/2000 \text{ lb}) = 66.6 \text{ tpy}$

Solagen Burner (Natural Gas)

Heat input capacity: 42.2 MMBtu/hr capacity

See Permit Application #2303-13 and supporting documentation for more detail. The emissions from the Solagen burner were calculated assuming a worst-case scenario where the annual heat requirement of the Solagen burner would be met by burning sander dust. Emissions from burning natural gas in the Solagen burner is calculated only for the minimum amount of natural gas required by the burner to sustain a flame.

Sustaining flame on the burner = $0.005 \text{ MMscf/hr} * 8760 \text{ hr/yr} = 43.8 \text{ MMscf/yr}$

SO_x 0.6 lb/MMscf (AP-42 Fifth Edition Table 1.4-2)
 $(0.6 \text{ lb/MMscf})(43.8 \text{ MMscf/yr})(1 \text{ ton}/2000 \text{ lb}) = 0.01 \text{ tpy}$

NO_x 100 lb/MMcf (AP-42, Table 1.4-1, 7/98)
 $(100 \text{ lb/MMscf})(43.8 \text{ MMscf/yr})(1 \text{ ton}/2000 \text{ lb}) = 2.2 \text{ tpy}$

VOC 5.5 lb/MMcf (AP-42, Table 1.4-1, 7/98)
 $(5.5 \text{ lb/MMscf})(43.8 \text{ MMscf/yr})(1 \text{ ton}/2000 \text{ lb}) = 0.1 \text{ tpy}$

CO 84 lb/MMcf (AP-42, Table 1.4-1, 7/98)
 $(84 \text{ lb/MMscf})(43.8 \text{ MMscf/yr})(1 \text{ ton}/2000 \text{ lb}) = 1.8 \text{ tpy}$

Predryer

See Permit Application #2303-13 and supporting documentation for more detail. The direct contact wood particle predryer (DRY500) draws hot combustion gases from the Solagen Burner to dry particleboard furnish material. In addition, approximately 50% of the predryer exhaust gases will be reintroduced into the duct immediately preceding the predryer drum. The following predryer emission calculations are based on a process rate of 200,000 bone-dry tons (BDT) per year for each predryer.

SO_x - Not generated by predryer. All SO_x is accounted for in the Solagen Burner.

NO_x - Not generated by predryer. All NO_x is accounted for in the Solagen Burner

VOC 0.74 lb/BDT (Manufacturer emission factor)
Production Limit: 200,000 BDT/yr (permit limit)
(.74 lb/BDT)(200,000 BDT/yr)(1 ton/2000 lb) = 74.0 tpy

CO - Not generated by predryers. All CO is accounted for in the Solagen Burner.

Press Vents (1-4)

8,500 hours/year (operational permit limit)
Future 1 PTE production rate (Mft²-³/₄") = 217,333
Past PTE production rate (Mft²-³/₄") = 160,000
Roseburg assumed Biofilter particulate control efficiency (%) = 40
Biofilter VOC control efficiency (%) = 0

PM Emissions (controlled)^(a):

Emission Factor: 4.40 lb/hr (based on source test and ratio of production increases)
Emissions: 4.4 lb/hr * 8500 hours/year * 1 ton/2000 lb = 18.7 tpy

PM₁₀ Emissions (controlled)^(a):

Emission Factor: 4.40 lb/hr (based on source test and ratio of production increases)
Emissions: 4.4 lb/hr * 8500 hours/year * 1 ton/2000 lb = 18.7 tpy

PM_{2.5} Emissions (controlled)^(a):

Emission Factor: 4.40 lb/hr (based on source test and ratio of production increases)
Emissions: 4.4 lb/hr * 8500 hours/year * 1 ton/2000 lb = 18.7 tpy

NO_x Emissions:

Emission Factor: 0.22 lb/hr^(a)
Emissions: 0.22 lb/hr * 8500 hours/year * 1 ton/2000 lb = 0.9 tpy

CO Emissions:

Emission Factor: 12.5 lb/hr
Emissions: 12.5 lb/hr * 8500 hours/year * 1 ton/2000 lb = 51.2 tpy

VOC Emissions:

Emission Factor^(a): 13.85 lb/hr
Emissions: 13.85 lb/hr * 8500 hrs/yr * tons/2000 lb = 58.9 tpy

Notes: (a) Future PTE emission factors [lbs/hr] = (past average actual PM or VOC emission factor [lbs/hr]) x ([future Line 1 PTE production rate {Mft²-³/₄"}] / [past Line 1 PTE production rate {Mft²-³/₄"}]) x (1 - [biofilter PM or VOC control efficiency { % } /100])

(b) Future PTE emission factors [lbs/hr] = (past average actual PM or VOC emission factor [lbs/hr]) x ([future Line 1 PTE production rate {Mft²-³/₄"}] / [past Line 1 PTE production rate {Mft²-³/₄"}])

Baghouses

See Permit Application #2303-08 and supporting documentation for more detail.

VOC Emissions:

BH302A & B	Eight Head Top & Bottom Sander System	5.9 tpy
BH302R	Eight Head Sander System Relay	0.3 tpy
BH401	Schilling & Bullnose Saw System	2.9 tpy
BH50	Truck Dump Baghouse	11.1 tpy
Total for Baghouses		20.2 TPY

Melamine Burner (Natural Gas)

Heat input capacity: 3 MMBtu/hr

See De Minimis Notification letter dated January 13, 2006 for more detail.

Total Annual Heat Requirements: 3 MMBtu/hr * 8760 hr/yr = 26,280 MMBtu/yr

Natural Gas: 26,280 MMBtu/yr * 1 scf/1050 Btu = 25 MMscf/yr

SO_x 0.6 lb/MMcf (AP-42, Fifth Edition, Table 1.4-2)
(0.6 lb/MMscf)(25 MMscf/yr)(1 ton/2000 lb) = 0.01 tpy

NO_x 100 lb/MMcf (AP-42, Fifth Edition, Table 1.4-1)
(100 lb/MMscf)(25 MMscf/yr)(1 ton/2000 lb) = 1.25 tpy

VOC 5.5 lb/MMcf (AP-42, Fifth Edition, Table 1.4-2)
(5.5 lb/MMscf)(25 MMscf/yr)(1 ton/2000 lb) = 0.07 tpy

CO 84 lb/MMcf (AP-42, Fifth Edition, Table 1.4-1)
(84 lb/MMscf)(25 MMscf/yr)(1 ton/2000 lb) = 1.05 tpy

Melamine Press

See De Minimis Notification letter dated January 13, 2006, for more detail.

Hours of Operation = 8760 hr/yr

Production Capacity = 10.944 Mft²/hr

VOC 0.0006 lb formaldehyde/Mft² (provided by vendor)
(0.0006 lb/Mft²)(10.944 Mft²/hr)(8760 hr/yr)(1 ton/2000 lb) = 0.029 tpy

0.00011 lb methanol/Mft² (provided by vendor)
(0.00011 lb/Mft²)(10.944 Mft²/hr)(8760 hr/yr)(1 ton/2000 lb) = 0.005 tpy

Total VOC = 0.034 tpy

RTO (Natural Gas)

Capacity: 8 MMBtu/hr

See Permit Application #2303-14 and supporting documentation for details.

Total Annual Heat Requirements: 8 MMBtu/hr * 8760 hr/yr = 70,080MMBtu/yr

Natural Gas: 70,080 MMBtu/yr * 1 scf/1050 Btu = 66.7 MMscf/yr

SO_x 0.6 lb/MMcf (AP-42, Fifth Edition, Table 1.4-2)
 (0.6 lb/MMscf)(66.7 MMscf/yr)(1 ton/2000 lb) = 0.02 tpy

NO_x 0.19 lb/MMBtu (provided by vendor)
 (0.19 lb/MMBtu)(70,080 MMBtu/hr)(1 ton/2000 lb) = 6.66 tpy

VOC 5.5 lb/MMcf (AP-42, Fifth Edition, Table 1.4-2)
 (5.5 lb/MMscf)(66.7 MMscf/yr)(1 ton/2000 lb) = 0.19 tpy

CO 0.23 lb/MMBtu (provided by vendor)
 (0.23 lb/MMBtu)(70,080 MMBtu/hr)(1 ton/2000 lb) = 8.06 tpy

Edge Banding Line

See De Minimis Notification letter dated April 30, 2008, for more detail.

Adhesive Usage (Jowat Adhesive) = 0.238 gal/MLF
 Solvent Usage (TI-750 High Purity Solvent) = 0.0185 gal/MLF
 Production Capacity = 60,400 MLF/yr

VOC Adhesive = 0.02075 lb/gal
 (0.238 gal/MLF)(60,400 MLF/yr)(0.02075 lb /gal)(1 ton/2,000 lb) = 0.15 tpy

Solvent = 6.41 lb/gal
 (0.0185 gal/MLF)(60,400 MLF/yr)(6.41 lb VOC/gal)(1 ton/2,000 lb) = 3.58 tpy

V. Existing Air Quality

The Missoula area is currently a nonattainment area for PM₁₀. The Department previously determined, based on its preliminary demonstration of attainment, that the emission limitations contained in this permit, along with control measures applied to other sources, will bring Missoula into compliance with the PM₁₀ standards. Modeling was previously submitted demonstrating that the emissions will not cause an exceedance of the ambient air quality standards. The Missoula CO nonattainment area, which included Roseburg, was reclassified to attainment in August 2007.

VI. Ambient Air Impact Analysis

The Department determined that based on the information provided, that the impacts from this permitting action will be minor. The Department believes it will not cause or contribute to a violation of any ambient air quality standard.

VII. Taking or Damaging Implication Analysis

As required by 2-10-105, MCA, the Department conducted the following private property taking and damaging assessment.

YES	NO	
X		1. Does the action pertain to land or water management or environmental regulation affecting private real property or water rights?
	X	2. Does the action result in either a permanent or indefinite physical occupation of private property?
	X	3. Does the action deny a fundamental attribute of ownership? (ex.: right to exclude others, disposal of property)
	X	4. Does the action deprive the owner of all economically viable uses of the property?
	X	5. Does the action require a property owner to dedicate a portion of property or to grant an easement? [If no, go to (6)].
		5a. Is there a reasonable, specific connection between the government requirement and legitimate state interests?
		5b. Is the government requirement roughly proportional to the impact of the proposed use of the property?
	X	6. Does the action have a severe impact on the value of the property? (consider economic impact, investment-backed expectations, character of government action)
	X	7. Does the action damage the property by causing some physical disturbance with respect to the property in excess of that sustained by the public generally?
	X	7a. Is the impact of government action direct, peculiar, and significant?
	X	7b. Has government action resulted in the property becoming practically inaccessible, waterlogged or flooded?
	X	7c. Has government action lowered property values by more than 30% and necessitated the physical taking of adjacent property or property across a public way from the property in question?
	X	Takings or damaging implications? (Taking or damaging implications exist if YES is checked in response to question 1 and also to any one or more of the following questions: 2, 3, 4, 6, 7a, 7b, 7c; or if NO is checked in response to questions 5a or 5b; the shaded areas)

Based on this analysis, the Department determined there are no taking or damaging implications associated with this permit action.

VIII. Environmental Assessment

This permitting action is considered an administrative action; therefore, an environmental assessment is not required.

Analysis Prepared by: Craig Henrikson
 Date: October 22, 2013