March 27, 2015

Dear Ms. Porter:

The Department of Environmental Quality (Department) has made its decision on the Montana Air Quality Permit application for Roseburg Forest Products. The application was given permit number 2303-20. The Department's decision may be appealed to the Board of Environmental Quality (Board). A request for hearing must be filed by April 13, 2015. This permit shall become final on April 14, 2015, unless the Board orders a stay on the permit.

Procedures for Appeal: Any person jointly or severally adversely affected by the final action may request a hearing before the Board. Any appeal must be filed before the final date stated above. The request for a hearing shall contain an affidavit setting forth the grounds for the request. Any hearing will be held under the provisions of the Montana Administrative Procedures Act. Submit requests for a hearing in triplicate to: Chairman, Board of Environmental Review, P.O. Box 200901, Helena, Montana 59620.

Conditions: See attached

For the Department,

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

Craig Henrikson, P.E.
Environmental Engineer
Air Resources Management Bureau
(406) 444-6711

JM:CH
Enclosure

MONTANA AIR QUALITY PERMIT

Issued To:	Roseburg Forest Products Missoula Particleboard P.O. Box 4007 Missoula, MT 59806	MAQP: #2303-20 Application Complete: 2/23/15 Preliminary Determination: 3/11/15 Department's Decision: 3/27/15 Permit Final: 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 February 12, 2015, the Department received a modification request to provide for reconstruction of the Sander Dust Boiler. Under MAQP #2303-18, the replacement of the Sander Dust Boiler burner was approved but it has not yet been installed. This proposed modification would not reduce any of the previously permitted limits associated with the new burner, but would provide for a reconstruction of the boiler itself and also trigger Title 40 Code of Federal Regulations (CFR) Part 60 Subpart Dc – Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units. Subpart Dc triggers lower filterable particulate matter (PM) limits than were previously permitted for the Sander Dust Boiler burner. There are no changes to particulate matter with an aerodynamic diameter of 10 microns or less (PM_{10}), oxides of nitrogen (NO_x), or carbon monoxide (CO) limits for this emitting unit. There are no emission increases associated with this proposed change but the New Source Performance Standard (NSPS) would be triggered with the reconstructed boiler.

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).

8. Roseburg shall comply with all applicable standards and limitations, and the reporting, recordkeeping, and notification requirements contained in 40 CFR 60, Subpart Dc, Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units (ARM 17.8.340 and 40 CFR 60, Subpart Dc).

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 low NO_x burners and baghouse and shall not exceed the following emission limitations (ARM 17.8.749 and ARM 17.8.752):

   a. Particulate matter (PM) emissions, without the condensable portion, of 1.6 pounds per hour (lb/hr) excluding periods of startup, shutdown or malfunction (40 CFR 60, Subpart Dc).

b. Particulate matter with an aerodynamic diameter of 10 microns or less (PM_{10}), including the condensable portion, of 4.7 lb/hr (ARM 17.8.752);

c. Oxides of nitrogen (NO_x) of 35.7 lb/hr (ARM 17.8.752);

d. Carbon monoxide (CO) of 18.8 lb/hr (ARM 17.8.752).

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).

4. The Sander Dust Boiler shall comply with all applicable standards and limitations, and the reporting, recordkeeping, and notification requirements contained in 40 CFR 60, Subpart Dc, Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units (ARM 17.8.340 and 40 CFR 60, Subpart Dc).

5. On and after the date on which the initial performance test is completed or required to be completed under 40 CFR 60.8, Roseburg shall not exceed a 20 percent opacity (6-minute average), except for one 6-minute period per hour of not more than 27 percent opacity. This opacity standard does not apply during period of startup, shutdown or malfunction (ARM 17.8.340 and 40 CFR 60, Subpart Dc).

6. Roseburg shall either install and operate a bag leak detection system on the Sander Dust Boiler baghouse or shall install and operate a continuous opacity monitoring system (COMS) (ARM 17.8.340 and 40 CFR 60, Subpart Dc).

7. If Roseburg opts to install and operate a COMS as identified in "6" directly above, all COMS requirements as identified in 40 CFR 60, Subpart Dc must be met (ARM 17.8.340 and 40 CFR 60, Subpart Dc)

8. Roseburg shall record and maintain by day, the amount of each fuel combusted during each operating day and maintain these records for at least two years (ARM 17.8.340 and 40 CFR 60, Subpart Dc).

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/PM_{10} emissions from the Final Dryer stack (includes DRY100 - DRY103) shall not exceed 20.5 lb/hr (ARM 17.8.749).

3. Total PM/PM_{10} 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/PM_{10} 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 ºF. 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 PM_{10} except for BH 74A and BH 74B which shall meet 0.002 gr/dscf for PM and 0.002 gr/dscf for PM_{10}. (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/PM_{10} (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. $PM/PM_{10}/PM_{2.5}$ 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 PM_{10} 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 PM_{10}. 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:

Description	Control Efficiency	Controls
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 NOx 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/PM_{10} 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 NOx 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. Roseburg may choose to install, calibrate, maintain, and operate a CEMS which would replace the subsequent testing requirements. The source testing shall occur while Roseburg is using sander dust as the fuel for the Boiler (ARM 17.8.105, ARM 17.8.749, ARM 17.8.340 and 40 CFR 60, Subpart Dc).

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/PM_{10} 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/PM_{10} 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).

3. Roseburg shall provide notification of the date of construction or reconstruction and actual startup of the Sander Dust Boiler. This notification shall include the 1) design heat input capacity of the affected facility and 2) annual capacity factor at which the owner or operator anticipates operating the affected facility based on all fuels fired and based on each individual fuel fired (ARM 17.8.340 and 40 CFR 60, Subpart Dc).

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 #2303-20

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 (PM_{10}) 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

Baghouse Name	Number	Flow Rate (cfm)	Controlled Point
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 PM_{10}. 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 PM_{10} 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 PM_{10} 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 PM_{10}. However, because of the addition of new control equipment, L-P reduced the net emissions increase of particulate matter and PM_{10} 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 (CO_2) 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 than 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 predyer because the cyclone is used as product recovery rather than control; (5) adding the RTO in addition to the WESP as control for the predyer 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 (ºF) to 600 ºF 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-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, PM_{10}, $PM_{2.5}$, 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.

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 was 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** replaced MAQP #2303-18.

E. Current Permit Action

On February 12, 2015, the Department received a modification request to provide for reconstruction of the Sander Dust Boiler. Under MAQP #2303-18, the replacement of the Sander Dust Boiler burner was approved but it has not yet been installed. This proposed modification would not reduce any of the previously permitted limits associated with the new burner, but would provide for a reconstruction of the boiler itself and also trigger Title 40 Code of Federal Regulations (CFR) Part 60 Subpart Dc – Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units. Subpart Dc triggers lower filterable particulate matter (PM) limits than were previously permitted for the Sander Dust Boiler burner. There are no changes to PM_{10}, $PM_{2.5}$, NO_x, or CO limits. There are no emission increases associated with this proposed change. **MAQP #2303-20** replaces MAQP #2303-19.

F. Response to Public Comments

Person/Group Commenting	Permit Reference	Comment	Department Response
Roseburg	III. BACT Analysis	During a previous permit action the Department chose to include a lengthy discussion in Section III of the Permit Analysis for the BACT Determination. The Boiler portion of that BACT Determination still remains. Since this analysis does not apply to this permit action, it may simplify the document to remove this language from Section Ill.	The Department concurs the BACT analysis included in this action is not required but since the proposed project is still related to the previous project, it is included for completeness.
Roseburg	III. BACT Analysis	If the Department decides to preserve the BACT discussion, the emission values in Table 2 may need to be updated to reflect the new NSPS values.	A note was included in the BACT analysis section and to Table 2 to highlight this slight change in the filterable PM from the previous BACT analysis.
Roseburg	IV.	Lastly, Section IV of the Permit Analysis typically contained an emission inventory. Although this information is not necessary, it is helpful for the permittee to see how the Department calculated emission limits for the various units.	Since there are no emission increases associated with the action and because of the length of the emission inventory, the emission inventory is not included in this section but is on file and available.

G. 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 PM_{10}

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

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, PM_{10}, $PM_{2.5}$, $NO_{X,}$ 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.

Roseburg submitted an affidavit of publication of public notice for the February 6, 2015, issue of The Missoulian, a newspaper in general circulation in the city of Missoula as proof of compliance with the public notice requirements.

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 PM_{10} in a serious PM_{10} 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, PM_{10}, $PM_{2.5}$, 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 PM_{10} 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 specifically required for the current permit action because a BACT determination was completed under MAQP #2303-18 allowing for the physical burner replacement of the Sander Dust Boiler. This current modification allows for a replacement of the remainder of the boiler itself and does not result in any emission increases. The previously permitted replacement burner will be installed with the new boiler and therefore the previous BACT analysis is included for completeness.

A. <u>BACT Analysis for the Sander Dust Boiler</u>[1]

The Sander Dust Boiler at Roseburg's Missoula particle board facility can fire natural gas (up to 270 MMscf/yr) sander dust, or LFG (up to 14 MMBtu/hr). Exhaust can either be directed through the existing particleboard Final Dryers or through a dedicated stack. Under the latest submittal, Roseburg proposed installation of low NO_x burners on the Boiler that will decrease the Boiler's maximum heat input capacity from 55 MMBtu/hr to 52 MMBtu/hr.

[1] Information taken from the BACT Analysis provided by Golder Associates on behalf of Roseburg

1. BACT Analysis for $PM/PM_{10}/PM_{2.5}$ – Sander Dust Boiler

A variety of particulate control technologies are available for removing particulate from the wood-fired boiler exhaust. The following control technologies were evaluated in this BACT analysis:

- wet scrubber (venturi);
- fabric filter baghouse;
- electrostatic precipitator (Dry and Wet ESP);
- cyclone/multiclones.

Wet scrubbers, baghouses and ESPs are generally used in series with a mechanical collector system. The mechanical collector removes the bulk of the large particulate and reduces the loading on the secondary control equipment.

Wet scrubbers remove particulate from gas streams principally by inertial impaction of the particulate onto a water droplet. Particles can be wetted by impingement, diffusion, or condensation mechanisms. To be wetted, particulate must either make contact with a spray droplet or impinge upon a wet surface. In a Venturi scrubber, the gas stream is constricted in a throat section. The large volume of gas passing through a small constriction gives a high gas velocity and a high-pressure drop across the system. As water is introduced into the throat, the gas is forced to move at a higher velocity causing the water to shear into droplets. Particles in the gas stream then impact onto the water droplets produced. The entrained water droplets are subsequently removed from the gas stream by a cyclone separator. Venturi scrubber collection efficiency increases with increasing pressure drops for a given particle size. Collection efficiency increases with increasing liquid-to-gas ratios up to the point where flooding of the system occurs.

Wet scrubbers are also used as wet flue gas desulfurization systems (wet FGD) to remove sulfur dioxide (SO_2) from the flue gases by using alkaline reagent to form sulfite and sulfate salts. Wet FGD systems typically utilize a spray absorber tower to establish contact between flue gases and reagent slurry droplets. Counterflow wet scrubbers are common, with the flue gas entering the bottom of the absorber tower, passing through packing, impingement trays, or other means of creating large liquid surface area to maximize the gas/liquid contact. Spray nozzles at the top of the absorber tower generally dispense the reagent/water spray. A mist eliminator is utilized at the exhaust to minimize the droplet carryover out of the scrubber. The wet FGD system generates waste water and wet sludge streams that require treatment and disposal. Roseburg noted that it is difficult to adequately address the actual water and sludge treatment costs when performing the cost effectiveness calculations for a BACT analysis.

Fabric filters are used extensively as PM control devices for a variety of source types. Fabric filters are frequently referred to as baghouses because the fabric is usually configured in cylindrical bags. They are extremely efficient at collecting the particle sizes typically produced from wood fired combustion. In a fabric filter, flue gas is passed through a tightly woven or felted fabric, causing PM in the flue gas to be collected on the fabric by sieving and other mechanisms. Fabric filters may be in the

form of sheets, cartridges, or bags, with a number of the individual fabric filter units housed together in a group. Bags are the most common type of fabric filter. The dust cake that forms on the filter from the collected PM can significantly increase collection efficiency. Typical new equipment design efficiencies are between 99 and 99.9%. Several factors determine fabric filter collection efficiency. These include gas filtration velocity, particle characteristics, fabric characteristics, and cleaning mechanism. In general, collection efficiency increases with decreasing filtration velocity and increasing particle size. Fabric filters are generally less expensive than electrostatic precipitators and they do not require complicated control systems. However, fabric filters are subject to plugging for certain exhaust streams and do require maintenance and inspection to ensure that plugging or holes in the fabric have not developed. Regular replacement of the filters is required, resulting in higher maintenance and operating costs than electrostatic precipitators. Although fabric filters can be used to control wood-fired combustion devices, the overall system design and operating practices must be carefully designed to prevent fires in the fabric filter and associated equipment.

ESPs are used extensively after combustion devices for control of PM emissions, particularly for wood and oil-fired combustion devices and dryers. An ESP is a particulate control device that uses electrical forces to move particles entrained within an exhaust stream onto collection surfaces. The entrained particles are given an electrical charge when they pass through a corona, a region where gaseous ions flow. Electrodes in the center of the flow lane are maintained at high voltage and generate the electrical field that forces the particles to the collector walls. In WESP, the collectors are either intermittently or continuously washed by a spray of liquid, usually water. Instead of the collection hoppers used by dry ESPs, WESPs utilize a drainage system and water treatment of some sort. In dry ESPs, the collectors are knocked, or "rapped", by various mechanical means to dislodge the collected particles, which slide downward into a hopper where they are collected prior to disposal. Typical new equipment design efficiencies are between 98 and 99.9%. Older existing equipment has a range of actual operating efficiencies of 90 to 99.9%. While several factors determine ESP collection efficiency, ESP size is the most important. ESP size determines treatment time; the longer a particle spends in the ESP, the greater its chance of being collected. Maximizing electric field strength will maximize ESP collection efficiency. Collection efficiency is also affected to some extent by dust resistivity, gas temperature, chemical composition (of the dust and the gas), and particle size distribution.

The advantage of electrostatic precipitators is their ability to consistently achieve high control efficiencies, even for small particles, and to handle a hot gas stream. ESPs can handle high moisture exhaust streams and WESPs can also handle sticky condensable organic matter that might result in plugging in a fabric filter control device. The major disadvantages of ESPs are the higher cost and greater complexity, as well as greater difficulty in achieving the highest control efficiencies that fabric filters can attain. ESPs require a fair amount of maintenance, more complicated control systems, and they have more parameters to monitor. WESPs may also have wet collected material that is a greater housekeeping and disposal issue.

Cyclones/Multiclones are multiple high efficiency cyclones assembled into a single functional unit through manifold arrangements for the inlet and outlet streams of the cyclones, and are used to abate PM emissions. The use of larger (less efficient) cyclones would not provide a significant emissions reduction.

Evaluation of Most Effective PM/ PM_{10}/$PM_{2.5}$ Controls

Existing wood fired boilers have been successfully retrofitted to accommodate fabric filters for particulate control. Therefore, a fabric filter was considered technically feasible.

Due to the low moisture content, high oxygen content, and high particulate loading of the boiler, a dry ESP would be a potential fire or explosion hazard as detailed in the *Reasonable Progress Analysis (RPA) submitted by RFP to US EPA, Region 8, February 2011*. For this reason, a dry ESP is not considered technically feasible for the boiler.

A WESP is considered a potential control option; however the WESP will produce waste water requiring treatment. Currently, waste water discharge is a very significant issue for the Missoula facility. The facility cannot discharge to a publicly owned treatment facility due to its remote location. Due to the proximity of the drinking water aquifer below their site, RFP cannot release discharges of this nature to evaporation ponds or infiltration ponds. For the biofilter controlling the presses and the WESP currently controlling the pre-dryer, RFP is using the water in the process such as adding the waste water to the resin at the blenders. However, if additional waste water is generated, from one or more additional wet control devices, RFP does not currently have a method to dispose of it. For this reason, wet control devices, such as a WESP are not considered technically feasible.

The same waste water issue applies to wet scrubbing technologies, such as venturi scrubbers. For this reason, wet scrubbers such as venturi scrubbers, are not considered technically feasible for Roseburg. It should be noted that, despite determining these wet control options infeasible due to waste water challenges, they have been carried forward in the BACT assessment for boiler PM emissions.
A multiclone is considered technically feasible. However, the boiler is currently utilizing a multiclone for particulate control. Therefore, multiclones/cyclones will not be carried forward in the BACT assessment. Also, electrified gravel beds/filter beds were not considered. Roseburg reported that experience with these air pollution control devices has shown them to be poor performing, difficult to maintain, and requiring a very specific type of media in the device.

In Table 1 below, general percent efficiency provides some indication of the differences between the effectiveness of various control technologies. The table below summarizes the control efficiencies of these technologies based on information provided by Golder Associates (on behalf of Roseburg).

Table 1. Removal Efficiency.

Technology	**PM/PM_{10} Removal Efficiency**	**$PM_{2.5}$ Removal Efficiency**	**Source**
Fabric Filters	99+%	99+%	Golder Associates
Wet Electrostatic Precipitator	98+%	99+%	Golder Associates
Venturi Scrubber	70 %		Golder Associates

Table 2 contains a list of comparable BACT determinations from RBLC. All of the boilers listed in the table are fired with wood, wood-waste, bark or sander dust. If no BACT determination was listed for an individual pollutant, the table indicates 'na'.

Table 2. BACT Determinations for Boilers as listed in the RBLC.

RBLC No.	**Boiler Size (MMBtu/hr)**	**CO BACT Limit (lb/MMBtu)**	**NOx BACT Limit (lb/MMBtu)**	**PM_{10} BACT Limit (lb/MMBtu)**
TN-0159	69.3	na	0.25	na
VT-0028	29.5	na	na	0.091 (baghouse)
AR-0075	64.3	0.475	0.3	0.08 (ESP)
AL-0213	3 @ 29.5	na	0.5	na
AR-0065	29.63	0.3	0.3	0.24 (multiclones)
LA-0126	2 @ 58.3	na	0.9	na
SC-0111	99	0.30	1.23	0.025 (multiclone/low NOx)
ME-00025	84	50 lb/hr	35 lb/hr	0.12
AR-0075	64.3	0.475	0.30	0.08
Roseburg	**52**	**0.362**	**0.684**	**0.113 (PM) (old) 0.030 (PM) (new) 0.09 (PM_{10}) 0.05 ($PM_{2.5}$)**

Under MAQP #2303-20, Roseburg is required to not exceed 0.030 lbs/MMBtu for filterable PM only, therefore Roseburg's new filterable PM limit in this permit is 0.030 lb/MMBtu rather than 0.113 lb/MMBtu. This is triggered by 40 CFR 60 Subpart Dc – Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units. This results in an hourly limit of 52 MMBtu/hr*0.030 lb/MMBtu = 1.6 lbs PM/hr.

The use of a baghouse has the highest control efficiency and the emissions associated with this baghouse are similar to other facilities recently permitted, the Department determined that no further analysis was necessary. Roseburg's sander dust boiler is equipped with an abort stack to divert hot gases directly to the atmosphere in case of fire or other problems.

Because baghouses generally provide the highest degree of control of all add on controls listed above, the Department determined that a baghouse constitutes BACT.

2. <u>BACT Analysis for NOx – Sander Dust Boiler</u>

NO_X emissions can be controlled through combustion controls and/or flue gas scrubbing. As an introduction to the detailed discussion of NO_X control technologies, it is useful first to review the mechanisms by which NO_X is formed in the exhaust from a Wood-fired boiler. NO_X refers to the cumulative emissions of nitric oxide (NO), nitrogen dioxide (NO_2), and trace quantities of other species. NO_X emissions from combustion processes are typically more than 95 percent NO with the remainder being primarily NO_2. Once the flue gas leaves the stack, however, most of the NO is oxidized in the atmosphere to create NO_2 in a process that can take several hours to complete. The extent to which the NO is oxidized to NO_2 is a function of a number of meteorological variables, including ambient ozone levels.

The two primary mechanisms for formation of NO_X are: thermal NO_X and fuel NO_X. Thermal NO_X refers to the NO_X formed through high-temperature oxidation of the nitrogen found in the combustion air. The primary factors contributing to an increased thermal NO_X formation rate are the same factors contributing to complete combustion of fuel: combustion temperature, residence time, and mixing or turbulence. Regardless of the fuel being combusted, thermal NO_X generally becomes a significant factor at combustion temperatures of approximately 2,200 degrees Fahrenheit (ºF), with exponential increases in formation rate at higher temperatures. Fuel NO_X refers to the NO_X formed by the conversion of fuel-bound nitrogen to NO_X during combustion. Fuel NO_X accounts for a major portion of the total NO_X emissions from the combustion of nitrogen containing fuels, such as coal and wood waste. A variety of factors, including the combustion temperature, fuel-air stoichiometric ratio, and wood characteristics (moisture, volatile matter, and nitrogen) are believed to contribute to the fuel NO_X formation mechanism.

The following add-on controls for NOx emissions were considered: Selective Non-catalytic Reduction (SNCR); and Selective Catalytic Reduction (SCR), SNCR/SCR hybrid systems, Regenerative SCR (RSCR) and low NOx burner (LNB) technologies.

SNCR systems have been widely employed for combustion systems globally. SNCR is relatively simple because it utilizes the combustion chamber as the control device reactor, achieving control efficiencies of 30-70%. SNCR systems rely on the reaction of ammonia and nitrogen oxide at temperatures of 1,550°F to 1,950°F to produce molecular nitrogen and water, common atmospheric constituents, in the following reaction:

$$4NO = 4NH_3 + O_2 \rightarrow 4NH_2 + 6H_2O$$

In the SNCR process, the ammonia or urea is injected into the combustion chamber, where the combustion gas temperature is in the proper range for the reaction. Relative to catalytic control devices, SNCR is inexpensive and easy to install in new applications where the injection points can be placed for optimum mixing of ammonia and combustion gases. The reduction reaction between ammonia and NO is favored over other chemical reactions at the appropriate combustion temperatures and is, therefore, a selective reaction. One major advantage of SNCR is that it is effective in combustion gases with a high particulate loading. Sanderdust combustion devices can produce exhaust that has a very high particulate loading rate from ash carryover to the downstream particulate control device. With use of SNCR, the particulate loading is irrelevant to the gas-phase reaction of the ammonia and NO.

One disadvantage of SNCR, and any control systems that rely on the ammonia and NO reaction, is that excess ammonia must be injected to ensure the highest level of control. Higher excess ammonia generally results in a higher NOx control efficiency. However, ammonia is also a contributor to atmospheric formation of particulate that can contribute to regional haze. Therefore, the need to reduce NOx emissions must be balanced with the need to keep ammonia slip levels acceptable. Careful monitoring to ensure an appropriate level of ammonia slip, not too high or too low, is necessary.

Unlike SNCR, SCR reduces NOx emissions with ammonia in the presence of a catalyst. The major advantages of this are the higher control efficiency (70%-90%) and the lower temperatures at which the reaction can take place (400°F to 800°F, depending upon the catalyst selected). SCR is widely used for combustion processes where the type of fuel produces a relatively clean combustion gas, such as natural gas turbines. In an SNCR/SCR hybrid system, ammonia or urea is injected into the combustion chamber to provide the initial reaction with NOx emissions, followed by a catalytic (SCR) section that further enhances the reduction of NOx emissions. The primary reactions that take place in the presence of the catalyst are:

$$4NO + 4NH_3 + O_2 \rightarrow 4NH_2 + 6H_2O$$

$$4NO + 2NH_3 + O_2 \rightarrow 3N_2 + 6H_2O$$

$$NO + 2NH_3 + NO_2 \rightarrow 2N_2 + 3H_2O$$

SCR is not widely used with wood fired combustion units due to the amount of particulate that is generated by combustion of wood. The particulate, if not removed, can cause plugging in the catalyst and coat the catalyst such that the surface area for reaction is reduced. Another challenge with wood fired combustion is the presence of alkali metals such as sodium and potassium, which are commonly found in wood, but not fossil fuels. Sodium and potassium will poison catalysts and the effects are irreversible. Other naturally occurring catalyst poisons found in wood are phosphorous and arsenic.

In order to prevent the plugging, blinding, and/or poisoning of the SCR catalyst, it is necessary to first remove particulate from the exhaust gases. It is not considered technically feasible to place an SCR unit upstream of the particulate control device in a wood-fired boiler or burner application due to the potential for decreasing the useful life of the catalyst and decreasing the control efficiency, which can happen relatively quickly. Use of SCR on a wood-fired boiler or burner application requires a high temperature particulate control device so that the downstream temperature is still in the range of 400°F to 800°F, which is necessary for the reduction of NOx in the presence of the catalyst. In situations where NOx emissions are being controlled downstream of a dryer where the outlet temperature is well below 200°F, the catalyst is essentially ineffective at reducing emissions.

RSCR is an innovative add-on control technology that combines the technology of a regenerative thermal oxidizer device and SCR. Ammonia is injected upstream of the catalyst just as with a traditional SCR unit. The reactions between ammonia and NO are the same. Intended to be placed downstream of emission control systems where the exhaust gas is clean, but the temperature is below the optimal temperature range for catalytic reduction of NOx, the RSCR unit has a front-end preheating section that reheats the exhaust stream with a regenerative thermal device. An RSCR unit is approximately 95% efficient at thermal recovery. The exhaust is heated to a temperature in the range optimal for catalytic reduction (600°F to 800°F) prior to entering an SCR unit.

RSCR units can also include a catalytic oxidation option for control of carbon monoxide (CO). Oxidation catalyst is placed on top of the RSCR bed material. Since the exhaust gas is being heated by the RSCR unit and since the RSCR unit is placed downstream from the particulate control device, the catalyst can operate in a suitable environment for oxidation of CO.

LNB are a viable technology for a number of fuels including sanderdust and gasified biomass. Generally, staged combustion and sub-stoichiometric conditions can be used to limit the amount of NOx formation.

Volatile organic compounds (VOC), NOx, and CO emissions from a wood-fired boiler can be controlled through altering the combustion process. The wood fuel is heated such that organics are volatilized off of the fuel. These volatiles can escape if not mixed with the proper amount of oxygen and heat. Modern combustion controls can allow for a maximum degree of combustion control. Control systems monitor combustion temperatures, excess air, and the degree to which the fuel is mixed in the fluidized bed. The control systems then adjust the necessary parameters to ensure complete combustion.

Technically Infeasible NOx Control Options

SNCR relies on the injection of ammonia in the combustion chamber of the boiler. It is unknown whether sufficient residence time would occur in the boiler combustion zone. Because the boiler can provide exhaust to the dryers, Roseburg expressed a great deal of concern about the impact of ammonia on the wood furnish. In making particleboard, the wood furnish is combined with a formaldehyde based

resin. Ammonia can act as a scavenger of free formaldehyde, which could affect resin curing if ammonia is trapped within the furnish during forming. Another concern is that ammonia can darken or blacken certain wood species. It is unknown what impact ammonia would have on the wood species being used by Roseburg for the period of time it would be exposed, the concentrations of excess ammonia, and at the elevated temperatures that occur in the dryers. Due to the uncertain impact that ammonia could have on wood furnish and resin curing, SNCR is not considered an applicable technology with proven feasibility for the boiler due to their location upstream of the Final Dryers. For these reason, SNCR is not considered feasible. SCR requires a clean exhaust stream with temperatures between 400°F and 800°F. PM in the exhaust from wood combustion can poison, blind, or plug catalyst beds very rapidly in certain conditions. As a result, it is industry practice to have a good PM control device upstream of the catalyst bed. For the boiler at the Missoula facility, there is not sufficient room for particulate controls and a catalyst bed upstream of the particle dryers. Additionally, the exhaust temperature exiting the catalyst bed would be significantly cooler, which would provide less heat to the dryers. Additionally, the location of an SCR unit upstream of any of the dryers would result in ammonia slip into the dryers. For the reasons stated in the previous discussion regarding the use of SNCR, ammonia slip into the dryers could have unintended consequences for the wood furnish, thereby affecting the manufacturing process. For these reasons, SCR is not considered feasible.

RSCR can be used on a cool exhaust stream that would otherwise not be appropriate for SCR alone, and requires the use of an upstream particulate control device. The disadvantages of RSCR include their significant cost, the use of large amounts of electricity, the use of fossil fuels, and the large footprint of the unit. Additionally, the RSCR technology includes the injection of ammonia. As discussed previously with regard to both SNCR and SCR, there are significant concerns with control options that include the injection of ammonia upstream of the particleboard final dryers. Therefore, RSCR is not considered technically feasible.

LNBs are commercially available for the type of sanderdust boiler used at the Missoula facility and LNBs are considered feasible.

Therefore, the Department determined that the use of LNB constitutes BACT for the sander dust boiler. This is similar to other recently permitted facilities and is supported by an evaluation of permitting actions with similar properties as listed in EPA's RBLC (See Table 2 above).

3. BACT Analysis for CO – Sander Dust Boiler

A variety of control technologies are available for removing CO from the wood-fired boiler exhaust. The following control technologies were evaluated:

- RSCR;
- Catalytic oxidation;
- Recuperative thermal oxidation;
- Good combustion techniques.

Recuperative thermal oxidization is similar to the thermal oxidization technology described above, but has an added energy recovery component. Energy, in the form

of heat, is recovered in a gas pre-heater which increases the temperature of the incoming gas, aiding in combustion. In some cases where additional energy recovery is necessary, a secondary waste heat exchanger can be used to provide low pressure steam or hot water. Typical heat recovery is above 40% and no higher than 70% in order to prevent auto-ignition of the waste gas in the heat exchanger.

Catalytic Noble metal (commonly platinum or palladium) oxidation catalysts are used to promote the oxidation of VOCs and CO (converting the CO into CO_2). The operating temperature range for a conventional VOC oxidation catalyst, such as the CatCO® oxidation catalyst is between 300°F and 1,250°F with efficiencies ranging from 40% to greater than 90% for some VOC constituents. The temperature of the exhaust gas can have a significant effect on VOC oxidation. Datasheets for the CatCO® oxidation catalyst indicate that only a select few VOCs are oxidized by 40% at 350°F.

The operating temperature range CO oxidation, using the same catalyst as mentioned previously, is between 500°F and 1,250°F with efficiencies of greater than 90%. Oxidation catalysts are susceptible to deactivation due to impurities present in the exhaust gas stream. Arsenic, iron, sodium, phosphorous, and silica, all of which are found in wood fuel, will all act as catalyst poisons causing a reduction in catalyst activity and pollutant removal efficiencies. For these reasons, VOC oxidation catalysts should be installed after a particulate removal device.

Technically Infeasible CO control options

Since the exhaust gas would be heated by the RSCR unit and since the RSCR unit would be placed downstream from the particulate control device, the catalyst could arguably operate in a suitable environment for oxidation of CO. However, Golder reported that they are aware of at least one situation (in California) where RSCR was rejected as BACT due to concerns about catalyst poisoning. Ammonia injection is not required for the use of the CO catalyst in the RSCR unit and so is not a basis for considering the technology infeasible when used just for CO control. Although there are significant concerns about the ability of an RSCR CO catalyst to function in a sanderdust boiler, catalytic oxidation in an RSCR unit will be carried forward in the BACT assessment.

The proposed project includes a fabric filter to remove particulate from the boiler exhaust gas. Particulate removal would be required for the use of a standalone catalytic oxidation option so as to reduce the potential for catalyst blinding and/or poisoning. However, the exhaust gas exiting the fabric filter will be around 450°F. This is below the minimum temperature threshold of 500°F for CO catalytic oxidation. Even if the exhaust temperature were at levels where the catalyst could function, there would still be a significant risk that the catalyst would be blinded or poisoned due to metals emitted as a result of wood combustion. Therefore, standalone catalytic oxidation is not technically feasible for CO removal.

CO emissions from a wood-fired boiler can be indicative of incomplete combustion. The wood fuel is partially combusted due to inadequate amounts of oxygen or if the bed of the combustor is at a low temperature. The fuel carbon is not fully oxidized into CO_2 and water, and instead, CO is generated. Modern combustion controls can allow for a maximum degree of combustion. Control systems monitor combustion temperatures, and excess air. Good combustion practices are considered feasible.

Environmental and Energy Impacts Associated with Remaining Control Options

RSCR remains as the only available technology for CO control.

RSCR uses a highly efficient regenerative thermal system to recover thermal energy that must be added to the exhaust gas for heating to the appropriate temperature for effective catalytic reduction. Utility consumption was calculated to be $69,000 per year in electrical energy and $13,000 per year in natural gas. While these energy costs by themselves are not cost prohibitive, they reduce the net energy and environmental benefit of the project by consuming non-renewable fossil fuels and generating non-biogenic greenhouse gases.

The environmental impacts associated with the use of supplemental energy with the RSCR are considerable given the amount of electricity and natural gas consumed. The use of RSCR-based control systems would increase the use of natural gas at the facility, which is non-renewable and leads to emissions increases of greenhouse gases. Additionally, RSCR systems use a catalyst that has mining, manufacturing, and waste disposal impacts.

On the contrary, good combustion practices reduce the overall use of fuel by increasing combustion efficiency. Also, as discussed previously, good combustion practices reduce the use of fuels by increasing the combustion efficiency which leads to lower greenhouse gas emissions.

Economic Impacts Associated with Remaining Control Options

The economic feasibility of RSCR with oxidation catalyst was also assessed. The average cost effectiveness was calculated as the annualized cost of control (capital and operating expenses) divided by the total tons of pollutant controlled ($/ton).

The RSCR with oxidation catalyst cost calculations were all based on a vendor quote for a similar unit at a similar wood products facility, and included commonly used, and widely accepted, methodologies presented in the EPA Air Pollution Control Cost Manual published in 2002 as well as information contained in Factors for Estimating Capital and Operating Costs published in 1980. The RSCR cost effectiveness was calculated to be over $16,000 per ton of controlled CO. Based on the cost effectiveness calculations previously discussed, the RSCR control option is not considered cost effective.

Therefore, Roseburg proposed and the Department agrees that good combustion practices constitutes CO BACT for the sander dust boiler.

4. BACT Analysis for VOC – Sander Dust Boiler

Roseburg considered the following control options as BACT for the sander dust boiler:

- RTO;
- Standalone catalytic oxidation;
- Recuperative oxidation;
- Good combustion practices.

Thermal oxidation employs high temperatures (approximately 1,500°F) to achieve a 90 percent or greater oxidization rate of VOCs. The thermal oxidizer components are subject to fouling by PM. Accordingly, for biomass-fired boilers, the thermal oxidizer would need to be located downstream of the boiler's particulate control device.

There are many types of thermal oxidation units on the market, however, the regenerative thermal oxidizer (RTO) type would likely be selected over a simple "flame in a can" thermal oxidizer (TO) based on energy recovery/conservation values inherent in this project. The achievable thermal energy recovery efficiency for an RTO is roughly 95%, meaning that the amount of heat input required over time would be approximately 5% of the requirements for a comparable simple TO.

Recuperative thermal oxidization is similar to the thermal oxidization technology as described above (in the CO BACT analysis), but has an added energy recovery component. Energy, in the form of heat, is recovered in a gas pre-heater which increases the temperature of the incoming gas, aiding in combustion. In some cases where additional energy recovery is necessary, a secondary waste heat exchanger can be used to provide low pressure steam or hot water. Typical heat recovery is above 40% and no higher than 70% in order to prevent auto-ignition of the waste gas in the heat exchanger.

Catalytic Noble metal (commonly platinum or palladium) oxidation catalysts are used to promote the oxidation of VOCs and CO (converting the CO into CO_2). The operating temperature range for a conventional VOC oxidation catalyst, such as the CatCO® oxidation catalyst supplied by BASF, is between 300°F and 1,250°F with efficiencies ranging from 40% to greater than 90% for some VOC constituents. The temperature of the exhaust gas can have a significant effect on VOC oxidation. Datasheets for the CatCO® oxidation catalyst indicate that only a select few VOCs are oxidized by 40% at 350°F. The operating temperature range CO oxidation, using the same catalyst as mentioned previously, is between 500°F and 1,250°F with efficiencies of greater than 90%. Oxidation catalysts are susceptible to deactivation due to impurities present in the exhaust gas stream. Arsenic, iron, sodium, phosphorous, and silica, all of which are found in wood fuel, will all act as catalyst poisons causing a reduction in catalyst activity and pollutant removal efficiencies. For these reasons, VOC oxidation catalysts should be installed after a particulate removal device.

As mentioned above, VOC, NOx, and CO emissions from a wood-fired boiler can be controlled through altering the combustion process. The wood fuel is heated such that organics are volatilized off of the fuel. These volatiles can escape if not mixed with the proper amount of oxygen and heat. Modern combustion controls can allow for a maximum degree of combustion control. Control systems monitor combustion temperatures, excess air, and the degree to which the fuel is mixed in the fluidized bed. The control systems then adjust the necessary parameters to ensure complete combustion.

Technically Infeasible VOC control options

Wood combustion units such as boilers are rarely, if ever, used in conjunction with VOC control equipment. The amount of VOCs emitted by the boiler is minimal. But, strictly speaking, thermal oxidation is technically feasible, however unlikely it would be.

VOC oxidation catalysts should be installed after a particulate removal device. This is especially true for wood fired boilers. If one assumes that a fabric filter is used to remove particulate from the exhaust gas, the exhaust gas exiting the fabric filter will be below the optimal operating temperatures of a VOC oxidation catalyst. It is also unknown which VOC constituents would be oxidized by the catalyst, which could significantly reduce the total VOC control efficiency. For this reason, oxidation catalysts are not technically feasible.

There would be no excess energy to recover from the thermal oxidation of the waste gas from the boiler because of the very low concentrations of VOCs. Even when considering all organic compounds expected in the exhaust gas, there would still be insufficient excess energy after combustion to warrant the use of a recuperative thermal oxidation. The heat recovery is less than the typical heat recovery of an RTO, as described above. In addition, recuperative units tend to have shorter functional life and higher maintenance costs because of the heat exchanger components. Therefore, a recuperative thermal oxidizer is not technically feasible.

Modern combustion controls can allow for a maximum degree of combustion. Control systems monitor combustion temperatures, and excess air. Good combustion practices are considered feasible. Roseburg proposed good combustion practices, and the Department agrees, this constitutes BACT for CO and VOC emissions.

5. BACT Analysis for SO_2 – Sander Dust Boiler

Roseburg considered the following SO_2 control options:

- Wet scrubber;
- Spray dryer;
- Dry sorbent injection.

Wet scrubbers remove particulate from gas streams principally by inertial impaction of the particulate onto a water droplet. Particles can be wetted by impingement, diffusion, or condensation mechanisms. To be wetted, particulate must either make contact with a spray droplet or impinge upon a wet surface. In a Venturi scrubber, the gas stream is constricted in a throat section. The large volume of gas passing through a small constriction gives a high gas velocity and a high-pressure drop across the system. As water is introduced into the throat, the gas is forced to move at a higher velocity causing the water to shear into droplets. Particles in the gas stream then impact onto the water droplets produced. The entrained water droplets are subsequently removed from the gas stream by a cyclone separator. Venturi scrubber collection efficiency increases with increasing pressure drops for a given particle size. Collection efficiency will also increase with increasing liquid-to-gas ratios up to the point where flooding of the system occurs.

Wet scrubbers are also used as wet flue gas desulfurization systems (wet FGD) to remove SO_2 from the flue gases by using alkaline reagent to form sulfite and sulfate salts. Wet FGD systems typically utilize a spray absorber tower to establish contact between flue gases and reagent slurry droplets. Counterflow wet scrubbers are common, with the flue gas entering the bottom of the absorber tower, passing through packing, impingement trays, or other means of creating large liquid surface area to maximize the gas/liquid contact. Spray nozzles at the top of the absorber tower generally dispense the reagent/water spray. A mist eliminator is utilized at the exhaust to minimize the droplet carryover out of the scrubber.

The wet FGD system generates waste water and wet sludge streams that require treatment and disposal. It is difficult to adequately address the actual water and sludge treatment costs when performing the cost effectiveness calculations for a BACT analysis.

Spray dryers are used for SO_2 abatement, and consist of a reactor vessel upstream of the particulate control device. An alkaline lime slurry is injected into the top of the reactor vessel using a rotary atomizer or spray nozzles. The salts that form from the reaction between the reagent and the acid gases are dried by the heat in the flue gases. Some of the dried material is removed from the bottom of the reactor vessel and the balance continues on to the PM control device for further reaction and removal.

Dry sorbent injection removes SO_2 from exhaust streams by injecting sorbent into the duct upstream of the PM control device. Dry sorbent injection does not utilize a reactor vessel, but does require a downstream particulate control device. The partially reacted solids then continue on to the fabric filter for further reaction and removal.

Technically Infeasible SO_2 control options

Wet scrubbers face the same waste water issues previously described, and as such, wet scrubbers are not considered technically feasible.

Spray dryer absorber technology, while requiring the use of a particulate control device could feasibly be installed on the boiler to reduce SO_2 emissions. Therefore, a spray dryer is considered technically feasible even though this would require a particulate control device.

Dry sorbent injection could be used to reduce SO_2 emissions from the boiler, but would require the use of a particulate control device. Dry sorbent injection is considered technically feasible even though this would require a particulate control device.

Evaluation of Most Effective SO_2 Control Option

The energy impacts of these technologies are listed below with the first listed having the highest energy impact:

- Spray Dryer/Semi-Dry Scrubber
- Dry Sorbent Injection Dry Scrubber

Both semi-dry and dry scrubbing have material energy impacts. The pressure drop through the scrubber vessel is one source of energy loss, but there is also a significant energy requirement involved in pumping reagent to create the slurry spray droplets.

Environmental and Economic Impacts

Semi-dry and dry scrubbing technology turns polluted air into contaminated solids. There is a significant environmental impact associated with disposal of the scrubber waste. Also, semi-dry scrubbing consumes material quantities of water, a limited resource.

Economic impacts are often expressed in terms of a calculated "cost control effectiveness" (CCE) value. The CCE value is expressed as the annual cost of a given control option per ton of pollutant that is controlled. The annual cost for a given control option includes both the cost associated with the capital expenditure (financing costs) as well as the annual operating cost of the control option. The annual operating cost includes utilities, labor, and maintenance.

The estimated maximum total annual post-project SO_2 emissions from the boiler are 5.7 tons per year. Given that the annual SO_2 emission rate is less than 10 tons per year, Roseburg used a simplified approach to assessing the economic impacts of feasible SO_2 control options was used.

A very high CCE of $10,000 per ton of SO_2 controlled, which is well above the threshold for cost effectiveness, was assumed. Based on this CCE and a very conservative assumption that 100% of the emitted SO_2 is controlled, a conservative total annualized cost of $57,000 per year is calculated.

Based on numerous BACT assessments conducted throughout the wood products industry, a conservative (low) assumption for direct annual costs is $25,000. This would include the cost of labor, utility consumption, and maintenance. In many cases, the labor alone could be greater than this. An assumed direct annual cost of $25,000 is supported by the detailed costing analyses conducted for this BACT assessment, with the majority of assessments calculating a direct annual cost of much greater than $25,000. Subtracting the direct annual cost of $25,000 from the total annualized cost of $57,000 leaves $32,000 which is the portion of the total annualized cost attributed to the cost of capital. This is commonly referred to as the capital recovery cost (CRC).

A capital recovery factor (CRF) is commonly multiplied by the total capital investment to estimate the CRC. The CRF is calculated based on the assumed interest rate and the period of time over which the payments are made. Employing a CRF allows for the simple conversion of a present day, lump sum cost into an annualized payment over a defined period of time.

Assuming an interest rate of 10% and an equipment lifespan (period over which payments are made) of 15 years, then the CRF is equal to 0.131. Dividing the CRC, which is equal to $32,000, by the CRF yields a calculated total capital investment of $244,000.

Assuming a conservatively high cost control effectiveness of $10,000, a control option capable of 100% removal, a conservatively low total direct annual cost of $25,000, an interest rate of 10%, and an equipment lifespan of 15 years, a selected control option would need to cost, in total, less than $244,000.

This is an unreasonably low purchase price for a control option which would need to include the purchase of all necessary equipment, shipping, taxes, permitting, site preparation, and contingencies. Therefore, based on this very conservative approach, control of SO_2 emissions from the boiler is determined to not be cost effective, regardless of the control option.

This conclusion is supported by the results of the RBLC database queries for wood fired boilers. There were no entries in the database identifying any SO_2 controls for wood-fired boilers. Based on this information, Roseburg proposed and the Department concurs, no additional controls constitute BACT.

V. Existing Air Quality

The Missoula area is currently a nonattainment area for PM_{10}. 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 PM_{10} 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?

YES	NO	
	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

An environmental assessment, required by the Montana Environmental Policy Act was completed for this project. A copy is attached.

Analysis Prepared by: Craig Henrikson
Date: February 23, 2015

DEPARTMENT OF ENVIRONMENTAL QUALITY
Permitting and Compliance Division
Air Resources Management Bureau
P.O. Box 200901, Helena, Montana 59620
(406) 444-3490

FINAL ENVIRONMENTAL ASSESSMENT (EA)

Issued To: Roseburg Forest Products
Missoula Particleboard
PO Box 4007
Missoula, MT 59806

Montana Air Quality Permit (MAQP) Number: 2303-20

Preliminary Determination Issued: 3/11/2015
Department Decision Issued: 3/27/2015
Permit Final:

1. *Legal Description of Site*: The Roseburg plant is located approximately 1 mile northwest of the Missoula, Montana city limits on Raser Road, in the NW ¼ of SW ¼ of Section 8, Township 13 North, Range 19 West, in Missoula County, Montana.

2. *Description of Project:* Roseburg Forest Products submitted an application fee of $500 on February 12, 2015, and an application for modification to the MAQP, with additional information submitted through February 19, 2015.

   This project would provide for replacement of the current boiler. Replacement of the burner itself was already approved under MAQP #2303-18. There are no emissions increase associated with the change but the project will trigger a 40 CFR Part 60 Subpart Dc – Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units.

3. *Objectives of Project*: The modification request would be to provide for reconstruction of the existing Sander Dust Boiler (Emitting Unit #32). The current boiler has exceeded its useful life and needs to be replaced to ensure overall facility reliability.

4. *Alternatives Considered*: In addition to the proposed action, the Department also considered the "no-action" alternative. The "no-action" alternative would deny issuance of the air quality preconstruction permit to the proposed facility. However, the Department does not consider the "no-action" alternative to be appropriate because Roseburg demonstrated compliance with all applicable rules and regulations as required for permit issuance. Therefore, the "no-action" alternative was eliminated from further consideration.

5. *A Listing of Mitigation, Stipulations, and Other Controls*: A list of enforceable conditions, including a Best Available Control Technology (BACT) analysis, would be included in MAQP #2303-20. A BACT analysis completed in MAQP #2303-18 to address the burner replacement has been included from MAQP #2303-18 as the burner permitted under that action will be installed with the new boiler.

6. *Regulatory Effects on Private Property*: The Department considered alternatives to the conditions imposed in this permit as part of the permit development. The Department determined that the permit conditions are reasonably necessary to ensure compliance with applicable requirements and demonstrate compliance with those requirements and do not unduly restrict private property rights.

7. *The following table summarizes the potential physical and biological effects of the proposed project on the human environment.* The "no-action" alternative was discussed previously.

Potential Physical and Biological Effects							
		Major	Moderate	Minor	None	Unknown	Comments Included
A.	Terrestrial and Aquatic Life and Habitats				X		yes
B.	Water Quality, Quantity, and Distribution			X			yes
C.	Geology and Soil Quality, Stability, and Moisture			X			yes
D.	Vegetation Cover, Quantity, and Quality			X			yes
E.	Aesthetics			X			yes
F.	Air Quality			X			yes
G.	Unique Endangered, Fragile, or Limited Environmental Resource			X			yes
H.	Demands on Environmental Resource of Water, Air, and Energy				X		yes
I.	Historical and Archaeological Sites				X		yes
J.	Cumulative and Secondary Impacts			X			yes

SUMMARY OF COMMENTS ON POTENTIAL PHYSICAL AND BIOLOGICAL EFFECTS

The following comments have been prepared by the Department.

A. Terrestrial and Aquatic Life and Habitats

Overall, additional impacts to terrestrial life and habitats would not occur because the changes proposed in this permit action would take place at an existing facility and provide for reconstruction of existing equipment. It was previously determined that this area does not appear to contain any critical or unique wildlife habitat or aquatic life. Since the project would occur in an already disturbed area at an existing facility; there would be no impact to terrestrial and aquatic life and habitats.

B. Water Quality, Quantity, and Distribution

Minor, if any, impacts would be expected on water quality, quantity, and distribution from the proposed project because of the nature of the project. While the facility would emit air pollutants, and corresponding deposition of pollutants would occur, as described in Section 7.F. of this EA, the Department determined that this permit action would not result in any new emissions directly related to the project. Therefore, the Department determined that only minor impacts would occur from the deposition of pollutants on water quality, quantity, and distribution.

C. Geology and Soil Quality, Stability, and Moisture

Minor impacts would occur on the geology and soil quality, stability, and moisture from the proposed project because construction would be required to complete the project. However, any impacts to the geology and soil quality, stability, and moisture from facility construction would be minor because the project would occur at an existing industrial site and on existing equipment.

Further, while deposition of pollutants would occur, as described in Section 7.F of this EA, the Department determined that deposition of pollutants in the areas surrounding the site would be minor due to dispersion characteristics of pollutants and the atmosphere and conditions that would be placed in MAQP #2303-20. Therefore, overall, any impacts to the geology and soil quality, stability, and moisture would be minor.

D. Vegetation Cover, Quantity, and Quality

This permitting action would have a minor effect on vegetation cover, quantity, and quality. The proposed project would occur at an existing, industrial property that has already been disturbed. No additional vegetation on the site would be disturbed for the project. Overall, any impacts to vegetation cover, quantity, and quality would be minor.

E. Aesthetics

The proposed modification to the facility would be contained to the area of the existing facility that has previously been disturbed. Therefore, only minor impacts to aesthetics would occur during construction.

F. Air Quality

No new deposition of pollutants would occur as a result of the project. The Department determined that any air quality impacts from deposition would be minimal and minor due to dispersion characteristics of pollutants (stack height, stack temperature, etc.), the atmosphere (wind speed, wind direction, ambient temperature, etc.) and conditions that would be placed in MAQP #2303-20. The new boiler will have a new baghouse in operation to minimize particulate emissions. Therefore, only minor impacts to air quality would occur as a result of this permit action.

G. Unique Endangered, Fragile, or Limited Environmental Resources

The changes proposed would occur at an existing facility and would not change the footprint of the facility. Therefore, there would be no impacts to existing unique endangered, fragile, or limited environmental resources in the area. As explained in Section 7.F of this EA, conditions that would be placed in MAQP #2303-20, would provide that any impacts from deposition of pollutants would be minor.

H. Demands on Environmental Resources of Water, Air, and Energy

As described in Section 7.B of this EA, this permitting action would have little to no effect on the environmental resource of water as there would be no discharges to groundwater or surface water associated with this permitting action. In addition, the project would not increase current water use at the facility. There would be a no additional impacts on energy resources because the project would not require additional energy or upgrades to existing infrastructure.

Previous modeling efforts, using allowable levels, showed compliance with National and Montana Ambient Air Quality Standards (NAAQS/MAAQS). Overall, this project would result in a minor effect on the air resource.

I. Historical and Archaeological Sites

The proposed project would take place within a previously disturbed industrial site. According to previous correspondence from the Montana State Historic Preservation Office, there would be a low likelihood of adverse disturbance to any known archaeological or historic site, given previous industrial disturbance within the area. Therefore, it would be unlikely the proposed project would have an effect on any known historic or archaeological site.

J. Cumulative and Secondary Impacts

Overall, the cumulative and secondary impacts from the proposed project would be minor. The project would involve installing a previously permitted new burner, along with reconstructing the existing Sander Dust Boiler. All changes would occur within the existing facility. Impacts to air, soil, and water quality would be minimized by conditions that would be placed in MAQP #2303-20.

8. *The following table summarizes the potential social and economic effects of the proposed project on the human environment.* The "no-action" alternative was discussed previously.

Potential Social and Economic Effects							
		Major	Moderate	Minor	None	Unknown	Comments Included
A.	Social Structures and Mores				X		yes
B.	Cultural Uniqueness and Diversity				X		yes
C.	Local and State Tax Base and Tax Revenue			X			yes
D.	Agricultural or Industrial Production			X			yes
E.	Human Health			X			yes
F.	Access to and Quality of Recreational and Wilderness Activities				X		yes
G.	Quantity and Distribution of Employment				X		yes
H.	Distribution of Population				X		yes
I.	Demands for Government Services			X			yes
J.	Industrial and Commercial Activity				X		yes
K.	Locally Adopted Environmental Plans and Goals				X		yes
L.	Cumulative and Secondary Impacts				X		yes

SUMMARY OF COMMENTS ON POTENTIAL SOCIAL AND ECONOMIC EFFECTS: The following comments have been prepared by the Department.

A. Social Structures and Mores

The proposed facility would not cause a disruption to any native or traditional lifestyles or communities (social structures or mores) in the area because the project would occur at an existing industrial site. Therefore, the proposed project would not change the nature of the site.

B. Cultural Uniqueness and Diversity

The proposed project would not cause a change in the cultural uniqueness and diversity of the area because the land is currently used as a particleboard manufacturing plant; therefore, the land use would not be changing. The use of the surrounding area would not change as a result of this project.

C. Local and State Tax Base and Tax Revenue

The proposed project would result in only minor impacts to the local and state tax base and tax revenue because the proposed project would not require new permanent employees to be hired. It is expected during construction, temporary contractors would likely be used for construction and installation.

D. Agricultural or Industrial Production

The proposed project would not result in any impacts to agricultural or industrial production because the proposed project would not displace any agricultural or industrial land. The project would occur at the existing facility. The Department determined that any impacts from deposition would be minor due to dispersion characteristics of pollutants and the atmosphere and conditions that would be placed in MAQP #2303-20.

E. Human Health

The project would not be expected to cause or contribute to any violations of the NAAQS/MAAQS, which are set to protect the public health. Any impacts would be minimized by maintaining compliance with the conditions of MAQP #2303-20. The Department believes there would be minimal additional impacts to human health as a result of this project.

F. Access to and Quality of Recreational and Wilderness Activities

The proposed action would not alter any existing access to or quality of any recreational or wilderness area activities. This project would not have an impact on recreational or wilderness activities because the site is far removed from recreational and wilderness areas or access routes. Furthermore, the facility is contained on private property and would continue to be contained within private property boundaries. Therefore, the Department determined there would be no additional impact to access or quality of recreational and wilderness activities.

G. Quantity and Distribution of Employment

The proposed project would not result in any impacts to the quantity or distribution of employment at the facility or surrounding community other than during construction of the proposed project. No new permanent employees would be expected to be hired at the facility as a result of the project.

H. Distribution of Population

The proposed project would not involve any significant physical or operational change that would affect the location, distribution, density, or growth rate of the human population.

I. Demands of Government Services

There would be a minor impact on demands of government services because of the required permit issuance; however, no additional time (beyond what is currently dedicated) would likely be required by government agencies to assure compliance with applicable rules, standards, and MAQP #2303-20. The Department determined there would be minimal additional impacts as a result of this permit action.

J. Industrial and Commercial Activity

No additional impacts would be expected on the local industrial and commercial activity because the proposed project would take place at an existing facility. No additional industrial or commercial activities would be expected to take place in the area due to the project.

K. Locally Adopted Environmental Plans and Goals

The Department is not aware of any locally adopted environmental plans and goals that would be affected by issuing MAQP #2303-20. Roseburg would be required to maintain compliance with the applicable ambient air quality standards. The State Implementation Plan (SIP) demonstration of attainment indicated that the emission limitations contained in MAQP #2303-20, along with control measures applied to other sources, will bring the Missoula area into compliance with the PM_{10} standards.

Missoula City-County has designated an "air stagnation zone" surrounding the City of Missoula which is in place largely to regulate solid wood burning associated with older higher emitting devices. This does not cover stationary sources such as the proposed Roseburg facility modification. Stationary sources can be covered in some instances under Missoula County rules but for Roseburg they fall under Chapter 6- Standards for Stationary Sources, Subchapter 1 – Air Quality Permits for Air Pollutant Sources. Under Rule 6.102(5), an air quality permit is not required for the following, except when the Control Board determines an air quality permit is necessary to insure compliance with the NAAQS and other provisions of this Program:

> (a) Any major stationary source or modification, as defined in 40 CFR 51.165 or 51.166, which is required to obtain an air quality permit from the MT DEQ in conjunction with ARM Title 17, Chapter 8, Subchapters 8, 9 or 10 <u>that does not have the potential to emit</u> <u>250 tons a year or more of any pollutant subject to regulation under Title 75, Chapter 2,</u> <u>MCA, including fugitive emissions</u>;

Roseburg is required to obtain a Montana Department of Environmental Quality air quality permit under this action and therefore, is not required to obtain an air quality permit from the Missoula City-County Air Pollution Control Program.

L. Cumulative and Secondary Impacts

Overall, the social and economic cumulative and secondary impacts from this project would be minor because the proposed project would take place at the existing facility. New businesses would not be drawn to the area and permanent jobs would not be created or lost due to the proposed project. Because no new employees would be hired for the proposed project, there would be no economic impacts from new employees.

Recommendation: An Environmental Impact Statement (EIS) is not required.

If an EIS is not required, explain why the EA is an appropriate level of analysis: The impacts resulting from this project would not be significant. Overall, the changes to the permit would not result in increased utilization but rather improved reliability. Further, MAQP #2303-20 would include conditions and limitations to ensure the facility would operate in compliance with all applicable rules and regulations.

Other groups or agencies contacted or that may have overlapping jurisdiction: Montana Natural Heritage Program - Natural Resource Information System

Individuals or groups contributing to this EA: Department of Environmental Quality - Air Resources Management Bureau

EA prepared by: Craig Henrikson
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