

OREGON DEPARTMENT OF ENVIRONMENTAL QUALITY
 OREGON TITLE V OPERATING PERMIT
 REVIEW REPORT
 FOR
 Boise Building Solutions Manufacturing, L.L.C.

Western Region
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Unassigned emissions	X	Special conditions		NESHAP	X
Emission credits		Annual report	X	NSR	
Source test	X	Semi-annual report	X	PSD	
COMS	X	Quarterly report	X	RACT	
CEMS	X	Monthly report	X	Size	T-V
CAM	X	Excess emissions report		Major HAP source	X
Ambient monitoring		NSPS	X	Federal major source	X
Compliance schedule					

TABLE OF CONTENTS

INTRODUCTION3
 PERMITTEE IDENTIFICATION3
 FACILITY DESCRIPTION3
 EMISSION LIMITS AND STANDARDS, TESTING, MONITORING, AND RECORDKEEPING7
 GENERAL BACKGROUND INFORMATION10
 COMPLIANCE HISTORY10
 SOURCE TEST RESULTS.....10
 PUBLIC NOTICE10

LIST OF ABBREVIATIONS USED IN THIS REVIEW REPORT

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

INTRODUCTION

1. This is the review report for a Permit Renewal of the original Title V Permit issued to the facility in 1997.
2. In accordance with OAR 340-218-0120(1)(f), this review report is intended to provide the legal and factual basis for the draft permit conditions. In most cases, the legal basis for a permit condition is included in the permit by citing the applicable regulation. In addition, the factual basis for the requirement may be the same as the legal basis. However, when the regulation is not specific and only provides general requirements, this review report is used to provide a more thorough explanation of the factual basis for the draft permit conditions.]

PERMITTEE IDENTIFICATION

3. Boise Building Solutions Manufacturing, L.L.C., is a veneer drying and plywood layup facility with veneer dryers, layup presses, lumber dry kilns, material handling systems, and 3 boilers located in Medford on North Pacific Highway & Elk St.

FACILITY DESCRIPTION

4. Overview

The primary operating process of the Medford Operation is manufacturing plywood panels 4 feet wide and 8 feet in length. The facility also produces kiln dried lumber. The operation is comprised of three distinct operating areas:

Plywood Plant, Lumber Kilns, and Powerhouse.

The Plywood Plant manufactures plywood using green and dry veneer imported from other operating locations. The green veneer is dried in steam heated dryers and laid up into panels using phenolic resins. The panels are cured in steam heated presses to form structural panels, which are trimmed, and prepared for shipment. Wood waste generated at the Plywood Plant is collected, stored and either used as fuel for the Powerhouse or sold to other mills.

Green lumber from off site mills is dried in the on-site dry kilns using steam produced by the Powerhouse. Dried lumber is shipped off for planing.

The Powerhouse produces steam from three wood fired boilers. Two of the boilers were existing during the 1978 baseline year. The third boiler was installed in 1991 and is subject to New Source performance Standards. Flue gas from all three boilers is ducted through a common flue to an electrostatic precipitator (ESP) and emitted through a stack. The steam is provided to the dry kilns, veneer dryers and steam plywood presses. The boilers also provide steam to be used to generate electricity, which is used in the plant to offset power needed from outside sources or sold to the grid.

Prior to September 1998, the mill also produced green lumber and green veneer from logs delivered to the facility. In September 1998 a fire destroyed the plywood mill building and damaged the production equipment. In 1999 the plywood plant building was replaced and the veneer dryers, plywood lay up lines and plywood presses were repaired. Subsequently, the sawmill, veneer mill and log debarking operations were shutdown and dismantled. The green veneer mill was not rebuilt, and the sawmill operations, excluding the kilns, were dismantled in 2000. The facility maintains a log yard for log sorting and temporary storage until logs can be utilized by other area mills if necessary.

The following sub-sections provide a detailed description of the processes involved in each of the four operations at the Medford Operations.

5. Plywood Plant: Veneer Drying

Green veneer imported from other facilities is dried in one of six veneer dryers at the plywood Plant. A seventh veneer dryer is planned for installation during this permit term and all emission calculations are based on production from seven (7) dryers. The seventh dryer is approved under the current permit. However, installation of the dryer was postponed due to the plant fire. All of the dryers are steam heated using steam generated in the Powerhouse. Veneer is introduced into the dryer either manually or by automated veneer sheet feeders. The dried veneer sheets pass through a moisture detector as they exit the dryer where sheets are marked and sorted for re-drying if necessary.

The dryers have electro-mechanical controls to regulate the amount of air entering and exiting each zone. The speed in which the veneer is conveyed through the dryer is also mechanically controlled. The air flow and veneer speed settings are adjusted frequently to accommodate the species and moisture content of the veneer.

As the veneer is heated in the dryer, water vapor, condensable and non-condensable hydrocarbons are released from the wood. Condensable hydrocarbons are usually referred to as particulate matter (PM). Whereas non-condensable hydrocarbons are considered Volatile Organic compounds (VOC). Gases exiting the veneer dryers are treated with 2 Regenerative Thermal Oxidizers (RTO) which removes PM and VOC's. RTO1 serves Dryers #1, 5, 6, and proposed #7, while RTO2 serves Dryers #2, 3 and 4.

The accounting of veneer dried is based on the need to appropriately quantify emissions from the RTO control devices. Emission calculations are generally based on production or other unit of measure multiplied by an emission factor. It is important that the same methodology be used for emission calculations as was used for determination of a particular emission factor.

It is also important to note that the period used for short-term emission calculations must be sufficiently long to allow for natural variation in the moisture content of green veneer, which will directly impact dryer production. As a practical matter, this period is longer than daily. Assuming no material change in re-dry inventory, "gross dry veneer" is used to calculate emissions for a particular time period. "Gross dry veneer" is the total volume of veneer taken from a green state to a final dry specification, for a particular time period.

Plywood Plant: Layup & Pressing

Dry veneer sheets are coated with mixed glue, stacked to the prescribed thickness and formed into panels. The thickness of the plywood panel is a function of the thickness and number of veneer sheets used. Seven automated panel layup presses (Plywood Prod. Building 1; Plywood Presses 1, 2, 3 & 4 and Plywood Prod. Building 2; Plywood Presses 5, 6 & 7) are permitted for the facility.

The mixed glue is prepared each day. It consists primarily of phenol-formaldehyde glue resin, caustic soda, water and wheat flour or comparable extender. Glue resin and caustic are stored on site in bulk tanks.

Uncured glued panels are stacked after layup and pressed in a pre-press. The function of the pre-press is to stabilize the panel until it can be loaded into the hot press. From the pre-press the stacked panels are hand loaded into the steam heated press. Hot pressing cures the glue and forms a structurally sound panel. There are five operating plywood presses in the plant with an additional 2 presses planned for construction during this permit term. Emissions calculations include all 7 presses.

After hot pressing, the panels are trimmed to final dimensions, graded and patched as required. Approximately 10% – 20% of the panels are sanded. Finished panels are stacked, unitized and stored for shipment by truck or by rail. Sander dust is pneumatically conveyed to the boiler where it is used as fuel. Plytrim and other dry end waste wood is hogged and pneumatically conveyed to storage and sold as furnish for other manufacturing processes or used for fuel in the Powerhouse boilers.

6. Dry Kilns

Green lumber is dried in one of six (6) lumber kilns at the Medford Operation. Kilns 1-4 are single track and kilns 5 and 6 are double tracks. The dry kilns are heated by steam provided from the Powerhouse. The steam passes through heating coils inside the kiln, raising the temperature to approximately 150-200°F. Blowers circulate the warm air through the lumber. Air emissions include VOC's and Particulates vented during the drying process. There are no emission stacks on the dry kilns.

7. Powerhouse/Co-generation Facility

The powerhouse consists of three hogged fuel fired boilers and two steam turbine/generators. Boiler #3 was constructed in 1991 and is permitted under new source performance standards (NSPS). The three boilers produce steam that is primarily used at the kilns, the plywood presses and the veneer dryers. The steam is also used for generating electrical power with two steam turbine/generator units. All three boilers are ducted through a common duct to a four-field electrostatic precipitator (ESP).

Hogged fuel is delivered to the powerhouse from outside sources via a dump truck. Plytrim and sander dust is pneumatically conveyed to the powerhouse from the plywood plant. Hogged fuel is stored in a three-sided building adjacent to the powerhouse. Sander dust is stored in a fully enclosed silo. The wood fuel is moved from the fuel house and silo using mechanical conveyors and fed into one of three hogged fuel fired boilers. Waste paper generated at Boise Cascade Southern Oregon facilities is also burned in the boilers. Waste paper is not to exceed 1% by weight of total fuel.

EMISSIONS UNIT AND POLLUTION CONTROL DEVICE IDENTIFICATION

8. The emissions units at this facility are the following:

Emissions Unit Description	EUID	Pollution Control Device/Practice	PCD ID
Hogged Fuel Boilers 1, 2 and 3	EU1	ESP 1	ESP 1
Veneer Dryers 1, 5, 6 and 7 2, 3, and 4	EU2	RTO-1 RTO-2	RTO-1 RTO-2
Plywood Prod. Building 1; Plywood Presses 1, 2, 3 & 4 and veneer dryer fugitive emissions	EU3a	none	none
Plywood Prod. Building 2; Plywood Presses 5, 6 & 7	EU3b	none	none
Lumber Kilns #1, 2, 3, 4, 5 & 6	EU4	none	none
Baghouses (C & D) and Cyclones (13 & 14)	EU5a	none	none
Baghouses (G, E & F)	EU5b	none	none
Facility-Wide VOCs	EU6	none	none
Material Handling Fugitives	EU506	none	none
Unpaved Roads	EU508	none	none

Also see facility description above.

9. Categorically insignificant activities include the following:

- Constituents of a chemical mixture present at less than 1% by weight of any chemical or compound regulated under OAR Chapter 340, Divisions 200 through 268, excluding Divisions 248 and 262, or less than 0.1% by weight of any carcinogen listed in the U.S. Department of Health and Human Service's Annual Report on Carcinogens when usage of the chemical mixture is less than 100,000 pounds/year
- Evaporative and tail pipe emissions from on-site motor vehicle operation
- Distillate oil, kerosene, and gasoline fuel burning equipment rated at less than or equal to 0.4 million Btu/hr
- Natural gas and propane burning equipment rated at less than or equal to 2.0 million Btu/hr
- Office activities
- Food service activities
- Janitorial activities
- Personal care activities
- Groundskeeping activities including, but not limited to building painting and road and parking lot maintenance
- On-site laundry activities
- On-site recreation facilities
- Instrument calibration
- Maintenance and repair shop
- Automotive repair shops or storage garages
- Air cooling or ventilating equipment not designed to remove air contaminants generated by or released from associated equipment
- Refrigeration systems with less than 50 pounds of charge of ozone depleting substances regulated under Title VI, including pressure tanks used in refrigeration systems but excluding any combustion equipment associated with such systems
- Bench scale laboratory equipment and laboratory equipment used exclusively for chemical and physical analysis, including associated vacuum producing devices but excluding research and development facilities
- Temporary construction activities
- Warehouse activities
- Accidental fires
- Air vents from air compressors
- Air purification systems
- Continuous emissions monitoring vent lines
- Demineralized water tanks
- Pre-treatment of municipal water, including use of deionized water purification systems
- Electrical charging stations
- Fire brigade training
- Instrument air dryers and distribution
- Process raw water filtration systems
- Pharmaceutical packaging
- Fire suppression
- Blueprint making
- Routine maintenance, repair, and replacement such as anticipated activities most often associated with and performed during regularly scheduled equipment outages to maintain a plant and its equipment in good operating condition, including but not limited to steam cleaning, abrasive use, and woodworking
- Electric motors
- Storage tanks, reservoirs, transfer and lubricating equipment used for ASTM grade distillate or residual fuels, lubricants, and hydraulic fluids

- On-site storage tanks not subject to any New Source Performance Standards (NSPS), including underground storage tanks (UST), storing gasoline or diesel used exclusively for fueling of the facility's fleet of vehicles
- Natural gas, propane, and liquefied petroleum gas (LPG) storage tanks and transfer equipment
- Pressurized tanks containing gaseous compounds
- Vacuum sheet stacker vents
- Emissions from wastewater discharges to publicly owned treatment works (POTW) provided the source is authorized to discharge to the POTW, not including on-site wastewater treatment and/or holding facilities
- Log ponds
- Storm water settling basins
- Fire suppression and training
- Paved roads and paved parking lots within an urban growth boundary
- Hazardous air pollutant emissions of fugitive dust from paved and unpaved roads except for those sources that have processes or activities that contribute to the deposition and entrainment of hazardous air pollutants from surface soils
- Health, safety, and emergency response activities
- Emergency generators and pumps used only during loss of primary equipment or utility service due to circumstances beyond the reasonable control of the owner or operator, or to address a power emergency as determined by the Department
- Non-contact steam vents and leaks and safety and relief valves for boiler steam distribution systems
- Non-contact steam condensate flash tanks
- Non-contact steam vents on condensate receivers, deaerators and similar equipment
- Boiler blowdown tanks
- Industrial cooling towers that do not use chromium-based water treatment chemicals
- Ash piles maintained in a wetted condition and associated handling systems and activities
- Oil/water separators in effluent treatment systems
- Combustion source flame safety purging on startup
- Broke beaters, pulp and repulping tanks, stock chests and pulp handling equipment, excluding thickening equipment and repulpers
- Stock cleaning and pressurized pulp washing, excluding open stock washing systems
- White water storage tanks

EMISSION LIMITS AND STANDARDS, TESTING, MONITORING, AND RECORDKEEPING

10. Section 70.6(a)(3) of the federal Title V permit rules, requires all monitoring and analysis procedures or test methods required under applicable requirements be contained in Title V permits. In addition, where the applicable requirement does not require periodic testing or monitoring, periodic monitoring must be prescribed that is sufficient to yield reliable data from the relevant time period that is representative of the source's compliance with the permit.

However, the requirements to include in a permit testing, monitoring, recordkeeping, reporting, and compliance certification sufficient to assure compliance does not require the permit to impose the same level of rigor with respect to all emissions units and applicable requirement situations. It does not require extensive testing or monitoring to assure compliance with the applicable requirements for emissions units that do not have significant potential to violate emission limitations or other requirements under normal operating conditions. Where compliance with the underlying applicable requirement for an insignificant emission unit is not threatened by a lack of a regular program of monitoring and where periodic testing or monitoring is not otherwise required by the applicable requirement, then in this instance, the status quo (i.e., no monitoring) will meet section 70.6(a)(3). For this reason, this permit does not include any monitoring for insignificant emissions units and activities.

The Title V permit does include monitoring for all requirements that apply to significant emissions units in addition to the testing requirements in the permit. Periodic visible emissions observations are required for all particulate emissions sources. In addition, the permit includes monitoring of operating parameters for the boilers and pollution control devices. It is assumed that as long as these processes and controls are properly operated, the particulate emissions levels will be below the emissions limits specified in the permit.

TEST METHODS AND PROCEDURES

11. This section, is provided so that the permittee and Department will know what test methods should be used to measure pollutant emissions in the event that testing is conducted for any reason. This section does not by itself require the permittee to conduct any more testing than was previously included in the permit. Although the permit may not require testing because other routine monitoring is used to determine compliance, the Department and EPA always have the authority to require testing if deemed necessary to determine compliance with an emission limit or standard. In addition, the permittee may elect to voluntary conduct testing to confirm the compliance status. In either case, the methods to be used for testing in the event that testing is conducted are included in the permit. This is true for SIP as well as NSPS emission limits and standards.

ADDITIONAL REQUIREMENTS

12. This source is subject to federal regulations for New Source Performance Standards (NSPS) for Boiler #3.
13. This source is not currently subject to federal regulations for New Source Review.
14. This source is not currently subject to federal regulations for Prevention of Significant Deterioration (PSD).
15. This source is currently subject to federal regulations for National Emissions Standards for Hazardous Air Pollutants (NESHAPS) for Steam Generating Units and for the Plywood and Composite Wood Products Federal MACT requirements.

RECORDKEEPING

16. The permittee is required to retain all records of monitoring for a 5 year period. These records shall be made available to DEQ inspectors upon request.

REPORTING

17. The permittee is required to submit reports to the Department semi-annually and annually. The semi-annual reports are for certifying compliance with the applicable requirements contained in the permit. The report will include a list of all emission limits and monitoring deviations, the reason, and the corrective action as a result of the deviation. Redry veneer processed through veneer dryers (square feet/year and as a percent of green veneer), indicate any permanent changes made in the plant process or production which would effect air contaminant emissions. Indicate when changes were made, list all major maintenance performed on air pollution equipment.

In addition, the permittee is required to notify the Department before each source test and submit summaries or complete source test reports after each test.

The source is subject to immediate (within one hour) reporting of excess emissions.

18. Provided below is a summary of the baseline emissions rate, netting basis, plant site emission limits, and unassigned emissions.

Pollutant	Baseline Emission Rate (tons/yr)	Netting Basis		Plant Site Emission Limit (PSEL)				
		Previous (tons/yr)	Proposed (tons/yr)	Previous PSEL (tons/yr)	Proposed PSEL (tons/yr)	Unassigned Emissions	PSEL Increase (Decrease)	Total
PM	187	187		160	169	18		187
PM ₁₀	163	163		158	166		3	166
CO	2987	2987		2974	2974	13		2987
NO _x	227	227		253	253			253
SO ₂	20	20		31	31			31
VOC	351	351	279	351	231	69		300
Other ¹								

- 18.a. In 1989, the baseline plant site emission levels (PSELs) were changed from the original permitted determinations as a result of Division 030 rules for the particulate matter in the nonattainment area. Also in 2001 a consent agreement was finalized between EPA and Boise that resulted in a reduction of baseline VOC emissions due to more strict limitation on the veneer dryers for VOC emissions.
- 18.b. Baseline (1978) Emission Rates [corrected to include Lumber Kilns, Material handling fugitives and unpaved roads] VOC's have been reduced to reflect the value of 0.1 lbs.Msq.ft. of veneer 3/8 inch basis due to the installation of RTO controls required by the EPA-Boise agreement of 2001.
- 18.c. The VOC's have been recalculated to be expressed as propane with the addition of methanol and formaldehyde for the dryers, presses, and kilns, which more accurately reflects the actual mass emission of these pollutants.
19. Include a daily PSEL for PM₁₀ for sources located in the Medford-Ashland AQMA.

SIGNIFICANT EMISSION RATE

20. The proposed PSEL is greater than the previous netting basis for PM₁₀ as shown below. The increase is for 3 tons per year, which is less than a Significant Emission Rate and is allowed by current regulations.

Pollutant	SER	Requested increase over previous netting basis	Increase due to utilizing capacity that existed in the baseline period	Increase due to physical changes or changes in the method of operation
PM	25			
PM ₁₀	15/5*	3	-	3
CO	100			
NO _x	40			
SO ₂	40			
VOC	40			
Other				

*For PM₁₀, the first value is for sources located anywhere in the state other than the nonattainment portions of the Medford-Ashland AQMA nonattainment area. In this area, the SER for PM₁₀ is 5 tons/yr.

The annual PSEL applies to each 12 consecutive month period. Therefore, it is considered a limit on the potential to emit (PTE). Short term PSELs (e.g., lb/hr, lb/day, lb/week, lb/month) are not required, except for sources located in the Medford-Ashland AQMA must have a lb/day PSEL for PM₁₀ if the emissions are greater than 5 lbs/day.

GENERAL BACKGROUND INFORMATION

The facility is a significant source of PM, PM₁₀ CO and VOC and is an insignificant source of SO₂. The facility is located in an area that is designated nonattainment for PM₁₀ and CO and is also designated as an Air Quality Maintenance Area (AQMA) for ozone but currently in attainment for that pollutant. A Land Use Compatibility Statement (LUCS) signed by Jackson County Planning Dept. on March 20, 1989 granted unconditional approval.

Other permits issued or required by the Department for this source include a Storm water Discharge permit 1200-Z and NPDES permit #100438.

COMPLIANCE HISTORY

The facility was inspected on 7/11/1997, 7/8/1998, 4/1/1999, 9/19/2000, 9/6/2001, 9/17/2002, 9/23/2004, and 8/22/2006 was found to be in compliance with permit conditions.

During the prior permit period, no complaints were received.

SOURCE TEST RESULTS

The exhaust from the boilers is controlled by an ESP that was tested for PM₁₀ and NO₂ emissions on June 30, 2000, and December 12, 2002. The results of these tests showed the boiler in compliance with permit limits.

The exhaust from the veneer dryers is controlled by Regenerative Thermal Oxidizers (RTO1 and RTO2) which were tested to demonstrate compliance with permit limits and with the consent agreement between EPA and Boise. The testing was done on RTO1 on June 30, 2000, June 24, 2002, and December 20, 2005 which demonstrated compliance with the PM₁₀ limits of 0.30 lbs/Msq ft (3/8") and with VOC limits at 95% destruction efficiency (at a temperature of 800 degrees F) and 0.1 lbs/Msq ft (3/8"). RTO2 was tested on June 10, 2002, and August 26, 2005 which demonstrated compliance with the PM₁₀ limits of 0.30 lbs/Msq ft (3/8") and with VOC limits at 95% destruction efficiency (at a temperature of 1,000 degrees F) and 0.1 lbs/Msq ft (3/8"). RTO 2 was also tested on September 13, 2006 to establish new action levels.

PUBLIC NOTICE

21. This permit was put out on public notice from December 29, 2006, to February 2, 2007. One public comment was received. A proposed permit was sent to EPA for a 5-day expedited review period on February 27, 2007. In any event, the public will have 105 days (45 day EPA review period plus 60 days) from the date the proposed permit is sent to EPA to appeal the permit with EPA. The permit will be issued following EPA's review.