

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

**Pacific States Plywood, Inc  
Springfield Plywood  
419 South 28<sup>th</sup> Street  
Springfield, Oregon 97477**

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**LIST OF ABBREVIATIONS USED IN THIS REVIEW REPORT**

AMB	Ambient
AQMA	Air quality management area
ASTM	American Society of Testing and Materials
BDT	Bone dry ton
CEMS	Continuous emissions monitoring system
CFR	Code of Federal Regulations
CMS	Continuous monitoring system
CO	Carbon monoxide
COMPL	Compliance
COMS	Continuous opacity monitoring system
COND	Condition
CRED	Credit
DEQ	Oregon Department of Environmental Quality
dscf	dry standard cubic feet
EF	Emission factor
EPA	United State Environmental Protection Agency
EU	Emissions unit
FCAA	Federal Clean Air Act
gr/dscf	grains per dry standard cubic feet
HAP	Hazardous air pollutant
ID	Identification code
I&M	Inspection and maintenance
LRAPA	Lane Regional Air Protection Agency
MB	Material balance
MeOH	Methanol
Mlb	1000 pounds
MON	Monitoring
NA	Not applicable
NESHAP	National emission standard for hazardous air pollutants
NO <sub>x</sub>	Oxides of nitrogen
NSPS	New source performance standard
NSR	New source review
O <sub>2</sub>	Oxygen
OAR	Oregon Administrative Rules
ORS	Oregon Revised Statutes
O&M	Operation and maintenance
Pb	Lead
PCD	Pollution Control Device
PM	Particulate matter
PM <sub>10</sub>	Particulate matter less than 10 microns in size
PSD	Prevention of significant deterioration
PSEL	Plant Site Emission Limit
SCHED	Schedule
SPEC	Special
SO <sub>2</sub>	Sulfur dioxide
ST	Source test
VE	Visible emissions
VMT	Vehicle mile traveled
VOC	Volatile organic compound

**INTRODUCTION**

1. This permit is a renewal of Oregon Title V Operating Permit No. 208864 that was issued to Willamette Industries, Inc. on May 14, 2001 and scheduled to expire on May 13, 2006. The existing permit will remain in effect until this renewal is issued.
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.
3. The following changes have been made to the permit during the last permit term:

Date	Permit Revision or Notification	Brief Explanation
12/13/2001	Significant Permit Modification and Notice of Approval (MD906)	Increased PM emissions as a result of construction and installation of a 4-drum sander and one additional core composer line. The vacuum fan associated with the core composer utilized the existing air system to convey sawdust to an existing air system to convey sawdust to an existing cyclone controlled by a barehouse (BH-1).The sander discharge was configured to pneumatically convey material to a new cyclone/baghouse combination. This combination included a 13 foot diameter cyclone sized for 40,000 acfm, and two baghouses (BH-3 and BH-4).
05/03/2002	Off-Permit Notification (MD902)	Off-permit notification to allow burning of incidental volumes of oily and resinous wastes in the fuel cell.
05/28/2002	Administrative Amendment, Addendum No.1	Incorporate Panel Oiler into Aggregate Insignificant Activities.
03/13/2003	Administrative Amendment Addendum No. 2	Changed name from Willamette Industries, Inc. to Weyerhaeuser Company. Also changed address, responsible official, and facility contact person. Also corrected PM10 long-term PSEL from "36.3" to "34.6" for Operating Scenario I. Also changed the requirement that the emission fee report be submitted with the annual monitoring report. Report is now due "as specified by LRAPA after January 15."

4. The following is a list of condition-by-condition changes between the previous permit and the proposed permit:

New Permit Condition Number	Old Permit Condition Number	Description of Change	Reason for Change
Cover page	Cover page	Changed company name to Pacific States Plywood—Springfield Plywood	Facility request
Cover page	Cover page	Changed title of Facility Contact Person to Environmental Coordinator and phone number of same to (541) 895-2151	Facility Request
1	1	No change	NA

New Permit Condition Number	Old Permit Condition Number	Description of Change	Reason for Change
2	2	No change	NA
3	3	Modified emission unit/pollution control device description table to reflect equipment changes, deletions and additions. Materials Handling Group 1 now has BH-1, BH-2, and BH-3 as control devices. Eliminated Plant-1 through Plant-4 PSEL Emission Unit designations	Facility request
---	4	Removed condition because the alternative operating scenario for the veneer dryers operation until the RCO is installed is no longer valid.	RCO in place and operating. No alternative operating scenario necessary.
4	5	Eliminated requirement for visual surveys on Aggregate Insignificant Emission Unit.	Facility requested that AI be removed because AIs do not require monitoring.
5	6	No change	NA
6	7	Updated nuisance condition language as per rule change	LRAPA 50-020 was eliminated. LRAPA 49-010 is the new regulation.
7	8	No change	NA
8	9	Changed Inspection and Maintenance language to reflect that the I&M plan is established and needs to be maintained.	I&M plan had not been established at issuance of previous permit.
9	10	Eliminated monitoring requirement for concealment condition.	No value added in language that was removed. Condition stringency remains.
10	11	No change	NA
11	12	No change	NA
--	13	Eliminated condition that required compliance with production and throughput limits in favor of PSEL monitoring calculations.	Facility request. To provide facility flexibility in complying with PSELs and to maintain consistency with other LRAPA Title V permits.
12	14	Eliminated Operatince Scenario I description and converted short-term PSELs from Daily to Monthly	RCO in place and operating. No alternative operating scenario description necessary. Facility request.
--	15	Eliminated Monthly PSELs from this condition.	Now covered by Condition 12.
13	16	Added language to make Annual PSELs rolling 12-month PSELs	Facility request and to make consistent with other LRAPA Title V permits.
14	17	Removed Scenario I, lb/hr and lb/day references. Updated emission factors in Table 7 to include an emission factor for Methanol.	Only one scenario now exists and the short-term PSELs are now monthly. Methanol is now tracked for Synthetic minor compliance.
--	18	Eliminated Scenario II daily short-term PSELs	Only one operating scenario now that the RCO has been installed.

New Permit Condition Number	Old Permit Condition Number	Description of Change	Reason for Change
--	19	Eliminated Scenario II monthly short-term PSELs	Only one operating scenario now that the RCO has been installed.
--	20	Eliminated Scenario II annual short-term PSELs	Only one operating scenario now that the RCO has been installed
--	21	Eliminated Scenario II emission factors for PSEL monitoring.	Only one operating scenario now that the RCO has been installed.
15	22	No change	NA
16	23	No change	NA
17	24	No change	NA
18	25	No change	NA
19	--	Added new condition that clarifies what fuel is allowed to be combusted in the EU Cell-1. and also includes what is required to be monitored.	Facility request.
20	26	No change	NA
21	27	No change	NA
22	29, 30	Condition changed location and add CAM requirements.	Condition ordering changed for clarity. CAM requirement added because CAM is required to be addressed at renewal.
23	28	No change	NA
24	31	Change language to clarify the timing of testing requirement and to remove the requirement to establish parameter action levels for the Wet ESP as they have been established already.	Facility request. Changed for reasons given.
25	32	No change	NA
26	33	Removed Consent Decree requirements for control specific to CO and requirement to install RTO	Requirements complete, RTO installed and operational.
--	34	Deleted installation schedule for RTO.	RTO installed and operational.
--	35	Deleted requirement for RTO initial performance test.	RTO initial performance test has been completed.
27	36	Condition language changed to reflect the established parametric action levels for the RTO.	RTO installed and parameter action levels have been determined.
28	37	No change	NA
29	38	No change	NA
30	39	No change	NA
31	40	No change	NA
--	41	Deleted condition.	Already addressed by Condition 5
32	42	No change	NA
33	43	No change	NA
34	44	Added CAM parameter action levels and requirements.	CAM required at renewal.
35	45	No change	NA
36	46	No change	NA

New Permit Condition Number	Old Permit Condition Number	Description of Change	Reason for Change
37	47	Deleted "Plant-4" reference	Facility request, Plant-4 is no longer an emission unit.
38	48	No change	NA
39	49	No change	NA
--	50	Deleted condition.	Replaced with more streamlined version of Insignificant Activities requirements in 40 and 41
40	--	New standard Insignificant Activities condition.	Consistent with ODEQ TV Template
41	--	New standard testing, monitoring, and recordkeeping requirement for Insignificant Activities	Consistent with ODEQ TV Template
42	53	Modified permit condition so as to be consistent with updated (as of 2002) Oregon TV Permit Template.	LRAPA initiated change
43	54	No change	NA
44	55	Added statement to allow performance test required by Condition 24.b to satisfy this emission factor testing requirement	Facility request
45	56	No change	NA
46	57	No change	NA
47	58	Updated OAR reference.	Rule citation previously not included.
48	59	Updated OAR reference.	Rule citation previously not included.
49	60	No change	NA
50	61	No change	NA
51	62	No change	NA
52	63	Moved old condition 64 and included here	Consistent with Oregon TV template.
53	64	New separate condition regarding the emission fee report.	Consistent with Oregon TV Template
54	65	No change	NA
55	--	New condition regarding semi-annual compliance certification requirements.	Consistent with Oregon TV Template
56	66	Deleted DEQ address	DEQ no longer wants reports submitted.
57	67	Deleted "Non-Applicable Requirements" condition.	EPA raised concerns for including a non-applicable requirements section in Oregon Title V Permits and LRAPA is removing these conditions in permits as they are modified or renewed.
General Conditions G1. - G 28.	General Conditions G1. - G28.	No change	NA

5. This renewal includes production increases/decreases as follows:

Emission Unit	Previous Production Rate	Proposed Production Rate
Plywood Press (Press)	175,000 MSF/yr (3/8" basis)	175,000 MSF/year (3/8" basis)

#### PERMITTEE IDENTIFICATION

- Pacific States Plywood, Inc. (PSP) owns and operates a plywood manufacturing facility located on South 28th Street in Springfield, Oregon. The Springfield site includes all operations necessary to produce a variety of plywood products. Weyerhaeuser Company purchased the facility from Willamette Industries in 2003 and an Administrative Amendment was issued on March 13, 2003 to change the ownership of the facility. PSP purchased the facility in 2007 and the name change was incorporated with the renewal.

#### FACILITY DESCRIPTION

- Activities at the Pacific States Plywood- Springfield plywood mill include log processing, veneer peeling, veneer drying, and plywood pressing and finishing. Logs brought to the facility are sorted and stacked in the logyard. Logs are debarked in one of two debarkers, cut to length, and softened in steam vats. As of this renewal, the facility is not running the green end and is buying bark from off-site. Steam to the steam vats is provided by a boiler fired on natural gas or, during natural gas curtailments, diesel. The softened blocks are peeled on a lathe, and the green veneer produced is sorted by grade and size. The green veneer may be either placed in storage or sent directly to the two veneer dryers. The dryers are direct-heated by a Wellons fuel cell fired on hogged fuel primarily produced by on-site operations. The dryers are also fired on natural gas during fuel cell downtime and to provide supplemental heating. Resin is applied to the dried veneer and plies of veneer are pressed into panels. Steam to the press is provided by a boiler fired on natural gas, or propane during natural gas curtailments. Plywood from the presses is finished by trimming to size. A portion of the production is milled, producing tongue and groove edges and/or patched and sanded. Finished plywood is graded, packaged, and stenciled before shipment by rail or truck.
- The facility operates 8,760 hours per year (7 days/week, 24 hours/day, 365 days/year).

#### EMISSIONS UNIT AND POLLUTION CONTROL DEVICE IDENTIFICATION

The emissions units at this facility are the following:

- The Boilers-1 emission unit includes both boilers at the facility. Boiler #1 burns natural gas with diesel fuel as a back up to generate steam. The boiler is a fire box boiler and manufactured by Kewanee. The boiler was installed in 1975. No modification or reconstruction has been made to this boiler since the installation. The rated capacity of the boiler is 26 MM Btu/hr. Boiler #2 burns natural gas with propane as a back up to generate steam. Boiler #2 is a fire tube boiler and manufactured by Cleaver Brooks. The boiler was installed in 1970. No modification or reconstruction has been made to this boiler since the installation. The rated capacity of the boiler is 5.23 MM Btu/hr.

10. The Cell-1 emission unit consists of the fuel cell start-ups, which are done using a bypass vent to avoid a surge overload to the wet ESP. The Wellons fuel cell burns hogged fuel using the dutch oven firing method, and during normal operation, the exhaust gases pass through the dryer and then into the wet ESP. The fuel cell was installed in 1985 and has a rated capacity of 26 MM Btu/hr.
11. The Dryers-1 emission unit includes the stack emissions from the wet ESP controlling particulate matter from both veneer dryers. Dryer #1 is a Prentice veneer dryer, with longitudinal decks, directly heated by the fuel cell, or by two natural gas burners (total rating of 30 MM Btu/hr). This dryer, which has 6 decks in one zone, was installed in 1978. Dryer #2 is a Coe veneer dryer, also with 6 longitudinal decks in a single zone, also directly heated by the Wellons fuel cell or two natural gas burners (total 30 MM Btu/hr), installed in 1978. PM from the dryers is controlled by a wet ESP installed in 1997.

The following table summarizes the wet ESP information for the above veneer dryers:

<u>Device Description</u>	<u>ID No.</u>	<u>Manufacturer</u>	<u>Year Installed</u>	<u>Efficiency (%)</u>	<u>Design Air Flow Rate (acfm)</u>	<u>Design Primary And Secondary Current</u>
Wet ESP	ESP	Geo-energy	1997	90	60,000	Primary 132 Amps Secondary 600 mA

12. The Press-1 emission unit is the plywood press which was installed in 1970. The press has a maximum hourly production capacity of 25,600 ft<sup>2</sup>/hr and annual production of 175,000 thousands ft<sup>2</sup>/year.
13. The Vat-1 emission unit includes the steaming vats where the debarked dimensioned logs (bolts) are softened in a hot-water and steam bath prior to being peeled, producing the plywood veneer.
14. The Mat-1 emission unit includes material handling point source devices including the sanderdust and plytrim Cyclone/Baghouse 1, Baghouse 2 (sawdust), Cyclone/Baghouse 3 (sanderdust) and the dry chip bins.
15. The Mat-2 emission unit includes green end materials handling devices including the green end cyclones, the hog fuel bin and silo, and the green chip bins.
16. The Mat-3 emission unit includes fugitive emissions from log preparation (Bamford and Cambio debarkers and the chop saw).

<u>Device Description</u>	<u>Material</u>	<u>Year Installed</u>	<u>Max Rated Design Capacity</u>	<u>Description</u>
Dry waste Cyclone	Plytrim, sawdust and sanderdust	1978	Not known	From trim and panel saws, sander, and tongue and groove machines
Baghouse 2	Sawdust	1995	7947 acfm	From tongue and groove machines
		Before 1974	N/A	

<u>Device Description</u>	<u>Material</u>	<u>Year Installed</u>	<u>Max Rated Design Capacity</u>	<u>Description</u>
Dry Waste Bins (2)	Plytrim, sawdust and sanderdust			From trim and panel saws, sander, and tongue and groove machines
Cyclone/Baghouse 3	Sanderdust	2001	40,000 acfm	From proposed sander
Cyclone-1	Green sawdust and clippings	1988	45,000 acfm	From clipper and green veneer stacker
Cyclone-2	Green sawdust and clippings	1988	45,000 acfm	From clipper and green veneer stacker
Green Chip Bins (2)	Green chips	1973	N/A	From lily pad chipper and from green end chipper
Target Box T-1	Green chips	1973	N/A	From lily pad chipper
Target Box T-2	Green chips	1973	N/A	From green end chipper
Target Box T-3	Green chips	1973	N/A	From lily pad chipper
Target Box T-4	Green chips	1973	N/A	From green end chipper
Hogged Fuel Bin	Hogged fuel and green sawdust	1979	N/A	From Jeffrey hammer hog
Hogged Fuel Silo	Hogged fuel and green sawdust	1985	N/A	From T-5
Target Box T-5	Hogged fuel and green sawdust	1985	N/A	From Jeffrey hammer hog disc screen

17. The AI emission unit is aggregate insignificant activities and consists of the following activities which generate small quantities of VOC emissions: logmarking, resin storage tanks, moisture meter, the plywood patching line, and stenciling and grade stamping.

18. 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 20 through 32, 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
- 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
- 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**

### **Facility Wide Requirements:**

19. The permit contains six (6) conditions that apply to the facility in general (facility-wide limits and standards). These include a requirement that reasonable precautions be used to prevent particulate matter from becoming airborne. Monitoring associated with this requirement includes periodic plant-wide visible emission surveys. If visible emissions are detected during the surveys, the permittee is required to take corrective action or perform a Modified Method 9 test.
20. The permittee is prohibited from using #2 fuel oil containing more than 0.5 percent by weight sulfur. Monitoring of compliance with this requirement is required to be done using vendor sulfur analyses or certification, or testing performed by the permittee.
21. The permittee is prohibited from creating a nuisance from odorous material or fugitive emissions. Monitoring associated with this requirement includes maintaining a record of all complaints received, and prompt investigation and resolution of complainants' issues.
22. The permittee is prohibited from emissions of particulate matter greater than 250 microns in size if the PM can deposit on others' property. The visible emission surveys and corrective action required to prevent particulate matter from becoming airborne are considered adequate monitoring for this condition.
23. The permittee is prohibited from masking or concealing emissions without otherwise controlling them. Periodic compliance inspections by LRAPA staff and semi-annual compliance certifications from the permittee are considered adequate monitoring to ensure compliance with this requirement.
24. The facility is subject to emission reduction procedures in the event of an air pollution episode declaration. The permittee is required to monitor compliance with this requirement by maintaining a record of episodes declared and reduction methods used.

### **Specific Emission Unit/Pollution Control Device Requirements:**

25. **Boiler Requirements (emission unit Boilers-1):** The Boilers-1 emission unit consists of 2 boilers that were installed before NSPS were applicable. No reconstruction or other boiler retrofit activities have been

implemented by the permittee that would trigger applicability of the NSPS to these boilers. The boilers are subject to visible emissions and particulate concentration limits. Required monitoring of compliance with the visible emissions limit is visual observations required on a monthly frequency initially, then quarterly if 4 months of observations indicate the boilers are not a problem. Records of the observations are required. The concentration limit (0.1 grain/dry standard cubic foot) will be monitored by a combination of the visible emissions monitoring, fuel composition limits, and boiler capacity. Theoretical calculations of the concentration of particulate matter in a diesel-fired boiler (worst-case fuel requested by the permittee) show that the maximum concentration expected is about 1/10<sup>th</sup> of this limit.

26. **Fuel Cell Startup Requirements (emission unit Cell-1):** The Cell-1 emission unit consists of the Wellons fuel-cell during periods of start-up. The procedure used by the permittee is to bypass the dryers and wet ESP during start-up long enough to achieve stable combustion in the cell. This operating mode is subject to visible emission limits (<20 % opacity) and to the particulate matter concentration limit (<0.1 grain/dry standard cubic foot). Monitoring for these applicable requirements includes visible emission observations each time the bypass stack is used and a limit on the moisture content of hog fuel that may be used during start-up.
27. **Dryers 1, 2 Stack Emissions Requirements (emission unit Dryers-1):** The Dryers-1 emission unit includes both veneer dryers at the facility. Applicable requirements include LAER requirements for particulate matter, an exhaust particulate matter concentration limit (0.1 grains/dry standard cubic foot), a specific visible emission limit for veneer dryers, operational requirements for pollution control equipment, and a limit on particulate matter mass emissions specific to veneer dryers (allowable particulate matter emissions according to production rate). The LAER requirement is that the permittee is required to demonstrate 90 percent or better control efficiency for the particulate matter emissions from the veneer dryers. The wet ESP used to control veneer dryer emissions has been tested and demonstrated 92 percent control efficiency, and one additional source test is required during the permit term for this emission unit. The source test will be used to verify compliance with the concentration limit and the particulate matter emission limit based on production. Operational requirements for the wet ESP will be established, and emission action level ranges (ESP exhaust temperature ranges) will be used to monitor the operating condition of the wet ESP. Periodic visible emission observations are required to determine compliance with the veneer dryer opacity limits.
28. **Dryers 1, 2 Fugitives Requirements (emission unit Dryers-2):** The Dryers-2 emission unit includes fugitive emissions from the veneer dryers. Applicable requirements include the fugitive emission rule that requires that reasonable precautions are used to prevent particulate matter from becoming airborne, and the visible emissions limit (<20 % opacity). The permittee is required to include the dryer area in the facility-wide visible emission survey and to take immediate corrective action or perform a modified method 9 to monitor compliance with these requirements.
29. **Press Requirements (emission unit Press-1):** The Press-1 emission unit consists of the plywood press. The applicable requirement for this emission unit is the visible emission limit (<20 % opacity). Periodic visible emissions observations are required to monitor compliance with this applicable requirement.
30. **Steaming Vat Requirements (emission unit Vat-1):** The Vat-1 emission unit consists of the steaming vats where bolts are softened prior to peeling them into veneer. The vats are a potential source of VOC, and are identified in the permit for that reason. The applicable requirements for these devices include reasonable precautions to prevent airborne fugitive dust and the visible emission limit (<20 % opacity). The permittee is required to include the area of the vats in the facility-wide visible emission surveys to monitor compliance with these applicable requirements.
31. **Material Handling Group 1 and Material Handling Group 2 Requirements (emission unit Mat-1 and Mat-2):** The Mat-1 and Mat-2 emission units include all of the non-fugitive materials handling equipment at the facility. This includes cyclones, baghouses, wood fuel and chip bins, and silos. The applicable requirements for

this equipment include the old favorites, visible emission limits and particulate matter concentration limits. Periodic visible emission observations are required to monitor compliance with the visible emission limit. The permittee is required to prepare an inspection and maintenance manual for use in ensuring compliance with the concentration limit. Periodic inspection and maintenance of cyclones and baghouses combined with the required visible emission observations will ensure their compliance with the concentration limit.

32. **Materials Handling Group 3 Requirements (emission unit Mat-3):** The Mat-3 emission unit includes the chop saw and debarkers. The applicable requirements include reasonable precautions to prevent particulate matter from becoming airborne, and the visible emission limitation. Monitoring of compliance for these applicable requirements will include periodic visible emission surveys and corrective action or modified method 9 testing.
33. **Unpaved Roads Requirements (emission unit Roads-U):** The Roads-U emission unit includes all unpaved areas of the facility, primarily the log yard. Applicable requirements for this unit include that the permittee shall take reasonable precautions to prevent particulate matter from becoming airborne, and that visible emissions not exceed 20 %. Periodic visible emission surveys are required to monitor compliance with these requirements.

#### **PLANT SITE EMISSION LIMITS**

34. In accordance with LRAPA 34-060(5)(A), the PSEs in the permit will be based on projected operating conditions and applicable controls, as reflected in the permit application. In addition, an alternate operating scenario was created to ensure that emission changes occurring during start-up and debugging of the control equipment required in the Consent Decree between Willamette Industries, Inc. and USEPA are accounted for.

34.a. The following table contains the production parameters assumed for the PSEL calculations.

<u>Emission Unit</u>	<u>Process Parameter</u>	<u>Daily Throughput</u>	<u>Annual Throughput</u>	<u>Units</u>
Boilers	Gas Usage	1.44	271.8	MMCF NG
Keweenaw Boiler	No. 2 Fuel Oil usage	8	111.6	1000 gallons
Cleaver Brooks Boiler	Liquid Propane Gas Usage	1.08	33.48	1000 gallons
Dryers	Dried Veneer	576	170,000	M sq. ft. 3/8"
Dryers, Fuel Cell	Hog Fuel Usage	111	33,638	Bone dry tons
Press	Pressed Product	614.4	170,000	M sq. ft. 3/8"
Steam Vats	Steam Vats	870	170,000	M sq. ft. 3/8"
Mat-1 Dry Chip Cyclone/ Baghouse #1	Plytrim	57	13,667	Bone dry tons
Mat-1 Dry Chip Cyclone/ Baghouse #1	Sanderdust	4	882	Bone dry tons
Mat-1 Baghouse #2	Sawdust	5	1,176	Bone dry tons
Mat-1 Cyclone/Baghouse 3	Sanderdust	5	1,200	Bone dry ton
Mat-1 Dry Chip Bin	Plytrim/Sanderdust	71	16,925	Bone dry tons
Mat-2 Green End Cyclones	Green Chips	12	3,135	Bone dry ton,
Mat-2 Hog Fuel Bin	Hog Fuel	31	7,514	BDT
Mat-2 Green Chip Bins	Green Chip	124	31,351	BDT
Mat-2 Hog Fuel Silo	Hog Fuel	111	33,638	BDT
Mat-3 Debarkers	Logs	551	115,000	Cunits logs
Mat-3 Chopsaw	Logs	551	115,000	Cunits logs

35. The monthly short-term plant site emissions shall not exceed the following [LRAPA 34-060 (4) and 34-060 (5)]:

Emissions Unit ID Number	Pollutant	Short-Term PSEL	Units
Plantwide: includes emissions units Boilers-1, Dryers-1, Dryers-2, Cell-1, Press-1, Vat-1, Mat-1, Mat-2, Mat-3, Roads-U, and AI	PM	12,100	lb/month
	PM <sub>10</sub>	7,600	lb/month
	CO	30,500	lb/month
	NO <sub>x</sub>	10,500	lb/month
	SO <sub>2</sub>	1,100	lb/month
	VOC	6,800	lb/month

36. The annual plant site emissions (tons/year) for the entire facility (Plant 1) shall not exceed the following [LRAPA 34-060(4) and 34-060(5)]:

Emissions Unit ID Number	Pollutant	Long-Term PSEL	Units
Plantwide: includes emissions units Boilers-1, Dryers-1, Dryers-2, Cell-1, Press-1, Vat-1, Mat-1, Mat-2, Mat-3, Roads-U, and AI	PM	55	tons/year
	PM <sub>10</sub>	34	tons/year
	CO	138	tons/year
	NO <sub>x</sub>	47	tons/year
	SO <sub>2</sub>	5	tons/year
	VOC	31	tons/year
	Pb	0.03	tons/year
	HAPs	9-single, 24-total	tons/year

37. The attachment to this report contains the emission detail sheets that were used for calculations of the PSELs.

**Baseline Emission Rates (BERs) and Significant Emission Rate (SER) Comparison**

38. Baseline emission rates from the table below represent estimated actual emissions from 1977 (Except for Carbon Monoxide, which was set at a netting baseline of 138.57 tons per year in 1997 when Willamette Industries performed PSD/NSR analyses for CO. The BER (tons per year) for the source are:

Pollutant	Baseline Emissions (tons/year)	Proposed PSEL (tons/year)	Increase From Baseline (tons/year)	SER (tons/year)
PM	92	55	-37	25

<u>Pollutant</u>	<u>Baseline Emissions (tons/year)</u>	<u>Proposed PSEL (tons/year)</u>	<u>Increase From Baseline (tons/year)</u>	<u>SER (tons/year)</u>
PM <sub>10</sub>	51	34	-17	15
CO	139	138	-1	100
NO <sub>x</sub>	10	47	+37	40
VOC	15	5	-10	40
SO <sub>x</sub>	0.3	31	+31	40
Pb	2.45 E-05	0.03	+0.03	0.6

**HAZARDOUS AIR POLLUTANTS**

39. Facility actual emission estimates of hazardous air pollutants are included in the attached emission detail sheets. The permit contains the typical synthetic minor HAP limitation amounts for HAPs: 9 tons/year for any single HAP and 24 tons/year for any combination of HAPs. Methanol is the single HAP for which the facility has the potential to emit greater than 10 tons/year and tracking of Methanol emissions has been deemed sufficient to ensure compliance with the synthetic minor HAP limitations. As a synthetic minor source of HAPs, the facility is not subject to any major source National Emission Standard for Hazardous Air Pollutants (NESHAP) including the Plywood & Composite Wood Products NESHAP.

**GENERAL BACKGROUND INFORMATION**

40. Willamette Industries, Inc. has operated a plywood manufacturing facility at 419 South 28<sup>th</sup> Street in Springfield, Oregon since early 1970. Records indicate that the press and one gas fired boiler were installed in January of 1970. Equipment has been added since 1970 to increase production and streamline the operation. Veneer dryers were added in 1978. In 1985, the direct gas-fired dryers were converted to utilize a wood-fired fuel cell that had been installed that year. Exceedances of the SER for PM and PM10 related to the fuel cell addition were discovered by LRAPA and corrected when Willamette installed a wet ESP to control the exhaust from the dryers (indirectly, the exhaust from the fuel cell). In 1997, EPA determined that there were historical PSD issues at this facility in the process of EPA’s wood products industries enforcement initiative. A consent decree between USEPA and Willamette Industries, Inc. was signed November 2, 2000, to resolve the alleged PSD violations. The Consent Decree requires VOC control and CO control or offsets for the Willamette Springfield veneer dryers. The selected control strategy is a regenerative thermal or catalytic oxidizer to be installed in series following the wet ESP on the dryer exhaust.

**COMPLIANCE HISTORY**

Facility Enforcement History

41. On December 8, 1994, the facility was issued a notice of permit violation (NPV Number 94-73) for excessive visible emissions from the diesel backup-fired boiler (boiler #1). The facility corrected the problem and subsequent inspections showed that the facility was in compliance.

42. On July 22, 1994, EPA issued a request for information (a Section 114 Information Request) to Willamette Industries related to its facilities nationwide and including the Willamette Springfield plywood operation. The Section 114 request was issued as part of EPA's investigation of potential NSR/PSD violations in the wood products industry. The 114 request sought information on production, equipment modifications, and emissions data to determine if modifications to the facility increased emissions above the threshold quantities (Significant Emission Rates or SERs) that required review under the NSR or PSD regulations. EPA has tentatively concluded that facility modifications in the period between the baseline year of 1978 and 1983, when the facility modernized the green end (the initial portions of the operation from the log yard through veneer peeling), exceeded the SER for particulate matter. In the period between baseline and 1986 (the year following the conversion of the veneer dryer heat source from natural gas fuel to a direct-heat wood-fired fuel cell) SERs for carbon monoxide and VOC were also exceeded. In the period from 1989 to the present time, actual emissions of all pollutants at this facility have remained constant or gone down slightly. Particulate matter emissions were significantly reduced upon installation of a wet electrostatic precipitator (WESP) on the dryer exhaust (in accordance with LRAPA's SFO 1142). The WESP was operational as of 5/30/1997. Carbon monoxide increases over the SER were addressed by Willamette with a best available control technology (BACT) analysis and an air quality impact analysis. LRAPA received these analyses, but postponed approval to allow EPA's enforcement action to proceed.
43. On September 14, 1995, as a result of information discovered during preparation of a Title V permit application, Willamette Industries, Inc. voluntarily reported to LRAPA that modifications done to the green end process, the fuel cell and the plywood press were performed without undergoing the required review and issuance of a New Source Review and/or Prevention of Significant Deterioration permits from LRAPA. Further, the rate of emissions of particulate matter and CO from the fuel cell was greater than that allowed by LRAPA's Rules and Regulations. LRAPA issued Notice of Non-Compliance Number 1142 on October 9, 1995 to Willamette Industries, Inc. for violating LRAPA Title 38 and 33, specifically Sections 38-010, 38-015, 38-020, and 33-060, ordering Willamette Industries, Inc. to take steps to return the operation to compliance.
44. On December 6, 1995, Willamette Industries, Inc. submitted a proposed schedule to install emissions reduction equipment to comply with applicable emission limits of Section 33-060 for veneer and plywood manufacturing operations and the NSR/PSD rules in Title 38. In a Stipulated Final Order (SFO 1142) issued July 29, 1996, Willamette Industries, Inc. agreed to install particulate matter emission reduction equipment and pay to LRAPA a civil penalty in the amount of sixty-five thousand four hundred dollars (\$65,400). This amount was based on estimates provided by Willamette Industries, Inc. of specific operations and maintenance costs which had been avoided by not installing emission control equipment as would have been required under NSR procedures.
45. LRAPA agreed that by installing the emission reduction equipment, Willamette Industries, Inc. would provide sufficient particulate matter emission reductions, which when taken together with previous decreases would satisfy the NSR/PSD requirements of Title 38 for providing offsets for particulate matter emissions increases from modifications discussed in the Notice of Non-compliance.
46. Willamette Industries, Inc. has paid all civil and stipulated penalties pursuant to SFO 1142 in full, installed a wet ESP for control of particulate matter from the veneer dryers, and conducted testing on August 14, 1997, to verify emissions. LRAPA determined that Willamette Industries, Inc. has complied with the terms of SFO 1142. The results of the test reflect a control efficiency for particulate matter of 90%.
47. EPA and Willamette Industries, Inc. have continued to negotiate an agreement on the nature and extent of the NSR/PSD violations at the plywood facility. The law requires that resolution of the violations includes BACT for the pollutants in areas in attainment of the ambient air quality standards for those pollutants, LAER and offsets for pollutants in areas that do not attain the Federal ambient air quality standards. In addition, major sources or major modifications are required to demonstrate that the projects do not contribute to impaired visibility in Class I areas. LRAPA elected not to join EPA in its investigation of Willamette, instead relying on

the assurance that Willamette will be required to satisfy the above requirements. This Title V permit includes an alternate operating scenario with PSELs specific for the period of start-up and debugging of an RTO to be installed to resolve the alleged violations.

**SOURCE TEST RESULTS**

48. The following tests have been performed at this facility:

<u>Emission Point</u>	<u>Date of Test</u>	<u>Results of Test</u>	<u>Units</u>
Veneer Dryer #1	9/4-5/80 and 10/9/80	0.97 (PM) 2.95 (PM)(9/4) 3.48 (PM)(10/9)	lb/hr (green end) lb/hr (dry end) lb/hr (dry end)
Veneer Dryer #2	9/5/80	2.60 (PM)	lb/hr
Boiler (Oil-fired)	7/86	3.5 (PM)	lb/hr
Gas-fired Boiler	2/10/87	0.27 (PM) 3.9 (CO)	lb/hr lb/hr
Veneer Dryers #1, 2	8/9/94	38.1 (PM) 71.4 (CO) 6.1 (NO <sub>x</sub> ) 21.6 (VOCs)	lb/hr lb/hr lb/hr lb carbon/hr
Veneer Dryers #1, 2	6/21/95	39.4 (PM) 80.1 (CO) 8.2 (NO <sub>x</sub> ) 15.9 (VOCs)	lb/hr lb/hr lb/hr lb carbon/hr
Veneer Dryers #1, 2 ESP	8/14/97	3.1 (PM) 71.2 (CO) 2.8 (NO <sub>x</sub> ) 13.1 (VOCs)	lb/hr lb/hr lb/hr lb carbon/hr
Veneer Dryer #2, Natural Gas, Uncontrolled	6/1/98	5.1 (PM) 4.2 (CO) 1.0 (NO <sub>x</sub> ) 5.32 (VOCs)	lb/hr lb/hr lb/hr lb carbon/hr
Veneer Dryer #1, Natural Gas, Uncontrolled	6/2/98	4.3 (PM) 1.0 (CO) 0.3 (NO <sub>x</sub> ) 3.77 (VOCs)	lb/hr lb/hr lb/hr lb carbon/hr
Sander/Baghouse #1	6/8/06	0.001 (Formaldehyde) 0.006 (Methanol) 0.051 (VOC as propane)	(lb/MSE, 3/8") (lb/MSE, 3/8") (lb/MSE, 3/8")
Lay-Up Line Exhaust Fan	6/8/06	0.0011 (Formaldehyde) 0.007 (Methanol) 0.010 (VOC as propane)	(lb/MSE, 3/8") (lb/MSE, 3/8") (lb/MSE, 3/8")
PrePress & Hot Press Exhaust Duct	6/8/06	0.003 (Formaldehyde) 0.043 (Methanol) 0.048 (VOC as propane)	(lb/MSE, 3/8") (lb/MSE, 3/8") (lb/MSE, 3/8")
PrePress & Hot Press Capture Efficiency	6/8/06	85.7%	Percent capture efficiency

**PUBLIC NOTICE**

49. This permit was on public notice from May 7, 2008 to June 6, 2008. No comments were submitted in writing during the comment period.
50. This proposed permit was sent to EPA on July 11, 2008, for a 45-day re view period. Because there were no substantive changes to the permit after the public comment period, LRAPA requested and EPA may agree to an expedited review of five (5) days. 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.

MAX/cmw  
7/29/08