

**LANE REGIONAL AIR POLLUTION AUTHORITY (LRAPA)  
TITLE V OPERATING PERMIT REVIEW REPORT**

Willamette Industries, Inc.  
22833 Vaughn Road  
Veneta, OR 97487

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**PERMITTEE IDENTIFICATION**

1. Willamette Industries, Inc. owns and operates a laminated beam manufacturing facility located on 22833 Vaughn Road in Veneta, Oregon.

**FACILITY DESCRIPTION**

2. Rough green lumber is brought to the facility via truck or rail car. All rough green lumber is sent to the steam heated kilns for drying. The dry lumber is trimmed, planed, graded and scarfed before finger jointing. Trim ends are chipped in a hog and combined with sawdust for sale. The boards are then sent to the lam plant for finger jointing and radio frequency tunnel for curring. After boards are cut to length, resin glue is applied to each lam of the beam just prior to placing them in another radio frequency press. After the pressing, the laminated beams are planed, patched, cut to length and sanded. The finished laminated beams are wrapped and shipped offsite. Raw materials, including resin glue, patching material, paints, inks, and solvents, come from offsite. All steam used onsite is supplied by a hogged fuel (such as bark, wood waste, resin waste, oil rags, oil booms, and Duracubes) fired boiler. Most of the hogged fuel comes from offsite. Waste solvents are shipped from the facility for recycle.

**OPERATING SCENARIO**

3. The facility has one operating scenario.

**EMISSION UNIT AND CONTROL DEVICE IDENTIFICATION**

4. Hogged fuel boiler (Boiler-1) burns hogged fuel and duracubes to generate steam. The boiler is a dutch oven boiler, manufactured by M.A. Roberts & Company. The boiler was installed in 1952. No modification or reconstruction has been made to this boiler since installation. The rated design capacity of the boiler is 35 MM Btu/hr. The hogged fuel fired boiler is controlled by a multiclone.
5. Wood Drying Kilns (Kiln-1): There are 12 kilns and all kilns were installed between 1945 to 1962. The kilns are heated by steam.
6. Laminated beam glue (Lam-G): Glue/Resin Storage and application was installed in December 1989.
7. Laminated beam material balance (Lam-M): The laminated beam process was installed in 1989. Material balance is used to estimated VOC emitted by the process.
8. Material Hogged Pile (Pile-1): The dimensions of the storage pile are as shown below:

Pile length (ft)=	60	pile volume (ft <sup>3</sup> )=	84,000
Pile width or dia. (ft <sup>2</sup> )=	100	top surface area (m <sup>2</sup> )=	557
Pile height (ft)=	14	vertical area (m <sup>2</sup> )=	416
9. Paved road (Roads-P): Includes the vehicular traffic on paved roads around the plant that cause fugitive particulate matter emissions. The vehicles include automobiles, pickups, golf carts, backhoe, unloader, forklifts, resin trucks, and misc. vehicles.
10. Unpaved road (Roads-U): Includes the vehicular traffic on unpaved roads around the plant that cause

fugitive particulate matter emissions. The vehicles include employee vehicles, pickups, forklifts, and front-end loader.

11. Aggregate Insignificant (EU-AI): Aggregate Insignificant emissions include 4 baghouses as described below:

Device Description	ID number	Year installed	Manufacturer	Design air-to-cloth ratio	Number of bags	Design pressure drop (in. of water)
Baghouse 1	B1	1988	Carter-day	4.3:1	72	1
Baghouse 2	B2	1988	Carter-day	8:1	144	1
Baghouse 3	B3	1990	Pneumafil	8:1	312	1
Baghouse 4	B4	1994	Western Pneumatic	5:1	630	1

12. Plant-1 includes emissions units Boiler-1, Kiln-1, Lam-G, Lam-M, Roads-U, Piles-1 and Roads-P for the purpose of the annual plant site emissions limit (PSEL).
13. Plant-2 includes emissions units Boiler-1, and Kiln-1 for the purposes of the daily short term PSEL.
14. Plant-3 includes emissions units Lam-G, Lam-M, Piles-1, Roads-U, and Roads-P for the purposes of the monthly short term PSEL.

**CATEGORICALLY INSIGNIFICANT ACTIVITIES**

15. Willamette Industries, Inc. has the following categorically insignificant activities on site:
- ! Constituents of a chemical mixture present at less than 1% by weight of any chemical or compound regulated under Divisions 20 through 32 of this chapter, 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
  - ! 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 or ozone depleting substances regulated under Title VI, including pressure tanks used in refrigeration systems but excluding any combustion equipment associated with such systems
- ! Temporary construction activities
- ! Warehouse activities
- ! Accidental fires
- ! Air vents from air compressors
- ! Air purification systems
- ! Demineralized water tanks
- ! Electrical charging stations
- ! Fire brigade training
- ! Process raw water filtration systems
- ! 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
- ! Log ponds
- ! Fire suppression and training
- ! 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
- ! Ash piles maintained in a wetted condition and associated handling systems and activities

**AGGREGATE INSIGNIFICANT EMISSIONS**

16. The emissions from the activities included in the aggregate insignificant emissions are as follows:

Emissions source	Pollutants (lbs/yr)	
	PM	PM <sub>10</sub>
Baghouse 1 sanderdust/sawdust shavings	140 4	60 2
Baghouse 2 shavings	12	6
Baghouse 3 sanderdust/sawdust shavings sanderdust (backup No.1 sander)	140 4 4	60 2 2
Baghouse 4 shavings	12	6
Resin Mixing Room resin dust	0.2	0.1
Totals	316.2	138.1

**EMISSION LIMITS AND STANDARDS**

**ACDP CONDITIONS**

17. The following conditions do not appear in the federal operating permit as they existed in the ACDP because of reasons given below:

ACDP 200550 Condition #1: Willamette Industries Inc. has requested that this condition be removed because plant wide PSEs should be removed in anticipation of the limits established by LRAPA for the Title V operating permit.

The change has been approved for the reason given.

ACDP 200550 Condition #1 (Plywood plant): Willamette Industries Inc. has requested that this condition be removed because the plywood plant is no longer in operation.

The change has been approved for the reason given.

ACDP 200550 Condition #1 (Boiler): Willamette Industries Inc. has requested that this

condition be removed because plant wide PSEs should be removed in anticipation of the limits established by LRAPA for the Title V operating permit.

The change has been approved for the reason given.

ACDP 200550 Condition #1 (Sawmill): Willamette Industries Inc. has requested that this condition be removed because the sawmill plant no longer exists.

The change has been approved for the reason given.

ACDP 200550 Condition #2: Willamette Industries Inc. has requested that this condition be changed because the wording is not identical to the rule.

The change has been approved for the reason given.

ACDP 200550 Condition #3: Willamette Industries Inc. has requested that this condition be changed because the wording is not identical to the rule.

The change has been approved for the reason given.

ACDP 200550 Condition #4: Willamette Industries Inc. has requested that this condition be removed because veneer dryers and associated equipment no longer operate.

The change has been approved for the reason given.

ACDP 200550 Condition #5: Willamette Industries Inc. has requested that this condition be changed because the wording is not identical to the rule.

The change has been approved for the reason given.

ACDP 200550 Condition #6: Willamette Industries Inc. has requested that this condition be changed because the wording is not identical to the rule.

The change has been approved for the reason given.

ACDP 200550 Condition #7: Willamette Industries Inc. has requested that this condition be changed because the rule should be specific to each emissions unit.

The change has been approved for the reason given.

ACDP 200550 Condition #8: Willamette Industries Inc. has requested that this condition be removed because there is no reason to limit the production in Title V. The time period noted has passed.

The change has been approved for the reason given.

ACDP 200550 Condition #9: Willamette Industries Inc. has requested that this condition be removed because the time period noted has passed.

The change has been approved for the reason given.

ACDP 200550 Condition #10: Willamette Industries Inc. has requested that this condition be removed because the compliance schedule date has passed.

The change has been approved for the reason given.

ACDP 200550 Condition Other 1, 2, 3, 4, 5, and 6: Willamette Industries Inc. has requested that these conditions be changed, because the wordings are not consistent with the rule.

The changes have been approved for the reason given.

ACDP 200550 Condition Monitoring and Reporting 1: Willamette Industries Inc. has requested that this condition be changed, because the wording is not consistent with the rule.

The change has been approved for the reason given.

ACDP 200550 Condition Monitoring and Reporting 2: Willamette Industries Inc. has requested that this condition be changed, because recordkeeping and reporting requirements should be revised to meet the Title V operating permit requirements.

The change has been approved for the reason given.

ACDP 200550 Condition Monitoring and Reporting 2A: Willamette Industries Inc. has requested that this condition be removed, because the sand filter is no longer in operation.

The change has been approved for the reason given.

ACDP 200550 Condition Monitoring and Reporting 2B, 2C, 2D, 2E, and 2F: Willamette Industries Inc. has requested that this condition be changed, because recordkeeping and reporting requirements should be revised to meet the Title V operating permit requirements.

The change has been approved for the reason given.

ACDP 200550 Condition Fee Schedule 1: Willamette Industries Inc. has requested that this condition be removed, because ACDP fees will be replaced by Operating Permit fees.

The change has been approved for the reason given.

ACDP 200550 Condition Fee Schedule 2: Willamette Industries Inc. has requested that this condition be removed, because the requirement to have copies of the ACDP application and permit available and the ACDP to be posted will be replaced by similar requirements for the Operating Permit and application.

The change has been approved for the reason given.

**PLANT SITE EMISSION LIMIT (PSEL) INFORMATION**

ORIGINAL PLANT SITE EMISSION LIMIT

18. Baseline Operating Schedule

- a. Plywood lay up: 24 hrs/day x 7 days/wk x 46 wks/yr = 7,728 hrs/yr
- b. Boiler: 24 hours/day x 7 days/week x 46 weeks/year = 7,728 hrs/yr
- c. Veneer dryers: 24 hours/day x 7 days/week x 46 week/year = 7,728 hrs/yr

19. The baseline production rates were as follows:

Production or process parameter		Rate	Units
Plywood (3/8" basis)	Annual production	72.0	MMSF - 3/8" basis
Veneer dried	Annual veneer dried	72,000	MSF - 3/8" basis
Boiler 1	Annual amount of steam generated	772.8	1000 lbs of steam

20. Baseline emissions rates (tons/yr):

Emissions unit ID	PM	PM <sub>10</sub>	CO	NO <sub>x</sub>	SO <sub>2</sub>	VOC	Pb
Hogged Fuel Boiler 1	30.9	15.4	173.9	44.0	1.4	3.4	0.0068
Hogged Fuel Boiler 2	80.1	40.0	115.9	29.4	0.9	2.2	0.0038
Hogged Fuel Boiler 3	80.1	40.0	115.9	29.4	0.9	2.2	0.0038
Hogged Fuel Boiler 4	50.4	25.2	255.0	28.2	1.4	4.2	0.0058
Kilns	4.9	4.9	0.7	NA	NA	58.1	NA
Veneer Dryer 1	9.3	9.3	NA	NA	NA	5.8	NA
Veneer Dryer 2	9.3	9.3	NA	NA	NA	5.8	NA
Sawmill/Planer cyclones	10.6	10.6	NA	NA	NA	NA	NA
Plywood press 1	NA	NA	NA	NA	NA	0.4	NA
Plywood press 2	NA	NA	NA	NA	NA	0.5	NA
Plywood Cyclones/baghouses	Negl.	Negl.	NA	NA	NA	NA	NA
Paved Roads	81.6	16.3	NA	NA	NA	NA	NA
Unpaved Roads	10.2	3.6	NA	NA	NA	NA	NA
Hogged Pile	0.1	0.1	NA	NA	NA	4.7	NA

Emissions unit ID	PM	PM <sub>10</sub>	CO	NO <sub>x</sub>	SO <sub>2</sub>	VOC	Pb
Total	367.5	174.7	661.4	131.0	4.6	87.3	0.02

**CURRENT PLANT SITE EMISSIONS LIMITS**

21. The plant can be operated as much as 24 hours per day, 7 days per week, and 52 weeks per year.
22. The production rates used for determining the current PSELS are less than the baseline production and are as follows:

Production or process parameter	Period	Rate	Units
Laminated beam production	Annual	90,000,000	BF
	Max daily	400,000	BF

23. The current annual PSEL (tons/yr) is shown below:

Emissions unit ID	PM	PM <sub>10</sub>	CO	NO <sub>x</sub>	SO <sub>2</sub>	VOC	Pb
Boiler-1	165.1	82.8	230.0	66.7	1.9	4.4	0.008
Kiln-1	5.5	5.5	0.7	NA	NA	66.0	NA
Laminated beam glue (Lam-G)	NA	NA	NA	NA	NA	4.1	NA
Laminated beam material balance (Lam-M)	AI	AI	NA	NA	NA	15.6	NA
Roads-P	104.1	20.3	NA	NA	NA	NA	NA
Roads-U	5.3	1.9	NA	NA	NA	NA	NA
Pile-1	0.1	Negl.*	NA	NA	NA	1.9	NA
Aggregate Insignificant	1.0	1.0	NA	NA	NA	1.0	NA
Unassigned	136.8	83.1	430	64.3	2.7	NA	0.012
Total	417.9	194.6	660.7	131.0	4.6	93.0	0.02

AI Aggregate Insignificant  
 NA Not applicable  
 \* less than 0.1 tons/yr

24. The current short term daily PSEL (lb/day) for emissions unit Facility 2 is shown below:

Emissions unit ID	PM	PM <sub>10</sub>	CO	NO <sub>x</sub>	SO <sub>2</sub>	VOC
Boiler-1	907.2	453.6	1,260	561.1	11.2	24.4
Kiln-1	120.6	120.6	16.2	NA	NA	1,449.9
Total	1,027.8	574.2	1,850.4	561.1	11.2	1,474.3

25. The current short term daily PSEL (lb/month) for emissions unit Facility 3 is shown below:

Emissions unit ID	PM	PM <sub>10</sub>	CO	NO <sub>x</sub>	SO <sub>2</sub>	VOC	Pb
Plant-3 Lam-M, VOC Lam-G, VOC Roads-P, PM/PM <sub>10</sub> Roads-U, PM/PM <sub>10</sub> Piles-1, PM/PM <sub>10</sub> , VOC	31,591.0	6,424.4	NA	NA	NA	5,737.6	NA

**SIGNIFICANT EMISSION RATE**

26. The Plant Site Emission Limit increase over the baseline emissions is less than the Significant Emission Rate (SER) as defined in OAR 340-028-0110 (105) for VOC as shown below. No further air quality analysis is required for these pollutants.

Pollutant	Baseline emissions (tons/yr)	Proposed PSEL (tons/yr)	Increase from baseline (tons/yr)	SER (tons/yr)
Particulate, PM	367.5	367.5	0.0	25
Particulate, PM <sub>10</sub>	174.7	174.7	0.0	15
CO	661.4	661.4	0.0	100
NO <sub>x</sub>	131.0	131.0	0.0	40
VOC	87.3	93.0	+ 5.7	40
SO <sub>x</sub>	4.6	4.6	0.0	40
Pb	0.02	0.02	0.0	0.6

**HAZARDOUS AIR POLLUTANTS**

27. The facility has the potential to be a major HAP source.

**TOXIC AND FLAMMABLE SUBSTANCE USAGE**

28. The following toxic and flammable substances are used at the facility in the approximate quantities listed below:

CAS Number	Chemical name	Insignificant	1,001-10,000 lbs/yr	10,001-20,000 lbs/yr	20,001-50,000 lbs/yr	> 50,000 lbs/yr
71-73-2	Benzene	x				
92-52-4	Biphenyl	x				
100-41-4	Ethylbenzene	x				
107-21-1	Ethylene Glycol			x		
50-00-0	Formaldehyde		x			
67-56-1	Methanol	x				
78-93-3	Methyl Ethyl Ketone	x				
108-10-1	Methyl Isobutyl Ketone	x				
91-20-3	Naphthalene	x				
108-95-2	Phenol					x
100-42-5	Styrene	x				
108-88-3	Toluene	x				
1330-20-7	Xylene	x				

**STRATOSPHERIC OZONE-DEPLETING SUBSTANCES**

29. The facility does not manufacture, sell, distribute, or use in the manufacturing of a product any stratospheric ozone-depleting substances and the 1990 Clean Air Act, as amended, Sections 601-618, do not apply to the facility except that air conditioning units and fire extinguishers containing Class I or Class II substances must be serviced by certified repairmen to ensure that the substances are recycled or destroyed appropriately.

**MONITORING REQUIREMENTS**

30. 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.

31. 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**

32. This section is provided so that the permittee and LRAPA 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, LRAPA 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 voluntarily 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.

Periodic source testing of the boiler is also required to demonstrate compliance and verify that compliance is achieved while operating within certain specified parameter operating ranges.

#### **RECORDKEEPING REQUIREMENTS**

33. The permit includes requirements for maintaining records of all testing, monitoring, and production information necessary for assuring compliance with the standards and calculating short and long term plant site emissions.

#### **REPORTING REQUIREMENTS**

34. The permit includes a requirement for submitting semi-annual and annual monitoring reports that include semi-annual compliance certifications. Excess emissions are required to be reported to LRAPA immediately as well as in a log book attached to the annual report. Emissions fees reports are required annually.

### GENERAL BACKGROUND INFORMATION

35. The proposed permit is a replacement of an existing Air Contaminant Discharge Permit (ACDP 200550) which was issued on 01/01/83 with a modification issued on 08/05/85. The ACDP was originally scheduled to expire on 12/31/92.
36. Permits issued or required by the Department of Environmental Quality for this source includes a NPDES permit for stormwater and NPDES for log pond discharge.
37. This source is located in an area that is nonattainment for PM<sub>10</sub> pollutant.
38. The source is not located within 100 kilometers of any Class I air quality protection area.

### COMPLIANCE HISTORY

39. The facility was inspected on 04/01/85, 06/20/85, 08/01/86, 10/13/86, 01/07/88, 04/25/88, 08/13/88, 10/21/88, 09/28/94 and 09/16/95 and was found to be in compliance , except 09/16/85 inspection in which veneer dryer/scrubber had an opacity of 40-50% and boiler stack had an opacity of 30-60%. The violation was corrected by 11/11/85. During that time, no complaints were received and no enforcement actions have been taken against this source.

### ADDITIONAL REQUIREMENTS

40. This source is not currently subject to federal regulations for New Source Performance Standards (NSPS).
41. This source is not currently subject to federal regulations for New Source Review/Prevention of Significant Deterioration (PSD).

### PUBLIC NOTICE

42. The draft permit was placed on public notice from 04/08/97 through 05/08/97. No public comments were received during the 30-day comment period. Comments were received by Willamette Industries, Inc. and EPA. LRAPA's response to Willamette Industries, Inc.'s comment and EPA's comment are provided below:

Willamette Industries, Inc. Comment: The analytical test was conducted on the resin waste, oil rags, and oil booms. The analytical results indicates that these materials are non-hazardous waste and the BTU values are between 7,050 - 12,300 BTU/lb. Therefore, Willamette Industries, Inc. requests the facility description in the review report to read:

...All steam used onsite is supplied by a hogged fuel (such as bark, wood waste, resin waste, oil rags, oil booms, and Duracubes fired boiler...

LRAPA response: The change has been approved for the reason given.

EPA Comments: First, the permit fails to include one of the applicable requirements of the EPA-approved LRAPA rules, specifically Title 32-060 "Airborne Particulate matter." Instead, the permit

includes a nearly identical requirement from a LRAPA rule which has not been approved by EPA into the Oregon Sip (specifically, Title 48-015 2.) and indicates that this requirement is only enforceable by LRAPA. Condition 4 of the proposed permit needs to cite to the provisions of the approved SIP and must be labeled as federal and LRAPA enforceable or else EPA must veto the permit.

Second, the periodic monitoring requirement included in the permit for the SIP grain loading standard (Condition 11) is O&M monitoring and is set forth in Condition 28. However, implementation of Condition 28 is linked to Condition 21 and Condition 11.a., 11.b., and 11.c., but Condition 11.a., and c. are labeled as LRAPA enforceable only (both Condition 28 and Condition 21 are identified as federal and LRAPA enforceable). In order to comply with the requirement of OAR Division 28 that all monitoring, recordkeeping, and reporting conditions in a Title V permit be federally and LRAPA enforceable, Condition 2.b. and the first sentence of Condition 11.d. need to be deleted.

LRAPA response: The changes have been approved for the reasons given.

amn  
TV 200550 R.

PLANT SITE EMISSIONS DETAIL SHEET  
 Corrected (1996) Baseline - Calendar Year 1977

Pollutant: Particulate

Emission Unit/Point	Operating Parameter	Emission Factor		Emissions			
		Rate	Reference	lbs/day		tons/year	
				PM	PM <sub>10</sub>	PM	PM <sub>10</sub>
Hogged Fuel Boiler 1	231.84 MM lbs steam/yr	0.2664 lbs/M lbs steam 0.50 lbs/M lbs steam	1978 Source Test DEQ factor			30.9	15.4
Hogged Fuel Boiler 2	154.56 MM lbs steam/yr	1.0359 lbs/M lbs steam 0.50 lbs/M lbs steam	1978 Source Test DEQ factor			80.1	40.0
Hogged Fuel Boiler 3	154.56 MM lbs steam/yr	1.0359 lbs/M lbs steam 0.50 lbs/M lbs steam	1978 Source Test DEQ factor			80.1	40.0
Hogged Fuel Boiler 4	231.84 MM lbs steam/yr	0.435 lbs/M lbs steam 0.50 lbs/M lbs steam	1978 Source Test DEQ factor			50.4	25.2
Kilns	48,300 MBF/yr	0.201 lb/MBF	NCASI			4.9	4.9
Veneer Dryer 1	36,000 MSF/yr	0.519 lb/MSF	DEQ factor			9.3	9.3
Veneer Dryer 2	36,000 MSF/yr	0.519 lb/MSF	DEQ factor			9.3	9.3
Sawmill/Planer cyclones							
#3	1,080,000 lbs/yr	0.5 lb/BDT	DEQ factor			0.5	0.5
#4	3,660,000 lbs/yr					Negl.	Negl.
#5	351,360 lbs/yr					Negl.	Negl.
#6	351,360 lbs/yr					0.3	0.3
#7	2,108,160 lbs/yr					2.3	2.3
#8	18,432,000 lbs/yr					---	---
#14	Not being used					2.0	2.0
#15	15,876,960 lbs/yr					0.5	0.5
#16	4,128,000 lbs/yr					Negl.	Negl.
#17	165,600 lbs/yr					5.0	5.0
#18	40,066,740 lbs/yr					Negl.	Negl.
#22	144,000 lbs/yr						
Plywood Cyclones/Baghouses							
#1	702,720 lbs/yr	0.04 lbs/BDT	DEQ factor			Negl.	Negl.
#2	1,405,440 lbs/yr						

Emission Unit/Point	Operating Parameter	Emission Factor		Emissions			
		Rate	Reference	lbs/day		tons/year	
				PM	PM <sub>10</sub>	PM	PM <sub>10</sub>
Unpaved Roads Sawmill Plywood	200,000 BF/day 180,822 SF/day (3/8)	0.36 lbs	AP-42			2.3 7.9	0.8 2.8
Paved Roads Sawmill Plywood	200,000 BF/day 180,822 SF/day (3/8)	0.2 lbs	AP-42			18.4 63.2	3.7 12.6
Storage Pile						0.1	0.1
TOTAL						417.9	194.6

PLANT SITE EMISSIONS DETAIL SHEET  
 Corrected (1996) Baseline - Calendar Year 1977

Pollutant: Gaseous Pollutants

Emission Unit/Point	Operating Parameter	Emission Factor		Emissions	
		Rate	Reference	lbs/day	tons/year
Hogged Fuel Boiler 1					
CO	231.84 MM lbs steam/yr	1.50 lbs/M lbs steam	ST from Foster plant		173.9
NO <sub>x</sub>	231.84 MM lbs steam/yr	0.380 lbs/M lbs steam	ST from Foster plant		44.0
SO <sub>2</sub>	231.84 MM lbs steam/yr	0.012 lbs/M lbs steam	AP-42		1.4
VOC	231.84 MM lbs steam/yr	0.029 lbs/M lbs steam	AP-42		3.4
Pb	231.84 MM lbs steam/yr	0.00005 lb/M lbs steam	AP-42		0.0058
Hogged Fuel Boiler 2					
CO	154.56 MM lbs steam/yr	1.50 lbs/M lbs steam	ST from Foster plant		115.9
NO <sub>x</sub>	154.56 MM lbs steam/yr	0.380 lbs/M lbs steam	ST from Foster plant		29.4
SO <sub>2</sub>	154.56 MM lbs steam/yr	0.012 lbs/M lbs steam	AP-42		0.9
VOC	154.56 MM lbs steam/yr	0.029 lbs/M lbs steam	AP-42		2.2
Pb	154.56 MM lbs steam/yr	0.00005 lb/M lbs steam	AP-42		0.0038
Hogged Fuel Boiler 3					
CO	154.56 MM lbs steam/yr	1.50 lbs/M lbs steam	ST from Foster plant		115.9
NO <sub>x</sub>	154.56 MM lbs steam/yr	0.380 lbs/M lbs steam	ST from Foster plant		29.4
SO <sub>2</sub>	154.56 MM lbs steam/yr	0.012 lbs/M lbs steam	AP-42		0.9
VOC	154.56 MM lbs steam/yr	0.029 lbs/M lbs steam	AP-42		2.2
Pb	154.56 MM lbs steam/yr	0.00005 lb/M lbs steam	AP-42		0.0038
Hogged Fuel Boiler 4					

Emission Unit/Point	Operating Parameter	Emission Factor		Emissions	
		Rate	Reference	lbs/day	tons/year
CO	231.84 MM lbs steam/yr	2.20 lbs/M lbs steam	AP-42		255.0
NO <sub>x</sub>	231.84 MM lbs steam/yr	0.243 lbs/M lbs steam	AP-42		28.2
SO <sub>2</sub>	231.84 MM lbs steam/yr	0.012 lbs/M lbs steam	AP-42		1.4
VOC	231.84 MM lbs steam/yr	0.036 lbs/M lbs steam	AP-42		4.2
Pb	231.84 MM lbs steam/yr	0.00005 lb/M lbs steam	AP-42		0.0058
Kilns	VOC 48,300 MBF/yr	3.1681 x 0.76 wood species adj.	NCASI		58.1
Veneer Dryer 1	VOC 36,000 MSF/yr	0.3217 lb/MSF	DEQ estimates		5.8
Veneer Dryer 2	VOC 36,000 MSF/yr	0.3217 lb/MSF	DEQ estimates		5.8
Presses 1	VOC 28,800 MSF/yr	0.0243 lb/MSF	AP-42		0.4
Presses 2	VOC 43,200 MSF/yr	0.0243 lb/MSF	AP-42		0.5
Storage Piles	VOC 125,008 tons/yr	0.076 lbs/ton	NCASI		4.7

PLANT SITE EMISSIONS DETAIL SHEET  
 Projected

Pollutant: Particulate

Emission Unit/Point	Operating Parameter	Emission Factor		Emissions			
		Rate	Reference	lbs/day		tons/year	
				PM	PM <sub>10</sub>	PM	PM <sub>10</sub>
Hogged Fuel Boiler 1 (Boiler-1)	840.0 Mlb steam/day, 305.76 MM lbs steam/yr	1.08 lbs/M lbs steam	based on 0.2 gr/dscf	907.2	453.6	165.1	82.6
Wood drying kilns (Kiln-1)	600 MBF/day, 54,600 MBF/yr	0.201 lb/MBF	NCASI	120.6	120.6	5.5	5.5
Paved Roads (Roads-P)	*	*	*	30,109.4 lb/mo	5,857.5 lb/mo	104.1	20.3
Unpaved Roads (Roads-U)	*	*	*	1,562.4 lb/mo	562.3 lb/mo	5.3	1.9
Storage Piles (Piles-1)	*	*	*	9.2 lb/mo	4.6 lb/mo	0.1	0.1
Aggregate Insignificant						1.0	1.0
<b>TOTAL</b>						281.1	111.4

\*\* Aggregate Insignificant  
 \* See appendix  
 \*\*\* less than 0.1 tons/yr

PLANT SITE EMISSIONS DETAIL SHEET  
Projected

Pollutant: Gaseous Pollutants

Emission Unit/Point	Operating Parameter	Emission Factor		Emissions	
		Rate	Reference	lbs/day	tons/year
Boiler-1 CO, hogged fuel/duracubes  NO <sub>x</sub> , hogged fuel NO <sub>x</sub> , duracubes  SO <sub>2</sub> , hogged fuel SO <sub>2</sub> , duracubes  VOC, hogged fuel/duracubes  Pb, hogged fuel Pb, duracubes	840 M lbs steam/day 305.76 MM lbs steam/yr	1.5 lbs/M lbs steam	ST from Foster plant	1,260	229.3
	528.36 M lbs steam/day, 283.62 MM lbs steam/yr 311.64 M lbs steam/day, 22.14 MM lbs steam/yr	0.38 lbs/M lbs steam 1.16 lbs/M lbs steam	ST from Foster plant	200.8 361.5	53.9 12.8
	528.36 M lbs steam/day, 283.62 MM lbs steam/yr 311.64 M lbs steam/day, 22.14 MM lbs steam/yr	0.012 lbs/M lbs steam 0.016 lbs/M lbs steam	AP-42	6.3 4.9	1.7 0.2
	840 M lbs steam/day, 305.76 MM lbs steam/yr	0.029 lbs/M lbs steam	AP-42	24.4	4.4
	528.36 M lbs steam/day, 283.62 MM lbs steam/yr 311.64 M lbs steam/day, 22.14 MM lbs steam/yr	5.1 E -05 lbs/M lbs steam 6.6 E -05 lbs/M lbs steam	AP-42	0.02695 0.02057	0.00723 0.00073
Kilns-1 VOC CO	18,000 MBF/mo, 54,600 MBF/yr 18,000 MBF/mo, 54,600 MBF/yr	3.1683 lb/MBF x 0.76 adj. 0.027 lbs/MBF x 0.76 adj.	NCASI tech. NCASI	43,497 lbs/mo 486 lbs/mo	66.0 0.7
Glue/Resin storage & application RF-300 H-30M MF-212B RS-254D FM-316MB	6,204 lbs/day, 1,395,843 lbs/yr 1,329 lbs/day, 299,109 lbs/yr 665 lbs/day, 149,555 lbs/yr 204 lbs/day, 45,863 lbs/yr 40 lbs/day, 8,973 lbs/yr	Material Balance	Material Balance	452 lbs/mo 97 lbs/mo 91 lbs/mo 425 lbs/mo 83 lbs/mo	1.6 0.4 0.3 1.5 0.3
Plant Beam Patching/Grading Polyester wood patch 09-400-xxx Krylon (spray can) 349-2 Black Stamping ink VIC-551 Dye Safety-Kleen U100A U100B LS-100 Clear Beam Sealer	10.1 lbs/day, 2,261 lbs/yr 4.5 lbs/day, 1,005 lbs/yr 4.4 lbs/day, 983 lbs/yr 0.4 lbs/day, 100 lbs/yr 24.6 lbs/day, 5,541 lbs/yr 134.0 gal/day, 30,150 gal/yr 22.3 gal/day, 5,025 gal/yr 5.8 gal/day, 1,316 gal/yr	Material Balance	Material Balance	84.1 lbs/mo 62.6 lbs/mo 29.8 lbs/mo 0.5 lbs/mo 152.7 lbs/mo 3,946.3 lbs/mo Negl.** Negl.**	0.3 0.3 0.1 Negl.** 0.6 14.3 Negl.** Negl.**
Piles VOC	*	*	*	312.4 lb/mo	1.9

\* See appendix

\*\* less than 0.1 tons/yr