

**Lane Regional Air Protection Agency  
Synthetic Minor Air Contaminant Discharge Permit**

**REVIEW REPORT**

**Veneer Technologies -- Junction City, OR**

93747 Highway 99 South  
Junction City, Oregon 97448

**Permit No. 208263**

**INTRODUCTION**

1. Weyerhaeuser iLevel™ Veneer Technologies owns and operates a laminated veneer lumber manufacturing facility located at 93747 Highway 99 South in Junction City, Oregon. This existing facility is converting its Title V Operating Permit to a Synthetic Minor Air Contaminant Discharge Permit (SM-ACDP). The facility removed its six (6) Microllam® laminated veneer lumber (LVL) presses in 2006 and, based on the operation of the RCO to control veneer dryer emissions, is no longer a major source for Title V purposes.

**FACILITY DESCRIPTION**

2. The Junction City plant receives green veneer from outside suppliers. The green veneer is dried in one (1) of two (2) gas-fired veneer dryers and stored in a conditioning room. Dried veneer that remains too wet is likewise "redried" in the facility's gas-fired dryers. Pollutants emitted during the veneer drying process include NO<sub>x</sub>, CO, VOC, SO<sub>2</sub>, and PM/PM<sub>10</sub>. Emissions from the veneer dryers are vented to a regenerative catalytic oxidizer (RCO) when green veneer is dried and vented directly to atmosphere when veneer is redried. Wood residuals are generated when veneer debris is run through an on-site veneer hog. Such residuals are collected by baghouses at the facility.

**EMISSIONS UNIT AND POLLUTION CONTROL DEVICE IDENTIFICATION**

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

Emission Unit	Regulated Pollutants Emitted	Pollution Control Device Description
Pneumatic Transfer System	PM/PM <sub>10</sub>	Baghouses 1 & 2
Veneer Dryers (VD-1, VD-2)	PM, PM <sub>10</sub> , NO <sub>x</sub> , SO <sub>2</sub> , CO, VOC, and HAPs	Regenerative Catalytic Oxidizer (RCO)
Truck Bin	PM/PM <sub>10</sub>	None
Unpaved Roads	PM/PM <sub>10</sub>	None

4. Pneumatic Transfer System:

The facility's two (2) baghouses are designated BH1 and BH2. BH1 collects wood residuals resulting from the veneer feeders. BH1 was manufactured by Western Pneumatics with an 8:1 design air to cloth ratio, 630 bags, and was installed in 1988. BH2 collects residuals from the veneer feeders, the stackers, the clippers, and the hog. BH2 was manufactured by Clark with an 8:1 design air to cloth ratio, 40 bags, and was installed in 1978.

5. Veneer Dryers 1 and 2:

There are 2 veneer dryers. Veneer Dryer 1 is a longitudinal natural gas-fired dryer with six (6) decks and four (4) zones (2 heating, 2 cooling) and was installed in 1997. Veneer Dryer 2 is a jet natural gas-fired dryer with four (4) decks and three (3) zones (2 heating, 1 cooling) and was installed in 1979.

A RCO control device is used to control the emissions from the dryers and is required to be operated whenever green veneer is being dried. The facility is required to maintain a continuous temperature monitoring device for the RCO to assure proper combustion and destruction of pollutants in the unit. Corrective action is required if the combustion temperature falls more than 50° F below the average value recorded during the most recent source test. To assure that the RCO operates whenever green veneer is dried, the facility is required to have an interlock system which only allows the RCO to be bypassed when the dryer temperature is below 300°F. Temperatures below that level are indicative of redry mode, the emissions from which are not required to be routed to the RCO. The facility is required to record any instances of manual override of the interlock system. To minimize excess emission notification requirements, the facility is required to record the duration (hours) of any vent cap openings while drying green veneer and estimate the emissions from the events.

6. Unpaved Roads:

The Junction City plant includes a small unpaved area behind the facility where finished products from other Weyerhaeuser Company facilities are stored. Vehicular traffic delivering or removing product in this area cause fugitive particulate matter emissions.

7. Truck Bin:

The Junction City plant maintains one (1) truck bin that receives wood residuals from the baghouses and stores that material prior to release to trucks.

8. Miscellaneous Chemical Usage:

The Junction City plant uses small amounts of grade stamp inks and other miscellaneous VOC and/or HAP-containing coatings.

## **EMISSION LIMITS AND STANDARDS**

### **Plant Site Emission Limit (PSEL) Information**

9. Baseline Emission Rate (BER) Information:

Baseline emission rates are based upon actual estimated emission totals for the 1977 calendar year. Emissions are accounted from two (2) cyclones, one (1) veneer dryer, three (3) presses, one (1) truck bin, road dust fugitives, and aggregate insignificant activities. The detail sheets attached to this report contain the rates, factors and more details about the calculations.

### **Current Plant Site Emission Limits**

10. The plant can be operated as much as 24 hours per day, 7 days per week, and 52 weeks per year.

11. The production rates used as a basis for determining the PSELs are as follows:

Production or Process Parameter	Period	Rate	Units
Green Veneer Dried	Annual	6,132,000	cu.ft.
Redry Veneer Dried	Annual	1,083,000	cu.ft.
Wood Residuals	Annual	500	BDT

**Plant Site Emission Limits (PSELs)**

12. Components of the PSEL are contained in the table below. Emission values greater than 10 tons per year are rounded to the nearest whole ton and emission values less than 10 tons per year are rounded to the nearest tenth of a ton as per LRAPA significant figure policy.

Pollutant	Netting Baseline (tons/yr)	Components of the PSEL		
		PSEL (tons/yr)	Pollutant	Unassigned Emissions (tons/yr)
PM	46	19	PM	27
PM <sub>10</sub>	37	15	PM <sub>10</sub>	22
CO	6.8	46	CO	0
NO <sub>x</sub>	0.9	8.3	NO <sub>x</sub>	0
SO <sub>2</sub>	<0.5	<0.5	SO <sub>2</sub>	0
VOC	39	32	VOC	7

For the PSEL, the total annual tons per year are required to be determined as a rolling 12-month total.

### Significant Emission Rate

13. The Plant Site Emission Limit (PSEL) increase over the baseline emissions is less than the Significant Emission Rate (SER) as defined in LRAPA Title 38 for all of the pollutants, as shown below.

Pollutant	Baseline Emissions (tons/year)	Proposed PSEL (tons/year)	Increase from Baseline (tons/year)	SER (tons/year)
PM	46	19	-27	25
PM <sub>10</sub>	37	15	-22	15
CO	6.8	46	39	100
NO <sub>x</sub>	0.9	8.3	7.4	40
VOC	39	32	-6.2	40
SO <sub>x</sub>	<0.5	<0.5	<0.5	40

The table above shows that the facility does not have emissions of any pollutant that exceed the baseline emission rate by greater than the SER.

### **HAZARDOUS AIR POLLUTANTS (HAPs)**

14. The facility is a synthetic minor source of Hazardous Air Pollutants (HAPs) and must limit its emissions to less than or equal to nine (9) tons per year of any single HAP and 24 tons per year of any combination of HAPs. With the RCO in operation, the facility has the potential to emit the following HAPs (tons per year):

Pollutant	Potential to Emit (tons/yr)
Acetaldehyde	1.06
Acrolein	0.09
Benzene	0.08
Beryllium Compounds	1.8E-06
Cadmium Compounds	1.7E-04
Chromium, total	2.10E-04
Cobalt Compounds	1.3E-05
Dichlorobenzene	1.8E-04
Ethyl Benzene	0.013
Formaldehyde	1.18
Glycol Ether	0.028
Hexane	0.2700
Hydrogen Chloride	1.00E-02
Lead Compounds	7.50E-05
Manganese Compounds	1.90E-05
Mercury Compounds	3.90E-05
Methanol	1.47
Methyl Isobutyl Ketone	0.09
Napthalene	9.15E-05
Nickel Compounds	3.15E-04
Phenol	1.03
Polycyclic Organic Matter	1.35E-05
Propionaldehyde	0.023
Styrene	0.270
Toluene	0.36
Trichloroethylene	0.029
Xylene	0.09
m,p,-Xylene	0.06
<b>Total ( tons per year)</b>	<b>6.2</b>

#### **GENERAL BACKGROUND INFORMATION**

15. The proposed permit would convert an existing LRAPA Title V Operating Permit (No. 208263), last issued on June 14, 1999, to a Synthetic Minor Air Contaminant Discharge Permit (SM-ACDP). The facility's existing LRAPA Title V Operating Permit was originally scheduled to expire on June 14, 2004.
16. The facility is located in an area that has been designated as attainment for particulate matter, ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, and lead.
17. The facility is located within 100 kilometers of four (4) Class I air quality protection areas.

#### **PUBLIC NOTICE**

18. The draft permit was on public notice from September 2, 2007 to September 28, 2007. No written comments were received during the comment period.

#### **EMISSIONS DETAIL SHEETS**

19. The Emissions Detail Sheets are attached.

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## EMISSIONS DETAILS

### Summary Emissions Data for Hazardous Air Pollutants

Facility name/site identifier	Veneer Technologies - Junction City, OR
Pollutant	Potential to Emit (tons/yr)
Acetaldehyde	1.06
Acrolein	0.09
Benzene	0.08
Beryllium Compounds	1.8E-06
Cadmium Compounds	1.7E-04
Chromium, total	2.10E-04
Cobalt Compounds	1.3E-05
Dichlorobenzene	1.8E-04
Ethyl Benzene	0.013
Formaldehyde	1.18
Glycol Ether	0.028
Hexane	0.2700
Hydrogen Chloride	1.00E-02
Lead Compounds	7.50E-05
Manganese Compounds	1.90E-05
Mercury Compounds	3.90E-05
Methanol	1.47
Methyl Isobutyl Ketone	0.09
Napthalene	9.15E-05
Nickel Compounds	3.15E-04
Phenol	1.03
Polycyclic Organic Matter	1.35E-05
Propionaldehyde	0.023
Styrene	0.270
Toluene	0.36
Trichloroethylene	0.029
Xylene	0.09
m,p,-Xylene	0.06
Total ( tons per year)	6.2

#### Notes:

1. Emission factors based on best available data including source tests if available, NCASI data and AP-42.

**Production Throughputs**

<b>Process</b>	<b>Annual Rate</b>	<b>Units</b>
Dryer/RCO	6,132,000	CF
	191,625	MSF, 3/8"
	300	MMSCF

**Chemicals - HAP Inventory**

Veneer Technologies - Junction City, OR

Source	HAP	Annual rate	Emission factor	Reference	Emissions (tons/yr)
Spray Paint - Veneer marking	Toluene	250 gallons	1.42 lbs/gallon	See Notes 1,2	0.178
	Xylene	250 gallons	0.51 lbs/gallon	See Notes 1,2	0.064
	Ethyl Benzene	250 gallons	0.064 lbs/gallon	See Notes 1,2	0.008
Paint - General plant use	MIK	250 gallons	0.32 lbs/gallon	See Notes 1,2	0.040
	Toluene	100 gallons	1.42 lbs/gallon	See Notes 1,2	0.071
	Xylene	100 gallons	0.51 lbs/gallon	See Notes 1,2	0.026
	Ethyl Benzene	100 gallons	0.064 lbs/gallon	See Notes 1,2	3.2E-03
Aerosols - General plant use Dryer Moisture Inks	MIK	100 gallons	0.32 lbs/gallon	See Notes 1,2	0.016
	Trichloroethylene	5 gallons	11.60 lbs/gallon	See Notes 1,2	0.029
	Glycol Ethers	500 gallons	0.11 lbs/gallon	See Notes 1,2	0.028
"Disappearing" Ink (red for dryer use) Tanks (per EPA TANKS2 model)	Hydrochloric Acid	500 gallons	0.04 lbs/gallon	See Notes 1,2	0.010
	None	100 gallons	0.00 lbs/gallon	See Notes 1,2	0.00
	Aggregate			See Note 3	N/A
<b>6. POLLUTANT TOTAL</b>					
	Toluene				0.25
	Xylene				0.09
	Ethyl Benzene				0.01
	MIK				0.06
	Trichloroethylene				0.03
	Glycol Ethers				0.03
	Hydrochloric Acid				0.01
	<b>Total Mass Balance HAP:</b>				<b>0.47</b>

1. Annual rates based on maximum veneer production.
2. Specific HAP content based on vendor data. Where various products are represented, the maximum HAP content was used in the mass balance calculations.
3. HAPs emissions from tanks is assumed to be negligible.

Emissions Data for Hazardous Air Pollutants		Veneer Technologies - Foster, OR		Pollutant:		Acetaldehyde
Facility name/site identifier	Device/process ID	Annual rate	Emission factor	Reference	Emissions tons/year	
Dryers - RCO	RCO	191,625 MSF	5.10E-03 lb/MSF	See Note 1	0.49	
Dryers - Cooling Section	Dryers 3, 4 & 5	191,625 MSF	3.40E-03 lb/MSF	See Note 2	0.33	
Dryers - Fugitives	Dryers 3, 4 & 5	191,625 MSF	2.55E-03 lb/MSF	See Note 3	0.24	
Pollutant Total					1.06	

Notes:

1. Dryers - RCO: Emission factor based on average NCASI TB 768 (0.051) and 90% DRE.
2. Dryers - Cooling Section: AP-42, 10.5-16 I/02, 0.0034
3. Dryers - Fugitives: Emissions based on an engineering estimate of 5% (of inlet to RCO).

Emissions Data for Hazardous Air Pollutants			Veneer Technologies - Foster, OR		Pollutant:	Acrolein
Facility name/site identifier	Device/process ID	Annual rate	Emission factor	Reference		
Emissions data:						
Emissions unit ID						Emissions tons/year
Dryers - RCO	RCO	191,625 MSF	6.40E-04 lbs/MSF	See Note 1		6.1E-02
Dryers - Fugitives	Dryers 3, 4 & 5	191,625 MSF	3.20E-04 lbs/MSF	See Note 2		3.1E-02
					Pollutant Total	0.09

Notes:

1. Dryers - RCO: Emission factor based average NCASI TB 768 (0.0064) at 90% DRE
2. Dryer - Fugitives: Emissions based on an engineering estimate of 3% (of RCO inlet).

Emissions Data for Hazardous Air Pollutants		Veneer Technologies - Foster, OR		Benzene	
Facility name/site identifier	Device/process ID	Annual rate	Emission factor	Reference	Emissions tons/year
Emissions data: Dryers - RCO Dryers - Fugitives	RCO	191,625 MSF	5.70E-04 lbs/MSF	See Note 1	0.0546
	Dryers 3, 4 & 5	191,625 MSF	2.85E-04 lbs/MSF	See Note 2	0.0273
Pollutant Total					0.08

- Notes:
1. Dryer - RCO: EF based AP-42, 10.5-15, 0.0057 and 90% DRE.
  2. Dryer - Fugitives: Based on an engineering estimate of 5% fugitives (of RCO inlet).

Emissions Data for Hazardous Air Pollutants		Veneer Technologies - Foster, OR		Pollutant:		Beryllium
Facility name/site identifier	Emissions unit ID	Device/process ID	Annual rate	Emission factor	Reference	Emissions tons/year
Dryers - RCO	RCO- natural gas		300 MMCF	1.20E-05 lbs/MMCF	See Note 1	1.8E-06
				Pollutant Total		1.8E-06

Notes:  
 1. Dryer - RCO based on AP-42, Table 1.4-4, 7/98



Emissions Data for Hazardous Air Pollutants		Veneer Technologies - Foster, OR		Chromium, Total	
Facility name/site identifier	Device/process ID	Annual rate	Emission factor	Pollutant:	
Emissions data:					
Emissions unit ID				Reference	Emissions tons/year
Dryers - RCO	RCO- natural gas	300 MMCF	1.40E-03 lbs/MMCF	See Note 1	2.1E-04
					2.1E-04
				Pollutant Total	

Notes:

1. Dryers - RCO: AP-42, table 1.4-4, 7/98



Emissions Data for Hazardous Air Pollutants		Veneer Technologies - Foster, OR		Pollutant:		Dichlorobenzene
Emissions unit ID	Device/process ID	Annual rate	Emission factor	Reference	Emissions tons/year	
Dryers - RCO	RCO- natural gas	300 MMSCF	1.20E-03 lbs/MMSCF	See Note 1	1.8E-04	
Pollutant Total					1.8E-04	

1. Dryers- RCO: AP-42, Table 1.4.3, 7/98



Emissions Data for Hazardous Air Pollutants		Veneer Technologies - Foster, OR		Pollutant: Formaldehyde	
Emissions unit ID	Device/process ID	Annual rate	Emission factor	Reference	Emissions tons/year
Dryers - RCO	Dryers 3, 4 & 5	191,625 MSF	7.20E-03 lbs/MSF	See Note 1	0.69
Dryers - Cooling Section	Dryers 3, 4 & 5	191,625 MSF	1.50E-03 lbs/MSF	See Note 2	0.14
Dryers - Fugitives	Dryers 3, 4 & 5	191,625 MSF	3.60E-03 lbs/MSF	See Note 3	0.34
Pollutant Total					1.18

Notes:

1. Dryers - RCO: NCASI TB 768 average of 0.072 applied at 90% DRE
2. Dryers - Cooling Section: AP-42, 10.5-15, 1/02, (0.0015)
3. Dryers - Fugitive: Emissions based on an engineering estimate of 5% (of RCO inlet).

Emissions Data for Hazardous Air Pollutants		Veneer Technologies - Foster, OR		Glycol Ethers	
Facility name/site identifier	Device/process ID	Annual rate	Emission factor	Pollutant:	tons/year
N/A	Chemicals	N/A	N/A	Reference	0.028
				See chemicals worksheet	0.028
				Pollutant Total	0.028

Emissions Data for Hazardous Air Pollutants					Hexane	
1. Facility name/site identifier					Pollutant:	
Veneer Technologies - Foster, OR						
Emissions unit ID	Device/process ID	Annual rate	Emission factor	Reference	Emissions tons/year	
Dryers - RCO	Dryers	300 MMSCF	1.80 lb/MMSCF	See Note 1	0.27	
Pollutant Total						2.70E-01

Notes:

1. Dryers - RCO: AP-42, Table 1.4-3, 7/98

Emissions Data for Hazardous Air Pollutants		Veneer Technologies - Foster, OR		Hydrogen Chloride	
Facility name/site identifier	Device/process ID	Annual rate	Emission factor	Reference	Emissions tons/year
N/A	Chemicals	N/A	N/A	See chemicals worksheet	0.010
				Pollutant Total	0.01

Emissions Data for Hazardous Air Pollutants		Veneer Technologies - Foster, OR		Pollutant:		Lead
Emissions unit ID	Device/process ID	Annual rate	Emission factor	Reference	Emissions tons/year	
Dryers - RCO	RCO- natural gas	300 MMSCF	5.00E-04 lbs/MMSCF	See Note 2	7.5E-05	
Pollutant Total					0.000	

Notes:

1. Dryers - RCO: AQ/DEQ, table 1.4-2, 7/98

Emissions Data for Hazardous Air Pollutants		Veneer Technologies - Foster, OR		Manganese	
Emissions unit ID	Device/process ID	Annual rate	Emission factor	Pollutant:	Emissions tons/year
Dryer - RCO	RCO- natural gas	300 MMSCF	1.26E-04 lbs/MMSCF	See Note 1	1.90E-05
			Pollutant Total		0.000

Notes:  
 1. Dryer - RCO: AP-42 (9.8E-5) x 1.29 lb MnO/lb mm (NCASI 2001)

Emissions Data for Hazardous Air Pollutants		Veneer Technologies - Foster, OR		Pollutant:		Mercury
Facility name/site identifier	Emissions unit ID	Device/process ID	Annual rate	Emission factor	Reference	Emissions tons/year
Dryers - RCO		RCO- natural gas	300 MMSCF	2.60E-04 lbs/MMSCF	See Note 1	3.9E-05
				Pollutant Total		3.9E-05

Notes:

1. Dryers - RCO: AP42, table 1.4-4, 7/98

Emissions Data for Hazardous Air Pollutants			Methanol		
Facility name/site identifier	Veneer Technologies - Foster, OR		Pollutant:		
Emissions data:	Device/process ID	Annual rate	Emission factor	Reference	Emissions tons/year
Dryers - RCO	Dryers	191,625 MSF	6.40E-03 lb/MSF	See Note 1	0.61
Dryers - Cooling Section	Dryers	191,625 MSF	5.70E-03 lb/MSF	See Note 2	0.55
Dryers - Fugitives	Dryers	191,625 MSF	3.20E-03 lb/MSF	See Note 3	0.31
Pollutant Total					1.47

Notes:

1. Dryer - RCO: Based on NASI TB 768 average 0.064 at 90% DRE.
2. Dryer - Cooling Section: AP-42, Table 10.5-16, 1/02 of 0.0057.
3. Dryer - Fugitives: Use Dryer - RCO at 5% fugitive level for Dryers #3,4 &5. Water balance during 4/11/06 source test showed <5% leakage.

Emissions Data for Hazardous Air Pollutants		Veneer Technologies - Foster, OR		Methyl Isobutyl Ketone	
Facility name/site identifier	Device/process ID	Annual rate	Emission factor	Pollutant:	Emissions tons/year
Dryers - RCO	Dryers 3, 4 & 5	191,625 MSF	2.60E-04 lbs/MSF	See Note 1	0.025
Dryers - Fugitives	Dryers 3, 4 & 5	191,625 MSF	1.30E-04 lbs/MSF	See Note 2	0.012
N/A	Chemicals	N/A	N/A	See chemicals worksheet	0.06
				Pollutant Total	0.1

Notes:

1. Dryers - RCO: Emission factors based AP-42, 10.5-15, 1/02, 0.026 and 90% DRE
2. Dryers - Fugitive: Emissions based on an engineering estimate of 5% (of RCO inlet).

Emissions Data for Hazardous Air Pollutants		Veneer Technologies - Foster, OR		Pollutant:		Naphthalene	
Emissions unit ID	Device/process ID	Annual rate	d. Emission factor	Reference	Emissions tons/year		
Dryers - RCO	RCO - natural gas	300 MMSCF	6.10E-04 lbs/MMSCF	See Note 1	9.2E-05		
Pollutant Total					0.000		

Notes:

1. Dryers - RCO: AP-42, Table 1.4-3, 7/98

Emissions Data for Hazardous Air Pollutants		Veneer Technologies - Foster, OR		Nickel	
Facility name/site identifier	Device/process ID	Annual rate	Emission factor	Pollutant:	Emissions tons/year
Dryers	RCO- natural gas	300 MMSCF	2.10E-03 lbs/MMSCF	See Note 1	3.2E-04
			Pollutant Total		0.0003

Notes:  
 1. Dryers - RCO: AP-42,Table 1.4-4, 7/98 (0.0021)

Emissions Data for Hazardous Air Pollutants				Pollutant:		Phenol	
Facility name/site identifier				Emission factor		Emissions tons/year.	
Veneer Technologies - Foster, OR				Reference		#VALUE!	
Emissions data:				Pollutant Total		#VALUE!	
Emissions unit ID	Device/process ID	Annual rate					
Dryers - RCO	Dryers 3, 4 & 5	191,625 MSF	5.00E-04 lbs/MSF	See Note 1	0.05		
Dryers - Cooling Section	Dryers 3, 4 & 5	191,625 MSF	m lbs/MSF	See Note 2	#VALUE!		
Dryers - Fugitives	Dryers 3, 4 & 5	191,625 MSF	2.50E-04 lbs/MSF	See Note 3	0.024		
N/A	Resin & Glue Tanks				0.0020		

Notes:

1. Dryers- RCO: Use NCASI TB 768 average 0.005 at 90% DRE.
2. Dryers - Cooling Section: AP-42, 10.5-16, 1/02, (0.010).
3. Dryers - Fugitives: Emissions based on an engineering estimate of 5% (of RCO inlet).

Emissions Data for Hazardous Air Pollutants				Veneer Technologies - Foster, OR		Polycyclic Organic Matter	
Facility name/site identifier	Emissions unit ID	Device/process ID	Annual rate	Emission factor	Pollutant:		
Dryers - RCO		Natural Gas	300 MMSCF	9.00E-05 lbs/MMSCF	Reference	Emissions tons/year	1.4E-05
					See Note 1		1.4E-05
					Pollutant Total		

Notes:

1. Dryers - RCO: To identify organic compounds that are considered POM's, utilized the compounds identified as POM's by footnote b.c., in the Natural gas emission factor AP-42, Table 1.4-3, 7/98.

Emissions Data for Hazardous Air Pollutants		Veneer Technologies - Foster, OR		Pollutant:		Propionaldehyde	
Facility name/site identifier	Device/process ID	Annual rate	Emission factor	Reference	Emissions tons/year		
Emissions data: Dryers - RCO Dryers - Fugitives	Dryers 3, 4 & 5	191,625 MSF	1.60E-04 lbs/MSF	See Note 1	0.015		
	Dryers 3, 4 & 5	191,625 MSF	8.00E-05 lbs/MSF	See Note 2	0.008		
Pollutant Total					0.023		

- Notes:
1. Dryers - RCO: Emission factors per AP-42, 10.5-15, 1/02, 0.0016 and 90% DRE
  2. Dryers - Fugitives: Emissions based on an engineering estimate of 5% (of RCO inlet)

Emissions Data for Hazardous Air Pollutants		Veneer Technologies – Foster, OR		Trichloroethylene	
Facility name/site identifier	Device/process ID	Annual rate	Emission factor	Pollutant:	Emissions tons/year
N/A	Chemicals	N/A	N/A	Reference	2.9E-02
				See chemicals worksheet	2.9E-02
			Pollutant Total		

Notes:

Emissions Data for Hazardous Air Pollutants		Veneer Technologies - Foster, OR		Pollutant:		Toluene	
Facility name/site identifier	Device/process ID	Annual rate	Emission factor	Reference	Emissions tons/year		
Dryers - RCO	RCO - natural gas	300 MMSCF	3.66E-03 lbs/MMSCF	See Note 1	5.5E-04		
Dryers - RCO	Dryers 3, 4 & 5	191,625 MSF	7.40E-04 lbs/MSF	See Note 2	7.1E-02		
Dryers - Fugitives	Dryers 3, 4 & 5	191,625 MSF	3.70E-04 lbs/MSF	See Note 3	3.5E-02		
N/A	Chemicals	N/A	N/A	See chemicals worksheet	0.25		
Pollutant Total					0.36		

Notes:  
 1. Dryers - RCO: Natural gas combustion fraction estimated using Ventura County APCD, 8/95 (0.0366) and 90% DRE.  
 2. Dryers - RCO: Veneer dryer fraction estimated AP-42, 10.5-15, 1/02, 0.0074 and 90% DRE.  
 3. Dryers - Fugitives: Emissions based on an engineering estimate of 5% (of RCO inlet).

Emissions Data for Hazardous Air Pollutants			Pollutant:		
Facility name/site identifier	Veneer Technologies - Foster, OR		Styrene		
Emissions data:	Device/process ID	Annual rate	Emission factor	Reference	Emissions tons/year
Dryers - RCO	Dryers 3, 4 & 5	191,625 MSF	1.50E-04 lbs/MSF	See Note 1	1.4E-02
Dryers - Fugitives	Dryers 3, 4 & 5	191,625 MSF	7.50E-05 lbs/MSF	See Note 2	7.2E-03
N/A	Chemicals	N/A	N/A	See chemicals worksheet	0.25
			Pollutant Total		
			0.27		

Notes:

1. Dryers - RCO: Veneer dryer fraction estimated AP-42, 10.5-15, 1/02, 0.0015 and 90% DRE
2. Dryers - Fugitives: Emissions based on an engineering estimate of 5% (of RCO inlet).

Emissions Data for Hazardous Air Pollutants		Veneer Technologies - Foster, OR		Pollutant:		Xylene	
Emissions unit ID	Device/process ID	Annual rate	Emission factor	Reference	Emissions tons/year		
Dryers N/A	RCO - natural gas Chemicals	300 MMSCF N/A	2.72E-02 lbs/MMSCF N/A	See Note 1 See chemicals worksheet	4.1E-03 0.09		
				Pollutant Total	0.09		

Notes:

1. Dryers - RCO natural gas combustion from the Ventura County, as AP-42 did not include xylene emission factors

Emissions Data for Hazardous Air Pollutants				m,p-Xylene	
Facility name/site identifier	Veneer Technologies - Foster, OR		Pollutant:		
Emissions data:	Device/process ID	Annual rate	Emission factor	Reference	Emissions tons/year
Dryers-RCO	Dryers 3, 4 & 5	191,625 MSF, 3/8"	3.90E-04 lbs/MSF	See Note 1	0.037
Dryers - Fugitives	Dryers 3, 4 & 5	191,625 MSF	1.95E-04 lbs/MSF	See Note 2	0.0187
			Pollutant Total		0.06

Notes:

1. Dryers - RCO: Emission factors per AP-42, 10.5-15, 1/02, 0.0039 and 90% DRE.
2. Dryers - Fugitives: Emissions based on an engineering estimate of 5% (of RCO inlet)

**BASELINE**

**Summary of Emissions Data for the Baseline Period - Criteria Pollutants**

Facility Name/Site Identifier: Veneer Technologies - Junction City, OR

Summary emissions data

Device/process	PM tons/yr	PM-10 ton/yr	SO2 ton/yr	CO ton/yr	VOC ton/yr	NOx ton/yr
Veneer Dryer No. 1	7.6	7.6	0.01	6.8	23.2	0.9
LVL Press No. 1						
LVL Press No. 2					5.1	
LVL Press No. 3					5.1	
Cyclone No 1. Chip Bin Cyclone	15.2 20.1	12.1 16.0				
Truck Bin	2.4	0.8				
Roads-U	1.2	0.4				
<b>TOTALS</b>	<b>46.4</b>	<b>37.0</b>	<b>0.01</b>	<b>6.8</b>	<b>38.5</b>	<b>0.9</b>

Pollutant:	PM	Baseline Period	Facility Name/Site Identifier: Veneer Technologies - Junction City, OR			Emissions
Device/process	Operating Parameters	Emission Factor	Reference		ton/year	
Veneer Dryer No. 1	911,075 CF	0.01664 lbs/CF	DEQ factor		7.58	
Cyclone No.1	19,680 SCFM	0.03 g/CFM	AP-42, 1980		15.18	
Chip Bin Cyclone	26,000 SCFM	0.03 g/CFM	AP-42, 1980		20.06	
Truck Bin	1,063 BDT	0.086 lb/BDT	Based on AP-42 grain unloading		2.35	
Roads-U	586 VMT	4.21 lb/VMT	AP-42		1.23	
<b>TOTAL</b>					<b>46.40</b>	

Notes: Veneer dryer emission factors based on DEQ factors for "Veneer Dryer - Gas Heat, Doug Fir (uncontrolled)  
 DEQ factors are divided by 31.25 to convert from 1000 SF, 3/8" basis to cubic foot basis  
 Residuals based the conversion factor of 1167 BDT/CF of conversion in the 1977/78 configuration.

**Pollutant: PM-10 Baseline Period**

Facility Name/Site Identifier: Veneer Technologies - Junction City, OR

Emissions data

Device/process	Operating Parameters	Emission Factor	Reference	Emissions ton/year
Veneer Dryer No. 1	911,075 CF	0.01664 lbs/CF	DEQ factor	7.58
Cyclone No.1	19,680 SCFM	0.024 g/CFM	AP-42, 1980	12.15
Chip Bin Cyclone	26,000 SCFM	0.024 g/CFM	AP-42, 1980	16.05
Truck Bin	1,063 BDT	0.029 lb/BDT	Based on AP-42 grain unloading	0.79
Roads-U	586 VMT	1.51 lb/VMT	AP-42	0.44
<b>TOTAL</b>				<b>37.01</b>

Notes: Veneer dryer emission factors based on DEQ factors for "Veneer Dryer - Gas Heat, Doug Fir (uncontrolled) DEQ factors are divided by 31.25 to convert from 1000 SF, 3/8" basis to cubic foot basis Residuals based the conversion factor of 1167 BDT/CF of conversion in the 1977/78 configuration.

<b>Pollutant:</b>	<b>SO2</b>	<b>Baseline Period</b>				<b>Emissions ton/year</b>
Facility Name/Site Identif Veneer Technologies - Junction City, OR						
Emissions data						
<b>Device/process</b>	<b>Operating Parameters</b>	<b>Emission Factor</b>	<b>Reference</b>			
Veneer Dryer No. 1	911,075 CF	0.00002 lb/CF	DEQ factor			0.0091

<b>Pollutant:</b>	<b>CO</b>	<b>Baseline Period</b>			
Facility Name/Site Identifi Veneer Technologies - Junction City, OR					
Emissions data					
<b>Device/process</b>	<b>Operating Parameters</b>	<b>Emission Factor</b>	<b>Reference</b>	<b>Emissions ton/year</b>	
Veneer Dryer No. 1	911,075 CF	0.015 lb/CF	DEQ factor	6.83	

Facility Name/Site Identif Veneer Technologies - Junction City, OR

Emissions data					
Device/process	Operating Parameters	Emission Factor	Reference	Emissions ton/year	
Veneer Dryer No. 1	911,075 CF	0.051 lb/CF	See Note 1	23.23	
LVL Press No. 1	1.13 MM#'s Adhesive	0.009 lb/lb	See Note 2	5.09	
LVL Press No. 2	1.13 MM#'s Adhesive	0.009 lb/lb	See Note 2	5.09	
LVL Press No. 3	1.13 MM#'s Adhesive	0.009 lb/lb	See Note 2	5.09	
<b>TOTAL</b>				<b>38.49</b>	

Notes:

- VOC emission factors for the veneer dryers operating uncontrolled on green veneer estimated using DEQ's IMD  
 Please note VOC worksheet in proposed EI.  
 EF = Uncontrolled Dryer + Fugitives + Cooling Section  
 $EF = 0.0467 + 0.00234 + 0.00229 = 0.051$
- Based on Borden Tests, 6/96

Pollutant: NOx	Baseline Period				Emissions ton/year
Facility Name/Site Identifi Veneer Technologies - Junction City, OR					
Emissions data					
Device/process	Operating Parameters	Emission Factor	Reference		
Veneer Dryer No. 1	911,075 CF	0.00203 lb/CF	DEQ factor		0.92