Lane Regional Air Protection Agency
Standard Air Contaminant Discharge Permit

Review Report

Rosboro Company, LLC – Vaughn Facility
Permit No. 200550
22833 Vaughn Road
Veneta, OR 97487
Website: https://rosboro.com/

Source Information:

SIC	2439
NAICS	321213
Source Categories (LRAPA Title 37, Table 1)	B – 45 Structural Wood Members

	C – 3 Electing to Maintain Baseline
Public Notice Category	II

Compliance and Emissions Monitoring Requirements:

Unassigned emissions	Yes
Emission credits	No
Compliance schedule	No
Source test [date(s)]	See permit

COMS	No
CEMS	No
Ambient monitoring	No

Reporting Requirements

Annual report (due date)	March 1
SACC (due date)	No
Quarterly report (due dates)	No

Monthly report (due dates)	No
Excess emissions report	No
Other reports	No

Air Programs

NSPS (list subparts)	No
NESHAP (list subparts)	A, JJJJJJ
CAM	No
Regional Haze (RH)	No
Synthetic Minor (SM)	No
Part 68 Risk Management	No
Title V	Prior to 2011

ACDP (SIP)	No
New Source Review (NSR)	No
Prevention of Significant Deterioration (PSD)	No
Acid Rain	No
Clean Air Mercury Rule (CAMR)	No
TACT	X

1. Permittee Identification

Rosboro Lumber Company LLC ("Rosboro Vaughn" or "the facility") owns and operates a laminated beam manufacturing facility (Vaughn Laminating Complex) located on 22833 Vaughn Road in Veneta, Oregon.

2. General Background Information

The facility was previously operating under an Oregon Title V Operating Permit but applied for a Standard ACDP on September 23, 2010. The facility has been operating by way of a Standard ACDP since March 24, 2011. The facility has one (1) operating scenario and can be operated as much as 24 hours per day, 7 days per week, and 52 weeks per year.

Dried lumber is brought to the facility via truck or rail car. The facility formerly brought rough green lumber into the facility and sent it to the steam heated kilns onsite for drying, but, with the change from Title V to ACDP, the facility no longer operates the dry kilns; the dry kilns are not operational as of this renewal. The dry lumber is trimmed and scarfed before finger jointing. Trim ends are chipped in a hog and combined with sawdust for sale. The lumber is then finger jointed and cured in a radio frequency tunnel. After lams are cut to length, adhesive is applied to each lam of the beam just prior to placing them in another radio frequency press. After the pressing, the laminated beams may be planed, patched, cut to length and sanded or trucked to the Springfield facility for finishing. The finished laminated beams are wrapped and shipped offsite. Raw materials, including adhesive, patching material, paints, inks, and solvents, come from offsite. When operating, a hogged fuel-fired boiler supplies all steam used onsite. Most of the hogged fuel comes from offsite, but the boiler in EU-Boiler wasn't operated during the previous permit term and the hogged fuel pile is currently non-existent. The facility added a sawdust (SD) transfer operation during this renewal which was added as new EU-SD Pile.

3. Emission Units

The emission units regulated by this permit are the following:

Emission Unit (EU)	Emission Unit Description	Pollution Control Device
EU-Boiler	**Boiler**: M.A. Roberts & Co., wood-fired, dutch oven, 35 MMBtu/hr, 35 M lb steam/hr, 150 psi steam, 1939 mfg, 1952 installed.	Multiclone 1: Western Precipitation Co. P-21396-AO, installed 1952
EU-Lam	**Lam 2**: Custom Glue Laminated Beam Production **Lam3**: Stock Glue Laminated Beam Production	NA
EU-Finish	**Finish**: Glue Laminated Beam Finishing	NA
EU-MH	**Material Handling (MH)**: Roads –paved and unpaved, dry sawdust, shavings, and sanderdust pneumatically conveyed to truck bin. Also truck	Two (2) Baghouses: B1: Carter-Day (installed 1988),

Emission Unit (EU)	Emission Unit Description	Pollution Control Device
	bin unloading	B2: Pneumafil (installed 2019), and B-3: Donaldson (installed 1990)
EU-HF Pile	**HF Pile**: Hog fuel storage and handling	None
EU-SD Pile	**SD Pile**: Sawdust storage and handling	None

4. Reasons for Permit Action

The facility applied for a renewal of the Standard ACDP in a timely manner on August 10, 2021. The primary reason for the permit action is to renew the existing permit that expired on March 2, 2022.

5. Enforcement History

Following is a summary of the enforcement activity related to the facility.

On 4/6/01 Notice of Non-Compliance (NON) No. 2236 was issued to the facility for failure to have a certified observer make an opacity observation during the 4th quarter of the year 2000. No civil penalty was issued and the file was closed 5/31/01.

On 4/6/01 NON No. 2238 was issued to the facility for an inadvertent shutting off of main power which shut off all the baghouses, causing them to abort and emit excess particulate matter. No civil penalty was issued and the file was closed 5/31/01.

6. Baseline Emission Rate (BER)

The 1978 baseline production rates for the facility were established during the previous permitting action and are in the following table.

Production or Process Parameter	Parameter Type	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	Annual Amount of Steam Generated	772.8	1000 lbs of steam

The GHG baseline production rate was established by the facility for the 2010 calendar year. The total steam produced during 2010 was 270,201 MMBtu/year.

The 1978 Baseline Emission Rates are shown in the table below.

Pollutant	1978 Baseline Emission Rate from the Title V Permit – Corrected in 1996 (tons/year)	1978 Baseline Emission Rate from the Standard Permit – Corrected in 2011 (tons/year)
PM	367.4	364 (-3.4)
PM_{10}	174.7	166 (-8.7)
$PM_{2.5}$	NA	NA
CO	660.7	580 (-80.7)
NO_X	131.0	147 (+16.0)
SO2	4.6	4.6
VOC	87.3	46 (-41.3)
GHG	NA	NA

- The dry kiln PM and PM10 emission factors were updated from NCASI (0.201 lb/MBF) to the more current, lower emission factor.
- The CO emission factor for HF Boiler 4 was changed from the AP-42 EF (2.20 lb/M lb steam) to the same factor used for the other HF Boilers (1-3)
- The NOx emission factor for HF Boiler 4 was changed from the AP-42 EF (0.243 lb/M lb steam) to the same factor used for the other HF Boilers (1-3)
- The dry kiln VOC emission factor was updated from NCASI (3.1681 x 0.76 lb/MBF) to the more current, lower emission factor.

7. Plant Site Emission Limits (PSELs) and Netting Basis

Provided below is a summary of the baseline emission rate, netting basis, plant site emission limits and a comparison the PSEL increase over the netting basis to the significant emission rate (SER):

Pollutant	Baseline Emission Rate (tons/year)	Netting Basis		Plant Site Emission Limit (PSEL)			Capacity (tons/year)
		Previous (tons/year)	Proposed (tons/year)	Previous PSEL (tons/yr)	Proposed PSEL (tons/yr)	PSEL Increase (tons/year)	
PM	364	124	124	98	98	0	98
PM_{10}	166	77	77	92	91	-1	93
$PM_{2.5}$	NA	NA	38	46	46	NA	46
CO	580	199	199	99	99	0	98
NO_X	147	98	98	58	53	-5	53
SO2	4.6	4	4	39	39	0	2
VOC	46	29	29	39	39	0	29
GHG	28,311	28,311	28,311	74,000	74,000	NA	31,548

Where:

- Capacity is the maximum emissions under the source's physical and operational design.
- Potential to Emit (PTE) is the lesser of the "capacity" or maximum allowable emissions (synthetic minor limit for pollutants with a PTE > 100 tpy).
- Unassigned emissions equal the baseline or netting basis minus the source's current PTE.
- Unassigned emissions were reduced to no more than a Significant Emission Rate (SER) on July 1, 2010 as per LRAPA Title 42, and as “SER” are defined in LRAPA Title 12.

- For pollutants with the potential to emit less than the SER, the PSEL is set at the Generic PSEL level.
- For pollutants with the potential to emit greater than the SER (that is, greater than an SER over the baseline or netting basis), the PSEL is set at a level of one ton less than the SER over the PTE or netting basis, whichever is less.
- For PTE/Netting Basis greater than the 100 ton per year major source threshold, the PSELs and Netting Basis are set at one ton less (99 tons/yr).
- $PM_{2.5}$ netting basis is established with the previous renewal. The calculations are in the emission detail sheets attached to this review report.
- The GHG baseline emission rate is established with this proposed renewal and are based upon actual emissions from the 2000 calendar year.

8. Significant Emission Rate

The PSEL increase over the netting basis is less than the Significant Emission Rate (SER) as defined in LRAPA title 12 for all pollutants as shown below.

Pollutant	Proposed PSEL (TPY)	PSEL Increase Over Netting Basis (TPY)	PSEL Increase Due to Utilizing Existing Baseline Period Capacity (TPY)	PSEL Increase Due to Modification (TPY)	SER (TPY)
PM	98	-26	0	0	25
PM_{10}	91	14	0	0	15
$PM_{2.5}$	46	8	0	0	10
CO	99	-100	0	0	100
NO_X	53	-45	0	0	40
SO2	39	35	0	0	40
VOC	39	10	0	0	40
GHG	74,000	45,689	0	0	75,000

9. Unassigned Emissions and Emission Reduction Credits

The facility has unassigned emissions as shown in the table below. Unassigned emissions are equal to the netting basis minus the source's current PTE, minus any banked emission reduction credits. The facility has zero (0) tons of emission reduction credits. The unassigned emissions were reduced to no more than the SER for each pollutant in the previous renewal. In accordance with LRAPA 42-0055(5) the unassigned emissions were established again with this renewal and will be reduced to be no more than the SER at the next renewal.

Pollutant	Proposed Netting Basis (TPY)	PTE (TPY)	Unassigned Emissions (TPY)	Emission Reduction Credits (TPY)	SER (TPY)
PM	124	98	25	0	25
PM_{10}	77	93	0	0	15
$PM_{2.5}$	38	46	0	0	10
CO	199	98	100	0	100
NO_X	98	53	40	0	40
SO2	4	2	0	0	40
VOC	29	29	0	0	40
GHG	28,311	31,548	0	0	75,000

10. Other Emission Limitations

The wood-fired boiler is subject to the visible emissions standards in LRAPA 32-010(4)(b) and the particulate grain-loading standard in LRAPA Section 32-020(1)(b)(B). Opacity and grain loading limits were removed from fugitive emission sources during this renewal, in accordance with the rules.

11. Federal Hazardous Air Pollutants/Toxic Air Contaminants

The facility does not have the potential to be a major HAP source. The potential to emit for HAPs are as follows (see Emission Detail Sheets for more information):

- 4.0 tons/year of Methanol (highest HAP),
- 14.7 tons/year of total HAPs.

Under the Cleaner Air Oregon program, only existing sources that have been notified by LRAPA and new sources are required to perform risk assessments. This source has not been notified by LRAPA and is therefore, not yet required to perform a risk assessment or report annual emissions of toxic air contaminants. LRAPA required reporting of approximately 600 toxic air contaminants in 2016 and and 2021 and regulates approximately 260 toxic air contaminants that have Risk-Based Concentrations established in rule. All FHAPs are on the list of approximately 600 toxic air contaminants. The FHAPs and toxic air contaminants listed below are based upon source testing and standard emission factors for the types of emission units at this facility. After the source is notified by LRAPA, they must update their inventory and perform a risk assessment to see if they must reduce risk from their toxic air contaminant emissions. Until then, sources will be required to report toxic air contaminant emissions triennially.

12. Toxic Release Inventory

The Toxics Release Inventory (TRI) is federal program that tracks the management of certain toxic chemicals that may pose a threat to human health and the environment, over which LRAPA has no regulatory authority. It is a resource for learning about toxic chemical releases and pollution prevention activities reported by certain industrial facilities. Section 313 of the Emergency Planning and Community Right-to-Know Act (EPCRA) created the TRI Program. In general, chemicals covered by the TRI Program are those that cause:

- Cancer or other chronic human health effects;
- Significant adverse acute human health effects; or
- Significant adverse environmental effects.

There are currently over 650 chemicals covered by the TRI Program. Facilities that manufacture, process or otherwise use these chemicals in amounts above established levels must submit annual TRI reports on each chemical. NOTE: The TRI Program is a federal program over which LRAPA has no regulatory authority. LRAPA does not guarantee the accuracy of any information copied from EPA's TRI website.

In order to report emissions to the TRI program, a facility must operate under a reportable NAICS code, meet a minimum employee threshold, and manufacture, process, or otherwise use chemicals in excess of the applicable reporting threshold for the chemical. This facility has not reported any emissions to the TRI program because they do not manufacture, process, or otherwise use chemicals in excess of the applicable reporting thresholds

13. Typically Achievable Control Technology (TACT)

LRAPA 32-008(1) requires an existing unit a facility to meet TACT if the emission unit meets the following criteria: The emission unit is not already subject to emission standards for the regulated pollutant under LRAPA title 30, title 32, title 33, title 38, title 39 or title 46 at the time TACT is required;

the source is required to have a permit; the emission unit has emissions of criteria pollutants equal to or greater than five (5) tons per year of particulate or ten (10) tons per year of any gaseous pollutant; and LRAPA determines that air pollution control devices and emission reduction processes in use for the emissions do not represent TACT and that further emission control is necessary to address documented nuisance conditions, address an increase in emissions, ensure that the source is in compliance with other applicable requirements, or to protect public health or welfare or the environment.

The only emissions units at the facility that meet these criteria are the boiler (EU-Boiler) and beam lam (EU-Lam). LRAPA 32-001 defines TACT for existing sources as the emission level that is typical of emissions units that are similar in type and size as the affected emissions unit. The wood-fired boiler gaseous emissions are greater than 10 tons/year and are therefore required to meet TACT; good combustion practices are considered TACT for the boiler. The beam lam emission unit (EU-Lam) emits more than 10 tons/year of VOC and are therefore required to meet TACT; LRAPA has determined that beam lam operations typically do not have VOC controls.

14. New Source Review (NSR) and Prevention of Significant Deterioration (PSD)

Because the proposed PSELs for all regulated pollutants are below the Significant Emission Rates (SERs) in LRAPA title 38, the facility is not subject to LRAPA's New Source Review (NSR) requirements.

15. National Emission Standards for Hazardous Air Pollutants (NESHAPs)

As an area source of HAPs, the facility's boiler is subject to the Boiler Area Source NESHAP (40 CFR Part 63 Subpart JJJJJJ. The facility must conduct an initial tune-up of the boiler within 30 days of restarting operation of the boiler and every two years (biennially) thereafter. A Notice of Compliance Status is required to be submitted within 120 days of conducting the initial tune-up.

The facility is not subject to the Plywood and Composite Wood Products (PCWP) NESHAP under 40 CFR Part 63 Subpart DDDD (applicable only to major sources) because the facility is an area source of HAPs.

16. New Source Performance Standards (NSPSs)

There are no emission units or devices subject to any NSPSs.

17. Performance Test Results

The following are the test results since 1998:

EU	Date	Pollutant	Result
Boiler	October 23, 2007	PM	0.42 lb/M lb steam
		CO	2.3 lb/M lb steam
		NO_X	0.30 lb/M lb steam
Boiler	August 29, 2002	PM	0.25 lb/M lb steam
		CO	0.24 lb/M lb steam
		NO_X	0.32 lb/M lb steam
		VOC	0.0 lb/M lb steam
Boiler	September 6, 2001	PM	0.25 lb/M lb steam
		CO	0.21 lb/M lb steam
		NO_X	0.31 lb/M lb steam
		VOC	0.01 lb/M lb steam

Boiler	February 10, 2000	PM	0.57 lb/M lb steam
		CO	0.06 lb/M lb steam
		NO_X	0.33 lb/M lb steam
		VOC	0.01 lb/M lb steam
Boiler	February 12, 1998	PM	0.41 lb/M lb steam
		CO	0.40 lb/M lb steam
		NO_X	0.36 lb/M lb steam
		VOC	0.01 lb/M lb steam

The permit requires CO, NO_X, and PM_{10} emission factor verification testing for the wood-fired boiler within 180 days of boiler startup.

18. Reporting Requirements

The facility is required to submit an annual summary by March 1st of each year to document compliance with the PSELs and other requirements in the permit, and to provide an estimate of Greenhouse Gas (GHG) emissions if emissions for the calendar year are equal to or greater than 2,500 metric tons of CO2 equivalents (CO2e) in accordance with OAR 340 division 215 by March 31st each year.

19. Public Notice

The proposed permit was on notice for public comment from July 20, 2022 to August 19, 2022. No written comments were submitted during the 30-day comment period.

Mkh/cmw
8/22/2022

Emission Details

Netting Basis (NB), PSEL, and Unassigned Emissions

	Baseline Emission Rate (tpy)	Previous and Current Netting Basis (tpy)	Previous PSEL (tpy)	Proposed PSEL (tpy)	Increase over Netting Basis (tpy)	SER (tpy)	2022 Unassigned Emissions (tpy)	PTE (tpy)
PM	364	124	98	98	-26	25	25	98
PM_{10}	166	77	92	91	14	15	0	93
$PM_{2.5}$	NA	38	46	46	8	10	0	46
CO	579.6	199	99	99	-100	100	100	98
NOx	146.8	98	53	53	-45	40	40	53
SO_2	1.4	4	39	39	35	40	0	2
VOC	46	29	39	39	10	40	0	11
GHG	28,311	28,311	74,000	74,000	45,689	75,000	0	31,548

The PM2.5 Netting Basis was set in the previous permit as equal to the PM10 Netting basis multiplied by the PM2.5 to PM10 PSEL fraction at the time

The unassigned emissions are established with this permit renewal, and will be established again and reduced upon the following permit renewal to no more than the

Criteria Pollutant Summary

Source	Production Rate	units	Pollutant	Emission Factor	units	Reference	Emissions (ton/yr)
Boiler	305,760	(M lb steam/yr)	PM	0.63	(lb/M lb steam)	Ave of representative test results	96.1
Boiler	305,760	(M lb steam/yr)	PM10	0.60	(lb/M lb steam)	Ave of representative test results	91.3
Boiler	305,760	(M lb steam/yr)	PM2.5	0.30	(lb/M lb steam)	Assume 50% of PM10	45.7
Boiler	305,760	(M lb steam/yr)	CO	0.64	(lb/M lb steam)	Ave of representative test results	98.1
Boiler	305,760	(M lb steam/yr)	NOx	0.34	(lb/M lb steam)	Ave of representative test results	52.7
Boiler	305,760	(M lb steam/yr)	SO2	0.014	(lb/M lb steam)	DEQ AQ-EF02	2.1
Boiler	305,760	(M lb steam/yr)	VOC	0.031	(lb/M lb steam)	Ave of representative test results	4.7
Boiler	305,760	(MMBtu/yr)	GHG (CO2)	93.8	(kg/mmBtu)	DEQ GHG Calculator for Steam	31,548
Pile - HF	38,000	cu unit/yr	PM	0.0074	lb/cu unit	TV Permit	0.1
Pile - HF	38,000	cu unit/yr	PM10	0.0037	lb/cu unit	TV Permit	0.1
Pile - HF	38,000	cu unit/yr	PM2.5	0.000555	lb/cu unit	DEQ -EF08: 15% of PM10	0.0
Pile - HF	38,000	cu unit/yr	VOC	0.1812	lb/cu unit	NCASI Tech Bul. 723 Pg. 14	3.4
Pile - SD	5,000	cu unit/yr	PM	0.0074	lb/cu unit	TV Permit	0.0
Pile - SD	5,000	cu unit/yr	PM10	0.0037	lb/cu unit	TV Permit	0.0
Pile - SD	5,000	cu unit/yr	PM2.5	0.000555	lb/cu unit	DEQ -EF08: 15% of PM10	0.0
Pile - SD	5,000	cu unit/yr	VOC	1.22	lb/cu unit	NCASI Tech Bul. 723 Pg. 14	3.1
Lam: Cascomel MF	195,260	lb/yr	VOC	0.0132	lb/lb adhesive	Sealed caul plate test	1.3
Lam: Cascomel 4720/5025	382,000	lb/yr	VOC	0.00891	lb/lb adhesive	Sealed caul plate test	1.7
Lam 3 Face	3,213,400	lb/yr	VOC	0.01018	lb/lb adhesive	Sealed caul plate test	16.4
Finish	Material Balance		VOC	NA	NA	10% of amount listed for Misc VOC on 2005 TV Form ED605	1.5
MH*	11,000	cu unit/yr	PM	0.276	lb/cu unit	AP42 converted	1.5
MH*	11,000	cu unit/yr	PM10	0.276	lb/cu unit	AP42 converted	1.5
MH*	11,000	cu unit/yr	PM2.5	0.138	lb/cu unit	AP42 & assume 25% of PM10	0.8
	*MH (material handling) includes truck bin loadout and road fugitive emissions						
Baghouse B1	11,000	cu unit/yr	PM	0.0012	lb/cu unit	DEQ AQ-EF02 converted to units	0.0066
Baghouse B1	11,000	cu unit/yr	PM10	0.0012	lb/cu unit	DEQ AQ-EF02 converted to units	0.0066
Baghouse B1	11,000	cu unit/yr	PM2.5	0.001	lb/cu unit	DEQ AQ-EF08: assume 100% of PM10	0.007
Baghouse B2	11,000	cu unit/yr	PM	0.0012	lb/cu unit	DEQ AQ-EF02 converted to units	0.0066
Baghouse B2	11,000	cu unit/yr	PM10	0.0012	lb/cu unit	DEQ AQ-EF02 converted to units	0.0066
Baghouse B2	11,000	cu unit/yr	PM2.5	0.0012	lb/cu unit	DEQ AQ-EF08: assume 100% of PM10	0.0066
Baghouse B3	11,000	cu unit/yr	PM	0.0012	lb/cu unit	DEQ AQ-EF02 converted to units	0.0066
Baghouse B3	11,000	cu unit/yr	PM10	0.0012	lb/cu unit	DEQ AQ-EF02 converted to units	0.0066
Baghouse B3	11,000	cu unit/yr	PM2.5	0.0012	lb/cu unit	DEQ AQ-EF08: assume 100% of PM10	0.007

Pollutant	Capacity
PM	98
PM_{10}	93
$PM_{2.5}$	46
CO	98
NO_X	53
SO_2	2
VOC	11
GHG	31548

Capacity is the maximum emissions under the source's physical and operational design

HAPs								
Source	**pollutant**	**Production Rate**		**Emission Factor**		**Reference**	**Annual Emissions**	
Boiler	Acetaldehyde	46,000	ton/yr	0.01411	lb/ton hog fuel	TV permit/Ap42	0.32	ton/yr
Boiler	Acrolein	46,000	ton/yr	0.0680	lb/ton hog fuel	TV permit/Ap42	1.56	ton/yr
Boiler	Benzene	46,000	ton/yr	0.0714	lb/ton hog fuel	TV permit/Ap42	1.64	ton/yr
Boiler	Formaldehyde	46,000	ton/yr	0.0221	lb/ton hog fuel	TV permit/ncasi	0.51	ton/yr
Boiler	Methanol	46,000	ton/yr	0.0143	lb/ton hog fuel	TV permit/ncasi	0.33	ton/yr
Boiler	Napthalene	46,000	ton/yr	0.0016	lb/ton hog fuel	TV permit/Ap42	0.04	ton/yr
Boiler	Phenol	46,000	ton/yr	0.0009	lb/ton hog fuel	TV permit/Ap42	0.02	ton/yr
Boiler	Propionaldehyde	46,000	ton/yr	0.0010	lb/ton hog fuel	TV permit/Ap42	0.02	ton/yr
Boiler	Styrene	46,000	ton/yr	0.0323	lb/ton hog fuel	TV permit/Ap42	0.74	ton/yr
Boiler	Toluene	46,000	ton/yr	0.0156	lb/ton hog fuel	TV permit/Ap42	0.36	ton/yr
Boiler	Xylene	46,000	ton/yr	0.0004	lb/ton hog fuel	TV permit/Ap42	0.01	ton/yr
Boiler	HCL	46,000	ton/yr	0.1139	lb/ton hog fuel	TV permit/Ap42	2.62	ton/yr
Boiler	Arsenic	46,000	ton/yr	0.0004	lb/ton hog fuel	TV permit/Ap42	0.01	ton/yr
Boiler	Cadmium	46,000	ton/yr	0.0001	lb/ton hog fuel	TV permit/Ap42	0.00	ton/yr
Boiler	Chromium	46,000	ton/yr	0.0004	lb/ton hog fuel	TV permit/Ap42	0.01	ton/yr
Boiler	Lead	46,000	ton/yr	0.0008	lb/ton hog fuel	TV permit/Ap42	0.02	ton/yr
Boiler	Manganese	46,000	ton/yr	0.0272	lb/ton hog fuel	TV permit/Ap42	0.63	ton/yr
Boiler	Mercury	46,000	ton/yr	0.0001	lb/ton hog fuel	TV permit/Ap42	0.00	ton/yr
Boiler	Nickel	46,000	ton/yr	0.0001	lb/ton hog fuel	TV permit/Ap42	0.00	ton/yr
Boiler	Selenium	46,000	ton/yr	0.0000476	lb/ton hog fuel	TV permit/Ap42	0.00	ton/yr
Boiler	Total	46,000	ton/yr	0.38465	lb/ton hog fuel	sum of above	8.85	ton/yr
Lam: Cascomel MF	Methanol	195,260	lb/yr	0.01312	lb/lb adhesive	Sealed caul plate test	1.3	ton/yr
Lam: Cascomel MF	Formaldehyde	195,260	lb/yr	0.00008	lb/lb adhesive	Sealed caul plate test	0.008	ton/yr
Lam: Cascomel 4720/5	Methanol	382,000	lb/yr	0.008	lb/lb adhesive	Sealed caul plate test	1.5	ton/yr
Lam: Cascomel 4720/5	Formaldehyde	382,000	lb/yr	0.00007	lb/lb adhesive	Sealed caul plate test	0.0	ton/yr
Lam: Face	Methanol	3,216,400	lb/yr	0.00058	lb/lb adhesive	Sealed caul plate test	0.9	ton/yr
Lam: Face	Formaldehyde	3,216,400	lb/yr	0.000097	lb/lb adhesive	Sealed caul plate test	0.2	ton/yr
Lam: Face	Phenol	3,216,400	lb/yr	0.00111	lb/lb adhesive	Sealed caul plate test	1.8	ton/yr
Lam Production	Total HAP						5.7	
Finish Face Repair	Formaldehyde	1,500	lb/yr	0.00019	lb/lb	TV permit- Borden	0.0001	ton/yr
Finish Face Repair	Methanol	1,500	lb/yr	0.00037	lb/lb	TV permit- Borden	0.0003	ton/yr
Finish Gap Filling	Formaldehyde	1,500	lb/yr	0.00038	lb/lb	TV permit- Borden	0.0003	ton/yr
Finish Gap Filling	Methanol	1,500	lb/yr	0.00074	lb/lb	TV permit- Borden	0.0006	ton/yr
Finish - Hand Putty	Styrene	500	lb/yr	0.27	lb/lb	TV permit SDS	0.0675	ton/yr
Finish - Spray Paint	Ethylbenzene	297	lb/yr	0.101	lb/lb	Spfld TV permit SDS	0.0150	ton/yr
Finish - Spray Paint	Toluene	297	lb/yr	1.000	lb/lb	Spfld TV permit SDS	0.1485	ton/yr
Finish	Total HAP						0.2323	ton/yr
B1 or B3 - joist saw	Methanol			0.016	lb/MLF	LRAPA AQGP-010	MLF and/or MSF unknown, assume negligible	
B1 or B3 -sander	Acetaldehyde			0.0028	lb/MSF	LRAPA AQGP-010	MLF and/or MSF unknown, assume negligible	
B1 or B3 -sander	Formaldehyde			0.002	lb/MSF	LRAPA AQGP-010	MLF and/or MSF unknown, assume negligible	
B1 or B3 -sander	Methanol			0.012	lb/MSF	LRAPA AQGP-010	MLF and/or MSF unknown, assume negligible	

		Potential
Pollutant	Pollutant	Emissions (ton/yr)
Highest Single HAP	Methanol	4.0
Total HAPs	Sum	14.7

Rosboro Vaughn
Permit No. 200550
Boiler Test Results

Pollutant	Date	Result (lb/M lb Steam)		
PM	10/23/2007	0.42	0.15	gr/dscf
PM	8/29/2002	0.25		
PM	9/6/2001	0.25		
PM	2/23/2000	0.57		
PM	2/13/1998	0.41		
PM	9/1/1992	0.98	37.4	lb/hr
PM	8/31/1992	1.09	44.5	lb/hr
PM	12/4/1990		72.5	lb/hr
PM	3/28/1986	1.06	0.21	gr/dscf
	AVERAGE	**0.63**	**lb/M lb steam**	

Pollutant	Date	Result (lb/M lb Steam)	
CO	10/23/2007	2.3	
CO	8/29/2002	0.24	
CO	9/6/2001	0.21	
CO	2/23/2000	0.06	
CO	2/13/1998	0.40	
CO	9/1/1992	5.51	excluded from average, not representative
CO	8/31/1992	8.66	excluded from average, not representative
	AVERAGE	**0.64**	**lb/M lb steam**

Pollutant	Date	Result (lb/M lb Steam)	
NOx	10/23/2007	0.30	
NOx	8/29/2002	0.32	
NOx	9/6/2001	0.31	
NOx	2/23/2000	0.33	
NOx	2/13/1998	0.36	
NOx	9/1/1992	0.44	
NOx	8/31/1992	0.35	
	AVERAGE	**0.344**	**lb/M lb steam**

Pollutant	Date	Result (lb/M lb Steam)	
VOC	2/13/1998	0.01	
VOC	2/23/2000	0.01	
VOC	9/6/2001	0.01	as propane
VOC	8/29/2002	0	
VOC	9/1/1992	0.13	
VOC	8/31/1992	0.03	
	AVERAGE	**0.031**	**lb/M lb steam**

Dry Kiln Test Results*

Pollutant	Date	Result	
VOC	12/19/1998	0.39	lb/MBF
PM	12/19/1998	0.022	lb/MBF

*OSU small-scale dry kiln

Baseline Emission Rates						
PM						PM
Emission device	Rate	Units	PM EF	units	Reference	tons/yr
HF Boiler 1	231.84	MM Lb steam/yr	0.2664	lb/M lb steam	1978 source test	30.9
HF Boiler 2	154.56	MM Lb steam/yr	1.0359	lb/M lb steam	1978 source test	80.1
HF Boiler 3	154.56	MM Lb steam/yr	1.0359	lb/M lb steam	1978 source test	80.1
HF Boiler 4	231.84	MM Lb steam/yr	0.435	lb/M lb steam	1978 source test	50.4
Kilns	48,300	MBF/yr	0.05	lb/MBF	General Permit*	1.2
Veneer Dryer 1	36,000	MSF/yr	0.519	lb/MSF	TV Permit/DEQ	9.3
Veneer Dryer 2	36,000	MSF/yr	0.519	lb/MSF	TV Permit/DEQ	9.3
Sawmill/Planer Cyclones	86,363,580.00	lbs/yr	0.5	lb/BDT	TV Permit/DEQ	10.80
Plywood Cyclones/BHs	2,108,160.00	lbs/yr	0.04	lb/BDT	TV Permit/DEQ	0.02
Roads Unpaved - Saw	200,000	BF/day			TV Permit	2.3
Roads Unpaved - Ply	180,822	SF/day			TV Permit	7.9
Roads Paved - Saw	200,000	BF/day			TV Permit	18.4
Roads Paved - Ply	180,822	SF/day			TV Permit	63.2
					TOTAL	**363.9**
*The dry kiln PM and PM10 emission factors were updated from NCASI (0.201 lb/MBF) to the more current, smaller emission factor.						
PM10						PM10
Emission device	Rate	Units	PM10 EF	units	Reference	tons/yr
HF Boiler 1	231.84	MM Lb steam/yr	0.1332	lb/M lb steam	50%PM10 General	15.4
HF Boiler 2	154.56	MM Lb steam/yr	0.51795	lb/M lb steam	50%PM10 General	40.0
HF Boiler 3	154.56	MM Lb steam/yr	0.51795	lb/M lb steam	50%PM10 General	40.0
HF Boiler 4	231.84	MM Lb steam/yr	0.2175	lb/M lb steam	50%PM10 General	25.2
Kilns	48,300	MBF/yr	0.05	lb/MBF	General Permit*	1.2
Veneer Dryer 1	36,000	MSF/yr	0.519	lb/MSF	TV Permit/DEQ	9.3
Veneer Dryer 2	36,000	MSF/yr	0.519	lb/MSF	TV Permit/DEQ	9.3
Sawmill/Planer Cyclones	86,363,580.00	lbs/yr	0.25	lb/BDT	TV Permit/DEQ	5.4
Plywood Cyclones/BHs	2,108,160.00	lbs/yr	0.04	lb/BDT	TV Permit/DEQ	0.0
Roads Unpaved - Saw	200,000	BF/day			TV Permit	0.8
Roads Unpaved - Ply	180,822	SF/day			TV Permit	2.8
Roads Paved - Saw	200,000	BF/day			TV Permit	3.7
Roads Paved - Ply	180,822	SF/day			TV Permit	12.6
					TOTAL	**165.9**
*The dry kiln PM and PM10 emission factors were updated from NCASI (0.201 lb/MBF) to the more current, smaller emission factor.						
CO						CO
Emission device	Rate	Units	CO EF	units	Reference	tons/yr
HF Boiler 1	231.84	MM Lb steam/yr	1.5	lb/M lb steam	ST from Foster plant 9/25/92	173.9
HF Boiler 2	154.56	MM Lb steam/yr	1.5	lb/M lb steam	ST from Foster plant 9/25/92	115.9
HF Boiler 3	154.56	MM Lb steam/yr	1.5	lb/M lb steam	ST from Foster plant 9/25/92	115.9
HF Boiler 4*	231.84	MM Lb steam/yr	1.5	lb/M lb steam	ST from Foster plant 9/25/92	173.9
					TOTAL	**579.6**
* The CO emission factor for HF Boiler 4 was changed from the AP-42 EF (2.20 lb/M lb steam) to the same factor used for the other HF Boilers (1-3)						
NOx						NOx
Emission device	Rate	Units	NOx EF	units	Reference	tons/yr
HF Boiler 1	231.84	MM Lb steam/yr	0.38	lb/M lb steam	ST from Foster plant 9/25/91	44.0
HF Boiler 2	154.56	MM Lb steam/yr	0.38	lb/M lb steam	ST from Foster plant 9/25/91	29.4
HF Boiler 3	154.56	MM Lb steam/yr	0.38	lb/M lb steam	ST from Foster plant 9/25/91	29.4
HF Boiler 4	231.84	MM Lb steam/yr	0.38	lb/M lb steam	ST from Foster plant 9/25/91	44.0
					TOTAL	**146.8**
SO2						SO2
Emission device	Rate	Units	SO2EF	units	Reference	tons/yr
HF Boiler 1	231.84	MM Lb steam/yr	0.012	lb/M lb steam	ST from Foster plant 9/25/91	1.4
HF Boiler 2	154.56	MM Lb steam/yr	0.012	lb/M lb steam	ST from Foster plant 9/25/91	0.9
HF Boiler 3	154.56	MM Lb steam/yr	0.012	lb/M lb steam	ST from Foster plant 9/25/91	0.9
HF Boiler 4	231.84	MM Lb steam/yr	0.012	lb/M lb steam	ST from Foster plant 9/25/91	1.4
VOC						VOC
Emission device	Rate	Units	SO2EF	units	Reference	tons/yr
HF Boiler 1	231.84	MM Lb steam/yr	0.012	lb/M lb steam	ST from Foster plant 9/25/91	1.4
HF Boiler 2	154.56	MM Lb steam/yr	0.012	lb/M lb steam	ST from Foster plant 9/25/91	0.9
HF Boiler 3	154.56	MM Lb steam/yr	0.012	lb/M lb steam	ST from Foster plant 9/25/91	0.9
HF Boiler 4	231.84	MM Lb steam/yr	0.012	lb/M lb steam	ST from Foster plant 9/25/91	1.4
Kilns	48,300	MBF/yr	1.7	lb/MBF	General Permit for P.Pine*	41.1
Veneer Dryer 1	36,000	MSF/yr	0.3217	lb/MSF	DEQ- 2 STs from Foster Plant & 1 std	5.8
Veneer Dryer 2	36,000	MSF/yr	0.3217	lb/MSF	DEQ- 2 STs from Foster Plant & 1 std	5.8
Presses 1	28,800	MSF/yr	0.07	lb/MSF	General Permit**	1.0
Presses 2	43,200	MSF/yr	0.07	lb/MSF	General Permit**	1.5
Storage Piles	125,008	tons/yr	0.076	lb/ton	NCASI, TV permit	4.8
					TOTAL	**45.7**
*The dry kiln VOC emission factor was updated from NCASI (3.1681 x 0.76 lb/MBF) to the more current, smaller emission factor.						
**The plywood press VOC emission factor was updated from AP42 (0.0243 lb/MBF) to the more current,but larger, emission factor in the General Permi						
						GHG
GHG						tons/yr
Boiler	270,201	MMBtu/yr	93.8	kg CO2/mmBtu	DEQ GHG Calculator, 40 CFR Part 98	27937.92
Boiler	270,201	MMBtu/yr	0.0072	kg CH4/mmBtu	DEQ GHG Calculator, 40 CFR Part 98	2.14
Boiler	270,201	MMBtu/yr	0.0036	kg N20/mmBtu	DEQ GHG Calculator, 40 CFR Part 98	1.07
The GHG baseline emisison rate is based upon the 2010 calendar year steaming rate.					TOTAL (short tons)	28,311

Baseline Emission Rate Totals	
Pollutant	tons/yr
PM	364
PM10	166
PM2.5	NA
CO	580
NOx	147
SO2	1.4
VOC	46
GHG	28,311

Rosboro Vaughn				
Permit No. 200550				
PM2.5 Netting Basis (NB)				
	"Required" PM2.5 PSEL			46
	PM2.5 to PM10 PSEL ratio			0.50
	PM2.5 NB (=PM10 NB x ratio)			38

Rosboro Vaughn
Permit No. 200550
GHG Estimations "Capacity"

Calculating greenhouse gas emissions from steam production

Equation C-2c*: CO_2 = .001 * Steam * B * EF
Equation C-9b*: CH_4 or N_2O = .001 * Steam * B * EF
* Equations are from EPA's Mandatory Greenhouse Gas Reporting Rule, 40 CFR Part 98, Subpart C

Total CO_2e (short tons):	**32,036.85**
Anthropogenic CO_2e (short tons):	**422.25**
Biogenic CO_2 (short tons):	**31,614.61**
Total fuel combusted (mmBtu)	**305,760**

Input Data

[Steam] = Total mass of steam generated by MSW or solid fuel combustion during the reporting year (lb steam)	305,760,000.	
[B] = Ratio of the boiler's maximum rated heat input capacity to its design rated steam output capacity (mmBtu/lb steam)	0.001	
[.001] = Conversion Factor from kg to metric tons (constant)	0.001	
[EF] = Fuel-Specific Default CO_2 Emission Factor, from Table C-1 (kg CO_2/mmBtu)	93.8	See "Table C-1" tab. Note: Wood/Woodwaste = 93.8 kg/mmBtu
[EF] = Fuel-Specific Default CH_4 Emission Factor, from Table C-2 (kg CH_4/mmBtu)	0.0072	See "Table C-2" tab. Note: Wood/Woodwaste = .0072 kg/mmBtu
[EF] = Fuel-Specific Default N_2O Emission Factor, from Table C-2 (kg N_2O/mmBtu)	0.0036	See "Table C-2" tab. Note: Wood/Woodwaste = .0036 kg/mmBtu
Is the fuel biomass?	yes	

Emissions by mass (short tons)

CO_2 Emissions For the Specific Fuel Type (short tons) from Equation C-2c	31614.61
CH_4 Emissions For the Specific Fuel Type (short tons) from Equation C-9b	2.43
N_2O Emissions For the Specific Fuel Type (short tons) from Equation C-9b	1.21

CH_4 Emissions Converted to Carbon Dioxide Equivalent (short tons CO_2e)

Global Warming Potential for CH_4	25
Annual CH_4 emissions from combustion of the specified fuel (metric tons CO_2e)	**60.67**

N_2O Emissions Converted to Carbon Dioxide Equivalent (short tons CO_2e)

Global Warming Potential for N_2O	298
Annual N_2O emissions from combustion of the specified fuel (metric tons CO_2e)	**361.58**