

Lane Regional Air Protection Agency  
Standard Air Contaminant Discharge Permit

**REVIEW REPORT**

**Emerald Forest Products, Inc. – Plant #3**

82898 North Butte Road  
Creswell, Oregon 97426

**Permit No. 202526**

Permit Action

1. This is a permit renewal for an existing Air Contaminant Discharge Permit (ACDP) for Emerald Forest Products – Plant #3 (EFP or facility), which was issued on August 18, 2010, and expired on August 18, 2015. The existing permit will remain valid until LRAPA issues the permit renewal. The facility operates a process listed in Table 1, Part B: 57 – Veneer Drying and Part C: 3 – The facility is electing to maintain the source's baseline emission rate or netting basis. The facility is requesting renewal of their permit.

Emission Units Description

2. The following table includes the emission units and control devices at the facility.

Description	Pollution Control Device
Two (2) Gas-Fired Veneer Dryers (#3 and #5)	Burley Scrubber (#3) and Venturi Scrubber (#5)

Attainment Status

3. This facility is located attainment area for all criteria pollutants.

General Background Information

4. EFP operates a veneer-drying production facility in Creswell, Oregon. The facility started operations in the 1950's as a plywood manufacturing plant, using Veneer Dryer #3. In 1998, the facility installed Veneer Dryer #5 and is currently only manufacturing softwood veneer to supplement EFP – Plant #1 in Eugene. The facility uses one each of one (1) Burley scrubber and one (1) Venturi (Riley) Scrubber to control PM emissions from the two (2) gas-heated veneer dryers. In 2015 the amount of veneer dried at the facility was approximately 69,190 thousand square feet (MSF–3/8" basis). The total maximum design rate for both veneer dryers is 31.0 thousand square feet per hour (MSF–3/8" basis) and 225,000 thousand square feet per year (MSF–3/8" basis) combined.

Compliance

5. The facility was inspected on April 26, 2016 and found to be in compliance with permit conditions. The facility last Full Compliance Evaluation (FCE) was conducted on April 26, 2016 and the facility was in compliance.
6. During the prior permit period, there were twelve (12) complaints logged in by LRAPA. Ten (10) were odor complaints and two (2) were particulate fallout complaints.
7. Enforcement History:
  - 7.a. Currently there are no enforcement actions pending against the facility.
  - 7.b. March 2011: The facility received a Notice of Non-Compliance (NON #3239), for failing to submit their annual report in a timely manner.
  - 7.c. September 2002: The facility received a Notice of Non-Compliance (NON #2391), for failing to keep all contaminant control equipment at full operating efficiency

Performance Test Results:

8. December 2003: EFP tested the two (2) natural gas veneer dryers for VOC, Formaldehyde, and Methanol to verify the emission factors.

Emissions

9. Proposed PSEL information:

Pollutant	Baseline Emission Rate (tons/yr) <sup>1</sup>	Netting Basis		Plant Site Emission Limit (PSEL)	
		Previous (tons/yr)	Proposed (tons/yr)	Previous PSEL (tons/yr)	Proposed PSEL (tons/yr)
PM	19	19	19	33	33
PM <sub>10</sub>	19	19	19	33	28
PM <sub>2.5</sub>	NA	NA	11	NA	16
CO	27	27	27	99	99
NO <sub>x</sub>	6	6	6	39	39
SO <sub>2</sub>	0	0	0	0	0
VOC	28	28	28	60	68
GHG	9,812	NA	9,812	NA	74,000

<sup>1</sup> The Baseline Emission Rate for the only Veneer Dryer #3 and one (1) plywood press operating 6,000 hours per year, with a plywood production of 72 million square feet (3/8" basis) and veneer dryer production of 50 million square feet million (3/8" basis) per year.

- 9.a. The baseline emission rates for PM, PM<sub>10</sub>, CO, NO<sub>x</sub>, and SO<sub>2</sub> were determined in previous permitting actions and there have been no changes.
- 9.b. A baseline emission rate is not required for PM<sub>2.5</sub> in accordance with the definition of "baseline emission rate" in LRAPA Title 12. The PM<sub>2.5</sub> netting basis is established with this permitting action as 59% of the PM<sub>10</sub> PSEL.
- 9.c. During the permit renewal it was discovered that the cooling zone of the veneer dryers vent directly to the atmosphere via a stack therefore, source test emission factors could not be used to calculate the VOCs from the cooling zones. The DEQ emission factor for VOC for cooling zones was applied to calculate the contribution to the VOC PSEL from the cooling zones. The 2003 source test results for VOC were utilized in the last PSEL calculation for VOC, but the propane:carbon ratio of 1.22 was not taken into account when the emission factor was applied. During this renewal action, the 1.22 propane:carbon ratio was applied to the VOC emission factor for the veneer dryers. Because this increased the VOC PSEL for the facility SER and Netting increases had to be analyzed to demonstrate that the increase could be made in the renewal. The VOC increase does not increase the Netting Basis or increase the current PSEL over the SER of 40 tons per year of VOC, so it was determined that this correction could be done in this permit renewal.
- 9.d. In accordance with LRAPA 42-0040 the PSELs for CO, NO<sub>x</sub>, and GHG are set at the Generic PSEL level. In accordance with LRAPA 42-0041 the PM, PM<sub>10</sub>, PM<sub>2.5</sub>, SO<sub>2</sub>, and VOC PSELs are set at a source specific annual levels and incorporating updated emission factors.

9.e. The baseline for GHGs is based upon actual emissions from 2004 calendar year.

Hazardous Air Pollutants:

10. The HAPs potential to emit (PTE) and the actual 2015 HAPs emissions from the facility are shown in the table below. The emission factors for the single HAP are based on a combination of DEQ General Permit Emission Factors and 2003 source test data.

HAP	Potential Emissions (tons/yr)	2015 Actual Emissions (tons/year)
Acetaldehyde	7.65	2.35
Acrolein	0.10	0.03
Formaldehyde	3.38	1.04
Methanol	3.49	1.07
Phenol	1.80	0.55
Propionaldehyde	0.41	0.12
<b>Total HAPs</b>	<b>16.82</b>	<b>5.17</b>

Other Regulatory Considerations

11. The particulate matter emissions from the facility point stacks are required to not equal or exceed 20% opacity as a six (6) minute block average. The permit contains the applicable particulate matter requirement in terms of the grain loading standards.
12. LRAPA 33-060-3.A(2) limits visible emissions from the veneer dryer stacks to 10 percent opacity on average and 20 percent maximum opacity.

PSEL Compliance Demonstration

13. In order to ensure that the 12-month rolling PSELs are not exceeded, the facility is required to perform emission calculations by the 15<sup>th</sup> day of each month and submit annual reports by March 15<sup>th</sup> of each year. For GHGs, compliance with the PSEL is determined by complying with the Oregon GHG reporting program requirements specified in division 215 (as applicable).
14. In lieu of monthly calculations, the facility is allowed to keep records demonstrating that none of the following operational parameters are exceeded on a rolling annual basis. The total gas-fired veneer dryers' throughputs shall not exceed 225,000 MSF (on a 3/8" basis) per calendar 12-month rolling period.

Typically Achievable Control Technology (TACT)

15. LRAPA Title 32-008 requires an existing emission unit at a facility to meet TACT if the emissions unit has emissions of criteria pollutants greater than ten (10) tons per year of any gaseous pollutant or five (5) tons per year of particulate, and the emissions unit is not subject to the emissions standards under LRAPA Title 30, Title 32, Title 33, Title 38, Title 39, or Title 46 for the pollutants emitted, and the facility is required to have a permit. The veneer dryers are subject to the requirements of LRAPA 33-060 therefore; there are no emission units required to meet TACT.

Criteria Pollutants

16. A major source is a facility that has the potential to emit more than 100 tons per year of any criteria pollutant. This facility is not a major source of criteria pollutant emissions.

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

17. Because the proposed PSEs for all regulated pollutants are below the Significant Emission Rates (SERs) in LRAPA Title 12, the facility is not subject to LRAPA's PSD requirements for PM, PM<sub>10</sub>, PM<sub>2.5</sub>, SO<sub>x</sub>, NO<sub>x</sub>, CO, and VOC in LRAPA Title 38.

New Source Performance Standards (NSPS)

18. The facility is not subject to any NSPS.

National Emission Standards for Hazardous Air Pollutants (NESHAP)

19. This facility is not a major source of HAPs and therefore, is not subject to 40 CFR 63, Subpart DDDD – Plywood and Composite Wood Products.

Continuous Compliance

20. A record of the following data is required to be maintained for a period of at least five (5) years at the facility. [LRAPA 35-0160 and 42-0080]

	<u>Parameter</u>	<u>Units</u>	<u>Minimum Recording Frequency</u>
(a)	Total throughput of Gas-Fired Veneer Dryers	1000 Square Feet (MSF – 3/8-inch basis)	Monthly
(b)	PSEL calculations required by Condition 4 of the permit	tons per year	Monthly
(c)	Amount of natural gas combusted in the dryers	Cubic Feet	Monthly
(d)	Pressure drop reading on Scrubbers	Inches of Water	Weekly
(e)	Visual inspection of the dryers for fugitive emissions	--	Daily
(f)	Inspect veneer dryers and scrubbers (including maintenance of scrubbers)	--	As performed

Reporting

21. *By March 15<sup>th</sup> each year*, the facility is required to submit an annual report to include the information required by Permit Condition 16.
22. *By March 31<sup>st</sup> each year*, the facility is also required to submit an annual GHG report, as applicable, in accordance with OAR 340 division 215.

Public Notice

23. The draft permit was on public notice from June 23, 2017 to July 27, 2017. No written comments were submitted during the 35-day comment period.

**Emission Factors and PSEL Calculations:**

**Veneer Dryers**

Gas-Fired Veneer Dryer (2 Total): PTE Annual Emissions (tons/yr)			
Maximum Throughput	31.0	Msqft 3/8" /hr	
Maximum Throughput	225,000.0	Msqft 3/8"	at 8760 hours/year
Actual 2015 Throughput	69,190.0	Msqft 3/8"	at 8760 hours/year
Pollutants	Emission Factors (lb/1000 sqft)	PTE Annual Emission [Max] (tons/year)	2015 Actual Emission (tons/year)
PM	0.290	32.63	10.03
PM10*	0.247	27.73	8.53
PM2.5*	0.145	16.31	5.02
NOx	0.120	13.50	4.15
CO	0.020	2.25	0.69
VOC**	0.573	64.51	19.84
Formaldehyde**	0.026	2.93	0.90
Methanol**	0.019	2.14	0.66
Heated Zone Pollutants	Emission Factors (lb/1000 sqft)	PTE Annual Emission [Max] (tons/year)	2015 Actual Emission (tons/year)
VOC**	Used Test Data		
Acetaldehyde	0.062	6.98	2.14
Acrolein	0.0009	0.10	0.03
Formaldehyde**	Used Test Data		
Methanol**	Used Test Data		
Phenol	0.006	0.68	0.21
Propionaldehyde	0.0016	0.18	0.06
Cooling Zone Pollutants	Emission Factors (lb/1000 sqft)	PTE Annual Emission [Max] (tons/year)	2015 Actual Emission (tons/year)
VOC	0.050	5.63	1.73
Acetaldehyde	0.003	0.34	0.10
Acrolein	0.000	0.00	0.00
Formaldehyde	0.002	0.23	0.07
Methanol	0.006	0.68	0.21
Phenol	0.000	0.00	0.00
Propionaldehyde	0.002	0.23	0.07
Fugitive Pollutants	Emission Factors (lb/1000 sqft)	PTE Annual Emission [Max] (tons/year)	2015 Actual Emission (tons/year)
VOC	0.046	5.18	1.59
Acetaldehyde	0.003	0.34	0.10
Formaldehyde	0.002	0.23	0.07
Methanol	0.006	0.68	0.21
Phenol	0.01	1.13	0.35

<b>Formula:</b>
Annual Emissions = (Maximum throughput (sqft/yr) x Emission Factor) x 1 ton/2000 lb
<b>Notes:</b>
*All Veneer Dryers PM10 and PM 2.5 emissions fraction are based on Wet Scrubber (Medium Efficiency) and are based on DEQ Emission Factors Wood Products - PM10/PM2.5 Fraction (08/01/11)
** Gas-Fired Veneer Dryer emission factors are based on DEQ General ACDP: Sawmill/Millwork ≥ 25,000 bd ft , Section 12.0: Emission Factors <b>Except</b> for VOC, Methanol, and Formaldehyde which used test data from a source test done in November 2003; Where the highest average from each veneer dryer emission factor was used (the results for VOC was "as propane" basis and has to multiplied by 1.22 to get the true VOC emission factor. The formaldehyde and methanoi is the highest single run for each dryer.

**PSELS**

Total Plant Site Emission Limits		
Pollutant	Annual Emissions	
	Potential	Actual (2015)
	(tpy)	(tpy)
PM	32.63	10.03
PM <sub>10</sub>	27.73	8.53
PM <sub>2.5</sub>	16.31	5.02
NO <sub>x</sub>	13.50	4.15
CO	2.25	0.69
VOC	75.31	23.16
Acetaldehyde	7.65	2.35
Acrolein	0.10	0.03
Formaldehyde	3.38	1.04
Methanoi	3.49	1.07
Phenol	1.80	0.55
Propionaldehyde	0.41	0.12
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**Total HAPS**

TOTAL HAPS (ton/yr)		
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