



**Lane Regional Air Protection Agency  
Standard Air Contaminant Discharge Permit**

**Review Report**

**Emerald Forest Products, Inc. – Plant #1**

118 Highway 99 North  
Eugene, OR 97402

**Permit No. 202528**

**Source Information:**

Primary SIC	2436
NAICS	321212
Source Categories (LRAPA title 37, Table 1)	Part B: 57. Plywood manufacturing and/or veneer drying. Part C: 3. Sources electing to maintain the source's netting

	basis. Part C: 4. All sources that request a PSEL equal to or greater than the SER for a regulated pollutant.
Public Notice Category	III

**Compliance and Emissions Monitoring Requirements:**

Unassigned Emissions	Y
Emission Credits	N
Compliance Schedule	N
Source Test	Y

COMS	N
CEMS	N
Ambient monitoring	N

**Reporting Requirements**

Annual Report (due date)	2/15
Semi-Annual Report (due date)	N
GHG Report (due date)	3/31
Monthly Report (due date)	N
Quarterly Report (due date)	N

Excess Emissions Report	Y
Other Reports (due date)	Y
- CAO Zoning Report	2/15
- NSPS Dc Reports	2/15, 8/15

**Air Programs**

NSPS (list subparts)	A, Dc
NESHAP (list subparts)	N
Compliance Assurance Monitoring (CAM)	N
Regional Haze (RH)	N
40 CFR part 68 Risk Management	N
Cleaner Air Oregon (CAO)	Y
Synthetic Minor (SM)	N
SM-80	Y

Title V	N
Major FHAP Source	N
Federal Major Source	N
TACT	N
Type A State New Source Review	N
Type B State New Source Review	N
Prevention of Significant Deterioration (PSD)	N
Nonattainment New Source Review (NNSR)	N

### **Permittee Identification**

1. Emerald Forest Products, Inc. (“the facility” “EFP” or “EFP#1”) operates a veneer-drying and plywood production facility, known as Plant #1, at 118 Highway 99 North, Eugene, Oregon. The facility was constructed in 1953.
2. The primary SIC code for this facility is 2436 – Softwood Veneer and Plywood. The primary NAICS code for this facility is 337127 – Softwood Veneer and Plywood Manufacturing.

### **General Background**

3. EFP#1 operates a veneer-drying and plywood production facility. EFP operates saws, hogs, and other wood-processing equipment, a direct gas-fired veneer dryer (EU-NGVDY#1), an indirect steam-heated veneer dryer (EU-STVDY#2), five (5) plywood presses (EU-PLYPRS), and one (1) 42.87 MMBtu/hr natural gas-fired boiler with fuel oil backup (EU-BOILER). The facility uses a pneumatic transfer system (EU-PXFRSYS) consisting of a cyclone and two (2) baghouses to control particulate matter from hogged material and sawdust from plywood and veneer production. Material passing through the pneumatic transfer system (EU-PXFRSYS) is conveyed to two (2) target boxes, which is then loaded onto trucks and shipped off site. The facility uses two (2) Burley scrubbers to control particulate matter from the veneer dryers. The maximum design rate for the plywood presses is 40,000 MSF-3/8” basis per hour and 350,400 MSF-3/8” basis per year (3/8” basis).

### **Reasons for Permit Action and Fee Basis**

4. The proposed permit is a renewal of an existing Standard Air Contaminant Discharge Permit (ACDP) that was issued on July 9, 2019 and was originally scheduled to expire on July 9, 2024. The renewed Standard ACDP will be valid for up to five (5) years.
5. This facility was called into the Cleaner Air Oregon (CAO) program by LRAPA on December 15, 2021. The facility submitted a Risk Assessment on February 29, 2024. This proposed permit includes CAO-specific conditions in order to maintain the facility’s risk to human health at acceptable levels.

### **Attainment Status**

6. The facility is located in an area that has been designated as attainment or unclassified for all criteria pollutants. The facility is inside the Eugene-Springfield UGB as defined in LRAPA 29-0010 which designates the Eugene-Springfield CO and PM<sub>10</sub> maintenance areas. The facility is also located inside the Eugene-Springfield UGB as described in the current Eugene-Springfield Metropolitan Area General Plan, as amended. The facility is located within 100 kilometers of three (3) Class I air quality protection areas: Diamond Peak Wilderness, Mount Washington Wilderness and Three Sisters Wilderness area.

### **Permitting History**

7. LRAPA has reviewed and issued the following permitting actions to this facility since the last Standard ACDP renewal was issued on July 9, 2019:

Date(s) Approved/Valid	Permit Action Type	Description
07/09/2019 – 07/09/2024	Standard ACDP	Renewal
Upon Issuance	Standard ACDP	Renewal

### Emissions Unit Description

8. The emissions units regulated by this permit are the following:

Emissions Unit ID	Description	Pollution Control Device (PCD ID)	Installed / Last Modified
EU-PXFRSYS	Pneumatic Transfer System	2 Baghouses (<1982) 2 Target Boxes (1993)	1993
EU-NGVDY#1	Natural Gas-Fired Veneer Dryer	Burley Med. Eff. Scrubber (2000)	2000
EU-STVDY#2	Steam-Heated Veneer Dryer	Burley Med. Eff. Scrubber (1996)	1953
EU-PLYPRS	Plywood Presses #1 – #3	None	<1982
	Plywood Press #4	None	1995
	Plywood Press #5	None	1997
EU-PLYMISC	Miscellaneous Plywood Activities	None	1993
EU-BOILER	42.87 MMBtu/hr Natural Gas- or Diesel-fired Boiler	None	1994

### Significant Emissions Units

9. Emission Unit EU-PXFRSYS

The facility operates a pneumatic transfer system consisting of one (1) cyclone and two (2) baghouses to move hogged materials and sawdust from plywood and veneer production. Material passing through the pneumatic transfer system is conveyed to two (2) target boxes, which is then loaded onto trucks for shipment off-site. Particulate matter emission factors for this process are derived from DEQ AQGP-010, Section 13.2 (10/2017).

10. Emission Unit EU-NGVDY#1

The facility operates a direct-fired natural gas dryer. Particulate matter emission factors for this process are derived from DEQ AQGP-010, Section 13.5 (10/2017) based on the Douglas Fir ("Burley or 45% control") emission factor and speciated using DEQ AQEF03 (08/2011). CO and NO<sub>x</sub> emission factors are derived from DEQ AQGP-010, Section 13.5 (10/2017). The VOC emission factor is based on source testing at EFP#1 (10/2000) for the veneer dryer section converted from "as carbon" to "as propane" plus the formaldehyde and methanol from DEQ AQGP-010, Section 13.5 (10/2017) for the veneer dryer section plus the VOC emission factors from DEQ AQGP-010, Section 13.5 (10/2017) for the cooling section and fugitives averaged with the VOC emission factor from source testing at EFP#1 (12/2020) for the veneer dryer section on an "as propane" basis including the measured formaldehyde and methanol plus VOC emission factors from DEQ AQGP-010, Section 13.5 (10/2017) for the cooling section and fugitives. The SO<sub>2</sub> emission factor is based on DEQ AQGP-010, Section 13.1 (10/2017). HAP/TAC emission factors other than formaldehyde and methanol, are based on DEQ AQGP-010, Section 13.5 (10/2017) as the total of the veneer dryer section, cooling section and fugitives. Methanol and formaldehyde emission factors are based on source testing at EFP#1 (12/2020) for the veneer dryer section plus the emission factors from DEQ AQGP-010, Section 13.5 (10/2017) for the cooling section and fugitives.

11. Emission Unit EU-STVDY#2

The facility operates a steam heated (indirect) veneer dryer using steam from the EU-BOILER. Particulate matter emission factors for this process are derived from DEQ AQGP-010, Section 13.5 (10/2017) based on the Douglas Fir ("Burley or 45% control") emission factor and speciated using DEQ AQEF03 (08/2011). The VOC emission factor is based on source testing at EFP#1 (12/2020) for the veneer dryer section on an "as propane" basis including the measured formaldehyde and

methanol plus the VOC emission factors from DEQ AQGP-010, Section 13.5 (10/2017) for the cooling section and fugitives. HAP/TAC emission factors, other than methanol and formaldehyde, are based on DEQ AQGP-010, Section 13.5 (10/2017) as the total of the veneer dryer section, cooling section and fugitives. Methanol and formaldehyde emission factors are based on source testing at EFP#1 (12/2020) for the veneer dryer section plus the emission factors from DEQ AQGP-010, Section 13.5 (10/2017) for the cooling section and fugitives.

12. Emission Unit EU-PLYPRS

The facility operates five (5) plywood presses. The VOC and HAP/TAC emissions from this emissions unit are derived from DEQ AQGP-010, Section 13.6 (10/2017).

13. Emission Unit EU-PLYMISC

The facility operates a number of saws, hogs, and other wood-processing equipment. The particulate matter emissions from these processes are included in EU-PXFRSYS. The VOC and HAP/TAC emissions from this emissions unit are derived from DEQ AQGP-010, Section 13.7 (10/2017) based on the sum of Trim Chip and Skin Saw emission factors.

14. Emission Unit EU-BOILER

The facility operates a boiler with a heat input rating of 42.87 MMBtu per hour. This boiler operates on natural gas with fuel oil backup. The criteria pollutant and GHG emissions are based on emission factors derived from DEQ AQGP-010, Section 13.1 (10/2017) and US EPA 40 CFR part 98, Tables C-1 and C-2. The federal HAP or CAO TAC emissions are based on emission factors from DEQ's 2020 Air Toxics Emission Inventory Combustion Emission Factor Tool. The emissions are further constrained by a 48 hours limitation on fuel oil use to avoid being subject to 40 CFR part 63 subpart JJJJJ and a daily and annual fuel usage limitation under Cleaner Air Oregon.

**Nuisance, Deposition and Other Emission Limitations**

15. Under LRAPA 49-010(1), the permittee must not cause or allow air contaminants from any source subject to regulation by LRAPA to cause a nuisance. Compliance is demonstrated through documentation of all complaints received by the facility from the general public and following procedures to notify LRAPA of the receipt of these complaints.
16. Under LRAPA 32-055, the permittee must not cause or permit the emission of particulate matter which is larger than 250 microns in size at sufficient duration or quantity as to create an observable deposition upon the real property of another person. Compliance is demonstrated through documentation of all complaints received by the facility from the general public and following procedures to notify LRAPA of the receipt of these complaints.
17. Under LRAPA 32-090(1), the permittee must not discharge from any source whatsoever such quantities of air contaminants which cause injury or damage to any persons, the public, business or property; such determination is to be made by LRAPA. Compliance is demonstrated through documentation of all complaints received by the facility from the general public and following procedures to notify LRAPA of the receipt of these complaints.

**Emission Limitations**

*Conditions Specific to Emissions Unit EU-PXFRSYS*

18. EU-PXFRSYS is subject to the visible emission limitations under LRAPA 32-010(3). For sources, other than wood-fired boilers, no person may emit or allow to be emitted any visible emissions that equal or exceed an average of 20 percent opacity. Compliance demonstration is based on a quarterly visible emissions survey performed on this process.

19. EU-PXFRSYS was installed or last modified in 1993. This emission unit is subject to the following particulate matter emission limitations under LRAPA 32-015(2)(b)(B): For sources installed, constructed, or modified on or after June 1, 1970 but prior to April 16, 2015, the particulate matter emission limit is 0.14 grains per dry standard cubic foot if there are no representative compliance test results. Compliance demonstration is based on the use of baghouses and/or target boxes to control particulate matter emissions, monitoring and recording pressure drop across each baghouse, and inspection and maintenance of each baghouse.
20. EU-PXFRSYS is subject to the process weight rate emission limitations under LRAPA 32-045(1). No person may cause, suffer, allow, or permit the emissions of particulate matter in any one (1) hour from any process in excess of the amount shown in LRAPA 32-8010, for the process weight rate allocated to such process. Process weight is the total weight of all materials introduced into a piece of process equipment. Liquid and gaseous fuels and combustion air are not included in the total weight of all materials. Compliance demonstration is based on the use of baghouses and/or target boxes to control particulate matter emissions, monitoring and recording pressure drop across each baghouse, and inspection and maintenance of each baghouse.
21. EU-PXFRSYS is subject to the Other Sources limitations under LRAPA 33-060(3)(b). No person may cause to be emitted particulate matter from veneer and plywood mill sources including but not limited to, sanding machines, saws, presses, barkers, hogs, chippers and other material size reduction equipment, process or space ventilation systems, and truck loading and unloading facilities in excess of a total from all sources within the plant site of an hourly average emission rate (pounds per hour) based on the maximum hourly production capacity of the facility times one (1.0) pound per 1000 square feet of production. Veneer dryers, fuel-burning equipment, and refuse-burning equipment are excluded from this limitation. Compliance demonstration is based on calculations and recordkeeping.

*Conditions Specific to Emissions Units EU-NGVDRY#1 and EU-STVDRY#2*

22. EU-NGVDRY#1 and EU-STVDRY#2 are subject to the visible emission requirements under LRAPA 33-060(3)(a)(B)(ii) and 32-010(3)(a). For all emission units, no person may emit or allow to be emitted any visible emissions that exceed: (1) a daily average operating opacity of ten (10) percent on more than two (2) days within any 12-month period, with the days separated from each other by at least 30 days, as measured by EPA Method 9; and (2) a maximum opacity of 20 percent at any time as measured by EPA Method 9. Compliance demonstration is based on a weekly visible emissions survey performed on the veneer dryers.
23. EU-STVDRY#1 was installed in 1953. This emission unit is subject to the following particulate matter emission limitations under LRAPA 32-015(2)(a)(B): For sources installed, constructed, or modified before June 1, 1970, the particulate matter emission limit is 0.15 grains per dry standard cubic foot if there are no representative compliance source test results. Compliance demonstration is based on the use of scrubbers on the veneer dryers, monitoring and recording the scrubber water pressure, and inspection and maintenance of the scrubbers.
24. EU-NGVDRY#1 was installed in 2000. This emission unit is subject to the following particulate matter emission limitations under LRAPA 32-015(2)(b)(B): For sources installed, constructed, or modified on or after June 1, 1970 but prior to April 16, 2015, the particulate matter emission limit is 0.14 grains per dry standard cubic foot if there are no representative compliance source test results. This emission unit was tested for particulate matter emissions more than ten (10) years before April 16, 2015, which is outside the ten (10) year period that defines a representative compliance source test under LRAPA 32-015(3)(e)(A). Compliance demonstration is based on the

use of scrubbers on the veneer dryers, monitoring and recording the scrubber water pressure, and inspection and maintenance of the scrubbers and the natural gas burners on EU-NGVDY#1.

25. EU-NGVDY#1 and EU-STVDY#2 are subject to the process weight rate emission limitations under LRAPA 32-045(1). No person may cause, suffer, allow, or permit the emissions of particulate matter in any one (1) hour from any process in excess of the amount shown in LRAPA 32-8010, for the process weight rate allocated to such process. Process weight is the total weight of all materials introduced into a piece of process equipment. Liquid and gaseous fuels and combustion air are not included in the total weight of all materials. Compliance demonstration is based on the use of scrubbers on the veneer dryers, monitoring and recording the scrubber water pressure, and inspection and maintenance of the scrubbers and the natural gas burners on EU-NGVDY#1.

*Conditions Specific to Emissions Unit EU-PLYPRS and EU-PLYMISC*

26. EU-PLYPRS and EU-PLYMISC as represented at this facility emit only VOC and HAP/TAC. Any particulate matter emissions that may result from these emission units is included under EU-PXFRSYS. As such, there are no specific conditions for these emission units other than the requirements for calculating emissions and determining compliance with the PSEL limitations, as applicable.

*Conditions Specific to Emissions Unit EU-BOILER*

27. EU-BOILER is subject to the visible emission requirements under LRAPA 32-010(3). The permittee must not emit or allow to be emitted any visible emissions from Emission Unit EU-BOILER that equal or exceed an average of 20 percent opacity. Compliance demonstration for visible emissions when combusting natural gas will be based on the use of an Operation and Maintenance plan (O&M plan) and documentation of inspections and maintenance. Additionally, the compliance demonstration requirements under 40 CFR part 60 subpart Dc - Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units (NSPS) to perform scheduled visible emissions testing when combusting fuel oil will also serve as the compliance demonstration requirements for this emission limitation when EU-BOILER is combusting fuel oil.
28. EU-BOILER is subject to the particulate matter emission requirements under LRAPA 32-030(1)(b). For fuel burning equipment sources installed, constructed, or modified after June 1, 1970, but prior to April 16, 2015, for which there are no representative compliance source test results, the particulate matter emission limit is 0.14 grains per dry standard cubic foot. Compliance demonstration for visible emissions when combusting natural gas will be based on the use of an O&M plan and documentation of inspections and maintenance.
29. EU-BOILER is subject to 40 CFR part 60 subpart Dc – Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units (NSPS). See the NSPS section of this review report for more information.
30. EU-BOILER is not subject to 40 CFR part 63 subpart JJJJJJ – National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources (NESHAP). See the NESHAP section of this review report for more information.

**Typically Achievable Control Technology (TACT)**

31. 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. Emissions Units EU-PXFRSYS, EU-PLYPRS (Plywood Presses #1 – #3), EU-STVDY#2, and EU-PLYMISC are considered existing sources.

- 31.a. The particulate matter emissions from EU-PXFRSYS are below five (5) tons per year. As such, TACT does not apply to this emission unit
  - 31.b. The VOC emissions from each Plywood Press #1 – #3 in EU-PLYPRS are below ten (10) tons per year. As such, TACT does not apply to these processes.
  - 31.c. The VOC emissions from EU-PLYMISC results from a number of saws, hogs, and other wood-processing equipment. The VOC emissions from any individual process under EU-PLYMISC are below ten (10) tons per year. As such, TACT does not apply to these processes.
  - 31.d. EU-STVDY#2 has emissions of PM, PM<sub>10</sub>, PM<sub>2.5</sub>, and VOC greater than the existing TACT thresholds. While a formal TACT determination has not been conducted, LRAPA has determined that the use of a Burley scrubber likely meets TACT for emissions of PM, PM<sub>10</sub>, and PM<sub>2.5</sub>. While a formal TACT determination has not been conducted, LRAPA has determined that no control likely meets TACT for emissions of VOC due to the high air flows and the low VOC concentrations resulting from this process.
32. LRAPA 32-008(2) requires new units installed or existing emissions units modified on or after January 1, 1994, meet TACT if the emissions unit meets the following criteria: The emissions unit is not subject to Major NSR in title 38, Type A State NSR in LRAPA title 38, an applicable Standard of Performance for New Stationary Sources in title 46, or any other standard applicable only to new or modified sources in title 32, title 33, or title 39 for the regulated pollutant emitted; the source is required to have a permit; if new, the emissions unit has emissions of any criteria pollutant equal to or greater than one (1) ton per year of any criteria pollutant; if modified, the emissions unit would have an increase in emissions of any criteria pollutant equal to or greater than one (1) ton per year of any criteria pollutant; and LRAPA determines that the proposed air pollution control devices and emission reduction processes do not represent TACT. Emissions Units EU-NGVDY#1, EU-PLYPRS (Plywood Presses #4 and #5) and EU-BOILER are considered new or modified sources.
- 32.a. EU-NGVDY#1 has emissions of PM, PM<sub>10</sub>, PM<sub>2.5</sub>, CO, NO<sub>x</sub>, and VOC greater than one (1) ton per year. While a formal TACT determination has not been conducted, LRAPA has determined that the use of Burley scrubber likely meets TACT for emissions of PM, PM<sub>10</sub>, and PM<sub>2.5</sub>. While a formal TACT determination has not been conducted, LRAPA has determined that inspection and maintenance of the natural gas burners on EU-NGVDY#1 likely meets TACT for emissions of CO and NO<sub>x</sub>. While a formal TACT determination has not been conducted, LRAPA has determined that no control likely meets TACT for emissions of VOC due to the high air flows and the low VOC concentrations resulting from this process.
  - 32.b. EU-PLYPRS (Plywood Presses #4 and #5) are subject to TACT for VOC emissions. While a formal TACT determination has not been conducted, LRAPA has determined that no control likely meets TACT for emissions of VOC due to the high air flows and the low VOC concentrations resulting from each of these processes.
  - 32.c. EU-BOILER has emissions of PM, PM<sub>10</sub>, PM<sub>2.5</sub> less than one (1) ton per year. TACT does not apply to these pollutants. EU-BOILER has emissions of CO, NO<sub>x</sub>, and VOC greater than one (1) ton per year. While a formal TACT determination has not been conducted, LRAPA has determined that requiring an O&M plan for EU-BOILER likely meets TACT for emissions of CO, NO<sub>x</sub>, and VOC.

### **New Source Performance Standards (NSPSs)**

33. EU-BOILER is subject to 40 CFR part 60 subpart Dc – Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units because this emission unit is a steam generating unit for which construction commenced after June 9, 1989, and this emission unit has a maximum design heat input of 100 MMBtu per hour or less, but greater than or equal to 10 MMBtu per hour.
34. The 40 CFR part 60 subpart Dc requirements that are applicable to EU-BOILER are identified in the following table:

<b>40 CFR part 60 subpart Dc Citation</b>	<b>Description</b>	<b>Applicable to Source (Yes/No)</b>	<b>Comments</b>	<b>Permit Condition</b>
60.40c	Applicability and delegation of authority	Yes	The boiler has a maximum heat input capacity between 10 and 100 MMBtu per hour.	NA
60.41c	Definitions	Yes	The boiler meets the definition of a <i>steam generating unit</i> .	NA
60.42c	Standards for sulfur dioxide (SO <sub>2</sub> )	Yes	The facility elected to limit the sulfur weight percent of the fuel oil.	33, 34
60.43c	Standard for particulate matter (PM)	Yes	The boiler is subject to the opacity requirements.	35, 36
60.44c	Compliance and performance test methods and procedures for sulfur dioxide	No	--	NA
60.45c	Compliance and performance test methods and procedures for particulate matter	Yes	--	37
60.46c	Emission monitoring for sulfur dioxide	No	--	NA
60.47c	Emission monitoring for particulate matter	Yes	The facility is required to perform visible emission testing on a schedule when combusting fuel oil.	38, 39
60.48c	Reporting and recordkeeping requirements	Yes	Under the authority of 40 CFR 60.19(c), LRAPA has moved the postmark deadlines to align with the February 15 reporting.	40 – 46

### **National Emission Standards for Hazardous Air Pollutants (NESHAPs)**

*40 CFR part 63 subpart DDDD – National Emission Standards for Hazardous Air Pollutants: Plywood and Composite Wood Products*



35. This plywood and composite wood products manufacturing facility is not subject to 40 CFR part 63 subpart DDDD – National Emission Standards for Hazardous Air Pollutants: Plywood and Composite Wood Products because the facility is not a major source of federal HAPs.

*40 CFR part 63 subpart JJJJJJ – National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources*

36. Emissions Unit EU-BOILER is not subject to 40 CFR part 63 subpart JJJJJJ – National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources because this emissions unit meets the definition of a gas-fired boiler under 40 CFR 63.11237. Under 40 CFR 63.11195(e), gas-fired boilers as defined under 40 CFR 63.11237 are not subject to this NESHAP. The permittee is required to document that the boiler does not operate more than 48 hours per calendar year for periodic testing, maintenance, or operator training on fuel oil in order to remain classified as a gas-fired boiler under this regulation.

**Plant Site Emission Limits (PSELs)**

37. Under paragraph 42-0055(3), unassigned emissions are reduced to not more than the SER at each permit renewal following July 1, 2010. The netting basis is reduced by the amount that unassigned emissions are reduced. Under paragraph 42-0055(5), each time the permit is renewed, the unassigned emission will be established again and reduced upon the following permit renewal to no more than the SER for each regulated pollutant.

Pollutant	2019 Netting Basis (TPY)	2019 PSEL (TPY)	2019 Unassigned Emissions (TPY)	SER (TPY)	Proposed Netting Basis (TPY)	Proposed PSEL (TPY)	Proposed Unassigned Emissions (TPY)
PM	60	34	26	25	59	34	25
PM <sub>10</sub>	48	32	16	15	47	32	15
PM <sub>2.5</sub>	25	9	16	10	19	9	10
CO	199	99	100	100	199	17	182
NO <sub>x</sub>	16	39	0	40	16	26	0
SO <sub>2</sub>	3	39	0	40	3	1.0	2
VOC	139	99	40	40	139	79	60
GHG (CO <sub>2</sub> e)	14,200	74,000	0	74,000	14,200	41,761	0

38. Provided below is a summary of the baseline emissions rate, netting basis, and PSELs for this facility.

Pollutant	Baseline Emission Rate (TPY)	Netting Basis		Plant Site Emission Limit (PSEL)		PTE (TPY)	Significant Emission Rate (TPY)
		Previous (TPY)	Proposed (TPY)	Previous PSEL (TPY)	Proposed PSEL (TPY)		
PM	121	60	59	34	34	33.8	25
PM <sub>10</sub>	85	48	47	32	32	31.6	15
PM <sub>2.5</sub>	NA	25	19	9	9	8.83	10
CO	527	199	199	99	17	16.6	100
NO <sub>x</sub>	55	16	16	39	26	26.2	40
SO <sub>2</sub>	3	0	3	39	1.0	1.04	40
VOC	177	139	139	99	79	78.8	40

Pollutant	Baseline Emission Rate (TPY)	Netting Basis		Plant Site Emission Limit (PSEL)		PTE (TPY)	Significant Emission Rate (TPY)
		Previous (TPY)	Proposed (TPY)	Previous PSEL (TPY)	Proposed PSEL (TPY)		
GHG	14,200	14,200	14,200	74,000	41,761	41,761	75,000
Individual HAP	NA	NA	NA	9	9	11.4	NA
Aggregate HAPs	NA	NA	NA	24	24	24.7	NA

39. The baseline emission rates were established based upon the following:
- 39.a. Except for PM<sub>2.5</sub> and GHG, the baseline emission rates for all regulated pollutants are from the 1978 baseline period as determined in the previous permitting action from July 9, 2019. There are no changes to these emission rates as part of this permitting action.
  - 39.b. A baseline emission rate is not required for PM<sub>2.5</sub> in accordance with subsection 42-0048(3).
  - 39.c. The baseline emission rate for greenhouse gases (GHG) is based on the consecutive 12-month period of January 2004 through December 2004.
40. The netting basis was established based upon the following:
- 40.a. Except as discussed below, the netting basis is based on the previous permitting action from July 9, 2019.
  - 40.b. As discussed in Item 37, the netting basis for PM, PM<sub>10</sub>, and PM<sub>2.5</sub> where reduced by the amount that unassigned emissions where reduced such that unassigned emissions are no more than the SER before setting the PSEL in this permitting action.
41. The PSEL for all regulated pollutants were reset to the potential emission rate from the significant emissions units as required by subsection 42-0041(3). The previous PSEL for regulated pollutants, other than PM and PM<sub>10</sub>, were based on Generic PSELs that are no longer allowed by rule.
42. The PTE values for all pollutants are based on the calculations in the emission detail sheets.
43. The baseline year, netting basis, and SER are not applicable for limiting federal HAP. The facility does have a capacity for federal HAP that would exceed the major source thresholds for individual federal HAP and total federal HAP of ten (10) TPY and 25 TPY, respectively. Previous permitting actions established a PSEL for individual federal HAPs and total federal HAP of nine (9) TPY and 24 TPY, respectively. The facility is considered a synthetic minor or area source of federal HAP.

### **Significant Emission Rates**

44. The proposed PSEL are equal to or less than the previously established PSEL. There are no increases in the PSEL being requested with this permit action. An analysis of the proposed PSEL increases over the Netting Basis are shown in the following table:

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	34	0	0	0	25
PM <sub>10</sub>	32	0	0	0	15
PM <sub>2.5</sub>	9	0	0	0	10
CO	17	0	0	0	100
NO <sub>x</sub>	26	10	0	0	40
SO <sub>2</sub>	1.0	0	0	0	40
VOC	79	0	0	0	40
GHG (CO <sub>2</sub> e)	41,761	27,561	0	0	75,000

#### **Unassigned Emissions and Emission Reduction Credits**

45. 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. For the purposes of this calculation, the PSEL represents the PTE for each regulated pollutant. In accordance with section 42-0055, any unassigned emissions that exceed the SER shall be reduced upon the following permit renewal to no more than the SER for each regulated pollutant.

Pollutant	Unassigned Emissions (TPY)	Emission Reduction Credits (TPY)	SER (TPY)
PM	25	0	25
PM <sub>10</sub>	15	0	15
PM <sub>2.5</sub>	10	0	10
CO	182	0	100
NO <sub>x</sub>	0	0	40
SO <sub>2</sub>	0	0	40
VOC	60	0	40
GHG (CO <sub>2</sub> e)	0	0	75,000

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

46. This source is located in an area that is designated attainment or unclassified for all regulated pollutants. The proposed PSELs are less than the federal major source threshold for non-listed sources of 250 TPY per regulated pollutant and are not subject to Major NSR.

#### **Federal Hazardous Air Pollutants**

47. The facility currently has PSELs for federal HAPs that limit emissions to no more than nine (9) tons per year for an individual federal HAP and 24 tons per year for the total of all federal HAPs. Therefore, the facility is considered a synthetic minor or area source of federal HAPs. The maximum potential emission of a single federal HAP is 9tons per year (methanol). The maximum potential of the total of all federal HAP emissions is 24 tons per year.

Pollutant	CAS/DEQ Number	Federal HAP	CAO Air Toxic	PTE (TPY)
<b>Organics</b>				
Acetaldehyde	75-07-0	Yes	Yes	6.03
Acrolein	107-02-8	Yes	Yes	0.63
Benzene	71-43-2	Yes	Yes	0.39
Benzo(a)pyrene	50-32-8	Yes	Yes	2.2E-07
1,3-Butadiene	106-99-0	Yes	Yes	9.3E-05
Ethyl Benzene	100-41-4	Yes	Yes	1.3E-03
Formaldehyde	50-00-0	Yes	Yes	2.79
Hexane	110-54-3	Yes	Yes	8.6E-04
Methanol	67-56-1	Yes	Yes	9.0*
Naphthalene	91-20-3	Yes	Yes	8.8E-05
Phenol	108-95-2	Yes	Yes	2.26
POM (inc. PAHs)	401	Yes	Yes	3.0E-04
Propionaldehyde	123-38-6	Yes	Yes	0.29
Propylene Oxide	75-56-9	Yes	Yes	9.7E-02
Toluene	108-88-3	Yes	Yes	0.52
Xylenes	1330-20-7	Yes	Yes	0.28
<b>Inorganic Gases</b>				
Ammonia	7664-41-7	No	Yes	0.60
Hydrochloric Acid	7647-01-0	Yes	Yes	1.2E-03
<b>Metals</b>				
Arsenic	7440-38-2	Yes	Yes	4.7E-05
Barium	7440-39-3	No	Yes	8.0E-04
Beryllium	7440-41-7	Yes	Yes	2.2E-06
Cadmium	7440-43-9	Yes	Yes	2.1E-04
Chromium, Hexavalent	18540-29-9	Yes	Yes	2.6E-04
Cobalt	7440-48-4	Yes	Yes	1.5E-05
Copper	7440-50-8	No	Yes	1.8E-04
Lead Compounds	7439-92-1	Yes	Yes	1.4E-04
Manganese	7439-96-5	Yes	Yes	8.9E-05
Mercury	7439-97-6	Yes	Yes	6.0E-05
Molybdenum	1313-27-5	No	Yes	3.0E-04
Nickel	365	Yes	Yes	4.1E-04
Selenium	7782-49-2	Yes	Yes	1.8E-05
Vanadium	7440-62-2	No	Yes	4.2E-04
Zinc	7440-66-6	No	Yes	5.3E-03

\*The maximum potential of methanol is 11.41 TPY, but the facility has elected to limit the emissions of each individual federal HAP to no more than 9.0 TPY in order to be a synthetic minor source of federal HAP.

### **Cleaner Air Oregon**

48. Under the Cleaner Air Oregon program, only existing sources that have been notified by LRAPA and new sources are required to perform risk assessments. Clean Air Oregon requires reporting on the emissions of approximately 600 Toxic Air Contaminants (TAC) and regulates approximately 260 TACs that have Risk Based Concentrations established in rule. All FHAPs are on the list of

approximately 600 TACs. EFP#1 was notified by LRAPA on December 15, 2021, to perform a risk assessment of their TAC emissions. LRAPA approved EFP#1's Risk Assessment report on July 24, 2024. EFP#1 conducted a Level 3 Risk Assessment to determine cancer and noncancer risk from TAC emissions. Based on the results of the Level 3 Risk Assessment summarized below, EFP#1 exceeds the Source Permit Level for Acute Risk and is required to have source risk limits. The primary Acute Risk driver is emissions from combustion of fuel oil in EU-BOILER. The proposed permit will contain both daily and annual (12-month rolling) limitations on fuel oil combustion by EU-BOILER based on the conditions assumed in EFP#1's Risk Assessment.

#### Facility Risk from Toxic Air Contaminants

Facility Risk from Toxic Air Contaminants					
Risk Type	Exposure	Calculated Risk	Rounded Risk	Source Permit Level	Community Engagement Level
Chronic Cancer Risk					
	Residential	2.867	3	5	25
	Child	0.037			
	Worker	2.297			
Chronic Non-Cancer Risk					
	Residential	0.134	0.4	0.5	1
	Child	0.012			
	Worker	0.359			
Acute Risk		1.362	1	0.5	1

\* Risk values rounded in accordance with OAR 340-245-0200(4)(a) for comparison to the Risk Action Levels or Source Risk Limits.

#### Acute Risk Adjusted by Target Organ

Risk Type	Target Organ	Calculated Risk	Rounded Risk	Source Permit Level	Community Engagement Level
Acute Risk					
	Respiratory System	1.163	1	0.5	1
	Eyes	0.110	0.1	0.5	1

#### Toxics Release Inventory

49. The Toxics Release Inventory (TRI) is a 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 2023, this facility did not report any emissions to the TRI program. 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: (1) they do not employ ten (10) or more full-time employees; and (2) they do not manufacture, process, or otherwise use chemicals in excess of the applicable reporting thresholds.

### **Compliance History**

50. As a Standard ACDP, this facility is typically inspected by LRAPA at least once every five (5) years. The following table indicates the Full Compliance Evaluation inspection history of this facility since the last Standard ACDP renewal was issued on July 11, 2019:

Agency	Type of Inspection	Date	Results
LRAPA	Full Compliance Evaluation	August 30, 2021	No evidence of non-compliance

51. LRAPA has not taken any enforcement action against this facility since the last Standard ACDP renewal was issued on July 11, 2019.

### **Source Testing History**

52. In March 1994, the facility installed a Cleaver Brooks (EU: BOILER) 42.87 MMBtu/hr natural gas boiler that required the NO<sub>x</sub> emission factor to be verified via source testing.
53. In October 2000, the Moore natural gas-fired veneer dryer (EU: NGVDY#1) with Burley wet scrubber was tested for PM and VOC as total gaseous organic compounds (TGOC).
54. In March 2002, as part of the Stipulated Final Order No. 02-2346 and the 2002 permit modification to increase combustion of #2 fuel oil in EU-BOILER, EFP#1 was required to conduct an initial 3-hour Performance test for opacity using EPA Method 9 while burning #2 fuel oil in accordance with 40 CFR part 60 subpart Dc – Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units.
55. In February 2006, EFP#1 tested one (1) of the plywood presses for formaldehyde, methanol, and phenol to determine if the presses would be subject to the 40 CFR part 63 subpart DDDD – Plywood and Composite Wood Products regulations. It was determined that the facility was not a major source of HAPs and therefore, not subject to the MACT.
56. In December 2020, EFP#1 tested Plywood Press #3, EU-NGVDY#1, and EU-STVDY#2 for VOC, formaldehyde, and methanol emissions as part of emission factor verification.

Source Test Date	Emission Unit	Production Rate	Pollutant	Emission Rate	
03/04/1994	EU-BOILER	42.87 MMBtu/hr heat input	NO <sub>x</sub>	2.41 lbs/hr	0.10 lbs/MMBtu
10/03/2000	EU-NGVDY#1	9.52 MSF/hr	PM	1.8 lbs/hr	0.194 lbs/MSF 3/8"
			VOC	2.7 lbs/hr	0.30 lbs/MSF 3/8"
03/28/2002	EU-BOILER	#2 Fuel Oil	Opacity	4.5% Avg max reading 3-hr test	
02/28/2006	EU-PLYPRS (Press #5)	8.96 MSF/hr	Formaldehyde	0.007 lbs/hr	0.0008 lbs/MSF 3/8"
			Methanol	0.169 lbs/hr	0.0188 lbs/MSF 3/8"

Source Test Date	Emission Unit	Production Rate	Pollutant	Emission Rate	
12/08/2020	EU-PLYPRS (Press #3)	11.520 MSF/hr	Phenol	0.01 lbs/hr	0.001 lbs/MSF 3/8"
			VOC	0.72 lbs/hr	0.062 lbs/MSF 3/8"
			Formaldehyde	0.04 lbs/hr	0.0035 lbs/MSF 3/8"
			Methanol	0.48 lbs/hr	0.042 lbs/MSF 3/8"
12/09/2020	EU-NGVDRIY#1	9.36 MSF/hr	VOC	1.84 lbs/hr	0.197 lbs/MSF 3/8"
			Formaldehyde	0.28 lbs/hr	0.030 lbs/MSF 3/8"
			Methanol	0.15 lbs/hr	0.016 lbs/MSF 3/8"
12/10/2020	EU-STVDRIY#2	11.59 MSF/hr	VOC	3.87 lbs/hr	0.338 lbs/MSF 3/8"
			Formaldehyde	0.05 lbs/hr	0.004 lbs/MSF 3/8"
			Methanol	0.13 lbs/hr	0.011 lbs/MSF 3/8"

### **Recordkeeping Requirements**

57. The facility is required to keep and maintain a record of the following information for a period of at least five (5) years.

Activity/Parameter	Units	Minimum Recording Frequency
<b>PSEL Recordkeeping</b>		
Facility-wide 12-month rolling PSEL for each regulated pollutant	TPY	Monthly
EU-PXFSYS total throughput	BDT	Monthly
EU-NGVDRIY#1 throughput	MSF	Monthly
EU-NGVDRIY#1 natural gas usage	MMCF	Monthly
EU-STVDRIY#2 throughput	MSF	Monthly
EU-PLYPRS throughput	MSF	Monthly
EU-PLYMISC throughput	MSF	Monthly
EU-BOILER natural gas usage	MMCF	Monthly
EU-BOILER fuel oil usage	1000 Gal	Monthly
<b>General Limitation Recordkeeping</b>		
EU-PXFSYS visible emission surveys	Opacity (in percent)	Quarterly
EU-PXFSYS pressure drop recordings – each baghouse	Inches of water column	Weekly
EU-PXFSYS baghouse inspections and maintenance – each baghouse	--	Annually
EU-PXFSYS baghouse corrective actions – each baghouse	--	Upon occurrence
EU-PXFSYS title 33 calculations	--	Monthly
EU-NGVDRIY#1 visible emission surveys	% Opacity	Weekly
EU-NGVDRIY#1 water pressure recordings	psi	Weekly
EU-NGVDRIY#1 scrubber inspections and maintenance	--	Annually
EU-NGVDRIY#1 corrective actions	--	Upon occurrence
EU-STVDRIY#2 visible emission surveys	% Opacity	Weekly

Activity/Parameter	Units	Minimum Recording Frequency
EU-STVDY#2 water pressure recordings	psi	Weekly
EU-STVDY#2 scrubber inspections and maintenance	--	Annually
EU-STVDY#2 scrubber corrective actions	--	Upon occurrence
EU-BOILER calendar dates operated on fuel oil	Date	Monthly
EU-BOILER hours operated on fuel oil. The records must also indicate how many of the hours were for periodic testing, maintenance, or operator training on fuel oil and how many hours were for periods of gas curtailment, gas supply interruptions or startups.	Hours	Monthly
EU-BOILER operation and maintenance plan	--	Current version
Complaints from the public	--	Upon receipt
Excess emissions log of all planned and unplanned excess emissions	--	Per occurrence
<b>40 CFR part 60 subpart Dc Recordkeeping</b>		
EU-BOILER natural gas usage	MMcf	Monthly
EU-BOILER fuel oil usage	1000 Gallons	Monthly
EU-BOILER fuel oil supplier certifications	--	Each delivery of fuel oil
EU-BOILER visible emission testing records, as required under Conditions 37 and 38 of the permit	--	Each occurrence
<b>Cleaner Air Oregon</b>		
EU-BOILER each calendar date that fuel oil is combusted	--	Upon occurrence
EU-BOILER total number of gallons of fuel oil combusted for each day of operation on fuel oil	Gallons	Upon occurrence
EU-BOILER total number of gallons of fuel oil combusted during each calendar month	Gallons	Monthly
EU-BOILER total number of gallons of fuel oil combusted in any 12-consecutive month period	Gallons	Monthly

### **Reporting Requirements**

58. The facility must submit to LRAPA the following reports by no later than the dates indicated in the table below:

Report	Reporting Period	Due Date
PSEL pollutant emissions as calculated according to Condition 5 of the permit, including supporting calculations. The summary must include emission calculations corresponding to each 12-month consecutive period in the previous calendar year.	Annual	February 15
A summary of maintenance and repairs performed on any pollution control devices at the facility.	Annual	February 15



Report	Reporting Period	Due Date
Excess emission reports as required by 40 CFR part 60 subpart Dc.	Semiannual	Postmarked by February 15, August 15
Semiannual fuel reports as required by 40 CFR part 60 subpart Dc.	Semiannual	Postmarked by February 15, August 15
Cleaner Air Oregon Change in Zoning Report.	Annual	February 15
GHG Report, if required by Condition 57 of the permit.	Annual	March 31
A summary of all complaints received by the permittee and their resolution as required by Condition G11 of the permit.	Annual	February 15
The excess emissions log required by Condition G16 of the permit, if any planned or unplanned excess emissions have occurred during the reporting period.	Annual	February 15

### **Public Notice**

59. The draft permit was on public notice from April 17, 2025 to May 23, 2025. One written comment was submitted during the public comment period. After the public comment period ended, LRAPA responded to the comment received and has taken action to issue the permit without changes.

### **Public Comments Summary and LRAPA Responses**

LRAPA received and responded to the following comments at the close of the public comment period:

[All public comments that were received for this project are a public record and are retained with the public permit review files. For purposes of this summary document, the public comments may have been edited to reduce length or consolidated with similar comments. Public comments that are not related to the review report or draft permit, such as those comments that are statements of fact or express an opinion, are not presented in this document, and do not require a response from LRAPA.]

**Comment 1:** One commenter expressed a general opposition to air pollution, citing the odors that can be noticed from another wood products facility.

**Response 1:** LRAPA appreciates the commenter's concern for good air quality. LRAPA is obligated to issue air permits to facilities that meet all applicable air regulations. This facility has operations that qualify for a Standard ACDP and is required to meet all applicable requirements that are contained in the Standard ACDP. The commenter did not express any specific concerns regarding the facility's permit. LRAPA has not made any changes to the permit as a result of this comment.

The commenter referred to odors from another facility that is separate from Emerald Forest Products. LRAPA encourages the commenter to participate in the public comment period for the allegedly odorous facility during their next permit action or call the LRAPA office to file a complaint.

### **Public Comment Receipt Log**

Written comments were received from:

Kathy Mazzocco Kmiams3@gmail.com
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Emerald Forest Products, Inc. – Plant #1.  
Permit Number: 202528  
Expiration Date: May 30, 2030

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JJW/AD/aa  
5/29/2025

## Emission Details

### PSELS:

#### Emerald Forest Products #1 - 202528

##### Emission Details

##### PSEL Table

Pollutant	Baseline (TPY)	Existing Netting Basis (TPY)	Proposed Netting Basis (TPY)	Existing PSEL (TPY)	Proposed PSEL (TPY)	Unassigned Emissions (TPY)	PTE (TPY)	SER (TPY)
PM	121	60	59	34	34	25	34	25
PM <sub>10</sub>	85	48	47	32	32	15	32	15
PM <sub>2.5</sub>	NA	25	19	9	9	10	9	10
CO	527	199	199	99	17	182	17	100
NO <sub>x</sub>	55	16	16	39	26	0	26	40
SO <sub>2</sub>	3	0	3	39	1.0	2	1	40
VOC	177	139	139	99	79	60	79	40
GHG (CO <sub>2</sub> eq)	14,200	14,200	14,200	74,000	41,761	0	41761	75,000

#### Emerald Forest Products #1 - 202528

##### Emission Details

##### Facility Potential Emissions Summary

##### Criteria Pollutant Emissions

	PM (TPY)	PM <sub>10</sub> (TPY)	PM <sub>2.5</sub> (TPY)	CO (TPY)	NO <sub>x</sub> (TPY)	SO <sub>2</sub> (TPY)	VOC (TPY)	GHGs (TPY)
PTE	34	32	9	17	26	1	79	41761
Aggregate Insignificant	0	0	0	0	0	0	0	0
PSEL	34	32	9	17	26	1	79	41761

**HAPS SUMMARY:**

FHAP/TAC Emissions						
	CAS/DEQ Number	Federal HAP	CAO Air Toxic	Total HAP PTE (TPY)		
<b>Organics</b>						
Acetaldehyde	75-07-0	Yes	Yes	6.03		
Acrolein	107-02-8	Yes	Yes	0.63		
Benzene	71-43-2	Yes	Yes	0.39		
Benzo(a)pyrene	50-32-8	Yes	Yes	2.2E-07		
1,3-Butadiene	106-99-0	Yes	Yes	9.3E-05		
Ethyl Benzene	100-41-4	Yes	Yes	1.3E-03		
Formaldehyde	50-00-0	Yes	Yes	2.79		
Hexane	110-54-3	Yes	Yes	8.6E-04		
Methanol	67-56-1	Yes	Yes	11.4		
Naphthalene	91-20-3	Yes	Yes	8.8E-05		
Phenol	108-95-2	Yes	Yes	2.26		
POM (inc. PAHs)	401	Yes	Yes	3.0E-04		
Propionaldehyde	123-38-6	Yes	Yes	0.29		
Propylene Oxide	75-56-9	Yes	Yes	9.7E-02		
Toluene	108-88-3	Yes	Yes	0.52		
Xylenes	1330-20-7	Yes	Yes	0.28		
<b>Inorganic Gases</b>						
Ammonia	7664-41-7	No	Yes	0.60		
Hydrochloric Acid	7647-01-0	Yes	Yes	1.2E-03		
<b>Metals</b>						
Arsenic	7440-38-2	Yes	Yes	4.7E-05		
Barium	7440-39-3	No	Yes	8.0E-04		
Beryllium	7440-41-7	Yes	Yes	2.2E-06		
Cadmium	7440-43-9	Yes	Yes	2.1E-04		
Chromium, Hexavalent	18540-29-9	Yes	Yes	2.6E-04		
Cobalt	7440-48-4	Yes	Yes	1.5E-05		
Copper	7440-50-8	No	Yes	1.8E-04		
Lead Compounds	7439-92-1	Yes	Yes	1.4E-04		
Manganese	7439-96-5	Yes	Yes	8.9E-05		
Mercury	7439-97-6	Yes	Yes	6.0E-05		
Molybdenum	1313-27-5	No	Yes	3.0E-04		
Nickel	365	Yes	Yes	4.1E-04		
Selenium	7782-49-2	Yes	Yes	1.8E-05		
Vanadium	7440-62-2	No	Yes	4.2E-04		
Zinc	7440-66-6	No	Yes	5.3E-03		
				Total HAPs =	24.70	
				**Max Single HAP =	11.41	
				Total TACs =	25.3	
<b>Notes:</b>						
**The facility has requested a limit on HAPs of 9 TPY for an individual HAP and 24 TPY for the aggregate of HAP to avoid being a major source under Title V.						

**EU-BOILER:**

Emerald Forest Products #1 - 202528							
Emission Details							
EU-Boiler							
Max Heat Input	42.87	MMBtu/hr	NG Max HAP (propylene oxide) =		0.53	lbs/MMCF	
Heat Value - Natural Gas	1,026	MMBtu/MMcf	NG Total HAP =		0.62	lbs/MMCF	
Heat Value - Fuel Oil	138	MMBtu/1000 Gal	FO Max HAP (formaldehyde) =		0.35	lbs/1000 Gal	
Max Hrs Operation - NG	8,719	hr/yr	FO Total HAP =		1.34	lbs/1000 Gal	
Max Hrs Operation - FO	40.6	hr/yr					
Criteria Pollutants							
	NG Emission		FO Emission		NG	FO	Unit
Pollutant	Factor	NG EF Units	Factor	FO EF Units	PTE (TPY)	PTE (TPY)	PTE (TPY)
PM	2.5	lb/MMcf	3.3	lb/1000 Gal	0.46	2.1E-02	0.48
PM10	2.5	lb/MMcf	2.3	lb/1000 Gal	0.46	1.4E-02	0.47
PM2.5	2.5	lb/MMcf	1.6	lb/1000 Gal	0.46	1.0E-02	0.47
CO	84	lb/MMcf	5	lb/1000 Gal	15.30	3.2E-02	15.33
NOx	100	lb/MMcf	20	lb/1000 Gal	18.22	0.13	18.34
SO2	1.7	lb/MMcf	71	lb/1000 Gal	0.31	0.45	0.76
VOC	5.5	lb/MMcf	0.2	lb/1000 Gal	1.00	1.3E-03	1.00
GHG (CO2 eq)	117	lb/MMBtu	164	lb/MMBtu	21,886	142	22,028
FHAP/TAC Emissions							
	CAS/DEQ	NG Emission	FO Emission	NG	FO		
Pollutant	Number	Factor (lbs/MMCF)	Factor (lbs/1000 Gal)	PTE (TPY)	PTE (TPY)	Federal HAP	CAO Air Toxic
Organics							
Acetaldehyde	75-07-0	0.0031	0.3506	5.6E-04	2.2E-03	Yes	Yes
Acrolein	107-02-8	0.0027	0.3506	4.9E-04	2.2E-03	Yes	Yes
Benzene	71-43-2	0.0058	0.0044	1.1E-03	2.8E-05	Yes	Yes
Benzo(a)pyrene	50-32-8	1.2E-06		2.2E-07	0.0E+00	Yes	Yes
1,3-Butadiene	106-99-0		0.0148	0.0E+00	9.3E-05	Yes	Yes
Ethyl Benzene	100-41-4	0.0069	0.0002	1.3E-03	1.3E-06	Yes	Yes
Formaldehyde	50-00-0	0.0123	0.3506	2.2E-03	2.2E-03	Yes	Yes
Hexane	110-54-3	0.0046	0.0035	8.4E-04	2.2E-05	Yes	Yes
Naphthalene	91-20-3	0.0003	0.0053	5.5E-05	3.3E-05	Yes	Yes
POM (inc. PAHs)	401	0.0001	0.0445	1.8E-05	2.8E-04	Yes	Yes
Propylene Oxide	75-56-9	0.5300		9.7E-02	0.0E+00	Yes	Yes
Toluene	108-88-3	0.0265	0.0044	4.8E-03	2.8E-05	Yes	Yes
Xylenes	1330-20-7	0.0197	0.0016	3.6E-03	1.0E-05	Yes	Yes
Inorganic Gases							
Ammonia	7664-41-7	3.2000	2.9	5.8E-01	1.8E-02	No	Yes
Hydrochloric Acid	7647-01-0		0.1863	0.0E+00	1.2E-03	Yes	Yes
Metals							
Arsenic	7440-38-2	2.0E-04	0.0016	3.6E-05	1.0E-05	Yes	Yes
Barium	7440-39-3	4.4E-03		8.0E-04	0.0E+00	No	Yes
Beryllium	7440-41-7	1.2E-05		2.2E-06	0.0E+00	Yes	Yes
Cadmium	7440-43-9	1.1E-03	0.0015	2.0E-04	9.5E-06	Yes	Yes
Chromium, Hexavalent	18540-29-9	1.4E-03	0.0001	2.6E-04	6.3E-07	Yes	Yes
Cobalt	7440-48-4	8.4E-05		1.5E-05	0.0E+00	Yes	Yes
Copper	7440-50-8	8.5E-04	0.0041	1.5E-04	2.6E-05	No	Yes
Lead Compounds	7439-92-1	5.0E-04	0.0083	9.1E-05	5.2E-05	Yes	Yes
Manganese	7439-96-5	3.8E-04	0.0031	6.9E-05	2.0E-05	Yes	Yes
Mercury	7439-97-6	2.6E-04	0.002	4.7E-05	1.3E-05	Yes	Yes
Molybdenum	1313-27-5	1.7E-03		3.0E-04	0.0E+00	No	Yes
Nickel	365	2.1E-03	0.0039	3.8E-04	2.5E-05	Yes	Yes
Selenium	7782-49-2	2.4E-05	0.0022	4.4E-06	1.4E-05	Yes	Yes
Vanadium	7440-62-2	2.3E-03		4.2E-04	0.0E+00	No	Yes
Zinc	7440-66-6	2.9E-02		5.3E-03	0.0E+00	No	Yes
Total HAP Emissions =				0.11	0.01		

GHG-Related Emission Factors			
Pollutant	Natural Gas (kg/MMBtu)	Fuel Oil (kg/MMBtu)	GWP
Carbon Dioxide (CO <sub>2</sub> )	53.06	73.96	1
Methane (CH <sub>4</sub> )	1.0E-03	3.0E-03	25
Nitrous Oxide (N <sub>2</sub> O)	1.0E-04	6.0E-04	298
<b>Notes:</b>			
Natural gas emissions factors, except GHGs, are based on DEQ AQGP-010, Section 13.1 (10/2017).			
Fuel oil emissions factors, except GHGs, are based on DEQ AQGP-010, Section 13.1 (10/2017).			
GHG emission factors are from 40 CFR 98, Tables C-1 and C-2.			
Toxics emission factors from DEQ 2020 Air Toxics Emission Inventory Combustion Emission Factor Tool.			
Chromium assumed to be hexavalent.			
Fuel high heat values are from ODEQ Fuel Combustion Greenhouse Gas Calculator (6/2021).			
Max hours on fuel oil is based on the CAO annual limitation for fuel oil of 12,602 gallons.			

EU-PLYMISC:

<b>Emerald Forest Products #1 - 202528</b>					
<b>Emission Details</b>					
<b>EU-PLYMISC</b>					
Max Throughput	350,400	MSF/yr			
<b>Criteria Pollutants</b>					
	Emission Factor	EF Units	Unit PTE (TPY)	Max HAP (methanol) = 0.0200 lbs/MSF	
Pollutant				Total HAP = 0.0212 lbs/MSF	
VOC	0.15	lb/MSF	26.98		
<b>FHAP/TAC Emissions</b>					
Pollutant	CAS/DEQ Number	Emission Factor (lbs/MSF)	Unit PTE (TPY)	Federal HAP	CAO Air Toxic
<b>Organics</b>					
Acetaldehyde	75-07-0	0.0009	1.6E-01	Yes	Yes
Formaldehyde	50-00-0	0.0003	5.3E-02	Yes	Yes
Methanol	67-56-1	0.0200	3.5E+00	Yes	Yes
<b>Total HAP Emissions =</b>			3.71		
<b>Notes:</b>					
All throughputs in MSF (1000 square feet) are on a 3/8" basis.					
The VOC emission factor is based on DEQ AQGP-010, Section 13.7 (10/2017).					
The HAP/TAC emission factors are based on DEQ AQGP-010, Section 13.7 (10/2017).					
All emission factors are a combination of "Trim Chip" and "Skin Saw" from DEQ AQGP-010, Section 13.7 (10/2017).					



EU-PLYPRS:

<b>Emerald Forest Products #1 - 202528</b>					
<b>Emission Details</b>					
<b>EU-PLYPRS</b>					
Max Throughput	350,400	MSF/yr			
<b>Criteria Pollutants</b>					
	<b>Emission Factor</b>	<b>EF Units</b>	<b>Unit PTE (TPY)</b>	<b>Max HAP (methanol) =</b>	0.0305 lbs/MSF
<b>Pollutant</b>				<b>Total HAP =</b>	0.0379 lbs/MSF
VOC	0.062	lb/MSF	10.86		
<b>FHAP/TAC Emissions</b>					
	<b>CAS/DEQ Number</b>	<b>Emission Factor (lbs/MSF)</b>	<b>Unit PTE (TPY)</b>	<b>Federal HAP</b>	<b>CAO Air Toxic</b>
<b>Organics</b>					
Acetaldehyde	75-07-0	0.0042	7.4E-01	Yes	Yes
Formaldehyde	50-00-0	0.0022	3.8E-01	Yes	Yes
Methanol	67-56-1	0.031	5.3E+00	Yes	Yes
Phenol	108-95-2	0.001	1.8E-01	Yes	Yes
<b>Total HAP Emissions =</b>			6.46		
<b>Notes:</b>					
All throughputs in MSF (1000 square feet) are on a 3/8" basis.					
The VOC emission factor is based on source testing at EFP#1 (12/2020) on Press #3.					
The acetaldehyde emission factor is based on DEQ AQGP-010, Section 13.6 (10/2017).					
The formaldehyde and methanol emission factors are based on the average of source testing at EFP#1 (02/2006 and 12/2020)					
The phenol emission factor is based on source testing at EFP#1 (02/2006)					

**EU-STVDRY#2:**

Emerald Forest Products #1 - 202528					
Emission Details					
EU-STVDRY#2					
Max Throughput	48,180	MSF/yr			
Criteria Pollutants					
	Emission Factor	EF Units	Unit PTE (TPY)	Max HAP (methanol) = 0.0310 lbs/MSF	
Pollutant				Total HAP = 0.0856 lbs/MSF	
PM	0.56	lb/MSF	13.5		
PM10	0.53	lb/MSF	12.8		
PM2.5	0.14	lb/MSF	3.37		
VOC	0.47	lb/MSF	11.3		
FHAP/TAC Emissions					
Pollutant	CAS/DEQ Number	Emission Factor (lbs/MSF)	Unit PTE (TPY)	Federal HAP	CAO Air Toxic
<b>Organics</b>					
Acetaldehyde	75-07-0	0.0266	6.4E-01	Yes	Yes
Acrolein	107-02-8	0.0013	3.1E-02	Yes	Yes
Benzene	71-43-2	0.00059	1.4E-02	Yes	Yes
Formaldehyde	50-00-0	0.0063	1.5E-01	Yes	Yes
Methanol	67-56-1	0.031	7.5E-01	Yes	Yes
Phenol	108-95-2	0.0156	3.8E-01	Yes	Yes
Propionaldehyde	123-38-6	0.0024	5.8E-02	Yes	Yes
Toluene	108-88-3	0.0011	2.6E-02	Yes	Yes
Xylenes	1330-20-7	0.00075	1.8E-02	Yes	Yes
Total HAP Emissions =			2.06		
<b>Notes:</b>					
All throughputs in MSF (1000 square feet) are on a 3/8" basis.					
For the purposes of selecting emission factors, this unit is controlled by a Burley scrubber.					
The criteria pollutant emission factors, other than VOC, are based on DEQ AQGP-010, Section 13.5 (10/2017).					
Particulate matter is speciated using DEQ AQ-EF03 (08/2011).					
The VOC emission factor is based on source testing at EFP#1 (12/2020) for the veneer dryer section on an "as propane" basis including the measured formaldehyde and methanol plus the VOC emission factors from DEQ AQGP-010, Section 13.5 (10/2017) for the cooling section and fugitives.					
HAP/TAC emission factors, other than methanol and formaldehyde, are based on DEQ AQGP-010, Section 13.5 (10/2017) as the total of the veneer dryer section, cooling section and fugitives.					
Methanol and formaldehyde emission factors are based on source testing at EFP#1 (12/2020) for the veneer dryer section plus the emission factors from DEQ AQGP-010, Section 13.5 (10/2017) for the cooling section and fugitives.					



## EU-NGVDRY#1

### Emerald Forest Products #1 - 202528

#### Emission Details

##### EU-NGVDRY#1

Max Throughput	131,400	MSF/yr
Max Fuel Use	328.5	MMCF/yr
Heat Value - Natural Gas	1,026	MMBtu/MMcf

#### Criteria Pollutants

Pollutant	Emission Factor	EF Units	Unit PTE (TPY)	Max HAP (acetaldehyde) =	0.0684	lbs/MSF
				Total HAP =	0.1852	lbs/MSF
PM	0.29	lb/MSF	19.1			
PM <sub>10</sub>	0.28	lb/MSF	18.4			
PM <sub>2.5</sub>	0.07	lb/MSF	4.60			
CO	0.02	lb/MSF	1.31			
NO <sub>x</sub>	0.12	lb/MSF	7.88			
SO <sub>2</sub>	1.7	lb/MMcf	0.28			
VOC	0.44	lb/MSF	28.7			
GHG (CO <sub>2</sub> eq)	117	lb/MMBtu	19,733			

#### FHAP/TAC Emissions

Pollutant	CAS/DEQ Number	Emission Factor (lbs/MSF)	Unit PTE (TPY)	Federal HAP	CAO Air Toxic
<b>Organics</b>					
Acetaldehyde	75-07-0	0.0684	4.49	Yes	Yes
Acrolein	107-02-8	0.009	0.59	Yes	Yes
Benzene	71-43-2	0.0057	0.37	Yes	Yes
Formaldehyde	50-00-0	0.0335	2.20	Yes	Yes
Methanol	67-56-1	0.0277	1.82	Yes	Yes
Phenol	108-95-2	0.026	1.71	Yes	Yes
Propionaldehyde	123-38-6	0.0036	0.24	Yes	Yes
Toluene	108-88-3	0.0074	0.49	Yes	Yes
Xylenes	1330-20-7	0.0039	0.26	Yes	Yes
<b>Total HAP Emissions =</b>			12.17		

#### FHAP/TAC Emissions

Pollutant	CAS/DEQ Number	Emission Factor (lbs/MSF)	Unit PTE (TPY)	Federal HAP	CAO Air Toxic
<b>Organics</b>					
Acetaldehyde	75-07-0	0.0684	4.49	Yes	Yes
Acrolein	107-02-8	0.009	0.59	Yes	Yes
Benzene	71-43-2	0.0057	0.37	Yes	Yes
Formaldehyde	50-00-0	0.0335	2.20	Yes	Yes
Methanol	67-56-1	0.0277	1.82	Yes	Yes
Phenol	108-95-2	0.026	1.71	Yes	Yes
Propionaldehyde	123-38-6	0.0036	0.24	Yes	Yes
Toluene	108-88-3	0.0074	0.49	Yes	Yes
Xylenes	1330-20-7	0.0039	0.26	Yes	Yes
<b>Total HAP Emissions =</b>			12.17		

#### GHG-Related Emission Factors

Pollutant	Natural Gas (kg/MMBtu)	GWP
Carbon Dioxide (CO <sub>2</sub> )	53.06	1
Methane (CH <sub>4</sub> )	1.0E-03	25
Nitrous Oxide (N <sub>2</sub> O)	1.0E-04	298

#### Notes:

All throughputs in MSF (1000 square feet) are on a 3/8" basis.

For the purposes of selecting emission factors, this unit is controlled by a Burley scrubber.

The criteria pollutant emission factors, other than VOC and SO<sub>2</sub>, are based on DEQ AQGP-010, Section 13.5 (10/2017)

Particulate matter is speciated using DEQ AQ-EF03 (08/2011).

GHG emissions are based on a natural gas capacity of 328.5 MMCF/year.

The SO<sub>2</sub> emission factor is based on DEQ AQGP-010, Section 13.1 (10/2017).

The VOC emission factor is based on source testing at EFP#1 (10/2000) for the veneer dryer section converted from "as carbon" to "as propane" plus the formaldehyde and methanol from DEQ AQGP-010, Section 13.5 (10/2017) for the veneer dryer section plus the VOC emission factors from DEQ AQGP-010, Section 13.5 (10/2017) for the cooling section and fugitives averaged with the VOC emission factor from source testing at EFP#1 (12/2020) for the veneer dryer section on an "as propane" basis including the measured formaldehyde and methanol plus the VOC emission factors from DEQ AQGP-010, Section 13.5 (10/2017) for the cooling section and fugitives.

HAP/TAC emission factors other than formaldehyde and methanol, are based on DEQ AQGP-010, Section 13.5 (10/2017) as the total of the veneer dryer section, cooling section and fugitives.

Methanol and formaldehyde emission factors are based on source testing at EFP#1 (12/2020) for the veneer dryer section plus the emission factors from DEQ AQGP-010, Section 13.5 (10/2017) for the cooling section and fugitives.

Emerald Forest Products, Inc. – Plant #1.  
 Permit Number: 202528  
 Expiration Date: May 30, 2030

EU-PXFRSYS:

<b>Emerald Forest Products #1 - 202528</b>				
<b>Emission Details</b>				
<b>EU-PXFRSYS</b>				
Max Throughput	15,500	BDT/yr		
<b>Criteria Pollutants</b>				
		<b>Emission</b>		<b>Unit</b>
	<b>Pollutant</b>	<b>Factor</b>	<b>EF Units</b>	<b>PTE (TPY)</b>
Baghouse	PM	0.001	lb/BDT	7.8E-03
	PM10	0.001	lb/BDT	7.8E-03
	PM2.5	0.001	lb/BDT	7.8E-03
Target Box	PM	0.1	lb/BDT	0.78
	PM10	0.085	lb/BDT	6.6E-01
	PM2.5	0.05	lb/BDT	3.9E-01
<b>Notes:</b>				
Particulate matter emissions are based on DEQ AQGP-010, Section 13.2 (10/2017).				
Target box issue				