

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

**Review Report**

**9 Wood, Inc.**  
 999 South A Street  
 Springfield, Oregon 97477  
 Website: <http://9wood.com/>

**Source Information:**

SIC	2541
NAICS	337212
Source Categories (LRAPA Title)	B:69. – Surface coating operations: coating operations whose actual or expected usage of coating materials is

37, Table 1)	greater than 250 gallons per month 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	N
Emission Credits	N
Special Conditions	N
Compliance Schedule	N

Source Test [date(s)]	N
COMS	N
CEMS	N
Ambient monitoring	N

**Reporting Requirements**

Semi-Annual Report (due date)	July 15 February 15
SACC (due date)	N
NSPS Report (due date)	N

Monthly Report (due dates)	N
Excess Emissions Report	Y
Other Reports	N

**Air Programs**

NSPS (list subparts)	N
NESHAP (list subparts)	N
CAM	N
Regional Haze (RH)	N
Synthetic Minor (SM)	N
Part 68 Risk Management	N
Title V	N
ACDP (SIP)	N
New Source Review (NSR)	N
Prevention of Significant Deterioration (PSD)	N
Acid Rain	N
Clean Air Mercury Rule (CAMR)	N
TACT	N

Permittee Identification

1. 9 Wood, Inc. (“the facility”) operates a suspended wood ceilings manufacturing facility at 999 South A Street, Springfield, Oregon.

General Background

2. The facility uses three (3) paint booths for spray painting suspended wood ceiling components. The facility was built in August of 2005. The manual spray booth SB-1 was constructed in August of 2005. The samples spray booth SB-2 was constructed in August of 2014. The automated spray booth line SB-3 was constructed in June of 2018. Spray booths SB-1 and SB-2 are manual operations with air drying. Spray booth SB-3 is an automatic spray booth line equipped with eight (8) paint spray heads, although only four (4) heads are operational at any one time. Spray booth SB-3 uses hot water heat supplied by two (2) natural gas-fired boilers with maximum heat input rating of one (1) MMBtu per hour to dry the coating at three different locations on the automated spray line.

Reasons for Permit Action and Fee Basis

3. The facility operates a process listed in LRAPA Title 37, Table 1, Part B (B.69, Surface Coating Operations: coating operations whose actual or expected usage of coating materials is greater than 250 gallons per month, excluding sources that exclusively use non-VOC or non-HAP coatings) and is, therefore, required to obtain a permit. In addition, the facility has requested a PSEL for VOC that is equal to or greater than the applicable SER for that regulated pollutant. The facility has applied for a standard ACDP as required under Title 37.

Attainment Status

4. The facility is located inside the Eugene Springfield Air Quality Management Area. The facility is located in an area that has been designated an attainment area for PM, PM<sub>2.5</sub>, VOC, NO<sub>x</sub>, SO<sub>2</sub>, Pb and a maintenance area for CO and PM<sub>10</sub>.

Permitting History

5. LRAPA has reviewed and issued the following permitting actions to this facility:

Date Approved	Permit Action Type	Description
10/03/2010	Simple “High” ACDP	Initial Permit
08/27/2014	Approval to Construct NC-209600-A14	Installation of an open face samples spray booth (SB-2).
10/27/2014	Addendum No. 1	Incorporation of the approval to construct NC-209600-A14
03/21/2016	Simple “High” ACDP	Renewal

Emission Unit Description

6. The emission units regulated by the permit are the following:

EU ID	Emission Unit Description	Control Device Description	PCD ID
SB-1	Manual Spray Booth	Dry Filters	DF-1
SB-2	Samples Spray Booth	Dry Filters	DF-2
SB-3	Automatic Spray Booth Line	Dry Filters	DF-3

Emission Limitations for SB-1 and SB-2

7. SB-1 and SB-2 are subject to the visible emission limitations under LRAPA 32-010(3). These emission units may not have visible emissions equal to or greater than 20% opacity for a period or periods aggregating more than three minutes in any one hour. Compliance is demonstrated through the use of operational and work practice requirements, and a plant survey of visible emissions to be

completed at least once a quarter. The permittee is required to take corrective action if any visible emissions are identified or to conduct a Modified EPA Method 9 test within 24 hours.

8. SB-1 and SB-2 are subject to particulate matter emission limitations under LRAPA 32-015(2)(b). For sources installed, constructed or modified on or 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 is demonstrated through the use of operational and work practice requirements, and a plant survey of visible emissions to be completed at least once a quarter. The permittee is required to take corrective action if any visible emissions are identified or to conduct a Modified EPA Method 9 test within 24 hours.
9. SB-1 and SB-2 are subject to the process weight rate emission limitation under LRAPA 32-045. Particulate matter emissions in any one hour may not exceed the amount shown in LRAPA 32-8010 for the process weight allocated to the process. Compliance is demonstrated through the use of operational and work practice requirements, and a plant survey of visible emissions to be completed at least once a quarter. The permittee is required to take corrective action if any visible emissions are identified or to conduct a Modified EPA Method 9 test within 24 hours.
10. Under LRAPA 32-007, the facility must prepare an Inspection and Maintenance Plan (I&M Plan) for the spray coating operations. If the I&M Plan is updated, the permittee must submit the updated copy to LRAPA for review. If LRAPA determines the plan is deficient, LRAPA may require the permittee to amend the plan. At minimum, the I&M Plan must include inspection schedules for each spray booth and the associated dry filters used to control overspray from the spray coating operations. The I&M Plan must identify procedures for recording the date and time of any inspections, identification of the equipment inspected, the results of the inspection, and the actions taken if repairs or maintenance are necessary.

#### Emission Limitations for SB-3

11. SB-3 is subject to the visible emission limitations under LRAPA 32-010(3). This emission unit may not have visible emissions equal to or greater than 20% opacity for a period or periods aggregating more than three minutes in any one hour. Compliance is demonstrated through the use of operational and work practice requirements, and a plant survey of visible emissions to be completed at least once a quarter. The permittee is required to take corrective action if any visible emissions are identified or to conduct a Modified EPA Method 9 test within 24 hours.
12. The coating booth exhaust of SB-3 is subject to particulate matter emission limitations under LRAPA 32-015(2)(c). For sources other than fuel burning equipment, refuse burning equipment and fugitive emissions, installed, constructed or modified after April 16, 2015, the particulate matter emission limit is 0.10 grains per dry standard cubic foot. Compliance is demonstrated through the use of operational and work practice requirements, and a plant survey of visible emissions to be completed at least once a quarter. The permittee is required to take corrective action if any visible emissions are identified or to conduct a Modified EPA Method 9 test within 24 hours. No particulate matter emissions are expected from the three drying oven exhausts on SB-3.
13. SB-3 is subject to the process weight rate emission limitation under LRAPA 32-045. Particulate matter emissions in any one hour may not exceed the amount shown in LRAPA 32-8010 for the process weight allocated to the process. Compliance is demonstrated through the use of operational and work practice requirements, and a plant survey of visible emissions to be completed at least once a quarter. The permittee is required to take corrective action if any visible emissions are identified or to conduct a Modified EPA Method 9 test within 24 hours
14. Under LRAPA 32-007, the facility must prepare an Inspection and Maintenance Plan (I&M Plan) for the spray coating operations. If the I&M Plan is updated, the permittee must submit the

updated copy to LRAPA for review. If LRAPA determines the plan is deficient, LRAPA may require the permittee to amend the plan. At minimum, the I&M Plan must include inspection schedules for each spray booth and the associated dry filters used to control overspray from the spray coating operations. The I&M Plan must identify procedures for recording the date and time of any inspections, identification of the equipment inspected, the results of the inspection, and the actions taken if repairs or maintenance are necessary.

Typically Achievable Control Technology (TACT) for SB-1, SB-2, and SB-3

15. LRAPA 32-008 requires a new or modified emission unit at a facility to meet TACT if the emission unit meets the following criteria: The emission unit is not subject to Major NSR or a Type A State NSR under Title 38, an NSPS under Title 46, or any other standard applicable only to modified sources in Title 32, Title 33 or Title 39 for the regulated pollutant emitted; the facility is required to have a permit; the new emission unit would have emissions of any criteria pollutant equal to or greater than 1 ton per year; and LRAPA determines that the proposed air pollution control devices and emission reduction processes do not represent TACT. The proposed emission units are each expected to have VOC emissions greater than 1 ton per year. While LRAPA has not performed a formal TACT determination for VOCs, LRAPA has determined that (1) the use of air assisted airless (AAA) spray guns (or similar), (2) the use of dry filters with a control efficiency of at least 98.8% for particulate matter as determined by the manufacturer, (3) manual spray gun system cleaning is not performed outside a container that collects the gun cleaning solvent, and (4) personnel who apply surface coatings are trained in proper spray application of surface coatings likely meets TACT. Based on vendor literature, AAA spray guns typically achieve a transfer efficiency of between 65-85%. The facility's use of AAA spray guns (or similar) results in the application of the least amount of VOC per square foot of product produced for their particular application.

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

16. Because the proposed PSELS for all regulated pollutants are below the major source threshold of 250 TPY and the PM<sub>10</sub> PSEL is below the Significant Emission Rates (SER) in LRAPA Title 38, the facility is not subject to LRAPA's New Source Review (NSR) requirements for PM<sub>10</sub>, nor the Prevention of Significant Deterioration (PSD) requirements for any other regulated pollutant, as applicable.

Plant Site Emission Limits (PSELS)

17. Provided below is a summary of the baseline emissions rate, netting basis, plant site emission limit, and emissions capacity.

Pollutant	Baseline Emission Rate (TPY)	Netting Basis		Plant Site Emission Limit (PSEL)			SER (TPY)
		Previous (TPY)	Proposed (TPY)	Previous PSEL (TPY)	Proposed PSEL (TPY)	PSEL Increase over netting basis (TPY)	
PM	0	0	0	NA	NA	--	25
PM <sub>10</sub>	0	0	0	NA	NA	--	15
PM <sub>2.5</sub>	NA	0	0	NA	NA	--	10
SO <sub>2</sub>	0	0	0	NA	NA	--	40
NO <sub>x</sub>	0	0	0	NA	NA	--	40
CO	0	0	0	NA	NA	--	100
VOC	0	0	0	39	99	99	40
GHG	0	0	0	NA	NA	--	75,000
Individual HAP	NA	NA	NA	9	9	--	NA

Pollutant	Baseline Emission Rate (TPY)	Netting Basis		Plant Site Emission Limit (PSEL)			SER (TPY)
		Previous (TPY)	Proposed (TPY)	Previous PSEL (TPY)	Proposed PSEL (TPY)	PSEL Increase over netting basis (TPY)	
Aggregate HAP	NA	NA	NA	24	24	--	NA

18. The facility has no baseline emission rates for PM, PM<sub>10</sub>, SO<sub>2</sub>, NO<sub>x</sub>, CO, and VOC because the facility was not in operation during the 1978 baseline year. A baseline emission rate is not established for PM<sub>2.5</sub> in accordance with LRAPA 42-0048(3). The facility has no baseline for GHGs because the facility had no GHG emissions during any consecutive 12 calendar month period during calendar years 2000 through 2010.
19. The netting basis for all pollutants are set at zero because the facility currently has a Simple "High" ACDP. The netting basis will remain at zero for each regulated pollutant until the facility undergoes an increase listed under LRAPA 42-0046(3)(e).
20. The PSELs were established based upon the following:
  - 20.a. No PSELs were established for PM, PM<sub>10</sub>, PM<sub>2.5</sub>, SO<sub>2</sub>, NO<sub>x</sub>, CO and GHGs because these pollutants will be emitted at less than the de minimis emission level listed in LRAPA Title 12 from the entire source.
  - 20.b. The facility requested an increase in the VOC PSEL of 60 tons per year as part of the application submitted on March 19, 2019, to be covered by a Standard ACDP. Because this increase is considered a Type B State NSR action under LRAPA 38-0010(2)(d)(B), there will be no increase in the netting basis for VOCs. Because this increase in VOC emissions will exceed the netting basis by the SER, the facility must perform an air quality modeling analysis under LRAPA 40-0050(1)&(2) and 40-0060. See the Ozone Analysis section of this review report for more information.

Ozone Analysis

21. This facility must comply with Type B State New Source Review as required under LRAPA 38-0010(2)(d)(B) because VOC emissions are increasing to an amount that is equal to or greater than the SER over the netting basis (99 TPY). A facility subject to state NSR must comply with LRAPA 40-0050(1) and (2) for each regulated pollutant for which emissions will exceed the netting basis by the SER or more due to the proposed modification. Under LRAPA 40-0050(1), a facility must demonstrate compliance with the NAAQS (National Ambient Air Quality Standard), PSD increments, and other requirements in PSD Class II areas. LRAPA has performed a single source impact analysis as described below to demonstrate the proposed modification at the facility will not cause or contribute to a new violation of a NAAQS and PSD increment. This single source impact analysis is sufficient to show compliance if the modeled impacts from emission increases equal to or greater than a SER above the netting basis due to the proposed modification being evaluated is less than the Class II significant impact levels specified in Title 12, Table 1. The use of the SIL (Significant Impact Level) by itself satisfies LRAPA 40-0050(1)(b) because the background ozone concentrations in Lane County are more than the SIL below the applicable NAAQS and the formation of ozone does not result in concentration gradients in the vicinity of the source. Under LRAPA 38-0270(2)(a), the facility is presumed to have a significant impact if located within 100 kilometers of a designated ozone area. The facility is 88 kilometers from the Salem-Keizer designated ozone maintenance area. Based upon the Formula Method under LRAPA 38-0520(2)(a), a net air quality benefit demonstration is not required because the facility is located at a distance equal to or greater than  $D = (99 \text{ TPY}/40) \times 30 \text{ km} = 74 \text{ km}$  from the Salem-Keizer designated ozone maintenance area.

22. The United States Environmental Protection Agency (U.S. EPA) established a two-tiered approach for addressing impacts of single-source emissions on ozone (O<sub>3</sub>). The first tier involves the use of appropriate and technically credible relationships between emissions and ambient impacts. The second tier involves use of chemical transport modeling to obtain single-source impacts. In December 2016, U.S. EPA published a draft document, "Guidance on the Development of Modeled Emission Rates for Precursors (MERPs) as a Tier 1 Demonstration Tools for Ozone and PM<sub>2.5</sub> under the PSD Permitting Program". The term MERP is used to describe an emission rate of a precursor that is expected to result in a change in ambient O<sub>3</sub> or PM<sub>2.5</sub> concentration that would not cause or contribute to a violation of the NAAQS. Separate MERPs are developed for each precursor and each pollutant. Projected increases in the O<sub>3</sub> precursor pollutants NO<sub>x</sub> and VOC that are below the MERP are part of a demonstration that the facility will not cause or contribute to violation of the O<sub>3</sub> NAAQS. Based upon the guidance, the most conservative, or lowest, MERPs from the Western US were used to determine whether the proposed emissions from the facility would cause or contribute to a violation of the NAAQS for ozone. Using the modeled concentration for the minimum MERP source in the Western US, an emission rate equivalent to a 1.0 parts per billion (ppb) impact was computed for NO<sub>x</sub> and VOC. The facility's pollutant emissions are below these MERPs, but the contributions should be considered together to determine if the facility would cause or contribute to a violation of the NAAQS for ozone. The ratio of emissions to the MERP for each precursor were calculated and then added together. Since the sum of the ratio is not above 1.0 ppb, as shown below, the combined impact of NO<sub>x</sub> and VOC emissions would not cause or contribute to a violation of the NAAQS for ozone.

Precursor	Western US MERP (tons)	Hypothetical Emissions (TPY)	Associated Modeled Concentration (ppb)	9 Wood Emissions (TPY)	Ratio 9 Wood / MERP (ppb)	Ozone SIL (ppb)
VOC	1053	1000	0.95	99	0.094	
NO <sub>x</sub>	184	500	2.72	1	0.005	
Total =					0.099	1.0
Calculation: 9 Wood O <sub>3</sub> contribution = (1/500 * 2.72 ppb) + (99/1000 * 0.95 ppb) = 0.099 ppb < 1.0 ppb O <sub>3</sub> SIL						

Unassigned Emissions and Emission Reduction Credits

23. The facility has zero (0) tons/year of 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. In accordance with LRAPA 42-0055 the maximum unassigned emissions may not be more than the SER.

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

Significant Emission Rate

24. The VOC PSEL is being increase to 99 tons per year as part of this permit action. An analysis of the proposed PSEL increases over the Netting Basis is shown in the following table:

Pollutant	SER (TPY)	Requested Increase Over Previous Netting Basis (TPY)	Increase Due to Utilizing Capacity That Existed In The Baseline Period (TPY)	Increase Due to Physical Changes or Changes In The Method of Operation (TPY)	Increase Due to Use of Generic PSEL Level (TPY)
PM	25	0	0	0	0
PM <sub>10</sub>	15	0	0	0	0
PM <sub>2.5</sub>	10	0	0	0	0
SO <sub>2</sub>	40	0	0	0	0
NO <sub>x</sub>	40	0	0	0	0
CO	100	0	0	0	0
VOC	40	60	0	60	0
GHGs	75,000	0	0	0	0

Federal Hazardous Air Pollutants

25. The total HAPs for 2019 are projected to be 1.15 tons per year, with xylene being the highest single HAP at 0.44 tons per year. Potential annual HAP emissions are based on a ratio of the maximum hours in a calendar year to the normal operating hours of this facility (8760 hours/4160 hours). Potential HAPs are projected to be 2.42 tons per year, with xylene being the highest single HAP at 0.92 tons per year. A major source of HAPs is defined as a source with potential HAP emissions of 10 tons per year of any single HAP and 25 tons per year of the aggregate of all HAPs. This facility does not have potential HAP emissions exceeding these thresholds and is considered an “area source” of HAPs. As an area source of HAPs, the facility is not subject to any major source National Standard for Hazardous Air Pollutants (NESHAP), nor is the facility currently subject to any area source NESHAP requirements.

Hazardous Air Pollutants	2019 Projection (TPY)	Potential Annual Emissions (TPY)
Formaldehyde (50-00-0)	0.04	0.08
Methanol (67-56-1)	0.05	0.10
Ethylbenzene (100-41-4)	0.10	0.20
Toluene (108-88-3)	0.36	0.76
Hexamethylene Diisocyanate (882-06-0)	6.0E-03	1.3E-02
Xylene (1330-20-7)	0.44	0.92
Chromium Compounds as Chromium (7440-47-3)	1.4E-03	3.0E-03
Glycol Ethers (--)	0.16	0.34
S. 112(b) Federal HAPs (highest individual / aggregate) =	0.44 / 1.15	0.92 / 2.42

National Emission Standards for Hazardous Air Pollutants (NESHAPs)

26. The potential federal HAP emissions from this facility are less than the major source thresholds of 10 tons per year for an individual HAP and 25 tons per year for the aggregate of all federal HAPs. In addition, the facility currently has PSELs for federal HAPs that limit emissions to no more than 9 tons

per year for an individual federal HAP and 24 tons per year for the aggregate of all federal HAPs. As such, the facility is considered a minor or area source of federal HAPs.

- 27. The facility is not subject to 40 CFR 63 subpart JJ – National Emission Standards for Wood Furniture Manufacturing Operations because the facility is an area source of federal HAPs.
- 28. The facility is not subject to 40 CFR 63 subpart HHHHHH ('6H') – National Emission Standards for Hazardous Air Pollutants: Paint Stripping and Miscellaneous Surface Coating Operations at Area Sources because the facility does not perform paint stripping operations or apply coatings to metal or plastic products.

New Source Performance Standards (NSPSs)

- 29. There are no sources at this facility for which NSPS have been promulgated.

Enforcement History

- 30. The following is a chronological list and description since the startup of the facility in 2005 of all the inspection and enforcement-related actions for the facility
  - 30a. A Comprehensive Compliance Status inspection was performed on February 12, 2013. The facility was determined to be in compliance with the applicable permit conditions.
  - 30b. An informational inspection was performed on January 23, 2019 to view the new automated spray coating line (SB-3). Based upon this visit, it was determined that the new automated spray coating line (SB-3) was installed without approval from LRAPA and that the facility VOC emissions exceeded the PSEL of 39 tons per year in their current Simple "High" ACDP. As a result, LRAPA has initiated enforcement action and the facility has applied for a Standard ACDP as required under Title 37. Notice of Non-Compliance (NON) 3751 was issued on February 6, 2019 for failing to notify LRAPA or to submit appropriate construction documents prior to the installation and operation of a new continuous coating line and for exceeding the VOC PSEL of 40 tons per year.

Performance Test Results

- 31. The facility is not required to conduct performance testing. LRAPA is not aware of any performance testing conducted at this facility. Safety Data Sheets or Certified Product Data Sheets and the material usage are used to determine the facility's VOC and HAP emissions.

Recordkeeping Requirements

- 32. The facility is required to keep and maintain a record of the following information for a period of five (5) years:

Activity	Parameter	Units	Recording Frequency
VOC/HAP-containing Material Usage	Material Usage	Gallons or Pounds	Monthly
VOC/HAP-containing Material Usage	Density of Material	Pounds per Gallon	Maintain current information at all times
VOC-containing Material Usage	VOC Content	% By Weight	Maintain current information at all times
HAP-containing Material Usage	HAP Content	% By Weight	Maintain current information at all times
Spray Booth Filter Particulate Matter Control Efficiency	Control Efficiency	%	Maintain documentation from each manufacturer
Manual Spray Booth Training	Training Logs / Certifications	NA	Maintain documentation of training for spray coating personnel



Spray Booth Inspections	Occurrence	NA	Each inspection
Spray Booth Filter Replacement	Occurrence	NA	Upon Replacement
Inspection and Maintenance Plan	Document	NA	Maintain the current version on-site

- 33.a. VOC/HAP-containing materials include, but are not limited to, coatings, lacquers, thinners, stains, topcoats, solvents, adhesives, cleaning, and wash-off materials.
- 33.b. The density and VOC/HAP content information must be supplied from Certified Product Data Sheet (CPDS) or Safety Data Sheet (SDS) provided by the manufacturer/supplier of the VOC/HAP containing material.

Reporting Requirements

- 33. The facility is required to submit semi-annual reports that include the previous 12-month consecutive calendar month VOC and HAP emissions calculations, recordkeeping requirements, and any entries in the upset log as required by permit Condition G15. The first semi-annual report is due **July 15<sup>th</sup>** of each year and the second semi-annual report is due **February 15<sup>th</sup>** of each year.

Public Notice

- 34. The draft permit will be on public notice from April 23, 2019 to May 27, 2019. Written comments may be submitted during the 35-day comment period. If requested by ten (10) or more individuals or an individual representing a group of more than ten (10) individuals, there will be a public hearing following the comment period.

After the comment period and hearing (if requested), LRAPA will respond to comments received and then take final action to issue or deny the permit within 45 days of the close of the public comment or hearing period.

JJW/cmw  
04/15/2019

**9 Wood - 209600**  
**Emission Detail Sheets**

**Facility Emission Summary**

EU ID	Emission Unit Description	PM (TPY)	PM <sub>10</sub> (TPY)	PM <sub>2.5</sub> (TPY)	SO <sub>2</sub> (TPY)	NO <sub>x</sub> (TPY)	CO (TPY)	VOC (TPY)	GHG (TPY)
SB-1	Manual Spray Booth	0.20	0.20	0.20	--	--	--	118	--
SB-2	Samples Spray Booth				--	--	--		--
SB-3	Automated Spray Booth Line				1.5E-02	0.86	0.72		1,024
<b>Total =</b>		<b>0.20</b>	<b>0.20</b>	<b>0.20</b>	<b>0.01</b>	<b>0.9</b>	<b>0.7</b>	<b>118</b>	<b>1,024</b>

**9 Wood - 209600**  
**Emission Detail Sheets**

**Natural Gas Combustion Units**

EU ID	Emission Unit	Rating	Unit
SB-3	Automated Spray Booth Line	2.000	MMBtu/hr
Total =		2.000	MMBtu/hr

Avg. Gross Heat Value of Natural Gas  
 1020 MMBtu/MMCF

**Natural Gas Combustion Emissions**

EU ID	PM		PM <sub>10</sub>		PM <sub>2.5</sub>		SO <sub>2</sub>		NO <sub>x</sub>		CO		VOC		GHGs TPY
	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	
SB-3	4.9E-03	0.02	4.9E-03	0.02	4.9E-03	0.02	5.1E-03	1.5E-02	0.20	0.86	0.16	0.72	1.1E-02	0.05	1,024
Total =	4.9E-03	0.02	4.9E-03	0.02	4.9E-03	0.02	5.1E-03	1.5E-02	0.20	0.86	0.16	0.72	1.1E-02	0.05	1,024

**Natural Gas Combustion Emission Factors**

PM	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>		NO <sub>x</sub>	CO	VOC	GHGs
			Hourly	Annual				
2.5	2.5	2.5	2.6	1.7	100	84	5.5	512

All emission factors are from ODEQ AQ-EF05 - Emission Factors from Gas Fired Boilers (uncontrolled medium boilers < 100 million Btu/hr), except GHGs

All emission factors expressed as pounds of pollutant per MMCF of natural gas combusted, except GHGs

GHG emission factor is expressed as (tons of GHG x hr)/(MMBtu per year)

GHG emission factor is derived from 40 CFR 98, Tables C-1 and C-2 using GWP of 1 for CO<sub>2</sub>, 25 for methane, and 298 for nitrous oxide

**9 Wood - 209600**

**Emission Detail Sheets**

**Particulate Matter Emissions from Overspray**

Coating Manufacturer	Product Type	Product # (MSDS)	Gallons Used	Coating Wt./Gal.	Solids % By Weight	Solids lbs.	2019 Projected PM Emissions (TPY)	Potential PM Emissions (TPY)	
Sherwin Williams	Urethane Sealer	F63FH3	400	8.05	26.28%	846	1.8E-03	3.7E-03	
Sherwin Williams	Urethane Top Coat	F63FH2	600	8.09	24.60%	1,194	2.5E-03	5.3E-03	
Sherwin Williams	LV Haps Free Precat Topcoat (unicoat)	T77F90022	16286	7.85	30.00%	38,354	0.08	0.17	
Total (TPY)						=	20.2	0.08	0.18

Minimum Filter Efficiency = 98.80%

Minimum Coating Transfer Efficiency = 65%

9 Wood - 209600																																								
Emission Detail Sheets																																								
VOC and HAP Emissions																																								
																							2019		2019															
																							Projected	Potential	Projected	Potential														
																							Formaldehyde (50-00-0)		Methanol (67-56-1)		Ethylbenzene (100-41-4)		Toluene (108-88-3)		HDI (882-06-0)		Xylene (1330-20-7)		Chromium (7440-47-3)		Glycol Ethers (N230)		Projected	Potential
Coating Manufacturer	Product Type	Product # (MSDS)	Gallons Used	Coating Wt./Gal.	VOC Wt./Gal.	% By Weight	lbs.	lbs.	% By Weight	lbs.	% By Weight	lbs.	% By Weight	lbs.	% By Weight	lbs.	% By Weight	lbs.	% By Weight	lbs.	% By Weight	lbs.	% By Weight	lbs.	lbs.	lbs.														
Rodda	Barrier III Rust Inhibitive Metal Primer -	708099	16	11.2	3.32	29.64%	53.1	112	0.00%	-	0.00%	-	10.00%	17.92	0.00%	-	0.00%	-	40.00%	71.68	0.00%	-	0.00%	-	89.6	188.7														
Rodda	Dye Stain Base	7998555	500	6.7	0.67	10.00%	335	705	0.00%	-	0.00%	-	0.00%	-	0.00%	-	0.00%	-	0.00%	-	0.00%	-	0.00%	-	-	-														
Rodda	Lacquer Wood Primer Surfacer - Black	28001	100	9.84	4.79	48.68%	479	1,009	0.00%	-	10.00%	98.40	10.00%	98.40	10.00%	98.40	0.00%	-	20.00%	196.80	0.00%	-	0.00%	-	492	1,036														
Rudd	275 VOC Precat Lacquer Satin	651885.ST	50	7.78	0.574	7.38%	28.7	60.4	0.00%	-	0.00%	-	0.43%	1.67	0.00%	-	0.00%	-	2.00%	7.78	0.00%	-	0.00%	-	9.45	19.91														
Sherwin Williams	Dye Stain, Black	S61X87-4383	190	7.07	3.87	54.74%	735	1,548	0.00%	-	0.00%	-	0.30%	4.03	42.00%	564.19	0.00%	-	1.00%	13.43	0.00%	-	0.00%	-	582	1,225														
Sherwin Williams	HAPs Free Stain Base	R7K305	2375	6.84	5.86	85.67%	13,918	29,307	0.00%	-	0.00%	-	0.00%	-	0.00%	-	0.00%	-	0.00%	-	0.00%	-	2.00%	324.90	324.90	684.16														
Sherwin Williams	Kem Aqua Lacquer, DRE	T75F528	58	10.76	2.00	18.59%	116	244	0.00%	-	0.00%	-	0.00%	-	0.00%	-	0.00%	-	0.00%	-	0.00%	-	0.00%	-	-	-														
Sherwin Williams	Kem Aqua Lacquer Sanding Sealer	T65F520	35	8.51	0.54	6.35%	18.9	39.8	0.00%	-	0.00%	-	0.00%	-	0.00%	-	0.00%	-	0.00%	-	0.00%	-	0.00%	-	-	-														
Sherwin Williams	Polane Catalyst	V66V29	195	8.78	2.19	24.94%	427	899	0.00%	-	0.00%	-	0.00%	-	0.00%	-	0.70%	11.98	0.00%	-	0.00%	-	0.00%	-	12.0	25.2														
Sherwin Williams	Universal Dye Stain Concentrate, Black	S61B500	18	8.92	5.70	63.90%	103	216	0.00%	-	0.00%	-	0.00%	-	0.00%	-	0.00%	-	0.00%	-	1.33%	2.14	0.00%	-	2.14	4.50														
Sherwin Williams	Universal Dye Stain Concentrate, Blue	S61L505	1.5	8.54	6.61	77.40%	9.92	20.9	0.00%	-	0.00%	-	0.00%	-	0.00%	-	0.00%	-	0.00%	-	0.00%	-	0.00%	-	-	-														
Sherwin Williams	Universal Dye Stain Concentrate, Red	S61R503	12.25	9	2.88	32.00%	35.3	74.3	0.00%	-	0.00%	-	0.00%	-	0.00%	-	0.00%	-	0.00%	-	0.65%	0.72	0.00%	-	0.72	1.51														
Sherwin Williams	Universal Dye Stain Concentrate, Yellow	S61Y504	22.25	8.8	5.45	61.93%	121	255	0.00%	-	0.00%	-	0.00%	-	0.00%	-	0.00%	-	0.00%	-	0.00%	-	0.00%	-	-	-														
Sherwin Williams	Urethane Sealer	F63FH3	400	8.05	5.42	67.33%	2,168	4,565	0.00%	-	0.00%	-	0.90%	28.98	0.00%	-	0.00%	-	5.00%	161.00	0.00%	-	0.00%	-	190.0	400.1														
Sherwin Williams	Urethane Top Coat	F63FH2	600	8.09	5.57	68.85%	3,342	7,037	0.00%	-	0.00%	-	0.90%	43.69	0.00%	-	0.00%	-	5.00%	242.70	0.00%	-	0.00%	-	286.4	603.1														
Sherwin Williams	LV Haps Free Precat Topcoat (unicat)	T77F90022	16286	7.85	5.48	69.81%	89,247	187,934	0.01%	12.78	0.00%	-	0.00%	-	0.00%	-	0.00%	-	0.14%	178.98	0.00%	-	0.00%	-	191.77	403.82														
Sherwin Williams	Wiping Stain, Sherstain White	S64XXW259-4383	53	11.81	6.01	50.89%	319	671	0.00%	-	0.00%	-	0.00%	-	10.00%	62.59	0.00%	-	0.00%	-	0.00%	-	0.00%	-	62.6	132														
Valspar	Valtec Pre-Cat Lacquer 275 White	NUW3122	701	8.55	0.59	6.93%	415	875	1.00%	59.94	0.00%	-	0.00%	-	0.00%	-	0.00%	-	0.00%	-	0.00%	-	0.00%	-	59.9	126														
							<b>Tons =</b>	<b>55.94</b>	<b>118</b>	<b>Tons =</b>	<b>0.04</b>	<b>Tons =</b>	<b>0.05</b>	<b>Tons =</b>	<b>0.10</b>	<b>Tons =</b>	<b>0.36</b>	<b>Tons =</b>	<b>6.0E-03</b>	<b>Tons =</b>	<b>0.44</b>	<b>Tons =</b>	<b>1.4E-03</b>	<b>Tons =</b>	<b>0.16</b>	<b>1.15</b>	<b>2.42</b>													