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AFS Plant I.D. Number: 53-077-00072

# Statement of Basis

## Title V Air Quality Operating Permit
## Permit Renewal #1

Permit Writer: Christopher Familiare

## Yakama Forest Products

Yakama Reservation
White Swan, Washington

### Purpose of Permit and Statement of Basis

Title 40 Code of Federal Regulations Part 71 establishes a comprehensive air quality operating permit program under the authority of Title V of the 1990 amendments to the federal Clean Air Act. The air quality operating permit is an enforceable compilation of all of the applicable air pollution requirements that apply to an existing affected air emissions source. The permit is developed via a public process, may contain additional new requirements to improve monitoring of existing requirements, and contains procedural and prohibitory requirements related to the permit program itself. The permit is valid for five years and may be renewed.

This document, the statement of basis, summarizes the legal and factual basis for the permit conditions in the air quality operating permit to be issued to Yakama Forest Products (referred to herein as YFP facility, source, or permittee). Unlike the air quality operating permit, this document is not legally enforceable. This statement of basis summarizes the emitting processes at the facility, air emissions, permitting and compliance history, the statutory or regulatory provisions that relate to the subject facility, and the steps taken to provide opportunities for public review of the permit. The permittee is obligated to follow the terms of the permit. Any errors or omissions in the summaries provided here do not excuse the permittee from the requirements of the permit.

# Table of Contents

**Abbreiations & Symbols** ..... **1**

**1. EPA Authority to Issue Title V Permits** ..... **3**

**2. Facility Information** ..... **5**

2.1 Location ..... 5

2.2 Yakama Reservation ..... 5

2.3 Facility Description ..... 5

2.4 Local Air Quality and Attainment Status ..... 8

2.5 Permitting, Construction and Compliance History ..... 8

**3. Emission Inventory** ..... **9**

3.1 Emission Inventory Basics ..... 9

3.2 Potential to Emit (PTE) ..... 9

**4. Regulatory Analysis and Permit Content** ..... **11**

4.1 Federal Air Quality Requirements ..... 12

4.2 Other Federal Requirements ..... 27

**5. Permit Conditions** ..... **36**

5.1 Permit Conditions for Renewal Permit No. R10T5120100 ..... 36

5.2 Permit Conditions Changed from Expiring Permit No. R10T5120000 ..... 36

**6. Public Participation** ..... **36**

6.1 Public Notice and Comment ..... 36

6.2 Response to Public Comments and Permit Issuance ..... 36

**Appendix A – PTE Emissions Inventory**

# Abbreviations and Acronyms

Also see 40 CFR 60.2, 60.41c, 63.2, 63.2292, 63.7575 and 71.2.

| | |
|---|---|
| | Section |
| Btu | British thermal units |
| CAA | Clean Air Act [42 U.S.C. section 7401 et seq.] |
| CAM | Compliance assurance monitoring |
| CFR | Code of Federal Regulations |
| CO | Carbon monoxide |
| COMS | Continuous opacity monitoring system |
| DC | Dry chips |
| dscf | Dry standard cubic feet |
| EJ | Environmental Justice |
| EPA | United States Environmental Protection Agency (also U.S. EPA) |
| ESA | Endangered Species Act |
| EU | Emission Unit |
| FARR | Federal Air Rules for Reservations |
| FR | Federal Register |
| gal | gallon(s) |
| GC | Green chips |
| gr | Grains (7,000 grains = 1 pound) |
| GHG | Greenhouse Gases |
| HAP | Hazardous air pollutant |
| HF | Hog fuel (aka hogged fuel or wood waste) |
| hr | Hour |
| lb | Pound (lbs = pounds) |
| 1bm | Pound-mole |
| kPa | Kilopascals |
| LLM | Large log mill |
| MACT | Maximum Achievable Control Technology |
| m | Thousand |
| mm | Million |
| NEPA | National Environmental Protection Act |
| NESHAP | National Emission Standards for Hazardous Air Pollutants (40 CFR Parts 61 and 63) |
| NHPA | National Historical Preservation Act |
| $NO_x$ | Nitrogen oxides |
| NSPS | New Source Performance Standard |
| PM | Particulate matter |
| $PM_{10}$ | Particulate matter less than or equal to 10 microns in aerodynamic diameter |
| $PM_{2.5}$ | Particulate matter less than or equal to 2.5 microns in aerodynamic diameter |
| ppmdv | Parts per million on a dry, volume basis |
| ppmw | parts per million on a weight basis |
| PSD | Prevention of significant deterioration |
| psi | Pounds per square inch |
| PTE | Potential to emit |
| Region 10 | U.S. Environmental Protection Agency, Region 10 |
| S | Sulfur |
| SD | Sander dust |
| SH | Shavings |

| | |
|---|---|
| SLM | Small log mill |
| $SO_2$ | Sulfur dioxide |
| tpy | Tons per year |
| VOC | Volatile organic compound |
| YFP | Yakama Forest Products |

# 1. EPA Authority to Issue Title V Permits

On July 1, 1996, the EPA adopted regulations (see 61 Federal Register 34202) codified at 40 Code of Federal Regulations Part 71 setting forth the procedures and terms under which the Agency would administer a federal operating permit program. These regulations were updated on February 19, 1999 (64 FR 8247) to incorporate the EPA's approach for issuing federal operating permits to affected stationary sources in Indian Country.

As described in 40 CFR 71.4(a), the EPA will implement a Part 71 program in areas where a state, local, or Tribal agency has not developed an approved Part 70 program. Unlike states, Indian Tribes are not required to develop operating permit programs, though the EPA encourages Tribes to do so. See, for example, Indian Tribes: Air Quality Planning and Management (63 FR 7253, February 12, 1998) (also known as the "Tribal Authority Rule"). Therefore, within Indian Country, the EPA will administer and enforce a Part 71 federal operating permit program for stationary sources until the governing Indian Tribe receives the EPA's approval to administer its own operating permit program.

# 2. Facility Information

## 2.1 Location

The YFP facility is located in White Swan, Washington, within the exterior boundaries of the 1855 Yakama Reservation and is in Indian Country as defined in 40 CFR Part 71.

## 2.2 Yakama Reservation

The YFP facility is located on the Yakama Reservation in south central Washington. The reservation was established by the Treaty of June 9, 1855 (12 Stat. 951), by which The Confederated Tribes and Bands of the Yakama Nation ceded to the United States their aboriginal title to approximately 10 million acres in central Washington and reserved for their own use forever the Yakama Reservation. The Yakama Nation is composed of 14 Tribes and Bands: Kah-milt-pah, Klickitat, Klinquit, Kow-was-say-ee, Li-ay-was, Oche-chotes, Palouse, Pisquose, Se-ap-cat, Shyiks, Skinpa, Wenatshapam, Wishram and Yakama. The 1.4 million acre reservation is primarily in Yakima County with some land in Klickitat and Lewis Counties. The reservation is considered to be Indian Country, as defined in 40 CFR Part 71.

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## 2.3 Facility Description

Yakama Forest Products is a tribal enterprise wholly owned by the Confederated Tribes and Bands of the Yakama Nation. It operates two sawmills in White Swan, Washington where it produces common boards, industrial shop lumber, and dimensional lumber from timber harvested from tribal lands. The two mills are separated by a public road. The small log mill is located on the east side of the road and the large log mill is located on the west side of the road. The EPA has determined that YFP must treat the two mills as a single source for regulatory applicability purposes. The Title V permit is being issued to YFP; a wholly owned business enterprise of the Yakama Nation. YFP is the operator of the facility.

The primary air emission activities at the facility include fuel burning, lumber drying, lumber production and material handling. Each mill has two boilers that produce steam for lumber drying. The large log mill boilers are currently fired on propane. The small log mill boilers, currently not operating, will be converted to propane firing before being restarted. All of the boilers previously fired used oil or fuel oil. The oil storage tanks have been removed from the facility. The byproducts of lumber manufacturing are sawdust, green and dry wood chips, planer shavings and hog fuel. These byproducts are stored in bins until the material is sold and transferred off-site.

The air pollution emission units and control devices that exist at YFP are listed in Table 2-1 below by emission unit identification. None of the emission units vent through a stack shared with another emission unit. Installation dates and capacities are listed for several emission units based on the best information available from the applicant.

**Table 2-1 – Emission Units & Control Devices**

| EU ID | Emission Unit Description | Control Device |
|---|---|---|
| SLM Boilers | In the small log mill, two propane fired boilers supply steam to the small log mill kilns: Superior Model No. 6-5-3000, Serial No. 13796; Superior Model No. 7-4-2500, Serial No. 14159. Boiler 1 was installed in August 1998; boiler 2 was installed in 2001. Heat input capacity is 24.92 million Btu/hr each and maximum steam production is 20,700 and 21,562 lb/hr, respectively. Both will be converted from oil-firing to propane-firing prior to restarting. | None |
| LLM Boilers | In the large log mill, two propane fired boilers supply steam to the large log mill kilns: Superior Model No. 6-5-5000 and Serial Nos. 14921 and 14922. Both were installed in 2002. At that time, the heat capacity rating was 29.1 million Btu/hr each (after de-rating in February 2009) and the maximum steam production was approximately 23,252 lb/hr each. Both were converted from oil to propane firing in 2014. Since converting, they each now have a heat input capacity rating of 33 million Btu/hr and a maximum steam production rate of 26,400 lb/hr. | None |
| SLM Kilns | In the small log mill, four indirectly heated Coe brand kilns dry lumber. Kilns #1-3 are 65-foot long single-track kilns installed in 1997; kiln #4 is 100-foot long double track kiln installed in 2001. Approximate total annual capacity per wood species for all small log mill kilns is 88.8 mmbf (Grand Fir), 80.6 mmbf (Douglas Fir) and 61.9 mmbf (pine). | None |
| LLM Kilns | In the large log mill, seven indirectly heated Coe brand kilns dry lumber. Kilns #5-9 are 100-foot long single-track kilns installed in 2002; kilns #10-11 are 100-foot long double track kilns installed in 2005. Approximate total annual capacity per wood species for all large log mill kilns is 116.5 mmbf (Grand Fir), 116.4 mmbf (Douglas Fir) and 77.2 mmbf (pine). | None |
| SLM Cyclone | In the small log mill, Cyclone C-1 separates shavings from a pneumatic handling system into Bin SH-1. | None |

| EU ID | Emission Unit Description | Control Device |
|---|---|---|
| LLM Cyclones | In the large log mill, Cyclones C-2, C-3 and C-4 separate sawdust, green chips and shavings, respectively, from pneumatic handling systems onto the hogged fuel conveyor, into Bin GC-2 and into Bin SH-2, respectively. Approximately 2% of the sawdust produced in the large log mill is moved pneumatically. | None |
| SLM Bins | In the small log mill, Bins HF-1, SD-1, GC-1, DC-1 store hog fuel, sawdust, green chips and dry chips, respectively, received from conveyor belts; Bin SH-1 stores shavings received from Cyclone C-1. All five bins unload to trucks. | None |
| LLM Bins | In the large log mill, Bins HF-2, SD-2 and DC-2 store hog fuel and sawdust, only sawdust, and dry chips, respectively, received from conveyors belts; Bins GC-2 and SH-2 store green chips and shavings, respectively, received from Cyclones C-3 and C-4. Bin HF-2 receives approximately 2% of the sawdust produced in the large log mill while Bin SD-2 receives approximately 98%. All five bins unload to trucks. | None |
| Propane Tanks | In the large log mill, two storage tanks store propane fuel. Capacity is 30,000 gallons each. Both were installed in 2014. | None |
| MNFA | In both mills, **miscellaneous non-fugitive activities** generate emission inside buildings and are not described in other emission units. | Generated inside buildings |
| MFA | In both mills, **miscellaneous fugitive activities** generate emissions outside buildings and are not described in other emission units. | None |
| PT | In both mills, **plant traffic** by vehicles on paved and unpaved roads generate fugitive dust emissions. | Watering |
| PCMF* | In each mill, **pneumatically conveyed metal filings** are sent into 55-gallon drums. | None |
| Gas Tank* | At the small log mill, a 500-gallon storage tank stores gasoline fuel. | None |
| TD Tank* | At the small log mill, a 12,000-gallon storage tank stores truck diesel fuel. | None |
| FL Tank* | At the small log mill, a 1,000-gallon storage tank stores forklift diesel fuel. | None |
| Kerosene Tank* | At the small log mill, a 200-gallon storage tank stores kerosene. | None |
| HO Tank* | At the small log mill, a heating oil storage tank currently storing waste oil totaling 1,000 gallons of fuel. | None |
| LLMD Tanks* | At the large log mill, two diesel oil storage tanks. One totaling 10,000 gallons and the second totaling 6,000 gallons of diesel. | None |

* Insignificant Emission Units (IEU).

## 2.4 Local Air Quality and Attainment Status

South central Washington, including the Yakama Reservation, either attains the national ambient air quality standard for all criteria pollutants or is unclassified. An area is unclassifiable when there is insufficient monitoring data. Ambient $PM_{10}$ and $PM_{2.5}$ data are currently being collected at a monitoring location in the city of Yakima. Ambient $PM_{2.5}$ data are also being collected at monitoring locations in White Swan, Toppenish and Sunnyside, but these data are non-regulatory. Until about 2005, ambient CO data were collected at a monitoring site in Yakima. The area experiences high ambient fine particulate matter (PM2.5) levels, approaching and at times exceeding the ambient standard of 35 micrograms per cubic meter (ug/m3), caused primarily by wood stove use during wintertime inversions. During the road construction season (March through November), with the exception of wildfire events, daily PM2.5 levels measured in Wapato and Yakama, the nearest monitoring locations, rarely exceed 20 ug/m3 and are typically around 10 ug/m3 or less. The area is currently considered to be in attainment for $PM_{10}$, $PM_{2.5}$ and CO. The area is unclassified for all other pollutants.

## 2.5 Permitting, Construction and Compliance History

The small log mill began operation in 1998 with one boiler and three single-track lumber drying kilns. A second boiler and fourth (double-track) lumber drying kiln were added to the small log mill in 2001. The large log mill began operating in 2002 with two boilers and five, single-track lumber drying kilns. Two double-track lumber drying kilns were added to the large log mill in circa 2005/2006.

All four of the boilers were originally designed to burn oil. YFP de-rated the large log mill boilers from 41.3 mmBtu/hr to 29.1 mmBtu/hr in late 2008 to avoid more stringent NSPS requirements. The boilers were tested in February 2009 to confirm the boilers were de-rated. The large log mill boilers were converted to burn propane in 2014, obviating the need for the derate, which was performed solely to reduce used motor oil fuel regulatory requirements. The conversion to propane changed the boilers' rating from 29.1 to 33 mmBtu/hr. The small log mill boilers have not been operated since 2011. YFP has indicated, and this permit requires, that the small log mill boilers will be converted to burn propane before restarting operation. YFP has also requested, in the original permit, that the permit limit the temperature that pine can be dried at to 200ºF.

On October 6, 2003, and June 16, 2006, EPA issued notices of noncompliance to YFP, listing violations of Title V Part 71 requirements and provisions in NSPS Subpart Dc and Subpart A. As a result of many years of ongoing negotiations, YFP decided to de-rate the large log boilers and convert from oil burning to propane burning, as described above.

YFP submitted a renewal Title V permit application on May 11, 2020. Region 10 determined that application to be complete on June 10, 2020. Region 10 sent an additional information request on June 17, 2020 to YFP requesting more details on submitted compliance forms and for clarification on their application. YFP responded on June 23, 2020 with the requested additional information. YFP requested that this permit renewal have the 200 ºF maximum pine drying temperature limit rescinded. The facility is currently considered in compliance.

A chronologic summary of Title V permit activities for the Yakama Forest Products is provided below.

| | |
|---|---|
| December 2, 2010 | EPA receives initial Title V permit application from Yakama Forest Products. |
| September 29, 2015 | EPA issues initial Title V permit with an effective date of September 29, 2015. This is a five-year renewable permit with an expiration date of September 29, |

| | |
|---|---|
| | 2020. The renewal application was due on March 29, 2020, six months prior to permit expiration. |
| May 11, 2020 | EPA receives Title V permit renewal application from Yakama Forest Products. |
| August 14, 2020 | Public comment period for draft permit and statement of basis began. |
| September 14, 2020 | Public comment period for draft permit ended. |
| September 21, 2020 | EPA issues Title V Renewal #1 permit with an effective date of September 21, 2020. The expiration date of this renewal is September 21, 2025. |

# 3. Emission Inventory

## 3.1 Emission Inventory Basics

An emission inventory generally reflects either the "actual" or "potential" emissions from a source. Actual emissions generally represent a specific period of time and are based on actual operation and controls. Potential emissions, referred to as potential to emit, generally represent the maximum capacity of a source to emit a pollutant under its physical and operational design, taking into consideration regulatory restrictions, but only required control devices. PTE is often used to determine applicability to several EPA programs, including Title V, PSD and Section 112 (MACT).

Emissions can be broken into two categories: point and fugitive. Fugitive emissions are those which could not reasonably pass through a stack, chimney, vent, or other functionally equivalent opening. Examples of fugitive emissions are roads, piles that are not normally enclosed, wind-blown dust from open areas, and those activities that are normally performed outside buildings. Point sources of emissions include any emissions that are not fugitive.

The equation below represents the general technique for estimating emissions (in tons per year) from each emission unit at the facility. Emissions are calculated by multiplying an emission factor by an operational parameter. To estimate actual emission, the permittee will need to track the actual operational rates. Note that emission factors may be improved over time. For those estimation techniques that require substantial site-specific parameter tracking, such as piles and roads, emissions associated with a defined operational rate can be estimated to establish a set ratio that can be used to multiply by the actual operational rate in future years, significantly simplifying the annual inventory effort. All of the techniques and site-specific parameters and assumptions should be reviewed each year before estimating emissions to be sure they remain appropriate.

$$E = EF \times OP \times K$$

Where:

E = pollutant emissions in tons/year

EF = emission factor (see Appendix A to this Statement of Basis)

OP = operational rate (or capacity for PTE)

K = 1 ton/2000 lbs for conversion from pounds per year to tons per year

## 3.2 Potential to Emit

YFP completed and submitted EPA Part 71 Operating Permit Form EMISS for all emission units as part of its Title V permit application; however, YFP asked Region 10 to use the emission inventory in the 2010 Non-Title V permit application because it was more current, but provided new production capacities on July 23, 2015. Region 10 reviewed YFP's inventories and has documented the facility PTE in

Appendix A to this Statement of Basis. In some instances, Region 10 revised the emission estimates provided by YFP to more accurately reflect potential emissions from the facility. A summary of YFP's non-fugitive PTE (except for HAPs) is presented in Table 3-1 below. Note that fugitive emissions are not included for non-HAP emissions, because for sawmills fugitive emissions are not used to determine program applicability as explained in more detail in Section 4.1 of this Statement of Basis. HAPs are used to determine applicability for MACT purposes.

**Table 3-1 – YFP Potential to Emit (tpy)[1]**

| Pollutant[2] | Emission Units | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Boilers | Kilns | Cyclones | Bins | MNFA | MFA | PT | Tanks | Total |
| CO | 41.6 | | | | | | | | 42 |
| Pb | 0.00 | | | | | | | | 0 |
| $NO_X$ | 72.1 | | | | | | | | 72 |
| PM | 1.1 | 5.1 | 16.3 | 0.09 | 26.1 | | | | 49 |
| $PM_{10}$ | 3.9 | 5.1 | 13.9 | 0.04 | 13.1 | | | | 36 |
| $PM_{2.5}$ | 3.9 | 5.1 | 8.2 | 0.01 | 6.5 | | | | 24 |
| $SO_2$ | 8.3 | | | | | | | | 8 |
| VOC | 5.5 | 257.2 | 14.0 | | | | | 0.0 | 277 |
| GHG ($CO_2e$) | 69,320 | | | | | | | | 69,320 |
| Facility-wide Single HAP | | | | | | | | | 39.3 |
| Facility-wide Total HAP | | | | | | | | | 47.0 |

[1] Fugitive emissions are not included in this table (except for HAPs) because fugitives are not used in applicability determinations for this source type (see Section 4.1). For fugitive emission estimates, see Appendix A.
[2] CO = carbon monoxide; Pb = lead; $NO_X$ = oxides of nitrogen; PM = particulate matter; $PM_{10}$ = inhalable coarse particulate or particulate matter with diameter 10 microns or less; $PM_{2.5}$ = fine particulate or particulate matter with diameter 2.5 microns or less; $SO_2$ = sulfur dioxide; VOC = volatile organic compounds; GHG = greenhouse gases; $CO_{2e}$ = carbon dioxide equivalent; HAP = hazardous air pollutants [see CAA, Section 112(b)]; facility-wide total HAP = all HAPs totaled; facility-wide single HAP = highest individual HAP.

The emission estimates found in Appendix A include various adjustments to reflect a conservative potential to emit. YFP's current application listed the maximum boiler steam production rate to be 26,400 pounds per hour in the large log mill. The maximum steam production rate in Appendix A reflects the boiler rating of 33 mmBtu/hr for the large log mill boilers and 24.92 mmBtu/hr for the small log mill boilers. In Appendix A, the maximum sulfur content of propane is assumed to be 15 grains per 100 cubic feet of gas, based on the Gas Processors Association standard of 185 ppmw. This is assumed to be very conservative, because actual sulfur content is normally much lower due to corrosion prevention specifications. According to YFP's renewal application, the facility utilizes ASTM D 1835 HD-5 propane fuel which is held to a specification standard for a maximum sulfur content of 123 ppmw.

YFP's application assumed 7,980 hours per year for kiln, cyclone and bin operations. On July 23, 2015, YFP provided new production capacities based upon production modeling. Using YFP's estimate that it takes 3.5 pounds of steam to dry one board-foot of lumber, the large log mill boilers cannot supply enough steam to meet the maximum demand of the large log mill kilns causing a production "bottleneck." The large log mill kiln capacities have been reduced to the equivalent maximum amount of steam that can be produced. For kiln estimates, the pine lumber is assumed to be Ponderosa Pine, and the Western True Firs is assumed to be Grand Fir. Also, for kiln estimates, the maximum drying temperature for all species of lumber is assumed to be 240ºF.

For miscellaneous emission generating activities that occur inside buildings, emissions have been reduced by 80% due to being inside a building. While Region 10 does not have documentation to support this reduction, it seems logical that the reduction is substantial and should be included in some manner. Note

that the propane storage tanks are designed to operate under pressure without leaking. While some leakage is likely, the emissions are expected to be very small and have not been estimated.

Potential emissions for the all of the storage tanks have been included in Appendix A. While these emissions are extremely small, they have been calculated to illustrate insignificant emissions unit status. For the large log mill boilers propane storage tanks, the fuel is stored in a pressurized vessel and therefore, there is virtually no leakage during normal operation of the boiler units from each of the propane storage vessels. There are, however, leaks that are in the form of primarily VOCs that have been calculated that are fugitive emissions from valves, flanges, relief valves, and open-ended lines. The other petroleum fuel storage tanks at both the large log mill and small log mill were assumed to be of a fixed roof tank design. These tanks have both a breathing loss emission factor as well as a working loss emission factor. The breathing loss emissions are associated with the ordinary escape of VOC emissions, typically through a vent (making them non-fugitive), due to ambient temperature fluctuations of the fuel being stored within the tanks. The working loss emissions are associated with vapors in the tank headspace that are pushed out of the tank when the tank is being filled. The kerosene tanks at the facility have remained in place but have not been utilized for a few years. The heating oil tank at the SLM is now being used for waste oil storage only. The facility does not burn any of this oil and instead has it removed regularly by an outside vendor. While using the EPA Tanks software is the normal process in sourcing emission factors, knowing the tanks are very small sources, EPA WebFIRE has been used instead.

Additional sources of VOC and HAP, both fugitive and non-fugitive, likely exist, but emission factors for those sources are not available. For instance, it is known that logs, lumber and byproducts lose turpentine over time, and turpentine content relates to VOC emissions. Also, some portion of the VOC emissions tend to be HAPs. Methanol is known to be emitted from cyclones handling hardwood chips (AP-42, Table 10.6.4-9, 9/2002), and softwood is known to emit more VOC and HAPs than hardwood and shavings and sawdust handling generally emits more VOC and HAPs than chip handling. The permittee should use emission factors for sources not yet included when they become available.

YFP is expected to use the emission factors and calculation methods presented in Appendix A unless YFP demonstrates that a more appropriate emission factor or calculation method should be used (e.g., results of more recent source testing or sampling, revised emission factors published in AP-42, etc.). It is important to emphasize that to the extent YFP relies on any type of emission control technique to estimate emissions used to determine annual fees, or the applicability of a regulatory program, use of the technique must be fully documented and verifiable.

# 4. Regulatory Analysis and Permit Content

The EPA is required by 40 CFR Part 71 to include in this Title V permit all emission limitations and standards that apply to the facility, including operational, monitoring, testing, recordkeeping and reporting requirements necessary to assure compliance. This section explains which air quality regulations apply to this facility and how those requirements are addressed in the permit.

The YFP facility is made up of two sawmills located across the road from each other but considered one source for Title V purposes: the large log mill and the small log mill. Located within Indian Country, the YFP facility is subject to federal air quality regulations, but not subject to state air quality regulations. The EPA does not consider any permits issued by Washington Department of Ecology or the Yakima Regional Clean Air Agency to the YFP facility to be applicable requirements. The facility could be subject to tribal air quality regulations; however, the Yakama Nation has not gone through the process of obtaining authorization to be treated in the same manner as states under 40 CFR 49.6 and 49.7 (Tribal Authority Rule) and obtaining approval of air quality regulations as a "Tribal Implementation Plan." Therefore, Tribal air quality regulations, if any, are not federally enforceable and do not meet the definition of "applicable requirement" under 40 CFR Part 71. As such, there are no Tribal air quality

regulations in the YFP Title V permit.

The EPA relied on information provided in YFP's Title V permit application, YFP's 2010 Non-Title V application and on supplementary information provided by YFP to determine the requirements that are applicable to the sawmills. Future modifications to the mill could result in additional requirements.

## 4.1 Federal Air Quality Requirements

Title V Operating Permit Program. Title V of the CAA and the implementing regulation found in 40 CFR part 71 require major sources (as well as a selection of non-major sources) of air pollution to obtain operating permits and form the legal bases for this permit. A source is major for Title V purposes if it has the potential to emit 100 tons per year or more of any air pollutant subject to regulation, 25 tons per year or more of hazardous air pollutants (totaled) or 10 tons per year or more of any single hazardous air pollutant (see 40 CFR 71.2). YFP's facility is a major source subject to Title V because it has the potential to emit more than 100 tons per year of VOC not counting fugitive emissions, more than 10 tons per year of methanol, and more than 25 tons per year of total HAPs (see Table 1 and Appendix A).

The Title V operating permit serves as a comprehensive compilation of the air quality requirements that are applicable to a source. The permit also must assure compliance, so source-specific testing, monitoring, recordkeeping and reporting have been added where the EPA believes it is necessary, as explained in Section 4.3 (Permit Conditions) of this Statement of Basis below.

Prevention of Significant Deterioration. Under the PSD pre-construction permitting program found in Part C of the CAA and 40 CFR 52.21, no "major stationary source" or "major modification" to a major stationary source can begin actual construction without first obtaining a PSD permit. The PSD program has been changed over the years, but in general, a major stationary source for purposes of the PSD program is a source with a PTE of more than 250 tons per year of any PSD pollutant. Based upon our knowledge of the facility and understanding of its potential emissions and existing limitations, the facility will be considered a PSD major source with the issuance of this permit – see Section 5.1 of this Statement of Basis for more information about a temperature drying limit that is being removed from the permit as part of this renewal. A modification to an existing major source is subject to PSD if the changes would result in a significant emission increase as specified in 52.21(b)(23). Historical reviews of potential PSD projects are difficult due to the lack of specific details about the sources, their emissions and the various applicability requirements in previous PSD programs.

New Source Performance Standards. Four combustion-related NSPS may apply to the four boilers and three tank-related NSPS may apply to the propane fuel tanks at the YFP facility. Only two of the four boilers have been converted to being fueled with propane rather than oil. YFP has agreed to not start up the two un-converted boilers until they have been converted to propane fuel (and disconnected from the oil fuel supply system.

The boilers are not subject to 40 CFR Part 60, Subparts D and Da because the boilers each have a heat input capacity less than 250 mmBtu/hr. They are not subject to Subpart Db because the boilers each have a heat input capacity less than 100 mmBtu/hr. The LLM boilers are rated 33 mmBtu each and the SLM boilers are rated 24.92 mmBtu/hr each, well below the size cut off for each of those subparts. All four boilers are subject to Subpart Dc which applies to boilers built after 6/9/1989 that burn propane (propane meets the definition of natural gas in 60.41c) with a heat input capacity greater than 10 mmBtu/hr. NSPS Subpart Dc requirements that do not apply to the YFP facility are not included in the permit; requirements that apply but do not create specific requirements for YFP are also not included in the permit. Table 4-1 explains whether specific requirements of Subpart Dc apply to the boilers and where the requirements are located in the permit.

**Table 4-1 – NSPS Subpart Dc Applicability, 40 CFR Part 60**

| CITATION | REQUIREMENT | APPLICABLE? |
|---|---|---|
| §60.40c | Applicability: (a) Except as provided in paragraphs (d), (e), (f), and (g) of this section, the affected facility to which this subpart applies is each steam generating unit for which construction, modification, or reconstruction is commenced after June 9, 1989 and that has a maximum design heat input capacity of 29 megawatts (MW) (100 million British thermal units per hour (MMBtu/h)) or less, but greater than or equal to 2.9 MW (10 MMBtu/h). | Applies because 2 LLM Boilers are 33MMBtu each and 2 SLM Boilers are 24.92 MMBtu each but no applicable requirements in this subsection. |
| §60.41c | § 60.41c Definitions. As used in this subpart, all terms not defined herein shall have the meaning given them in the Clean Air Act and in subpart A of this part. | No applicable requirements in this subsection. |
| §60.42c, (a)-(c) | § 60.42c Standard for sulfur dioxide (SO2). Standards for affected facilities burning coal. | No – SLM and LLM boilers only combust propane. |
| §60.42c, (d) | § 60.42c Standard for sulfur dioxide (SO2). (d) On and after the date on which the initial performance test is completed or required to be completed under §60.8, whichever date comes first, no owner or operator of an affected facility that combusts oil shall cause to be discharged into the atmosphere from that affected facility any gases that contain SO2in excess of 215 ng/J (0.50 lb/MMBtu) heat input; or, as an alternative, no owner or operator of an affected facility that combusts oil shall combust oil in the affected facility that contains greater than 0.5 weight percent sulfur. The percent reduction requirements are not applicable to affected facilities under this paragraph. | No – SLM and LLM boilers only combust propane. |
| §60.42c, (e) | § 60.42c Standard for sulfur dioxide (SO2). (e) Standards for affected facilities combusting coal or oil with any other fuels. | No – SLM and LLM boilers only combust propane. |

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| §60.42c, (f) | § 60.42c Standard for sulfur dioxide ($SO_2$).<br>(f) Reduction in the potential $SO_2$ emission rate through fuel pretreatment is not credited toward the percent reduction requirement under paragraph (b)(2) of this section unless… | No – SLM and LLM boilers only combust propane. |
| §60.42c, (g) | § 60.42c Standard for sulfur dioxide ($SO_2$).<br>(g) Except as provided in paragraph (h) of this section, compliance with the percent reduction requirements, fuel oil sulfur limits, and emission limits of this section shall be determined on a 30-day rolling average basis. | No – SLM and LLM boilers only combust propane. |
| §60.42c, (h) | § 60.42c Standard for sulfur dioxide ($SO_2$).<br>(h) For affected facilities listed under paragraphs (h)(1), (2), (3) or (4) of this section, compliance with the emission limits or fuel oil sulfur limits under this section may be determined based on a certification from the fuel supplier, as described under §60.48c(f), as applicable.<br>(1) Distillate oil-fired affected facilities with heat input capacities between 2.9 and 29 MW (10 and 100 MMBtu/hr).<br>(2) Residual oil-fired affected facilities with heat input capacities between 2.9 and 8.7 MW (10 and 30 MMBtu/hr).<br>(3) Coal-fired facilities with heat input capacities between 2.9 and 8.7 MW (10 and 30 MMBtu/hr).<br>(4) Other fuels-fired affected facilities with heat input capacities between 2.9 and 8.7 MW (10 and 30 MMBtu/h) | No – SLM and LLM boilers are not subject to any limits under this section. |
| §60.42c, (i) | § 60.42c Standard for sulfur dioxide ($SO_2$).<br>(i) The $SO_2$ emission limits, fuel oil sulfur limits, and percent reduction requirements under this section apply at all times, including periods of startup, shutdown, and malfunction. | No – SLM and LLM boilers only combust propane. |

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| §60.42c, (j) | § 60.42c Standard for sulfur dioxide ($SO_2$).<br>(j) For affected facilities located in noncontinental areas and affected facilities complying with the percent reduction standard… | No. YFP is not located in a noncontinental Area. |
| §60.43c, (a)-(b) | §60.43c Standards for Particulate Matter (PM)<br>Establishes PM standards for coal and wood fired units. | No – SLM and LLM boilers only combust propane. |
| §60.43c, (c) | §60.43c Standards for Particulate Matter (PM)<br>(c) Establishes opacity standards for coal, wood and oil fired units with a heat input capacity greater than 30 MMBtu/hr. | No – SLM and LLM boilers only combust propane. |
| §60.43c, (d) | §60.43c Standards for Particulate Matter (PM)<br>(d) Requires that the PM and opacity standards of this section apply at all times, except during periods of startup, shutdown or malfunction. | No - SLM and LLM boilers not subject to PM or opacity standards of 40 CFR Part 60. |
| §60.43c, (e) | §60.43c Standards for Particulate Matter (PM)<br>(e) Establishes PM standards for coal, wood and oil fired units with a heat input capacity greater than 30 MMBtu/hr. | No – SLM and LLM boilers only combust propane. |
| §60.44c, (a)-(g) | §60.44c Compliance and Performance Test Methods and Procedures for Sulfur Dioxide | No - SLM and LLM boilers not subject to $SO_2$ standards of 40 CFR Part 60. |
| §60.44c, (h) | §60.44c Compliance and Performance Test Methods and Procedures for Sulfur Dioxide. (h) For affected facilities subject to §60.42c(h)(1), (2), or (3) where the owner or operator seeks to demonstrate compliance with the $SO_2$standards based on fuel supplier certification, the performance test shall consist of the certification from the fuel supplier, as described in §60.48c(f), as applicable. | No - SLM and LLM boilers not subject to $SO_2$ standards of 40 CFR Part 60. |

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| §60.44c, (i)-(j) | §60.44c Compliance and Performance Test Methods and Procedures for Sulfur Dioxide | No - SLM and LLM boilers not subject to $SO_2$ standards of 40 CFR Part 60. |
| §60.45c | §60.45c Compliance and Performance Test Methods and Procedures for Particulate Matter | No - SLM and LLM boilers not subject to PM or opacity standards of 40 CFR Part 60. |
| §60.46c | §60.46c Emissions Monitoring for Sulfur Dioxide | No - SLM and LLM boilers not subject to $SO_2$ standards of 40 CFR Part 60. |
| §60.46c, (e) | §60.46c Emissions Monitoring for Sulfur Dioxide<br>(e) The monitoring requirements of paragraphs (a) and (d) of this section shall not apply to affected facilities subject to §60.42c(h) (1), (2), or (3) where the owner or operator of the affected facility seeks to demonstrate compliance with the $SO_2$standards based on fuel supplier certification, as described under §60.48c(f), as applicable. | No - SLM and LLM boilers not subject to $SO_2$ standards of 40 CFR Part 60. |
| §60.47c | §60.47c Emissions Monitoring for Particulate Matter | No - SLM and LLM boilers not subject to PM or opacity standards of 40 CFR Part 60. |
| §60.48c, (a) | §60.48c Reporting and Recordkeeping Requirements<br>(a) The owner or operator of each affected facility shall submit notification of the date of construction or reconstruction and actual startup, as provided by §60.7 of this part. | Applied – one-time past requirement. |
| §60.48c, (b) | §60.48c Reporting and Recordkeeping Requirements<br>(b) The owner or operator of each affected facility subject to the $SO_2$emission limits of §60.42c, or the PM or opacity limits of §60.43c, shall submit to the Administrator the performance test data from the initial and any subsequent performance tests and, if applicable, the performance evaluation of the CEMS and/or | No - SLM and LLM boilers not subject to $SO_2$ or PM standards of 40 CFR Part 60. |

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| | COMS using the applicable performance specifications in appendix B of this part. | |
| 60.48c, (c) | 60.48c Reporting and Recordkeeping Requirements<br>(c) In addition to the applicable requirements in §60.7, the owner or operator of an affected facility subject to the opacity limits in §60.43c(c) shall submit excess emission reports for any excess emissions from the affected facility that occur during the reporting period and maintain records according to the requirements specified in paragraphs (c)(1) through (3) of this section, as applicable to the visible emissions monitoring method used. | No - SLM and LLM boilers not subject to SO2 or PM standards of 40 CFR Part 60. |
| 60.48c, (d) | 60.48c Reporting and Recordkeeping Requirements<br>(d) The owner or operator of each affected facility subject to the $SO_2$ emission limits, fuel oil sulfur limits, or percent reduction requirements under §60.42c shall submit reports to the Administrator. | No - SLM and LLM boilers not subject to SO2 or PM standards of 40 CFR Part 60. |
| 60.48c, (e) | 60.48c Reporting and Recordkeeping Requirements<br>(e) The owner or operator of each affected facility subject to the $SO_2$ emission limits, fuel oil sulfur limits, or percent reduction requirements under §60.42c shall keep records and submit reports as required under paragraph (d) of this section, including the following information, as applicable. | No - SLM and LLM boilers not subject to SO2 or PM standards of 40 CFR Part 60. |
| 60.48c, (f) | 60.48c Reporting and Recordkeeping Requirements<br>(f) Fuel supplier certification shall include the following information… | No - SLM and LLM boilers not subject to SO2 or PM standards of 40 CFR Part 60. |

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| 60.48c, (g) | 60.48c Reporting and Recordkeeping Requirements<br>(g)(1) Except as provided under paragraphs (g)(2) and (g)(3) of this section, the owner or operator of each affected facility shall record and maintain records of the amount of each fuel combusted during each operating day… | Applies; see Permit Condition 5.7. |
| 60.48c, (h) | 60.48c Reporting and Recordkeeping Requirements<br>(h) The owner or operator of each affected facility subject to a federally enforceable requirement limiting the annual capacity factor for any fuel or mixture of fuels under §60.42c or §60.43c shall calculate the annual capacity factor individually for each fuel combusted. The annual capacity factor is determined on a 12-month rolling average basis with a new annual capacity factor calculated at the end of the calendar month. | Does not apply because YFP does not have an annual capacity factor limit. |
| 60.48c, (i) | 60.48c Reporting and Recordkeeping Requirements<br>(i) All records required under this section shall be maintained by the owner or operator of the affected facility for a period of two years following the date of such record. | Applies; see Permit Condition 5.7.3. |
| 60.48c, (j) | 60.48c Reporting and Recordkeeping Requirements<br>(j) The reporting period for the reports required under this subpart is each six-month period. All reports shall be submitted to the Administrator and shall be postmarked by the 30th day following the end of the reporting period. | Does not apply because propane-fired boilers are not subject to reporting for $SO_2$ or PM limits. |

The two propane fuel tanks are not subject to 40 CFR Part 60, Subparts K and Ka because each tank, installed in 2014, was constructed after 1984. The propane fuel tanks are not subject to Subpart Kb because the tank is a pressure vessel designed to operate in excess of 204.9 kPa with no emission to the atmosphere. The vapor pressure of propane is about 102 psi or 703 kPa. YFP had several old fuel oil storage tanks, ranging in size from 10,000 to 25,000 gallons, that stored fuel with a vapor pressure less than 15 kPa but are no longer in service. If still in service, the tanks would not be subject to NSPS due to the combination of size and vapor pressure. YFP planned to sell the fuel oil storage tanks and remove them from the facility. According to their 2020 renewal application, the facility has permanently decommissioned and moved the fuel oil storage tanks offsite.

Because 40 CFR Part 60, Subpart Dc applies to the boilers, Subpart A of Part 60 also applies, as explained in 60.1(a). NSPS Subpart A requirements that do not apply to the YFP facility are not included in the permit; requirements that apply but do not create specific requirements for YFP are also not

included in the permit. Table 4-2 explains whether specific requirements of Subpart A apply to the boilers and where the requirements are located in the permit.

**Table 4-2 – NSPS Subpart A Applicability, 40 CFR Part 60**

| Citation | Description | Applicability |
|---|---|---|
| 60.1 – 60.3 | Applicability, definitions and units | Apply, but are not included in the permit. |
| 60.4(a) | Reporting address | Applies; see Permit Condition 3.40 for the current address for reporting to Region 10, including NSPS submittals. |
| 60.4(b) | Delegation | Applies, but are not included in the permit. |
| 60.5 – 60.6 | Construction and review of plans | Apply, but are not included in the permit. |
| 60.7(a)(1, 3) | Initial notification | One-time past requirements. |
| 60.7(a)(4) | Modification notification | Applies; see Permit Condition 4.20. |
| 60.7(a)(5-7) | CMS and opacity notification | Do not apply because Subpart Dc does not contain CMS or opacity requirements. |
| 60.7(b) | Startup, shutdown, malfunction records | Applies; see Permit Condition 4.16. |
| 60.7(c-e) | CMS recordkeeping | Do not apply because Subpart Dc does not require CMS. |
| 60.7(f) | Recordkeeping | Applies; see Permit Condition 4.17. |
| 60.7(g) | Similar notification | Does not apply because no other states or Tribes require notification. |
| 60.7(h) | Individual subpart clarification | Applies, but is not included in the permit. |
| 60.8 | Performance tests | Does not apply because Subpart Dc does not require testing. |
| 60.9 – 60.10 | Availability of information and state authority | Apply, but are not included in the permit. |
| 60.11(a-c) | Compliance with standards including opacity | Do not apply because the standards in Subpart Dc do not apply. |
| 60.11(d) | Good air pollution control practice | Applies; see Permit Condition 4.13. |
| 60.11(e) | Opacity compliance | Do not apply because Subpart Dc does not limit opacity. |
| 60.11(f) | Conflicting subpart provisions | Applies, but is not included in the permit. |
| 60.11(g) | Credible evidence | Applies; see Permit Condition 4.14. |
| 60.12 | Circumvention | Applies; see Permit Condition 4.15. |
| 60.13 | Monitoring | Does not apply because Subpart Dc does not require monitoring. |
| 60.14 – 60.17 | Modification, reconstruction, priority list and incorporations by reference | Apply, but are not included in the permit. |
| 60.18 | Control devices | Does not apply because Subpart Dc does not refer to this. |
| 60.19 | General notification and reporting | Applies; see Permit Conditions 4.18 and 4.19. |

National Emission Standards for Hazardous Air Pollutants. The YFP facility is considered a major source of HAPs because the facility has the potential to emit more than 25 tons per year of HAPs and more than 10 tons per year methanol. As a major source of HAPs, the facility is subject to two applicable NESHAP standards, also known as MACT standards: 40 CFR Part 63, Subparts DDDD (Plywood and Composite

Wood Products) and DDDDD (Industrial, Commercial and Institutional Boilers and Process Heaters at Major Sources).

Subpart DDDD applies to any lumber kiln located at a major HAP facility according to 40 CFR 63.2231. According to 63.2252, because there are no compliance options or work practice requirements specified in 63.2240, lumber kilns are not required to comply with the compliance options, work practice requirements, performance testing, monitoring, SSM plans, and recordkeeping or reporting requirements of Subpart DDDD, or any other requirements in Subpart A of this part, except for the initial notification requirements in 63.9(b), which is a one-time requirement. YFP submitted their initial notification on December 10, 2009. No other requirements associated with Subpart DDDD will be in YFP's permit.

Subpart DDDDD applies to all four boilers because they burn propane, are bigger than 10mmBtu/hr heat input capacity, do not meet any of the exemptions in 63.7491 and are located at a major HAP source. Because the boilers were installed before June 4, 2010, they are considered existing, not new. The compliance date for the Subpart DDDDD is January 31, 2016. YFP submitted their initial notification for Subpart DDDDD on September 30, 2013.

NESHAP Subpart DDDDD requirements that do not apply to the YFP facility are not included in the permit; requirements that apply but do not create specific requirements for YFP are also not included in the permit. Table 4-3 explains whether specific requirements of Subpart A apply to the boilers and where the requirements are located in the permit.

**Table 4-3 – NESHAP Subpart DDDDD Applicability, 40 CFR Part 63**

| Citation | Description | Applicability |
|---|---|---|
| 63.7480 – 63.7491 | Purpose, applicability and affected source | Apply, but are not included in the permit. |
| 63.7495(a) | New source compliance deadline | Does not apply because the boilers are existing units, constructed before 6/4/2010. |
| 63.7495(b) | Existing source compliance deadline | Applies; see Permit Conditions 5.4 and 5.5. |
| 63.7495(c) | Area sources that become major | Does not apply because the source has always been major. |
| 63.7495(d) | Notification | Applies; see Permit Condition 5.9. |
| 63.7495(e-g) | Incinerators, EGUs and control devices | Does not apply because the boilers are not any of the units listed. |
| 63.7499 | Subcategories | Applies (Subcategory l), but is not included in permit. |
| 63.7500(a)(1) | Emission limits and work practice standards in Table 3, Items 1 and 4 | Applies; see Permit Conditions 5.4 and 5.5. |
| 63.7500(a)(2) | Operating limits | Does not apply because the boilers are not subject to operating limits. |
| 63.7500(a)(3) | Good air pollution control practices | Applies; see Permit Condition 5.6. |
| 63.7500(b) | Alternative work practice standards | Applies, but is not included in the permit. |
| 63.7500(c-d) | Limited use and small boilers | Does not apply because the boilers are not limited use and are bigger than 5 mmBtu/hr. |
| 63.7500(e) | Exception from Tables 1-2, 4, 11-13. | Applies but is not included in the permit. |
| 63.7500(f) | Standards apply at all times | Does not apply because propane-fired boilers are not subject to any standards. |

| Citation | Description | Applicability |
|---|---|---|
| 63.7501 | Affirmative defense | Does not apply because boilers are not subject to any standards. |
| 63.7505(a) | General compliance | Applies but is not included in the permit. |
| 63.7505(c-d) | Compliance with emission limits | Does not apply because no emission limits apply to propane-fired boilers. |
| 63.7510(a-d) | General testing and fuel analysis | Does not apply because no testing or fuel analysis is required. |
| 63.7510(e) | Existing source initial compliance demonstration | Applies; see Permit Conditions 5.4.1 and 5.5. |
| 63.7510(f-i) | Initial compliance demonstration for new, solid waste, EGU type sources | Does not apply because YFP's boilers are not any of the units listed. |
| 63.7510(j) | Delayed initial compliance demonstration | Applies; see Permit Conditions 5.4.2 and 5.5.3. |
| 63.7515(a-c) | Subsequent tests | Does not apply because no testing is required. |
| 63.7515(d) | Subsequent tune-ups | Applies; see Permit Condition 5.4.3. |
| 63.7515(e-f) | Subsequent fuel analyses and report | Does not apply because propane-fired boilers are not required to analyze fuel. |
| 63.7515(g) | Delayed subsequent tune-up | Applies; see Permit Condition 5.4.4. |
| 63.7515(h-i) | Light liquid testing and CO CEMS | Does not apply because propane-fired boilers do not burn liquid fuel and have no CO CEMS. |
| 63.7520 | Stack testing | Does not apply because propane-fired boilers are not required to test. |
| 63.7521 | Fuel analysis | Does not apply because fuel analysis is not required for propane-fired boilers. |
| 63.7522 | Emission averaging | Does not apply because propane-fired boilers have no emission limits. |
| 63.7525 | Monitoring | Does not apply because propane-fired boilers are not subject to limits that require monitoring. |
| 63.7530(a-c, g-i) | Initial compliance using testing, fuel analysis, emission limits and monitoring | Do not apply because propane-fired boilers are not required to testing or fuel analysis. |
| 63.7530(d-e) | Initial compliance notice for gas 1 subcategory | Apply; see Permit Condition 5.9.2. |
| 63.7530(f) | Initial compliance notice for gas 1 subcategory | Applies but is not included in the permit. |
| 63.7533 | Efficiency credits | Does not apply because propane-fired boilers are not subject to emission limits. |
| 63.7535 | Continuous compliance monitoring data | Does not apply because propane-fired boilers are not subject to monitoring requirements. |
| 63.7540(a)(1, 2-9, 14-19) | Work practice: continuous compliance | Do not apply because propane-fired boilers are not subject to operating limits, fuel analysis, testing, bag leak detectors or CEMS. |

| Citation | Description | Applicability |
|---|---|---|
| 63.7540(a)(10) | Work practice: annual tune-up and tune-up details | Applies; see Permit Conditions 5.4.7 and 5.8.5. The required frequency does not apply because an oxygen trim system is used. |
| 63.7540(a)(11) | Work practice: biennial tune-up | Does not apply because a continuous oxygen trim system is used. |
| 63.7540(a)(12) | Work practice: 5-year tune-up, delayed inspection and oxygen level | Applies; see Permit Conditions 5.4.2, 5.4.5 and 5.4.6 |
| 63.7540(a)(13) | Work practice: continuous compliance, delay for inoperation | Applies; see Permit Condition 5.4.4. |
| 63. 7540(b-d) | Work practice: continuous compliance | Do not apply because propane-fired boilers are not subject to limits or fuel analysis. |
| 63.7541 | Emission averaging | Does not apply because propane-fired boilers have no emission limits. |
| 63.7545(a) | Notifications | Applies; see Permit Condition 5.9. |
| 63.7540(b) | Initial notification | Applies but is a past, one-time requirement so is not in the permit. |
| 63.7545(c-d) | Notification for new sources and tests | Do not apply because YFP's boilers are not new and propane-fired boilers are not required to test. |
| 63.7545(e)(1, 8) | Notification of compliance status | Apply; see Permit Condition 5.9. |
| 63.7545(e)(2-7) | Notification of compliance status | Do not apply because propane boilers are not required must only comply with (e)(1) and (e)(8). |
| 63.7545(f-g) | Notification during curtailment | Does not apply because YFP is allowed to burn only propane. |
| 63.7545(h) | Notification of fuel switch | Applies; see Permit Condition 5.11.3. |
| 63.7550(a) Table 9, Items 1.a to 1.c | Report contents and frequency | Apply; see Permit Condition 5.10. |
| 63.7550(a) Table 9, Item 1.d | Report contents for CMS | Does not apply because propane-fired boilers are not subject to CMS. |
| 63.7550(b)(1-4) | Report schedule | Apply; see Permit Conditions 5.10.1 and 5.10.2. |
| 63.7550(c)(1) | Report contents | Applies; see Permit Condition 5.10.3. |
| 63.7550(c)(2-4) | Report contents | Do not apply because propane-fired boilers are not subject to fuel analysis, testing or CMS. |
| 63.7550(c)(5)(i-iv, xiv, xvii) | Report contents | Apply; see Permit Condition 5.10.3. |
| 63.7550(c)(5)(v-viii, ix-xiii, xv-xvi) | Report contents | Do not apply because propane-fired boilers are not subject to CMS, testing, emission limits, fuel analysis. |
| 63.7550(d) | Report contents | Apply; see Permit Condition 5.10.3.7. |
| 63.7550(h)(1-2) | Reporting | Do not apply because propane-fired boilers are not subject to testing or CEMS. |
| 63.7550(h)(3) | Reporting electronically | Applies; see Permit Condition 5.10.4. |

| Citation | Description | Applicability |
|---|---|---|
| 63.7555(a)(1) | Records | Applies; see Permit Condition 5.8.1. |
| 63.7555(a)(2) | Records | Do not apply because propane-fired boilers are not subject to CMS, testing, opacity. |
| 63.7555(b-g) | Records | Do not apply because propane-fired boilers are not subject to CMS, monitoring, emission limits, emission averaging, efficiency credits, or mercury specs. |
| 63.7555(h) | Records for gas curtailments | Does not apply because YFP is allowed to burn only propane. |
| 63.7555(i-j) | Startup and shutdown records | Apply; see Permit Conditions 5.8.2 and 5.8.3. |
| 63.7560(a-c) | Records form and duration | Apply; see Permit Condition 5.8.6. |
| 63.7565 Table 10 | General provisions | See Table 4-4 below. |
| 63.7570 | Who implements? | Apply but are not included in the permit. |
| 63.7575 | Definitions | Apply but are not included in the permit except for "Energy Assessment" in Permit Condition 5.5.2. |

Because 40 CFR Part 63, Subpart DDDDD applies to the boilers, Subpart A of Part 63 also applies. NESHAP Subpart DDDDD requirements that do not apply to the YFP facility are not included in the permit; requirements that apply but do not create specific requirements for YFP are also not included in the permit. Table 4-4 explains whether specific requirements of Subpart A apply to the boilers and where the requirements are located in the permit.

**Table 4-4 – NESHAP Subpart A Applicability, 40 CFR Part 63**

| Citation | Description | Applicability |
|---|---|---|
| 63.1 – 63.3 | Applicability, definitions and abbreviations | Apply but are not included in the permit. |
| 63.4(a) | Prohibited activities | Applies but are not included in the permit. |
| 63.4(b) | Circumvention | Applies; see Permit Condition 4.21. |
| 63.5 | Preconstruction review | Applies but are not included in the permit. |
| 63.6(a) | Compliance applicability | Applies but are not included in the permit. |
| 63.6(b) | Compliance dates for new sources | Does not apply because YFP's boilers are existing. |
| 63.6(c) | Compliance dates for existing sources | Applies but is not included in the permit. |
| 63.6(e), (f)(1), (h)(1) | Compliance and operation and maintenance | Do not apply according to Table 10 in Subpart DDDDD. |
| 63.6(f)(2-3) | Methods for finding of compliance | Apply but are not included in the permit. |
| 63.6(g) | Alternative emission standards | Does not apply because propane-fired boilers are not subject to emission standards. |
| 63.6(h)(2-9) | Compliance with opacity | Does not apply because propane-fired boilers are not subject to opacity limits. |
| 63.6(i) | Extension of compliance with emission standards | Does not apply because propane-fired boilers are not subject to emission standards. |

| Citation | Description | Applicability |
|---|---|---|
| 63.6(j) | Presidential exemption | Applies but is not included in the permit. |
| 63.7 | Testing requirements | Does not apply because propane-fired boilers are not subject to testing. |
| 63.8 | Monitoring requirements | Does not apply because propane-fired boilers are not subject to monitoring. |
| 63.9(a) | Notification applicability | Applies but is not included in the permit. |
| 63.9(b)(1) | Initial notifications | Applies but is not included in the permit because it is a past requirement. |
| 63.9(b)(2) | Initial notifications | Applies but is not included in the permit because it is a past requirement. |
| 63.9(b)(4-5) | New source notifications | Do not apply because YFP's boilers are existing sources. |
| 63.9(c) | Extension of compliance | Does not apply because propane-fired boilers are not subject to emission standards. |
| 63.9(d) | Notifications for 63.6(b) | Does not apply because YFP's boilers are existing. |
| 63.9(e) | Test notification | Does not apply because propane-fired boilers are not subject to testing. |
| 63.9(f) | Opacity notifications | Does not apply because propane-fired boilers are not subject to opacity limits. |
| 63.9(g) | CMS notifications | Does not apply because propane-fired boilers are not subject to CMS requirements. |
| 63.9(h)(1) | Notification of compliance status | Applies but is not included in the permit. |
| 63.9(h)(2-3) | Notification of compliance status | Applies; see Permit Condition 4.25. |
| 63.9(h)(5) | Actual emission data | Does not apply because YFP was not subject to 63.5. |
| 63.9(h)(6) | Advice from the administrator | Applies but is not included in the permit. |
| 63.9(i) | Adjustments to time periods | Applies but is not included in the permit. |
| 63.9(j) | Changes to provided information | Applies; see Permit Condition 4.26. |
| 63.10(a) | Applicability | Applies but is not included in the permit. |
| 63.10(b)(1) | General recordkeeping files | Applies; see Permit Condition 4.23. |
| 63.10(b)(2)(i, iii-xiii) | General recordkeeping files | Do not apply because propane-fired boilers are not subject to emission limits, or monitoring and YFP's boilers have no controls. |
| 63.10(b)(2)(ii) | Malfunction of process equipment records | Applies; see Permit Condition 4.22. |
| 63.10(b)(2)(xiv) | Documentation supporting initial notifications and notifications of compliance status | Applies; see Permit Condition 4.24. |
| 63.10(b)(3) | Applicability determination records | Applies but is not included in the permit. |
| 63.10(c) | CMS recordkeeping | Does not apply because propane-fired boilers are not subject to CMS requirements. |
| 63.10(d)(1) | General reporting | Applies but is not included in the permit. |

| Citation | Description | Applicability |
|---|---|---|
| 63.10(d)(2-3) | Test and opacity reporting | Does not apply because propane-fired boilers are not subject to testing and opacity requirements. |
| 63.10(d)(4) | Compliance extension progress reporting | Does not apply because propane-fired boilers are not subject to a compliance extension. |
| 63.10(d)(5) | Periodic and immediate reporting | Do not apply according to Table 10 in Subpart DDDDD. |
| 63.10(e) | Reports for CMS | Does not apply because propane-fired boilers are not subject to CMS requirements. |
| 63.10(f) | Reporting Waivers | Applies but is not included in the permit. |
| 63.11 | Control device requirements | Do not apply according to Table 10 in Subpart DDDDD. |
| 63.12 | State authority and delegation | Applies but is not included in the permit. |
| 63.13 | Addresses | Applies but current EPA address is included in Permit Condition 3.40. |
| 63.14 | Incorporations by reference | Applies but is not included in the permit. |
| 63.15 | Availability of information | Applies but is not included in the permit. |
| 63.16 | Performance track provisions | Applies but is not included in the permit. |

Section 111(d) and Section 129 Regulations. There are no CAA, Section 111(d) or 129 regulations that apply to the type of emission units at YFP.

Federal Air Rules for Reservations. On April 8, 2005, the EPA promulgated a Federal Implementation Plan for Reservations in Idaho, Oregon and Washington, commonly referred to as the Federal Air Rules for Reservations. The EPA published the FARR rules that generally apply to Indian Reservations in Region 10 in 40 CFR 49.121 to 49.139. The FARR rules that specifically apply on the Yakama Reservation (Sections 123, 124, 125, 126, 129, 130, 131, 135, 137, 138 and 139) are codified at 40 CFR 49.11101 to 49.11110. FARR requirements that do not apply to the YFP facility are not included in the permit; requirements that apply but do not create specific requirements for YFP are also not included in the permit. Table 4-5 explains whether specific requirements of the FARR apply to the YFP facility and, if included, where the requirements are located in the permit.

**Table 4-5 – FARR Applicability, 40 CFR Part 49**

| Citation | Description | Applicability |
|---|---|---|
| 49.121 – 49.122 | Introduction and delegation | Apply, but are not included in the permit. |
| 49.123(a-c) | Definitions, testing, monitoring, recordkeeping, reporting, and credible evidence and incorporation by reference | Apply, but are not included in the permit. |
| | | |
| 49.124(a-b, f) | Visible emission limits purpose, applicability and definitions | Apply, but are not included in the permit. |
| 49.124(c) | Exemptions | Applies, see Permit Condition 3.10. |
| 49.124(d)(1-2) | Visible emission limit | Applies; see Permit Conditions 3.9 and 3.11. |
| 49.124(d)(3) | Visible emission limit for oil and solid fuel | Does not apply because only propane is burned. |

| Citation | Description | Applicability |
|---|---|---|
| 49.124(e) | Reference method | Applies; see Permit Condition 3.9. |
| 49.125(a-c, f) | PM limits purpose, applicability and definitions | Apply, but are not included in the permit. |
| 49.125(d)(1, 3) | PM limits | Apply; see Permit Conditions 5.3, 6.1, 7.1, 8.1 and 9.1. |
| 49.125(d)(2) | PM limit for wood fuel | Does not apply because only propane is burned. |
| 49.125(e) | Reference method | Applies; see Permit Conditions 5.3, 6.1, 7.1, 8.1 and 9.1. |
| 49.126(a-b, f) | Fugitive PM limits purpose, applicability and definitions | Apply, but are not included in the permit. |
| 49.126(c) | Exemptions | Applies; see Permit Condition 3.17. |
| 49.126(d-e) | Fugitive PM | Apply; see Permit Conditions 3.12-3.16 and 3.35. |
| 49.129(a-c, f) | $SO_2$ limits purpose, applicability and definitions | Apply, but are not included in the permit. |
| 49.129(d)(1) | $SO_2$ limit for combustion sources | Applies; see Permit Condition 5.2. |
| 49.129(d)(2) | $SO_2$ limit for process sources | Does not apply because none of YFP's processes emit $SO_2$. |
| 49.129(e) | Reference method | Applies; see Permit Condition 5.2. |
| 49.130(a-c, g) | Fuel sulfur limit purpose, applicability and definitions | Apply, but are not included in the permit. |
| 49.130(d)(1-7) | Fuel sulfur limits for liquid and solid fuels | Does not apply because YFP does not burn any of the fuels listed. |
| 49.130(d)(8) | Fuel sulfur limit for gaseous fuels | Applies; see Permit Condition 4.2. |
| 49.130(e)(1-3) | Reference methods for liquid and solid fuels | Does not apply because YFP does not burn any of the fuels listed. |
| 49.130(e)(4) | Reference method for gaseous fuels | Applies; see Permit Condition 4.2.1. |
| 49.130(f)(1)(i, iii) | Recordkeeping for liquid and solid fuels | Do not apply because YFP does not burn any of the fuels listed. |
| 49.130(f)(1)(ii) | Recordkeeping for gaseous fuels | Applies; see Permit Condition 4.3. |
| 49.130(f)(2) | Recordkeeping for gaseous fuels | Applies; see Permit Condition 3.35. |
| 49.130(f)(3) | Recordkeeping exemption for residences | Does not apply because YFP is not a residence. |
| 49.131(a, b, f) | Open burning purpose and applicability | Apply, but are not included in the permit. |
| 49.131(c, d, e) | Open burning | Apply; see Permit Conditions 3.4-3.8. |
| 49.135 | Detrimental emissions | Applies, but are not included in the permit. |
| 49.137(a, b, d) | Air pollution episode purpose, applicability and definitions | Apply, but are not included in the permit. |
| 49.137(c)(1-3) | Air pollution episodes | Apply, but are not included in the permit. |
| 49.137(c)(4)(i-ii) | Air pollution episodes | Apply; see Permit Conditions 3.6 and 3.7. |
| 49.137(c)(4)(iii) | Air pollution episodes | Apply, but are not included in the permit. |
| 49.138(a-c, g) | Registration purpose, applicability and definitions | Apply, but are not included in the permit. |

| Citation | Description | Applicability |
|---|---|---|
| 49.138(d) | Registration and reporting for Part 71 sources | Apply; see Permit Condition 3.46.2. |
| 49.138(f) | Registration and reporting for Part 71 sources | Apply; see Permit Condition 3.46. |
| 49.138(e)(1-2, 5-8) | Reporting for non-Part 71 sources | Do not apply because YFP is a Part 71 source. |
| 49.138(e)(3)(i-xi, xiii-xiv) | Reporting for non-Part 71 sources | Do not apply because YFP is a Part 71 source. |
| 49.138(e)(3)(xii) | Reporting for Part 71 sources | Apply; see Permit Condition 3.46. |
| 49.138(e)(4) | Reporting for Part 71 sources | Apply; see Permit Conditions 3.46 and 3.46.1. |
| 49.139 | Non-Title V operating permits | Applies, but is not included in the permit. |

Acid Rain Program. Title IV of the CAA created a $SO_2$ and $NO_X$ reduction program found in 40 CFR Part 72. The program applies to any facility that includes one or more "affected units" that produce power. YFP's boilers are not a "unit" as defined in 40 CFR 72.2 because the boilers do not produce power.

Compliance Assurance Monitoring. CAM applies at the time of initial Title V permit issuance for emission units that (a) are subject to an emission limit, (b) employ a control device to comply with the limit, and (c) have post-control PTE equal to or greater than the major source threshold defined in Title V (generally, 100 tons per year). See 40 CFR Part 64. None of the emission units at the facility employ a control device (cyclones used to separate material from a pneumatic handling system are not considered control devices), so CAM does not apply to any emission units at the YFP facility.

Mandatory Greenhouse Gas Reporting Rule. This rule requires sources above certain emission thresholds to calculate, monitor, and report greenhouse gas emissions. According to the definition of "applicable requirement" in 40 CFR 71.2, neither 40 CFR part 98, nor CAA 307(d)(1)(V), the CAA authority under which 40 CFR part 98 was promulgated, are listed as applicable requirements for the purpose of Title V permitting. Although the rule is not an applicable requirement under 40 CFR part 71, the permittee is not relieved from the requirement to comply with the rule separately from compliance with their part 71 operating permit. It is the responsibility of each permittee to determine applicability to part 98 and to comply, if necessary.

## 4.2 Other Federal Requirements

EPA Trust Responsibility. As part of the EPA Region 10's direct federal implementation and oversight responsibilities, Region 10 has a trust responsibility to each of the 271 federally recognized Indian tribes within the Pacific Northwest and Alaska. The trust responsibility stems from various legal authorities including the U.S. Constitution, Treaties, statutes, executive orders, historical relations with Indian tribes and, in this case, the Treaty of June 9, 1855. In general terms, the EPA is charged with considering the interest of tribes in planning and decision making processes. Each office within the EPA is mandated to establish procedures for regular and meaningful consultation and collaboration with Indian tribal governments in the development of EPA decisions that have tribal implications. Region 10's Office of Air, Waste and Toxics has contacted the Tribe to invite consultation on this Title V operating permit project.

Endangered Species Act. Under this act, the EPA is obligated to consider the impact that a federal project may have on listed species or critical habitats. It is the EPA's conclusion that the issuance of this Title V permit will not affect a listed species or critical habitat because it does not authorize new emissions units, increase existing emission limits or impose any new work practice requirements. Therefore, no additional analysis and no additional requirements will be added to this permit for the ESA reasons. The EPA's no-

effect determination concludes the EPA's obligations under Section 7 of the ESA. For more information about the EPA's obligations, see the Endangered Species Consultation Handbook: Procedures for Conducting Consultation and Conference Activities under Section 7 of the ESA, published by the FWS and NMFS (March 1998, Figure 1).

National Environmental Policy Act. Under Section 793(c) of the Energy Supply and Environmental Coordination Act of 1974, no action taken under the CAA shall be deemed a major Federal action significantly affecting the quality of the human environment within the meaning of the National Environmental Policy Act of 1969. This permit is an action taken under regulations implementing the CAA and is therefore exempt from the NEPA.

National Historic Preservation Act. As noted earlier, the issuance of this Title V permit does not authorize new emissions units, increase existing emission limits or impose any new work practice requirements. No changes to the facility are expected as a result of this permit action. Consequently, no adverse effects are expected, and further review under the NHPA is not necessary.

Environmental Justice Policy - Under Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations,* signed on February 11, 1994, the EPA is directed, to the greatest extent practicable and permitted by law, to make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations in the United States. This permit action does not allow new or additional emissions and therefore impacts. As a result, there is no information available that indicates that there are disproportionately high and adverse impacts to a minority or low-income population.

# 5. Permit Conditions

## 5.1 Conditions Changed from Expiring Permit No. R10T5120000

The renewal permit has been changed from the previous permit including the addition of language to reflect the facilities current operating conditions as well as the removal of requirements that are no longer applicable since issuance of previous initial Permit No. R10T5120000 on September 29, 2015.

Language added includes the inclusion of the facilities' insignificant emission units to the emission unit tables in both the permit and statement of basis. Within the permit, additional citations have been added to certain permit conditions, namely condition 2.2, 2.13, 3.18, 3.28, 3.32, 3.33, 3.39, 3.48, and 3.49.

The following requirements are no longer relevant to the operation of the source. These requirements are not being carried forward in the proposed renewal Permit No. R10T5120100. Each removed permit condition from Permit No. R10T5120100 is generally explained below.

Permit Condition 5.4 has been altered to reflect a tune-up frequency of once every five years as opposed to the previously stated permit condition of once per year. This is due to the use of the oxygen trim system on the boiler units. With the automated oxygen trim system, the permittee must use the most recent oxygen concentration data when setting the oxygen level for the trim system. A requirement to record the oxygen concentration measured during each tune has been added as Condition 5.8.4. The tune up reporting requirement has also been clarified in Condition 4.25.2.

Permit Condition 6.2 in the original permit limited the permittee to drying pine lumber at no greater than 200ºF, the temperature at which YFP normally operates. This was a voluntary limit to reduce VOC emissions to below the PSD major source threshold of 250 tons per year. At the permittee's request, this voluntary permit condition has been removed. The permittee currently emits VOC emissions well below the PSD major source threshold. If desired in the future, the permittee can apply for a synthetic minor limit to be considered a minor source for future PSD permitting purposes.

Permit Condition 6.3 in the original permit required the permittee to monitor and record information pertaining to the 200°F temperature limit found in the previous permit in Condition 6.2. Since Condition 6.2 has been removed, it is no longer necessary to have this permit condition.

## 5.2 Permit Conditions for Renewal Permit No. R10T5120100

This Title V operating permit compiles all of the applicable requirements that apply to the permittee. Additional monitoring, recordkeeping and reporting requirements have been created where needed so the permit assures compliance with all of the applicable requirements. In general, each permit condition in the permit is explained below. Certain permit conditions are self-explanatory, and thus are not further discussed. The permit is organized into the following nine sections:

| | |
|---|---|
| Permit Section 1: | Source Information and Emission Units |
| Permit Section 2: | Standard Terms and Conditions |
| Permit Section 3: | General Requirements |
| Permit Section 4: | Facility-Specific Requirements |
| Permit Section 5: | Unit-Specific Requirements – Boilers #1-4 |
| Permit Section 6: | Unit-Specific Requirements – Lumber Kilns #1-11 |
| Permit Section 7: | Unit-Specific Requirements – Cyclones |
| Permit Section 8: | Unit-Specific Requirements – Bins |
| Permit Section 9: | Unit-Specific Requirements – MNFA (Miscellaneous Non-Fugitive Activities) |

**Permit Section 1 – Source Information and Emission Units**

This permit section contains a brief description of the facility and a list of emission units. A more detailed description of the facility can be found in Section 2 of this Statement of Basis. YFP reports no modifications to the facility having been undertaken during the five-year term of the current Title V permit. The Large Log Mill boilers heat input Btu rating has been updated to reflect 33 mmBtu/hr for each boiler instead of the previously listed 29.1 mmBtu/hr rating, which was due to the derating that occurred on the oil-fired burners. The reversal of the derated heating capacity value did not result in any significant emissions increase for the facility.

**Permit Section 2 – Standard Terms and Conditions**

This permit section includes generic compliance terms that are required in all Title V permits, but that Region 10 does not expect to be addressed in the annual compliance certification required in Permit Condition 3.49.

Permit Condition 2.1 explains that the language in the underlying regulations takes precedence over paraphrased language in the permit. Some applicable requirements are paraphrased in the permit with the intention of clarifying the requirement, but with no intention of changing the underlying meaning of the requirement. Where there is a difference between the language in a permit and an underlying regulation, the wording in the underlying regulation governs. This permit condition also notes some underlying authorities that may have been used to create additional requirements in this permit. For instance, Region 10 is relying upon periodic monitoring authority in 40 CFR 71.6(a)(3)(i)(B) to create monitoring requirements when an applicable underlying emission limitation is not accompanied by monitoring. Region 10 is relying upon sufficiency monitoring authority in 40 CFR 71.6(c)(1) to create monitoring requirements when an applicable underlying emission limitation is accompanied by monitoring that we have determined is not sufficient to assure compliance with the limitation.[1]

[1] In the Matter of Citgo Refining and Chemicals Company L.P., West Plant, Corpus Christi, Texas, Order on Petition No. VI-2007-01 (May 28, 2009). Permitting authorities must incorporate applicable monitoring

Permit Conditions 2.4 and 2.5 address a general permit shield which states that compliance with the permit is deemed compliance with the applicable requirements listed in the permit. The permittee is responsible for complying with any applicable requirements that exist but have not been included in the permit. The permittee did not request a specific permit shield for any specific requirement excluded from this permit and none is being granted.

Permit Condition 2.6 incorporates the credible evidence rule as reflected in the various applicable requirements cited as authority for this condition. It makes clear that language in the permit stating "compliance is determined with" or "demonstrate compliance by" does not preclude the use of other credible evidence to demonstrate that the permittee is not in compliance with an applicable requirement.

Permit Conditions 2.7 and 2.8 incorporate the Part 71 provisions regarding permit modification, revocation, reopening, reissuance, and termination for cause.

Permit Conditions 2.9 through 2.11 address the expiration of the permit and the ramifications if the permittee does or does not renew their permit. It is important to note that, if the permittee does not submit a complete and timely renewal application, the permittee's right to operate is terminated. The expiration date of the permit is listed on the top right-hand corner of the front page of the permit. Specific requirements regarding permit renewal are in Permit Conditions 3.51 and 3.52.

Permit Conditions 2.12 through 2.14 address options for making certain physical and operational changes in the facility that do not require a permit modification. If the permittee uses any of these options, they must comply with the applicable recordkeeping requirement found in Permit Condition 3.32 and reporting requirements found in Permit Conditions 3.38 and 3.39.

**Permit Section 3 – General Requirements**

This permit section includes conditions that are required in all Title V permits. In some cases, facility-specific testing, monitoring, recordkeeping and reporting requirements for these permit conditions are found in Section 4 of the permit because those requirements can vary from permit to permit. Unless otherwise specified, emission units are subject to the general requirements in Section 3 of the permit as well as the facility-specific and unit-specific requirements in Sections 4 through 6.

Permit Conditions 3.1 and 3.2 are general compliance schedule requirements. Because EPA is not aware of any non-compliance at the time of permit issuance, there is no issue-specific compliance schedule in the permit.

Permit Condition 3.3 requires the permittee to allow EPA-authorized representatives access to the facility and required records.

Permit Conditions 3.4 through 3.8 restrict open burning. If the permittee performs any open burning, recordkeeping requirements specific to open burning found in Permit Condition 3.33 will apply.

Permit Conditions 3.9 through 3.11 limit visible emissions, require the use of either RM9 or a continuous opacity monitoring system (COMS) for determining compliance with the limit, and provide exceptions to the rule. RM9 includes specific guidance for reading opacity when there is a wet plume (both attached and detached and directs the observer to take readings excluding the portion of the plume that includes uncombined water (droplets). In the vast majority of cases, the likelihood of exceeding the 20% opacity limit due to the presence of uncombined water is very low because a certified reader would know that he/she should not read that portion of the plume. However, there are meteorological conditions that can prevent uncombined water (droplets) from completely evaporating in a plume (e.g., 100% relative humidity and a saturated plume). The provision in Permit Condition 3.11 addresses that situation.

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requirements into the Title V permit, add monitoring when no underlying monitoring exists, and supplement existing monitoring that is not sufficient to assure compliance with permit terms and conditions.

Because testing, monitoring, recordkeeping and reporting for assuring compliance with the visible emission limit can change based on the emission unit in question, the testing, monitoring, recordkeeping and reporting requirements are contained in facility-specific requirements in Section 4 of the permit, or in each emission unit-specific section, as appropriate. The general monitoring, recordkeeping and reporting for this requirement is the periodic visible emissions survey (plant walkthrough) specified in Permit Conditions 4.7 through 4.13.

Permit Conditions 3.12 through 3.17 restrict fugitive particulate matter emissions and require a plan be created to assure the use of reasonable precautions to prevent fugitive emissions. The plan is based on a survey of the facility and is updated annually. This annual survey can be accomplished simultaneously with the periodic visible emission survey requirement in Permit Conditions 4.7 through 4.13, as long as both requirements are fully complied with.

Permit Condition 3.18 addresses requirements in the Chemical Accident Prevention Program found in 40 CFR part 68. This program requires sources that use or store regulated substances above a certain threshold to develop plans to prevent accidental releases. This requirement is included in the permit as an applicable requirement because the permittee has an ongoing responsibility to submit a risk management plan if a substance is listed that the facility has in quantities over the threshold amount, or if the facility ever increases the amount of any regulated substance above the threshold quantity. Including this term in the permit minimizes the need to reopen the permit if the facility becomes subject to the requirement to submit a risk management plan.

Permit Conditions 3.19 and 3.20 address the Stratospheric Ozone and Climate Protection Program found in 40 CFR part 82. This program requires sources that handle regulated materials to meet certain procedural and certification requirements. There may be equipment at the facility that uses or contains chlorofluorocarbons (CFCs) or other materials regulated under this program. All air conditioning and refrigeration units must be maintained by certified individuals if they contain regulated materials.

Permit Condition 3.21 addresses asbestos demolition or renovation activity found in 40 CFR part 61, Subpart M (NESHAP). This program requires sources that handle asbestos-containing materials to follow specific procedures. If the permittee conducts any demolition or renovation activity at their facility, they must assure that the project is in compliance with the federal rules governing asbestos, including the requirement to conduct an inspection for the presence of asbestos. This requirement is in the permit to address any demolition or renovation activity that may occur at the facility.

Permit Conditions 3.22 through 3.30 specify the procedures that must be followed whenever the permit requires emissions testing or sampling in an emission unit-specific section of the permit. If there is a conflict between these permit conditions and an emission unit-specific permit condition, the specific permit condition governs. Concentration-based emission limits required to be corrected to a specific oxygen concentration in the flue gas often do not contain a protocol to convert measured concentrations to specified oxygen levels. Permit Condition 3.28 provides a protocol for such a conversion.

Permit Condition 3.31 describes general recordkeeping that has been added to the permit using Part 71 authority to assure that there is good documentation for any monitoring that the permittee performs.

Permit Condition 3.32 describes recordkeeping requirements that apply only if the permittee makes off-permit changes. Certain off-permit changes are allowed in Permit Condition 2.12.

Permit Condition 3.33 describe recordkeeping requirements that apply if the permittee performs open burning. The open burning recordkeeping was added using Part 71 authority. Open burning is restricted in Permit Conditions 3.4 through 3.8.

Permit Condition 3.34 includes recordkeeping that applies to fee records including the duration that the records must be maintained. The duration is consistent with that required by Title V (see Permit

Condition 3.35).

Permit Condition 3.35 sets the duration that records must be maintained. Both Title V and FARR records must be maintained for five years. These two requirements have been combined (streamlined) into one permit condition. If there is ever a conflict between these requirements and a more restrictive emission unit-specific permit condition, the specific permit condition governs.

Permit Conditions 3.36 and 3.37 require the permittee to submit or correct submitted information when requested by EPA and as needed. The permittee has an ongoing obligation to assure that all data in its Title V application is correct and to notify EPA of any errors or omissions. This includes notifying Region 10 if the application no longer reflects the type of fuel actually being fired in a combustion unit. An address for submitting application correction directly to Region 10's air permitting program is included in this condition.

Permit Condition 3.38 and 3.39 describe reporting requirements that apply only if the permittee makes off-permit changes (Permit Condition 3.38) or section 502(b)(10) changes (Permit Condition 3.39). Certain off-permit changes are allowed in Permit Condition 2.12. Section 502(b)(10) changes are allowed in Permit Conditions 2.13.

Permit Condition 3.40 includes the address for submittals to Region 10 and to the Tribe. All reports and notices, except for fee payments (see Permit Condition 3.43), Part 71 permit applications (see Permit Condition 3.51) and Part 71 permit application corrections (see Permit Condition 3.37), must be sent to this address with a copy sent to the Tribe.

Permit Conditions 3.41 through 3.45 require submittal of an annual emission inventory (of actual emissions) and payment of fees for Part 71 purposes. These requirements refer to Permit Condition 4.1 for the actual due date by which fees and emissions must be submitted each year. The per-ton fee rate varies each year; contact EPA to obtain the current rate. The submittal of the emission inventory is timed to coincide with the payment of fees because annual Title V fees are based on actual emissions generated during the previous calendar year. Appendix A to this statement of basis documents the methods, techniques, and assumptions that EPA believes provide the most accurate basis for estimating actual emissions for this facility. As explained in Section 3.2 of this statement of basis, Region 10 expects the emission estimation techniques listed in this statement of basis to be used to calculate the annual emissions inventory, unless the permittee has other information showing why another technique more accurately represents emissions. Also note that the actual emission estimates differ from the facility's PTE because actual emission are calculated based on actual operations, not maximum operational capacity.

Note that the FARR emission inventory required in Permit Condition 3.46 to be reported at the same time can be combined with the Part 71 emission inventory as long as it is clear which emissions inventory is for which purpose, because the pollutant lists for each emission inventory are slightly different.

Permit Condition 3.46 requires submittal of an annual emission inventory (of actual emissions) for FARR registration purposes. Appendix A to this statement of basis documents the methods, techniques, and assumptions that EPA believes provide the most accurate basis for estimating actual emissions for this facility. As explained in Section 3.2 of this statement of basis, Region 10 expects the emission estimation techniques listed in this statement of basis to be used to calculate the annual emissions inventory, unless the permittee has other information showing why another technique more accurately represents emissions. Also note that the actual emission estimates differ from the facility's PTE because actual emission are calculated based on actual operations, not maximum operational capacity.

Note that the FARR emission inventory is required to be submitted at the same time as the Part 71 fees and emission inventory required in Permit Conditions 3.41 through 3.45. The Part 71 and FARR emission inventories can be combined as long as it is clear which emissions inventory is for which purpose,

because the pollutant lists for each emission inventory are slightly different.

Permit Conditions 3.47 and 3.48 require semi-annual monitoring reports and prompt deviation reports. Determinations of deviations, continuous or intermittent compliance status, or violations of the permit are not limited to the testing or monitoring methods required by the underlying regulations or this permit. Failure to meet any permit term or permit condition, including emission standards, is considered a deviation. Other credible evidence (including any evidence admissible under the federal rules of evidence) must be considered by the source and EPA in such determinations. The timing for reporting deviations, as well as other data collected, depends on the circumstances, as explained in these permit conditions.

Permit Condition 3.49 requires an annual compliance certification. The permittee must certify compliance with the permit conditions in sections 3 through 13. The permittee does not need to annually certify compliance with the provisions in permit sections 1 or 2. Consistent with Permit Condition 2.6, however, if a permittee is aware of any information that indicates noncompliance, that information must be included in the annual compliance certification. In a year when the permit is renewed or revised, the permittee must address each permit for the time that permit was in effect. Forms for the annual compliance certifications may be obtained on the internet at https://www.epa.gov/title-v-operating-permits/epa-issued-operating-permits.

Permit Condition 3.50 requires the permittee to certify the truth, accuracy and completeness of all documents (notices, reports, data, and etc) submitted to EPA. The certification must be signed by a responsible official as defined in 40 CFR 71.2. The facility's responsible officials are listed on the first page of the permit. The permittee must request an administrative amendment of the permit if the responsible official for the facility changes.

Permit Conditions 3.51 and 3.52 require the permittee to submit an application for renewal and describe some of the information that must be included in the application. As explained in Permit Conditions 2.9 through 2.11, failure to submit a complete application on time terminates the permittee's right to operate. The expiration date of the permit is listed on the top right-hand corner of the front page of the permit. An address for submitting the renewal application directly to Region 10's air permitting program is included in Permit Condition 3.51.

## Permit Section 4 – Facility-Specific Requirements

This permit section includes applicable requirements and related testing, monitoring, recordkeeping and reporting that apply either to multiple emission units or on a facility-specific basis. Unless otherwise specified, emission units are subject to the facility-specific requirements in Section 4 of the permit as well as the general and unit-specific requirements in Sections 3 and 5 through 9 of the permit.

Permit Conditions 4.1 lists the due date for the annual fees and emission reports required in Permit Conditions 3.41 through 3.46.

Permit Conditions 4.2 and 4.3 limit the sulfur content of the propane fuel burned in any combustion device, specify the method for determining compliance and specify the monitoring and recordkeeping. The facility burns only propane in the large log mill boilers and will convert the small log mill boilers to burn only propane before re-starting them. The underlying rule allows the permittee to simply keep vendor records showing that the sulfur content of the propane is below the limit of 1.1 grams/dscm. Per the GPA Liquefied Petroleum Gas Specifications Standard 2140-97, HD-5 grade propane is limited to 0.147 grams/dscm sulfur (using AP-42 conversion factors: 123 ppmw x 28.8 / 32 = 110.7 ppmv and 110.7 ppmv x 32 / $0.02404 \times 10^6$ = 0.147 grams/dscm), so the permittee can satisfy the requirement to have vendor records by simply documenting that only HD-5 propane is burned.

Permit Conditions 4.4 through 4.10 require a quarterly survey (also called a plant walkthrough) for visible and fugitive emissions as well as specific follow-up steps (investigation, corrective action, RM9 observation and additional recordkeeping and reporting) if visible or fugitive emissions are observed. If observed visible or fugitive emissions cannot be eliminated within 24 hours, a tiered sequence of RM9 opacity determinations must be performed beginning with an initial 30-minute period of readings every 15 seconds. The frequency (e.g. daily or weekly) for conducting follow-up RM9 opacity readings is based upon whether any 6-minute average opacity exceeds 20%. Observations of visible or fugitive emissions during a survey are not considered deviations; however, any resulting RM9 6-minute average opacity determination above 20% is considered a permit deviation pursuant to Permit Conditions 3.47 and 3.48. The annual fugitive particulate matter survey required in Permit Condition 3.13 can be accomplished simultaneously with a quarterly survey required in this permit condition as long as both requirements are fully complied with.

This permit condition serves as the periodic monitoring for several fugitive and particulate matter limits found in the permit. This requirement applies to emission sources that normally do not exhibit visible or fugitive emissions. If the permittee prefers a specific periodic monitoring approach for any emission sources subject to this requirement, the permittee can propose a new approach as a permit modification.

Permit Conditions 4.11 and 4.12 have been included in the permit because a December 2002 change to the PSD regulation applicability test for modifications resulted in a new applicable requirement for PSD major sources. In summary, when the permittee considers a plant modification project to be exempt from PSD via the method specified in 40 CFR 52.21(b)(41)(ii)(a) through (c) and there is a reasonable possibility that there will be a significant emissions increase resulting from the project, then the permittee must fulfill specified requirements related to documentation, monitoring, and notification. This term will be relevant to the facility only when the permittee is contemplating making physical or operational changes to the facility. In those instances, it is strongly recommended that the permittee contact Region 10 to discuss their plans and verify their assumptions.

Permit Conditions 4.13 through 4.20 are generally applicable requirements that apply to any emission unit that is or becomes subject to NSPS. Because 40 CFR Subpart Dc applies to YFP's boilers, all of these conditions currently apply to the boilers, as denoted in the headings.

Permit Conditions 4.21 through 4.26 are generally applicable requirements that apply to YFP because YFP's boilers are considered an existing affected major source as specified in 40 CFR 63.7490 (a) and (d) which make it subject to 40 CFR Subpart DDDDD. The large log mill boilers only burn propane and the small log mill boilers will be converted to only burn propane before restarting.

## Permit Section 5 – Unit-Specific Requirements – Boilers #1-4

Permit Condition 5.1 restricts YFP to combusting only propane in the boilers. The large log mill boilers were converted to burn only propane in 2014. YFP has voluntarily committed to converting the small log mill boilers to burning only propane before those boilers are restarted. All of the boilers are subject to the major source boiler MACT; only the requirements that apply to propane fired boilers are addressed in the permit.

Permit Condition 5.2 limits the sulfur dioxide emissions from the boilers and describes the emission testing methods for determining compliance. As the boilers only use propane as fuel, $SO_2$ emissions are expected to be well below the emission limit of 500 ppmdv at 7% $O_2$. For an example, see the calculation below.

$SO_2$ concentration = (EF) x (boiler mgal/hr) / (f-factor) / (boiler mmBtu/hr) / (conversion factor)

= (1.5) x (0.318) / (8710) / (33) / ($1.66 \times 10^{-7}$)

= 11.3 ppmdv at 0% $O_2$

Where:

EF = lb/mgal – see $SO_2$ emission factor used in Appendix A

boiler mgal/hr = (33 mmBtu/hr) / (91.5 mmBtu/mgal) – see calculation in Appendix A

f-factor = dscf/mmBtu - see 40 CFR 60, Appendix A, Reference Method 19, Table 19-2

boiler mmBtu/hr = 33 mmBtu/hr – see capacity used in Appendix A

conversion factor = ppm / lb/dscf - see 40 CFR 60, Appendix A, Reference Method 19, Table 19-1

Permit Condition 5.3 limits the particulate matter (PM) emissions from the boiler to 0.2 gr/dscf at 7% $O_2$ and describes the emission testing method for determining compliance. As the boilers only use propane as fuel, PM emissions are expected to be well below the emission limit. For an example, see the calculation below.

PM grain loading = (EF) x (boiler mgal/hr) / (f-factor) / (boiler mmBtu/hr) x (conversion factor)

= (0.2) x (0.318) / (8710) / (33) x (7000)

= 0.0018 gr/dscf at 0% $O_2$

Where:

EF = lb/mgal – see PM emission factor used in Appendix A

boiler mgal/hr = (33 mmBtu/hr) / (91.5 mmBtu/mgal) – see calculation in Appendix A

f-factor = dscf/mmBtu - see 40 CFR 60, Appendix A, Reference Method 19, Table 19-2

boiler mmBtu/hr = 33 mmBtu/hr – see capacity used in Appendix A

conversion factor = grains/lb

Permit Condition 5.4 requires tune-ups of the boilers and specifies the frequency and details for tune ups. Operating an oxygen trim system reduces the frequency to every five years. The LLM boilers have had their initial tune ups. The SLM boilers have not operated since becoming subject to the requirement, so their first tune up must be within 30 days of beginning operation.

Permit Condition 5.5 requires one energy assessment of the boilers by January 31, 2016 and specifies what must be addressed in the assessment.

Permit Condition 5.6 is the general NESHAP requirement to employ good air pollution control practices that was written specifically for boilers subject to the major source MACT.

Permit Condition 5.7 specifies the fuel recordkeeping requirements for the boilers. While Condition 5.7.3 requires records be kept for only two years, this permit, in Condition 3.35 requires all records be kept for five years.

Permit Condition 5.8 specifies the records that must be maintained consistent with Condition 4.24. Conditions 5.8 and 4.24 should be read together. Condition 5.8.5 clarifies that records only have to be kept onsite for the first two of the required five years.

Permit Condition 5.9 requires a notification of compliance status as specified in Condition 4.25 regarding the tune-ups and energy assessment required in Condition 5.4 and 5.5. These two requirements should be read together.

Permit Condition 5.10 requires annual compliance reports and describes the contents of the reports and technique for submittal.

Permit Condition 5.11 requires notification when switching fuels. Although YFP has committed to converting the small log mill boilers to burning only propane before restarting those boilers, this condition was included in the permit to ensure YFP notifies Region 10 when the boilers are in fact converted. The fuel conversion is critical to comply with this permit and changes how the NESHAP applies to the boilers, the original reason for this requirement. The permit currently reflects how the NESHAP will apply to the boilers after conversion to propane.

### Permit Section 6 – Unit-Specific Requirements – Lumber Kilns #1-11

Permit Condition 6.1 limits particulate matter emissions and describes the test method for determining compliance. No unit-specific testing or monitoring is required. The visible and fugitive emission monitoring required in Permit Conditions 4.4 through 4.10 will serve as the periodic monitoring to assure compliance for these emission units.

### Permit Section 7 – Unit-Specific Requirements – Cyclones

Permit Condition 7.1 limits particulate matter emissions and describes the test method for determining compliance. No unit-specific testing or monitoring is required. The visible and fugitive emission monitoring required in Permit Conditions 4.4 through 4.10 will serve as the periodic monitoring to assure compliance for these emission units.

### Permit Section 8 – Unit-Specific Requirements – Bins

Permit Condition 8.1 limits particulate matter emissions and describes the test method for determining compliance. No unit-specific testing or monitoring is required. The visible and fugitive emission monitoring required in Permit Conditions 4.4 through 4.10 will serve as the periodic monitoring to assure compliance for these emission units.

### Permit Section 9 – Unit-Specific Requirements – MNFA

Permit Condition 9.1 limits particulate matter emissions and describes the test method for determining compliance. No unit-specific testing or monitoring is required. The visible and fugitive emission monitoring required in Permit Conditions 4.4 through 4.10 will serve as the periodic monitoring to assure compliance for this emission unit.

# 6. Public Participation

## 6.1 Public Notice and Comment

As required in 40 CFR 71.11(a)(5) and 71.8, all draft operating permits must be publicly noticed and made available for public comment. The public notice of permit actions and public comment period is described in 40 CFR 71.11(d). There is a 30-day public comment period for actions pertaining to a draft permit. For this permit action, the requirements of 40 CFR 71.11(a)(5) and 71.8 will be satisfied as follows:

1. Posting the public notice, draft permit, statement of basis and the draft administrative record (which includes the application and relevant supporting materials) on EPA's website for the duration of the public comment period.

2. Providing a copy of the public notice to: the permit applicant, the affected states, the air pollution control agencies of affected states, the Tribal, city and county executives, any comprehensive land use planning agency, any state or federal land manager whose lands may be affected by emissions from the source, the local emergency planning authorities which have jurisdiction over the area where the source is located and all persons who submitted a written request to be included on the EPA's mailing list for Title V permitting actions.

## 6.2 Response to Public Comments and Permit Issuance

The public comment process was held as described above. No requests for a public hearing were received. No comments were received during the public comment period. Because no comments were received, the final permit decision becomes effective immediately upon issuance pursuant to 40 CFR 71.11(i)(2)(iii).

# Appendix A

## Potential Emissions Inventory

Last Revised: July 31, 2020

Statement of Basis

Title V Operating Permit

R10T5120100

Yakama Forest Products
White Swan, Washington

# Appendix A: Potential Emissions Inventory

**Summary of Facility Non-HAP Potential to Emit**

**Non-Fugitive Emissions[1], (tons per year)**

| | Boilers | Kilns | Cyclones | Bins | MNFA | MFA | PT | Tanks | |
|---|---|---|---|---|---|---|---|---|---|
| | Boilers #1-4 | Kilns #1-11 | Cyclones #1-4 | Bins #1-7 | Miscellaneous Non-Fugitive Activities | Miscellaneous Fugitive Activities | Plant Traffic | Tanks | **Non-Fugitive Subtotal** |
| Carbon Monoxide (CO) | 41.6 | | | | | | | | 42 |
| Lead (Pb) | 0.0 | | | | | | | | 0 |
| Nitrogen Oxides ($NO_X$) | 72.1 | | | | | | | | 72 |
| Particulate (PM)[2] | 1.1 | 5.1 | 16.3 | 0.09 | 26.1 | | | | 49 |
| Inhalable Coarse Particulate ($PM_{10}$) | 3.9 | 5.1 | 13.9 | 0.04 | 13.1 | | | | 36 |
| Fine Particulate ($PM_{2.5}$) | 3.9 | 5.1 | 8.2 | 0.01 | 6.5 | | | | 24 |
| Sulfur Dioxide ($SO_2$) | 8.3 | | | | | | | | 8 |
| Volatile Organic Compounds (VOC) | 5.5 | 257.2 | 14.0 | | | | | 0.0 | 277 |
| Greenhouse Gas ($CO_2e$) | 69,320 | | | | | | | | 69,320 |

**Fugitive Emissions, (tons per year)**

| | Boilers | Kilns | Cyclones | Bins | MNFA | MFA | PT | Tanks | |
|---|---|---|---|---|---|---|---|---|---|
| | Boilers #1-4 | Kilns #1-11 | Cyclones #1-4 | Bins #1-7 | Miscellaneous Non-Fugitive Activities | Miscellaneous Fugitive Activities | Plant Traffic | Tanks | **Fugitive Subtotal** |
| Carbon Monoxide (CO) | | | | | | | | | 0 |
| Lead (Pb) | | | | | | | | | 0 |
| Nitrogen Oxides ($NO_X$) | | | | | | | | | 0 |
| Particulate (PM)[2] | | | | 0.13 | | 22.8 | 165.9 | | 189 |
| Respirable Particulate ($PM_{10}$) | | | | 0.06 | | 11.4 | 40.1 | | 52 |
| Fine Particulate ($PM_{2.5}$) | | | | 0.01 | | 5.7 | 6.5 | | 12 |
| Sulfur Dioxide ($SO_2$) | | | | | | | | | 0 |
| Volatile Organic Compounds (VOC) | | | | | | | | 0.4 | 0 |
| Greenhouse Gas ($CO_2e$) | | | | | | | | | 0 |

**Total Non-Fugitive and Fugitive Emissions, (tons per year)**

| | Boilers | Kilns | Cyclones | Bins | MNFA | MFA | PT | Tanks | |
|---|---|---|---|---|---|---|---|---|---|
| | Boilers #1-4 | Kilns #1-11 | Cyclones #1-4 | Bins #1-7 | Miscellaneous Non-Fugitive Activities | Miscellaneous Fugitive Activities | Plant Traffic | Tanks | **Plantwide PTE** |
| Carbon Monoxide (CO) | 41.6 | | | | | | | | 42 |
| Lead (Pb) | 0.00 | | | | | | | | 0 |
| Nitrogen Oxides ($NO_X$) | 72.1 | | | | | | | | 72 |
| Particulate (PM)[2] | 1.1 | 5.1 | 16.3 | 0.2 | 26 | 22.8 | 165.9 | | 238 |
| Respirable Particulate ($PM_{10}$) | 3.9 | 5.1 | 13.9 | 0.1 | 13 | 11.4 | 40.1 | | 88 |
| Fine Particulate ($PM_{2.5}$) | 3.9 | 5.1 | 8.2 | 0.0 | 7 | 5.7 | 6.5 | | 36 |
| Sulfur Dioxide ($SO_2$) | 8.3 | | | | | | | | 8 |
| Volatile Organic Compounds (VOC)[3] | 5.5 | 257.2 | 14.0 | | | | | 0.4 | 277 |
| Greenhouse Gas ($CO_2e$) | 69,320 | | | | | | | | 69,320 |

Notes:

[1] Only non-fugitive emissions are considered for this facility in determining Title V applicability given that it is a sawmill and not one of the 27 listed source categories required to consider fugitive emissions. See definition of "major source" at 40 CFR § 71.2.

[2] PM is not a pollutant considered in determining whether a source is subject to the requirement to obtain a Title V permit; however, PM emissions are considered in determining whether a facility/project is a major PSD source/modification and whether a source is subject to compliance assurance monitoring.

[3] Additional sources of VOC likely exist in the mill, for which emission factors have not yet been identified.

# Appendix A: Potential Emissions Inventory

**Summary of Facility HAP Potential to Emit**

**Total Non-Fugitive and Fugitive Emissions, (tons per year)**

| Hazardous Air Pollutants (HAP) | Boilers #1-4 | Kilns #1-11 | Cyclones #1-4 | Single HAP Plantwide Totals |
|---|---|---|---|---|
| **Trace Metal Compounds** | | | | |
| Arsenic Compounds | 9.95E-05 | | | 9.9E-05 |
| Beryllium Compounds | 5.97E-06 | | | 6.0E-06 |
| Cadmium Compounds | 5.47E-04 | | | 5.5E-04 |
| Chromium Compounds (including hexavalent) | 6.96E-04 | | | 7.0E-04 |
| Cobalt Compounds | 4.18E-05 | | | 4.2E-05 |
| Manganese Compounds | 1.89E-04 | | | 1.9E-04 |
| Mercury Compounds | 1.29E-04 | | | 1.3E-04 |
| Nickel Compounds | 1.04E-03 | | | 1.0E-03 |
| Selenium Compounds | 1.19E-05 | | | 1.2E-05 |
| **Organic Compounds** | | | | |
| Acetaldehyde | | 5.65E+00 | | 5.6E+00 |
| Acrolein | | 0.00E+00 | | 0.0E+00 |
| Acenaphthene* | 8.95E-07 | | | 9.0E-07 |
| Acenaphthylene* | 8.95E-07 | | | 9.0E-07 |
| Anthracene* | 1.29E-06 | | | 1.3E-06 |
| Benz(a)anthracene* | 8.95E-07 | | | 9.0E-07 |
| Benzene | 1.04E-03 | | | 1.0E-03 |
| Benzo(a)pyrene* | 5.97E-07 | | | 6.0E-07 |
| Benzo(b)fluoranthene* | 8.95E-07 | | | 9.0E-07 |
| Benzo(g,h,i)perylene* | 5.97E-07 | | | 6.0E-07 |
| Benzo(k)fluoranthene* | 8.95E-07 | | | 9.0E-07 |
| Chrysene* | 8.95E-07 | | | 9.0E-07 |
| Dibenzo(a,h)anthracene* | 5.97E-07 | | | 6.0E-07 |
| Dichlorobenzene | 5.97E-04 | | | 6.0E-04 |
| 7,12-Dimethylbenz(a)anthracene* | 7.96E-06 | | | 8.0E-06 |
| Fluoranthene* | 1.49E-06 | | | 1.5E-06 |
| Fluorene* | 1.39E-06 | | | 1.4E-06 |
| Formaldehyde | 3.73E-02 | 1.10E+00 | | 1.1E+00 |
| Hexane | 8.95E-01 | | | 9.0E-01 |
| Indeno(1,2,3-cd)pyrene* | 8.95E-07 | | | 9.0E-07 |
| Methanol | | 3.93E+01 | 5.22E-02 | 3.9E+01 |
| 2-Methylnaphthalene* | 1.19E-05 | | | 1.2E-05 |
| 3-Methylchloroanthracene* | 8.95E-07 | | | 9.0E-07 |
| Naphthalene* | 3.03E-04 | | | 3.0E-04 |
| Phenanathrene* | 8.46E-06 | | | 8.5E-06 |
| Polycyclic Organic Matter (POM) | 3.47E-04 | | | 3.5E-04 |
| Proprionaldehyde | | 0.00E+00 | | 0.0E+00 |
| Pyrene* | 2.49E-06 | | | 2.5E-06 |
| Toluene | 1.69E-03 | | | 1.7E-03 |
| TOTAL** | 0.9 | 46.0 | 0.1 | 47.0 |

| | | |
|---|---|---|
| Predicted Highest Plantwide Single HAP | 39.3 | tons per year, methanol |
| Predicted Plantwide HAP Total | 47.0 | tons per year |

* These HAPs are subject to the 10 tons/year major source threshold individually, but are also considered POM that are then, in aggregate, also subject to the 10 tons/year major source threshold.

** Because all of the emitted pollutants that are POMs have already been accounted for individually, the POM calculated PTE has not been included in the totals to avoid double-counting. Other sources of HAPs likely exist in the mill, for which emission factors have not yet been identified. When emission factors become available, additional sources will be added.

# Appendix A: Potential Emissions Inventory

**Non-HAP Potential to Emit**

Emission Unit: **Boilers #1-4**

Description: Two Superior brand boilers are located in the SLM, and two Superior brand are located in the LLM.
SLM: Model # 6-5-3000, Serial # 13796, 24.92 mmBTU/hr; and Model # 7-4-2500, Serial # 14159, 24.92 mmBTU/hr
LLM: both Model # 6-5-5000, Serial # 14921 and 14922, both 33 mmBtu/hr

Maximum Steam Production: SLM: 20,700 and 21,562 lb/hr = 42,736 pph total
LLM: 26,368 lb/hr each = 52,736 pph total
LLM boiler steam flow estimated based on original design heat-input-to-steam-output ratio = 33 mmBtu x (33,000 pph / 41.3 mmBtu) = 26,368 pph steam

Control Device: None

Fuel: Propane (assume SLM boilers are converted to propane from oil)

Startup: SLM: 1998 and 2001; and LLM: 2002

Design Maximum Heat Input Capacity: 115.84 MMBtu/hr (total for all four)
1.27 mgal/hr (assuming 91.5 mmBtu/mgal from AP-42, Section 1.5.3.1)

Operation: 8,760 hours per year

**NON-FUGITIVE EMISSIONS**

| Criteria Pollutant Emissions | EF (lb/mgal) | PTE (tpy) | EF References and Notes |
|---|---|---|---|
| Carbon Monoxide (CO) | 7.5 | 41.6 | AP-42, Table 1.5-1 |
| Lead (Pb) | 0 | 0.0 | No lead emissions are expected from propane combustion. |
| Nitrogen Oxides ($NO_X$) | 13 | 72.1 | AP-42, Table 1.5-1 |
| Particulate (PM) | 0.2 | 1.1 | AP-42, Table 1.5-1 (filterable only) |
| Inhalable Coarse Particulate ($PM_{10}$) | 0.7 | 3.9 | AP-42, Table 1.5-1 (assumed to be similar to natural gas where all PM is <1 micron diameter - see AP-42, Table 1.4-2) |
| Fine Particulate ($PM_{2.5}$) | 0.7 | 3.9 | AP-42, Table 1.5-1 (assumed to be similar to natural gas where all PM is <1 micron diameter - see AP-42, Table 1.4-2) |
| Sulfur Dioxide ($SO_2$) | 1.5 | 8.3 | AP-42, Table 1.5-1: EF = 0.10S, where S is the sulfur content expressed in grains per 100 cf gas vapor. For PTE purposes, the sulfur content is assumed to be 15 grains/100 cf gas vapor based on the Gas Processors Association liquefied petroleum gas standard of 185 ppmw at standard conditions: 185 ppmw x 44 (MW of propane) x 0.001845 = 15. The actual S content is often much lower to meet corrosion specifications. |
| Volatile Organic Compounds (VOC) | 1.0 | 5.5 | AP-42, Table 1.5-1 (TOC): assume TOC adequately represents VOC for propane combustion |

**NON-FUGITIVE EMISSIONS**

| Greenhouse Gas Emissions ($CO_2$ Equivalent) | EF (lb/mgal) | PTE (tpy) | EF Reference and Notes |
|---|---|---|---|
| Carbon Dioxide ($CO_2$) | 12,500 | 69,314 | AP-42, Table 1.5-1 |
| Methane ($CH_4$) | 0.2 | 1.1 | AP-42, Table 1.5-1 |
| Nitrous Oxide ($N_2O$) | 0.9 | 5.0 | AP-42, Table 1.5-1 |
| TOTAL | | 69,320 | |

# Appendix A: Potential Emissions Inventory

## Non-HAP Potential to Emit

Emission Unit: **Kilns #1-11**
Description: Lumber drying; the permits limits pine drying to less than 200ºF
Control Device: None
Work Practice Requirements: None
Fuel: None - indirect steam provided by propane fired boilers
Predominant Species Dried: Douglas Fir, Ponderosa Pine, Western True Fir
Installed: SLM: #1-3 1997, #4 2001; LLM: #5-9 2002, #10-11 2005
Annual Capacity: See table below; values are in mbf/yr and represent the maximum amount that can be dried if only that species is dried all year. Values were calculated by YFP using the mill economic maximation model without any limit on hours of operation and were provided to Region 10 on July 23, 2015. The LLM is constrained by steam generation capacity; the SLM is constrained by kiln capacity.

| Mill, Kilns | Western True Fir | Douglas Fir | Ponderosa Pine |
|---|---|---|---|
| SLM, #1-4 | 88,815 | 80,618 | 61,879 |
| LLM, #5-11 | 116,527 | 116,393 | 77,184 |
| Total | 205,342 | 197,011 | 139,063 |

**NON-FUGITIVE EMISSIONS**

| Pollutant Emissions | EF (lb/mbf) | PTE (tpy) | EF Notes |
|---|---|---|---|
| Carbon Monoxide (CO) | 0 | 0.0 | No CO emissions are expected. |
| Lead (Pb) | 0 | 0.0 | No lead emissions are expected. |
| Nitrogen Oxides ($NO_X$) | 0 | 0.0 | No $NO_x$ emissions are expected. |
| Particulate (PM) | 0.05 | 5.1 | Reference 1 - Because the facility has the ability to dry both resinous and non-resinous softwood species, to be conservative the higher of the two EF and capacities (non-resinous, Western True Fir) were selected to determine PTE. Western True Fir is assumed to be the same as White Fir. |
| Respirable Particulate ($PM_{10}$) | 0.05 | 5.1 | Reference 1 - Because the facility has the ability to dry both resinous and non-resinous softwood species, to be conservative the higher of the two EF and capacities (non-resinous, Western True Fir) were selected to determine PTE. Western True Fir is assumed to be the same as White Fir. |
| Fine Particulate ($PM_{2.5}$) | 0.05 | 5.1 | Reference 1 - Because the facility has the ability to dry both resinous and non-resinous softwood species, to be conservative the higher of the two EF and capacities (non-resinous, Western True Fir) were selected to determine PTE. Western True Fir is assumed to be the same as White Fir. |
| Sulfur Dioxide ($SO_2$) | 0 | 0.0 | No $SO_2$ emissions are expected. |
| Volatile Organic Compounds (VOC) | 3.69891 | 257.2 | Reference 2 - Because kiln capacity and emission factors vary with species dried, PTE is based upon the highest emitting combination that is selected considering Western True Fir, Douglas Fir and Ponderosa Pine dried at temperatures of 240ºF, the highest emissions for that temperature is Ponderosad Pine and selected to determine PTE. |

**NON-FUGITIVE EMISSIONS**

| Greenhouse Gas Emissions ($CO_2$ Equivalent) | EF (lb/mbf) | PTE (tpy) | EF Reference |
|---|---|---|---|
| Carbon Dioxide ($CO_2$) | 0 | 0.0 | No carbon dioxide is emitted from the kilns |
| Methane ($CH_4$) | 0 | 0.0 | No methane is emitted from the kilns |
| Nitrous Oxide ($N_2O$) | 0 | 0.0 | No nitrous oxide is emitted from the kilns |
| TOTAL | | 0 | |

EF References

| | |
|---|---|
| 1 | EPA Region 10 Particulate Matter Potential to Emit Emission Factors for Activities at Sawmills, Excluding Boilers, Located in Pacific Northwest Indian Country, May 8, 2014. See online at: http://yosemite.epa.gov/R10/AIRPAGE.NSF/Permits/tvop/. |
| 2 | EPA Region 10 HAP and VOC Emission Factors for Lumber Drying, November 2019. See online at: https://www.epa.gov/sites/production/files/2020-03/documents/epa-region-10-hap-voc-ldk-ef.pdf. VOCs for Pine are calculated at 240ºF. |

# Appendix A: Potential Emissions Inventory

## Non-HAP Potential to Emit

Emission Unit: **Cyclones**

Description: Cyclone C-1 is in the SLM; cyclones C-2, C-3 and C-4 are in the LLM. Cyclone C-1 separates shavings from a pnuematic handling system into Bin SH-1. Cyclone C-2 separates sawdust from a pnuematic handling system onto the hog fuel conveyor belt. Cyclone C-3 separates green chips from a pnuematic handling system into Bin GC-2. Cyclone C-4 separates shavings from a pnuematic handling system into Bin SH-2.

Control Device: none

Capacity: See table below; values were calculated by YFP using the mill economic maximation model without any limit on hours of operation and were provided to Region 10 on July 23, 2015. Material is assumed to be Ponderosa Pine.

| Bin | Mill | Material | | bdt/yr |
|---|---|---|---|---|
| | | | | Pine |
| Cyclone C-1 | SLM | SH | Shavings | 5,731 |
| Cyclone C-2 | LLM | SD | Sanderdust | 13,178 |
| Cyclone C-3 | LLM | GC | Green Chips | 30,986 |
| Cyclone C-4 | LLM | SH | Shavings | 15,344 |

**NON-FUGITIVE EMISSIONS**

| Emissions Generating Activity | Annual Capacity (bdt/yr) | EF | | | | PTE | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | PM | $PM_{10}$ | $PM_{2.5}$ | VOC | PM | $PM_{10}$ | $PM_{2.5}$ | VOC |
| | | (lb/bdt) | | | | (tpy) | | | |
| Cyclone C-1 | 5,731 | 0.5 | 0.425 | 0.25 | 0.4283 | 1.43 | 1.22 | 0.72 | 1.23 |
| Cyclone C-2 | 13,178 | 0.5 | 0.425 | 0.25 | 0.4283 | 3.29 | 2.80 | 1.65 | 2.82 |
| Cyclone C-3 | 30,986 | 0.5 | 0.425 | 0.25 | 0.4283 | 7.75 | 6.58 | 3.87 | 6.64 |
| Cyclone C-4 | 15,344 | 0.5 | 0.425 | 0.25 | 0.4283 | 3.84 | 3.26 | 1.92 | 3.29 |
| | | | | | TOTAL | 16.3 | 13.9 | 8.2 | 14.0 |

EF References and Notes

| | |
|---|---|
| PM, $PM_{10}$ and $PM_{2.5}$ | EPA Region 10 Particulate Matter Potential to Emit Emission Factors for Activities at Sawmills, Excluding Boilers, Located in Pacific Northwest Indian Country, May 8, 2014. See online at: http://yosemite.epa.gov/R10/AIRPAGE.NSF/Permits/tvop/. Assume all are medium efficiency. Emissions caused by bin filling below each cyclone is assumed to vent back up through each cyclone. |
| VOC | NCASI Technical Bulletin No. 723, "Laboratory and Limited Field Measurements of VOC Emissions from Wood Residuals," September 1996. To convert emission factor from units of carbon to units of propane, multiply by propane mass conversation factor of 1.2238. The EF for Ponderosa Pine chip handling will be used for all material handling because ponderosa pine generally emits more VOC than Douglas Fir (the other species tested) and chips generally emit less VOC than sawdust and shavings (the Ponderosa Pine chip EF is higher than the Douglas Fir sawdust and shavings EFs). For ponderosa pine chips, 0.35 (lb carbon)/bdt X 1.2238 = 0.4283 (lb VOC as propane)/bdt. The actual Ponderosa Pine sawdust and shavings emission factors are likely higher than chip-derived EF based upon comparative emissions testing data for douglas fir. |

# Appendix A: Potential Emissions Inventory

## Non-HAP Potential to Emit

Emission Unit: **Bins**

Description: Bins are used to store byproducts before shipping in trucks. Bin names ending with a "1" are located in the SLM; bin names ending with a "2" are located in the LLM. Bins SH-1, GC-2 and SH-2 are filled via a cyclone; all other bins are filled via a conveyor. All bins unload to trucks.

Control Device: none

Capacity: See table below; values were calculated by YFP using the mill economic maximation model without any limit on hours of operation and were provided to Region 10 on July 23, 2015. Highest value is used for

| Mill | Material | | bdt/yr | | | |
|---|---|---|---|---|---|---|
| | | | Grand Fir | Douglas Fir | Pine | Highest |
| SLM | HF | hog fuel | 25,577 | 24,264 | 15521 | 25,577 |
| SLM | SD | sawdust | 11,633 | 8,957 | 10890 | 11,633 |
| SLM | GC | green chips | 70,102 | 52,268 | 62171 | 70,102 |
| SLM | DC | dry chips | 5,086 | 4,626 | 3550 | 5,086 |
| SLM | SH | shavings | 8,226 | 7,467 | 5731 | 8,226 |
| LLM | HF | hog fuel | 21,826 | 30,070 | 11,131 | 30,070 |
| LLM | SD | sawdust | 6,684 | 7,987 | 13,178 | 13,178 |
| LLM | GC | green chips | 39,186 | 38,033 | 30,986 | 39,186 |
| LLM | DC | dry chips | 6,674 | 6,409 | 4,430 | 6,674 |
| LLM | SH | shavings | 11,653 | 11,369 | 15344 | 15,344 |

**NON-FUGITIVE EMISSIONS**

| Emissions Generating Activity | Annual Capacity (bdt/yr) | Control Efficiency % | EF | | | PTE | | |
|---|---|---|---|---|---|---|---|---|
| | | | PM | $PM_{10}$ | $PM_{2.5}$ | PM | $PM_{10}$ | $PM_{2.5}$ |
| | | | (lb/bdt) | | | (tpy) | | |
| Bin HF-1 filling | 25,577 | 0 | 0.00075 | 0.00035 | 0.00005 | 0.010 | 0.004 | 0.001 |
| Bin SD-1 filling | 11,633 | 0 | 0.00075 | 0.00035 | 0.00005 | 0.010 | 0.004 | 0.001 |
| Bin GC-1 filling | 70,102 | 0 | 0.00075 | 0.00035 | 0.00005 | 0.010 | 0.004 | 0.001 |
| Bin DC-1 filling | 5,086 | 0 | 0.0015 | 0.0007 | 0.0001 | 0.019 | 0.009 | 0.001 |
| Bin HF-2 filling | 30,070 | 0 | 0.00075 | 0.00035 | 0.00005 | 0.010 | 0.004 | 0.001 |
| Bin SD-2 filling | 13,178 | 0 | 0.00075 | 0.00035 | 0.00005 | 0.010 | 0.004 | 0.001 |
| Bin DC-2 filling | 6,674 | 0 | 0.0015 | 0.0007 | 0.0001 | 0.019 | 0.009 | 0.001 |
| | | | | | | 0.086 | 0.040 | 0.006 |

**FUGITIVE EMISSIONS**

| Emissions Generating Activity | Annual Capacity (bdt/yr) | Control Efficiency % | EF | | | PTE | | |
|---|---|---|---|---|---|---|---|---|
| | | | PM | $PM_{10}$ | $PM_{2.5}$ | PM | $PM_{10}$ | $PM_{2.5}$ |
| | | | (lb/bdt) | | | (tpy) | | |
| Truck loading from Bin HF-1 | 25,577 | 0 | 0.00075 | 0.00035 | 0.00005 | 0.010 | 0.004 | 0.001 |
| Truck loading from Bin SD-1 | 11,633 | 0 | 0.00075 | 0.00035 | 0.00005 | 0.010 | 0.004 | 0.001 |
| Truck loading from Bin GC-1 | 70,102 | 0 | 0.00075 | 0.00035 | 0.00005 | 0.010 | 0.004 | 0.001 |
| Truck loading from Bin DC-1 | 5,086 | 0 | 0.0015 | 0.0007 | 0.0001 | 0.019 | 0.009 | 0.001 |
| Truck loading from Bin SH-1 | 8,226 | 0 | 0.0015 | 0.0007 | 0.0001 | 0.019 | 0.009 | 0.001 |
| Truck loading from Bin HF-2 | 30,070 | 0 | 0.00075 | 0.00035 | 0.00005 | 0.010 | 0.004 | 0.001 |
| Truck loading from Bin SD-2 | 13,178 | 0 | 0.00075 | 0.00035 | 0.00005 | 0.010 | 0.004 | 0.001 |
| Truck loading from Bin GC-2 | 39,186 | 0 | 0.00075 | 0.00035 | 0.00005 | 0.010 | 0.004 | 0.001 |
| Truck loading from Bin DC-2 | 6,674 | 0 | 0.0015 | 0.0007 | 0.0001 | 0.019 | 0.009 | 0.001 |
| Truck loading from Bin SH-2 | 15,344 | 0 | 0.0015 | 0.0007 | 0.0001 | 0.019 | 0.009 | 0.001 |
| | | | | | | 0.134 | 0.063 | 0.009 |

EF References and Notes

| | |
|---|---|
| PM, $PM_{10}$ and $PM_{2.5}$ EF Basis | EPA Region 10 Particulate Matter Potential to Emit Emission Factors for Activities at Sawmills, Excluding Boilers, Located in Pacific Northwest Indian Country, May 8, 2014. See online at: http://yosemite.epa.gov/R10/AIRPAGE.NSF/Permits/tvop/. Emission caused by filling bins that are fed by a cyclone are accounted for with the cyclone emission estimates, not here, because those emission are assumedto vent back up through each cyclone feeding the bin. Emission caused by filling bins using a conveyor belt are accounted for here and assumed to be non-fugitive because they can be readily enclosed and captured. Emission caused by loading trucks from the bins are accounted for here and assumed to be fugitive because it is not as practical to enclose and capture truck loading emissions. |

# Appendix A: Potential Emissions Inventory

## Non-HAP Potential to Emit

Emission Unit: **MNFA**

Description: Miscellaneous Non-Fugitive Activities. Activities occurring inside a building that generate wood residue and dust that is emitted from the buildings thru various building vents. Sawing is the only activity

Controls: 80% Assume 80% reduction in dust emitted due to being inside building

Capacity: See the table below; mbf/yr values are from maximum drying capacity assumptions explained on the kiln emission estimating sheet; tons log/yr values are calculated using the following equation and assumptions:

tons/yr logs = mbf/yr lumber x (1000 bf/mbf) x (1 cf/6.33 bf lumber) x (46 lb/cf logs) x (1 ton/2000 lb)

SLM = 88,815 mbf/yr = 322,709 ton/yr logs

LLM = 116,527 mbf/yr = 423,400 ton/yr logs

**NON-FUGITIVE EMISSIONS**

| | | | EF | | | PTE | | |
|---|---|---|---|---|---|---|---|---|
| | | | PM | $PM_{10}$ | $PM_{2.5}$ | PM | $PM_{10}$ | $PM_{2.5}$ |
| Emissions Generating Activity | Annual Capacity | | (lb/ton log or lb/mbf lumber) | | | (tpy) | | |
| SLM Material Sawing (inside building) | 322,709 | ton/yr logs | 0.35 | 0.175 | 0.0875 | 11 | 6 | 3 |
| LLM Material Sawing (inside building) | 423,400 | ton/yr logs | 0.35 | 0.175 | 0.0875 | 15 | 7 | 4 |
| | | | | | TOTAL | 26 | 13 | 7 |

EF References and Notes:

| | |
|---|---|
| PM, $PM_{10}$ and $PM_{2.5}$ EF Basis: | EPA Region 10 Particulate Matter Potential to Emit Emission Factors for Activities at Sawmills, Excluding Boilers, Located in Pacific Northwest Indian Country, May 8, 2014. See online at: http://yosemite.epa.gov/R10/AIRPAGE.NSF/Permits/tvop/. |

# Appendix A: Potential Emissions Inventory

**Non-HAP Potential to Emit**

Emission Unit: **MFA**

Description: Miscellaneous Fugitive Activities. Activities occurring outside a building or storage structure that generate fugitive dust. Sawing, debarking, hogging, material conveyance and wind erosion are addressed.

Control Device: none

Capacity: See the table below; hog-related capacities are from the material handling capacities calculated on the bin emission estimating sheet; acreage estimates are from YFP website documentation about the plant size; logs processing capacities are calculated using the mbf/yr lumber capacities from the kiln emission estimating sheet and the following equation from the referenced document below:

Logs (tons/yr) = mbf/yr lumber x (1000 bf/mbf) x (1 cf/6.33 bf lumber) x (46 lb/cf logs) x (1 ton/2000 lb)

| | | | | | |
|---|---|---|---|---|---|
| SLM = | 88,815 | mbf/yr | = | 322,709 | ton/yr logs |
| LLM = | 116,527 | mbf/yr | = | 423,400 | ton/yr logs |

**FUGITIVE EMISSIONS**

| Emissions Generating Activity | Annual Capacity | | EF | | | PTE | | |
|---|---|---|---|---|---|---|---|---|
| | | | PM | $PM_{10}$ | $PM_{2.5}$ | PM | $PM_{10}$ | $PM_{2.5}$ |
| | | | (lb/bdt, lb/tons log; lb/acre) | | | (tpy) | | |
| SLM Log cross cut saws | 322,709 | ton/yr logs | 0.035 | 0.0175 | 0.00875 | 5.647 | 2.824 | 1.412 |
| SLM Log debarking | 322,709 | ton/yr logs | 0.024 | 0.012 | 0.006 | 3.873 | 1.936 | 0.968 |
| SLM Conveyance to hog | 25,577 | bdt/yr | 0.00075 | 0.00035 | 0.00005 | 0.010 | 0.004 | 0.001 |
| SLM Hog | 25,577 | bdt/yr | 0.024 | 0.012 | 0.006 | 0.307 | 0.153 | 0.077 |
| SLM Hog conveyance | 25,577 | bdt/yr | 0.00075 | 0.00035 | 0.00005 | 0.010 | 0.004 | 0.001 |
| SLM Log Yards No.'s 1, 2 and 3 (Wind Erosion) | 90.0 | acre-yr | 0.38 | 0.19 | 0.095 | 0.017 | 0.009 | 0.004 |
| LLM Log cross cut saws | 423,400 | ton/yr logs | 0.035 | 0.0175 | 0.00875 | 7.409 | 3.705 | 1.852 |
| LLM Log debarking | 423,400 | ton/yr logs | 0.024 | 0.012 | 0.006 | 5.081 | 2.540 | 1.270 |
| LLM Conveyance to hog | 30,070 | bdt/yr | 0.00075 | 0.00035 | 0.00005 | 0.011 | 0.005 | 0.001 |
| LLM Hog | 30,070 | bdt/yr | 0.024 | 0.012 | 0.006 | 0.361 | 0.180 | 0.090 |
| LLM Hog conveyance | 30,070 | bdt/yr | 0.00075 | 0.00035 | 0.00005 | 0.011 | 0.005 | 0.001 |
| LLM Log Yards No.'s 1, 2 and 3 (Wind Erosion) | 90.0 | acre-yr | 0.38 | 0.19 | 0.095 | 0.017 | 0.009 | 0.004 |
| | | | | | TOTAL | 22.8 | 11.4 | 5.7 |

EF References and Notes:

| | |
|---|---|
| PM, $PM_{10}$ and $PM_{2.5}$ EF Basis: | EPA Region 10 Particulate Matter Potential to Emit Emission Factors for Activities at Sawmills, Excluding Boilers, Located in Pacific Northwest Indian Country, May 8, 2014. See online at: http://yosemite.epa.gov/R10/AIRPAGE.NSF/Permits/tvop/. Assume hog emissions are similar to debarking. |

# Appendix A: Potential Emissions Inventory

**Non-HAP Potential to Emit**

Emission Unit: **PT**
Description: Plant Traffic. Fugitive emissions including employyee vehicles, forklifts, log trucks and byproduct trucks on paved and unpaved roads
Controls: Watering, but is not included because it is not required

**FUGITIVE EMISSIONS**

| Vehicle Type (# of vehicles) | Location | Loaded Weight (lbs) | Empty Weight (lbs) | Average Weight (lbs) | Paved Road Emission Factors (lb/VMT) | | | Unpaved Road Emission Factors (lb/VMT) | | | Travel % Paved | Travel % Unpaved | VMT per Year (miles) | VMT Paved Roads (miles) | VMT Unpaved Roads (miles) | Emissions (tpy) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | PM | $PM_{10}$ | $PM_{2.5}$ | PM | $PM_{10}$ | $PM_{2.5}$ | | | | | | PM | $PM_{10}$ | $PM_{2.5}$ |
| Employee Vehicles | Plantwide | 5000 | 5000 | 5000 | 0.173 | 0.035 | 0.008 | 3.517 | 1.002 | 0.100 | 100 | 0.000 | 4,636 | 4,636 | 0 | 0.4 | 0.1 | 0.0 |
| Product Loadout | Plantwide | 60000 | 60000 | 60000 | 2.183 | 0.4366 | 0.107 | 10.759 | 3.067 | 0.307 | 100 | 0.000 | 3,709 | 3,709 | 0 | 4.0 | 0.8 | 0.2 |
| H-360 HD forklift | SM-3 | 41200 | 20600 | 30900 | 1.109 | 0.222 | 0.054 | 7.981 | 2.275 | 0.228 | 100 | 0.000 | 6,480 | 6,480 | 0 | 3.6 | 0.7 | 0.2 |
| H-360 HD forklift | PM-3 | 41200 | 20600 | 30900 | 1.109 | 0.222 | 0.054 | 7.981 | 2.275 | 0.228 | 100 | 0.000 | 4,320 | 4,320 | 0 | 2.4 | 0.5 | 0.1 |
| H-360 HD forklift | PM/KILN-3 | 41200 | 20600 | 30900 | 1.109 | 0.222 | 0.054 | 7.981 | 2.275 | 0.228 | 100 | 0.000 | 5,760 | 5,760 | 0 | 3.2 | 0.6 | 0.2 |
| H-360 HD forklift | KILN | 41200 | 20600 | 30900 | 1.109 | 0.222 | 0.054 | 7.981 | 2.275 | 0.228 | 100 | 0.000 | 5,760 | 5,760 | 0 | 3.2 | 0.6 | 0.2 |
| H-280 forklift | SM-2 | 34800 | 17400 | 26100 | 0.934 | 0.187 | 0.046 | 7.397 | 2.109 | 0.211 | 100 | 0.000 | 3,240 | 3,240 | 0 | 1.5 | 0.3 | 0.1 |
| H-280 forklift | PM-2 | 34800 | 17400 | 26100 | 0.934 | 0.187 | 0.046 | 7.397 | 2.109 | 0.211 | 100 | 0.000 | 3,240 | 3,240 | 0 | 1.5 | 0.3 | 0.1 |
| H-190 HD forklift (x 3) | SHIPPING-3 | 26300 | 13150 | 19725 | 0.702 | 0.140 | 0.034 | 6.522 | 1.859 | 0.186 | 100 | 0.000 | 12,960 | 12,960 | 0 | 4.5 | 0.9 | 0.2 |
| H-190 HD forklift (x 2) | PM-3 | 26300 | 13150 | 19725 | 0.702 | 0.140 | 0.034 | 6.522 | 1.859 | 0.186 | 100 | 0.000 | 7,920 | 7,920 | 0 | 2.8 | 0.6 | 0.1 |
| H-190 forklift | PM-2 | 26300 | 13150 | 19725 | 0.702 | 0.140 | 0.034 | 6.522 | 1.859 | 0.186 | 100 | 0.000 | 2,430 | 2,430 | 0 | 0.9 | 0.2 | 0.0 |
| H-190 forklift | PM-SHIP-2 | 26300 | 13150 | 19725 | 0.702 | 0.140 | 0.034 | 6.522 | 1.859 | 0.186 | 100 | 0.000 | 2,700 | 2,700 | 0 | 0.9 | 0.2 | 0.0 |
| H-190 forklift | SHIPPING-2 | 26300 | 13150 | 19725 | 0.702 | 0.140 | 0.034 | 6.522 | 1.859 | 0.186 | 100 | 0 | 2,970 | 2,970 | 0 | 1.0 | 0.2 | 0.1 |
| H-155 Forklift | SM-2 | 13500 | 6750 | 10125 | 0.356 | 0.071 | 0.017 | 4.831 | 1.377 | 0.138 | 100 | 0 | 360 | 360 | 0 | 0.1 | 0.0 | 0.0 |
| LULL forklift | SM-2 | 9000 | 4500 | 6750 | 0.235 | 0.047 | 0.012 | 4.025 | 1.147 | 0.115 | 90 | 10 | 180 | 162 | 18 | 0.1 | 0.0 | 0.0 |
| TRACTOR forklift | SM-2 | 7500 | 3750 | 5625 | 0.195 | 0.039 | 0.010 | 3.708 | 1.057 | 0.106 | 90 | 10 | 270 | 243 | 27 | 0.1 | 0.0 | 0.0 |
| CAT 950 (x 3) | MERCH | 42520 | 21260 | 31890 | 1.146 | 0.229 | 0.056 | 8.095 | 2.308 | 0.231 | 99 | 1 | 14,580 | 14,434 | 86 | 8.6 | 1.8 | 0.4 |
| JD-200 | MERCH | 50000 | 25000 | 37500 | 1.352 | 0.270 | 0.066 | 8.708 | 2.482 | 0.248 | 99 | 1 | 810 | 802 | 8 | 0.6 | 0.1 | 0.0 |
| LETRO (x 2) | P-2 | 90000 | 45000 | 67500 | 2.462 | 0.492 | 0.121 | 11.344 | 3.234 | 0.323 | 1 | 99 | 4,860 | 49 | 4,811 | 27.4 | 7.8 | 0.8 |
| LETRO (x 2) | P-3 | 140000 | 70000 | 105000 | 3.863 | 0.773 | 0.190 | 13.840 | 3.945 | 0.394 | 99 | 1 | 16,200 | 16,038 | 162 | 32.1 | 6.5 | 1.6 |
| JD-744 (x 2) | P-2 | 51920 | 25960 | 38940 | 1.405 | 0.281 | 0.069 | 8.857 | 2.525 | 0.252 | 1 | 99 | 4,050 | 41 | 4,010 | 17.8 | 5.1 | 0.5 |
| CAT 966 | P-2 | 51980 | 25990 | 38985 | 1.406 | 0.281 | 0.069 | 8.861 | 2.526 | 0.253 | 1 | 99 | 2,025 | 20 | 2,005 | 8.9 | 2.5 | 0.3 |
| CAT 966 (x 2) | P-3 | 52720 | 26360 | 39540 | 1.427 | 0.285 | 0.070 | 8.918 | 2.542 | 0.254 | 99 | 1 | 9,450 | 9,356 | 95 | 7.1 | 1.5 | 0.3 |
| HITACHI (x 2) | P-2 | 81000 | 40500 | 60750 | 2.211 | 0.442 | 0.109 | 10.819 | 3.084 | 0.308 | 99 | 1 | 1,350 | 1,337 | 14 | 1.6 | 0.3 | 0.1 |
| MADILL (x 2) | P-3 | 99800 | 49900 | 74850 | 2.735 | 0.547 | 0.134 | 11.885 | 3.388 | 0.339 | 99 | 1 | 1,350 | 1,337 | 14 | 1.9 | 0.4 | 0.1 |
| WATER 1 | P-2&3 | 49860 | 24930 | 37395 | 1.348 | 0.270 | 0.066 | 8.697 | 2.479 | 0.248 | 50 | 50 | 3,900 | 1,950 | 1,950 | 9.8 | 2.7 | 0.3 |
| WATER 2 | P-2&3 | 52180 | 26090 | 39135 | 1.412 | 0.282 | 0.069 | 8.877 | 2.530 | 0.253 | 50 | 50 | 3,900 | 1,950 | 1,950 | 10.0 | 2.7 | 0.3 |
| WATER 3 | P-2&3 | 51920 | 25960 | 38940 | 1.405 | 0.281 | 0.069 | 8.857 | 2.525 | 0.252 | 50 | 50 | 3,900 | 1,950 | 1,950 | 10.0 | 2.7 | 0.3 |
| | | | | | | | | | | | | | | | TOTAL | 165.9 | 40.1 | 6.5 |

EF References and Notes:

| | |
|---|---|
| Emission, tpy = | EF (lb/VMT) x VMT x (ton/2000 lb) for both paved and unpaved roads |
| VMT = | vehicle miles traveled. Values are from YFP's 2010 Non-Title V application. VMT are multiplied by the number vehicles of the same type in the same location. |
| Paved Road EF = | k x $(sL)^{0.91}$ x $(W)^{1.02}$, lb/VMT, from AP-42 (01/11), Chapter 13.2.1, Equation 1 |
| sL= | 7.4 road surface silt loading in units of grams per square meter. Value is taken from application. |
| W = | average weight of vehicles traveling the road in units of tons. Vehicle weights are from application. |
| k = | particle size multiplier for particle size range in units of lb/VMT. See AP-42 Table 13.2.1-1 as follows: |
| | PM: 0.011 lb/VMT $PM_{10}$: 0.0022 lb/VMT $PM_{2.5}$: 0.00054 lb/VMT |
| | |
| Unpaved Road EF = | k $(s/12)^a$ x $(W/3)^b$, lb/VMT, from AP-42 (11/06) Chapter 13.2.2, Equation 1a. |
| s = | 8.4 surface material silt content in units of percent (%). Value is from application. |
| W = | average weight of vehicles traveling the road in units of tons. Vehicle weights are from application. |
| k, a and b = | empirical constants. See AP-42 Table 13.2.2-2 as follows: |

| | k (lb/VMT) | a | b |
|---|---|---|---|
| PM | 4.9 | 0.7 | 0.45 |
| $PM_{10}$ | 1.5 | 0.9 | 0.45 |
| $PM_{2.5}$ | 0.15 | 0.9 | 0.45 |

# Appendix A: Potential Emissions Inventory

**Non-HAP Potential to Emit**

Emission Unit: **Tanks**

Description: Various sized storage tanks that store different types of fuel located throughout the facilty. Capacities are listed in gallons.

Controls: none

Maximum Potential Fule Usage (gal/yr):

| | |
|---|---|
| LLM Propane Storage Tank 1 | 3,159,344 |
| LLM Propane Storage Tank 2 | 3,159,344 |
| LLM Diesel Storage Tank 1 | 276,722 |
| LLM Diesel Storage Tank 2 | 276,722 |
| SLM Heating Oil Storage Tank[6] | 12,000 |
| SLM Kerosene Storage Tank | 200 |
| SLM Forklift Diesel Storage Tank | 61,494 |
| SLM Truck Diesel Storage Tank | 309,195 |
| SLM Gasoline Storage Tank | 51,309 |

**FUGITIVE EMISSIONS**

| Emissions Generating Activity | Capacity (gal) | VOC | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Valve EF (lb/hr/source) | Valve PTE (tpy/source) | Relief Valve EF (lb/hr/source) | Relief Valve PTE (tpy/source) | Open-ended Line EF (lb/hr/source) | Open-ended Line PTE (tpy/source) | Flange EF (lb/hr/source) | Flange PTE (tpy/source) | PTE Total (tpy) |
| LLM Propane Storage Tank 1[1] | 30,000 | 0.00254 | 0.0111252 | 0.0417 | 0.182646 | 0.000771 | 0.00337698 | 0.000376 | 0.0016469 | 0.19879506 |
| LLM Propane Storage Tank 2[1] | 30,000 | 0.00254 | 0.0111252 | 0.0417 | 0.182646 | 0.000771 | 0.00337698 | 0.000376 | 0.0016469 | 0.19879506 |
| | | | | | | | | | TOTAL | 0.39759012 |

**NON-FUGITIVE EMISSIONS**

| Emissions Generating Activity[5] | Capacity (gal) | VOC | | | | |
|---|---|---|---|---|---|---|
| | | Breathing Loss EF (lbs/gal) | Breathing Loss PTE (tpy) | Working Loss EF (lbs/gal) | Workng Loss PTE (tpy) | Breathing Loss + Working Loss PTE Total (tpy) |
| LLM Diesel Storage Tank 1[2] | 10,000 | 0.0004 | 0.002 | 0.00002 | 0.00276722 | 0.00476722 |
| LLM Diesel Storage Tank 2[2] | 6,000 | 0.0004 | 0.0012 | 0.00002 | 0.00276722 | 0.00396722 |
| SLM Heating Oil Storage Tank[2] | 1,000 | 0.0004 | 0.0002 | 0.00002 | 0.00012 | 0.00032 |
| SLM Kerosene Storage Tank[3] | 200 | 0.0036 | 0.00036 | 0.0011 | 0.00011 | 0.00047 |
| SLM Forklift Diesel Storage Tank[2] | 1,000 | 0.0004 | 0.0002 | 0.00002 | 0.00061494 | 0.00081494 |
| SLM Truck Diesel Storage Tank[2] | 12,000 | 0.0004 | 0.0024 | 0.00002 | 0.00309195 | 0.00549195 |
| SLM Gasoline Storage Tank[4] | 500 | 0.00305 | 0.0007625 | 0.001 | 0.0256545 | 0.026417 |
| | | | | | TOTAL | 0.00873444 |

EF References and Notes:

| | | |
|---|---|---|
| 1 | AP-42 Chapter 1.5 Liquified Petroleum Gas Combustion | EF for Propane emissions found in Background Document on Table 4-3 at: https://www3.epa.gov/ttn/chief/ap42/ch01/bgdocs/b01s05.pdf |
| 2 | WebFIRE EF for Distillate Fuel | Breathing Loss EF: https://cfpub.epa.gov/webfire/index.cfm?action=fire.showfactor&factorid=22460 |
| | | Working Loss EF: https://cfpub.epa.gov/webfire/index.cfm?action=fire.showfactor&factorid=22462 |
| 3 | WebFIRE for Petroleum Liquids | Breathing Loss EF: https://cfpub.epa.gov/webfire/index.cfm?action=fire.showfactor&factorid=22485 |
| | | Working Loss EF: https://cfpub.epa.gov/webfire/index.cfm?action=fire.showfactor&factorid=22499 |
| 4 | WebFIRE for Gasoline | Breathing Loss EF: https://cfpub.epa.gov/webfire/index.cfm?action=fire.showfactor&factorid=22485 |
| | | Working Loss EF: https://cfpub.epa.gov/webfire/index.cfm?action=fire.showfactor&factorid=22488 |
| 5 | These sources have been designated 'Insignificant Emission Units' as their potential to emit regulated air pollutants, excluding HAPs, do not exceed 2 tpy. | |
| 6 | Per YFP's Title V renewal application, the SLM heating oil storage tank is currently being used to store waste oil which is then transported offsite. | |

# Appendix A: Potential Emissions Inventory

**HAP Potential to Emit**

Emission Unit: **Boilers #1-4**

Description: Two Superior brand boilers are located in the SLM, and two Superior brand are located in the LLM.
SLM: Model # 6-5-3000, Serial # 13796, 24.92 mmBTU/hr; and Model # 7-4-2500, Serial # 14159, 24.92 mmBTU/hr
LLM: both Model # 6-5-5000, Serial # 14921 and 14922, both 33 mmBtu/hr

Maximum Steam Production: SLM: 20,700 and 21,562 lb/hr = 42,262 pph total
LLM: 26,368 lb/hr each = 52,736 pph total
LLM boiler steam flow estimated based on original design heat-input-to-steam-output ratio = 33 mmBtu x (33,000 pph / 41. mmBtu) = 26,368 pph steam

Control Device: None

Fuel: Propane (assume SLM boilers are converted to propane from oil)

Startup: SLM: 1998 and 2001; and LLM: 2002

Design Maximum Heat Input Capacity: 115.84 MMBtu/hr (total for all four)
1.27 mgal/hr (assuming 91.5 mmBtu/mgal)

Operation: 8,760 hours per year

**NON-FUGITIVE EMISSIONS**

| Hazardous Air Pollutants | EF (lb/mmscf) | PTE (tpy) |
|---|---|---|
| **Trace Metal Compounds** | | |
| Arsenic Compounds | 2.00E-04 | 9.95E-05 |
| Beryllium Compounds | 1.20E-05 | 5.97E-06 |
| Cadmium Compounds | 1.10E-03 | 5.47E-04 |
| Chromium Compounds (including hexavalent) | 1.40E-03 | 6.96E-04 |
| Cobalt Compounds | 8.40E-05 | 4.18E-05 |
| Manganese Compounds | 3.80E-04 | 1.89E-04 |
| Mercury Compounds | 2.60E-04 | 1.29E-04 |
| Nickel Compounds | 2.10E-03 | 1.04E-03 |
| Selenium Compounds | 2.40E-05 | 1.19E-05 |
| **Organic Compounds** | | |
| Acenaphthene* | 1.80E-06 | 8.95E-07 |
| Acenaphthylene* | 1.80E-06 | 8.95E-07 |
| Anthracene* | 2.60E-06 | 1.29E-06 |
| Benz(a)anthracene* | 1.80E-06 | 8.95E-07 |
| Benzene | 2.10E-03 | 1.04E-03 |
| Benzo(a)pyrene* | 1.20E-06 | 5.97E-07 |
| Benzo(b)fluoranthene* | 1.80E-06 | 8.95E-07 |
| Benzo(g,h,i)perylene* | 1.20E-06 | 5.97E-07 |
| Benzo(k)fluoranthene* | 1.80E-06 | 8.95E-07 |
| Chrysene* | 1.80E-06 | 8.95E-07 |
| Dibenzo(a,h)anthracene* | 1.20E-06 | 5.97E-07 |
| Dichlorobenzene | 1.20E-03 | 5.97E-04 |
| 7,12-Dimethylbenz(a)anthracene* | 1.60E-05 | 7.96E-06 |
| Fluoranthene* | 3.00E-06 | 1.49E-06 |
| Fluorene* | 2.80E-06 | 1.39E-06 |
| Formaldehyde | 7.50E-02 | 3.73E-02 |
| Hexane | 1.80E+00 | 8.95E-01 |
| Indeno(1,2,3-cd)pyrene* | 1.80E-06 | 8.95E-07 |
| 2-Methylnaphthalene* | 2.40E-05 | 1.19E-05 |
| 3-Methylchloroanthracene* | 1.80E-06 | 8.95E-07 |
| Naphthalene* | 6.10E-04 | 3.03E-04 |
| Phenanathrene* | 1.70E-05 | 8.46E-06 |
| Polycyclic Organic Matter (POM) | 6.98E-04 | 3.47E-04 |
| Pyrene* | 5.00E-06 | 2.49E-06 |
| Toluene | 3.40E-03 | 1.69E-03 |
| TOTAL** | 1.89E+00 | 9.39E-01 |

* These HAPs are subject to the 10 tpy major source threshold individually, but are also considered POM that are then, in aggregate, also subject to the 10 tpy major source threshold.

** Because all of the emitted pollutants that are POMs have already been accounted for individually, the POM EF and calculated PTE has not been included in the totals to avoid double-counting.

EF References and Notes:

| | |
|---|---|
| HAP | AP-42 Tables 1.4-3 and 1.4-4. Assumes HAP EFs for natural gas combustion conservatively represent HAP emissions from propane combustion, because there are no EF available for propane combustion. Because the boiler is not subject to any limits in NESHAP DDDDD, PTE has been based on AP-42 emission factors for all HAPs. Included in each PTE calculation is the conversion of the natural gas EF in lb/mmscf to lb/mgal propane (as explained in AP-42, Table 1.5-1, Footnote a) by multiplying by the heat content of propane (91.5 mmBtu/mgal) and dividing by the heat content of methane (1020 mmBtu/1 mmscf). |

# Appendix A: Potential Emissions Inventory

## HAP Potential to Emit

Emission Unit: **Kilns #1-11**
Description: Lumber drying in both the small log mill and large log mill
Control Device: None
Work Practice Requirements: None
Fuel: None - indirect steam provided by propane fired boilers
Predominant Species Dried: Douglas Fir, Ponderosa Pine, Western True Fir
Installed: SLM: #1-3 1997, #4 2001; LLM: #5-9 2002, #10-11 2005
Annual Capacity: See table below; values are in mbf/yr and represent the maximum amount that can be dried if only that species is dried all year. Values were calculated by YFP using the mill economic maximation model without any limit on hours of operation and were provided to Region 10 on July 23, 2015. The LLM is constrained by steam generation capacity; the SLM is constrained by kiln capacity.

| Mill, Kilns | Western True Fir | Douglas Fir | Ponderosa Pine |
|---|---|---|---|
| SLM, #1-4 | 88,815 | 80,618 | 61,879 |
| LLM, #5-11 | 116,527 | 116,393 | 77,184 |
| Total | 205,342 | 197,011 | 139,063 |

**NON-FUGITIVE EMISSIONS**

| Hazardous Air Pollutants | Western True Fir | | Douglas Fir | | Ponderosa Pine | |
|---|---|---|---|---|---|---|
| | EF (lb/mbf) | PTE (tpy) | EF (lb/mbf) | PTE (tpy) | EF (lb/mbf) | PTE (tpy) |
| Acetaldehyde | 0.0550 | 5.6 | 0.0275 | 2.7 | 0.0340 | 2.4 |
| Acrolein | No Data | 0.0 | 0.0005 | 0.0 | 0.0026 | 0.2 |
| Formaldehyde | 0.0108 | 1.1 | 0.0029 | 0.3 | 0.0073 | 0.5 |
| Methanol | 0.3824 | 39.3 | 0.1127 | 11.1 | 0.1390 | 9.7 |
| Propionaldehyde | No Data | 0.0 | 0.0003 | 0.0 | 0.0010 | 0.1 |
| TOTAL | | 46.0 | | 14.2 | | 12.8 |

Highest total HAPs from one species: 46 tpy, when drying Western True Fir at temperatures at 240ºF
Highest HAP from any species: 39 tpy, when drying Western True Fir at temperatures at 240ºF (methanol)

EF References and Notes:

| | |
|---|---|
| HAP | EPA Region 10 HAP and VOC Emission Factors for Lumber Drying, November 2019. See online at: https://www.epa.gov/sites/production/files/2020-03/documents/epa-region-10-hap-voc-ldk-ef.pdf. Because the facility has the ability to dry resinous and non-resinous softwood species, the Grand Fir total HAPs and methanol represent the highest potential emissions at a maximum drying temperature of 240ºF. Western True Firs include Grand Firs. |

# Appendix A: Potential Emissions Inventory

## HAP Potential to Emit

Emission Unit: **Cyclones**

Description: Cyclone C-1 is in the SLM; cyclones C-2, C-3 and C-4 are in the LLM. Cyclone C-1 separates shavings from a pnuematic handling system into Bin SH-1. Cyclone C-2 separates sawdust from a pnuematic handling system onto the hog fuel conveyor belt. Cyclone C-3 separates green chips from a pnuematic handling system into Bin GC-2. Cyclone C-4 separates shavings from a pnuematic handling system into Bin SH-2.

Control Device: none

Capacity: See table below; values were calculated by YFP using the mill economic maximation model without any limit on hours of operation and were provided to Region 10 on July 23, 2015. Assume all the material is Ponderosa Pine.

| Bin | Mill | Material | | bdt/yr Pine |
|---|---|---|---|---|
| Cyclone C-1 | SLM | SH | Shavings | 5,731 |
| Cyclone C-2 | LLM | SD | Sanderdust | 13,178 |
| Cyclone C-3 | LLM | GC | Green Chips | 30,986 |
| Cyclone C-4 | LLM | SH | Shavings | 15,344 |

**NON-FUGITIVE EMISSIONS**

| Emissions Generating Activity | Annual Capacity (bdt/yr) | EF Methanol (lb/bdt) | PTE Methanol (tpy) |
|---|---|---|---|
| Cyclone C-1 | 5,731 | 0.0016 | 0.00 |
| Cyclone C-2 | 13,178 | 0.0016 | 0.011 |
| Cyclone C-3 | 30,986 | 0.0016 | 0.02 |
| Cyclone C-4 | 15,344 | 0.0016 | 0.01 |
| | | | 0.05 |

EF References and Notes

| | |
|---|---|
| HAP (Methanol) | NCASI Technical Bulletin No. 773 entitled, "Volatile Organic Compound Emissions from Wood Products Manufacturing Facilities, Part VI - Hardboard and Fiberboard," January 1999. See Table B46 of the document for emission unit 072-IIC1. Emission factor is representative of emissions exhausted from a cyclone receiving green hardwood chips via pneumatic system. Higher of two values employed in this PTE inventory. Of the 19 HAP's sampled for, only methanol was detected. Assume softwood green chip methanol EF is approximately equal to that for hardwood, and assume green chip EF is approximately equal to that for shavings and sanderdust. The actual sanderdust and shavings EF's are likely higher than chip-derived EF based upon comparative emissions testing data for douglas fir presented in NCASI Technical Bulletin No. 723 entitled, "Laboratory and Limited Field Measurements of VOC Emissions from Wood Residuals," September 1996." |

# Appendix A: Potential Emissions Inventory

Abbreviations used in Appendic A of the Statement of Basis

| | |
|---|---|
| bdt | bone dry tons |
| bf | board feet of lumber |
| Btu | British thermal units |
| cf | cubic feet |
| $CH_4$ | methane |
| CO | carbon monoxide |
| $CO_2$ | carbon dioxide |
| DC | dry chips |
| dscf | dry standard cubic feet |
| EF | emission factor |
| EU | emission unit |
| ºF | degrees Fahrenheit |
| gal | gallon(s) |
| GC | green chips |
| GHG | greenhouse gases |
| gr | grains |
| HAP | hazardous air pollutant(s) |
| HF | hog fuel |
| hpy | hours per year |
| hr | hour |
| kPa | kilopascals |
| lb | pound (lbs = pounds) |
| lbm | pound-mole |
| LLM | large log mill |
| m | thousand |
| mm | million |
| $N_2O$ | nitrous oxide |
| $NO_x$ | nitrogen oxides |
| PM | particulate matter |
| $PM_{10}$ | particulate matter less than 10 microns in aerodynamic diameter |
| $PM_{2.5}$ | particulate matter less than 2.5 microns in aerodynamic diameter |
| pph | pounds per hour |
| ppmdv | parts per million on a dry volume basis |
| ppmw | parts per million on a weight basis |
| psi | pounds per square inch |
| S | sulfur |
| scf | standard cubic feet |
| SD | sander dust |
| SH | shavings |
| SLM | small log mill |
| $SO_2$ | sulfur dioxide |
| tpy | tons per year |
| VMT | vehicle miles traveled |
| VOC | volatile organic compounds |
| WPP1 | Wood Products Protocol 1 |