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DEPARTMENT OF ENVIRONMENTAL QUALITY  
STATE OF IDAHO

December 17, 2013

Idaho Department of Environmental Quality  
Air Quality Program Office – Application Processing  
1410 N. Hilton  
Boise, ID 83706-1255

**RE: Application for a Air Quality Permit for Construct for Idaho Veneer Company to satisfy requirements to renew our current PTC / Tier 2 combination permit**

Idaho DEQ,

This package provides the Idaho Veneer Company application for a Permit To Construct (PTC) to replace the facility's expiring PTC / Tier 2 combination permit, requesting a permit with minimal changes that is a PTC only, without a Tier 2 component. This application is provided consistent with the requirements in our current Permit T2-2008.0115 and IDAPA 58.01.01.200 -230 and IDEQ PTC Guidance.

One printed copy and two electronic copies of the PTC application are enclosed, exceeding the recommendation by IDEQ Air Permits manager William Rogers on December 12 to meet IDEQ requirements for permit application review. The check for the permit processing fee is also enclosed. Electronic copies of all files needed to review and duplicate the modeling prepared to support the permit application are included on both CDs, so that the CDs represent copies of the entire application including the required electronic files to duplicate the modeling analyses. This application was prepared consistent with the guidance from IDEQ.

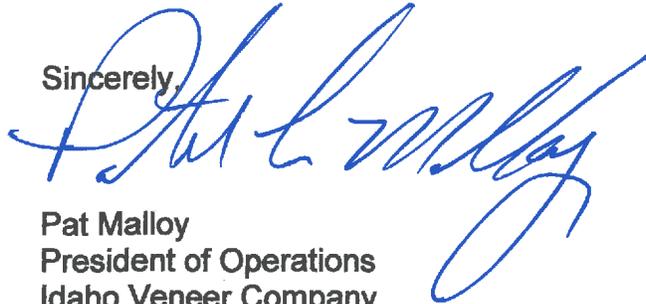
Pre-application interaction with IDEQ included a pre-application meeting on December 3 and discussions with IDEQ Air Permitting Program Manager William Rogers and modeling specialist Kevin Schilling, receiving IDEQ written approval for the modeling protocol, and discussions with IDEQ to ensure a complete and effective permit application. Aggressive efforts have been taken to provide a

thorough application, including verifying IDEQ recommendations to minimize the chances of an incompleteness determination. Those efforts are reflected in this permit application. Appendix E of the application includes IDEQ PTC and TAP Application Completeness Checklists documenting the location within the application of all required information. Our certification of Truth, Accuracy, and Completeness included on form GI in Appendix A of the application covers all information provided supporting this application, including the large format version of the scaled plot plan that will arrive (to Darrin Pampaian) separately.

We have tried to provide an application that is thorough enough to ensure it is determined complete, and is effective in supporting the PTC requested. We will follow up this application by promptly providing any information IDEQ verifies during the review that is necessary to support it. Any technical follow-up inquiries should be directed to our environmental contact, Chris Johnson, at 628-4036.

Thank you.

Sincerely,



Pat Malloy  
President of Operations  
Idaho Veneer Company  
PO Box H  
New Meadows, ID  
83654

# **Idaho Veneer Company**

## **Permit to Construct Modification Application**

**For:**

**Renewal of August 2013 Tier 2 / PTC Combination Permit T2-2008.0015  
as a PTC**

**Submitted to:**

**Idaho Department of Environmental Quality  
Air Quality Division  
1410 N. Hilton  
Boise, Idaho 83706**

*December 12, 2013*

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## **Introduction**

This Permit-to-Construct application is being submitted by Idaho Veneer Company to fulfill the requirement to renew the facility's Tier 2 / PTC combination permit, which was issued in August 2013 and is scheduled to expire December 23, 2013. The application requests a Permit To Construct, without a Tier 2 component, that differs from the current permit conditions only by lowering emissions of all pollutants (except a few TAPs and HAPs emitted by combusting natural gas and not by combusting wood). That emission reduction is accomplished by increasing allowable natural gas volume (12 month running total) to our boilers and switching the larger natural gas boiler to be the facility's primary steam producer, and correspondingly lowering the allowable biomass (wood and wood by-product) combustion from a Wellons boiler.

Idaho Veneer Company (Idaho Veneer) is located in Post Falls, Idaho and produces veneer and board lumber. The major emission sources are a wood/bark-fired hog fuel boiler which produces steam to heat the steam chambers, dry kilns, and veneer dryers; a standby gas-fired boiler to heat the Cremona veneer dryer and steam chambers; two lumber dry kilns; cyclones controlling the planer and transfer of sawdust and hog fuel; wood byproduct storage and loadout; and one veneer dryer.

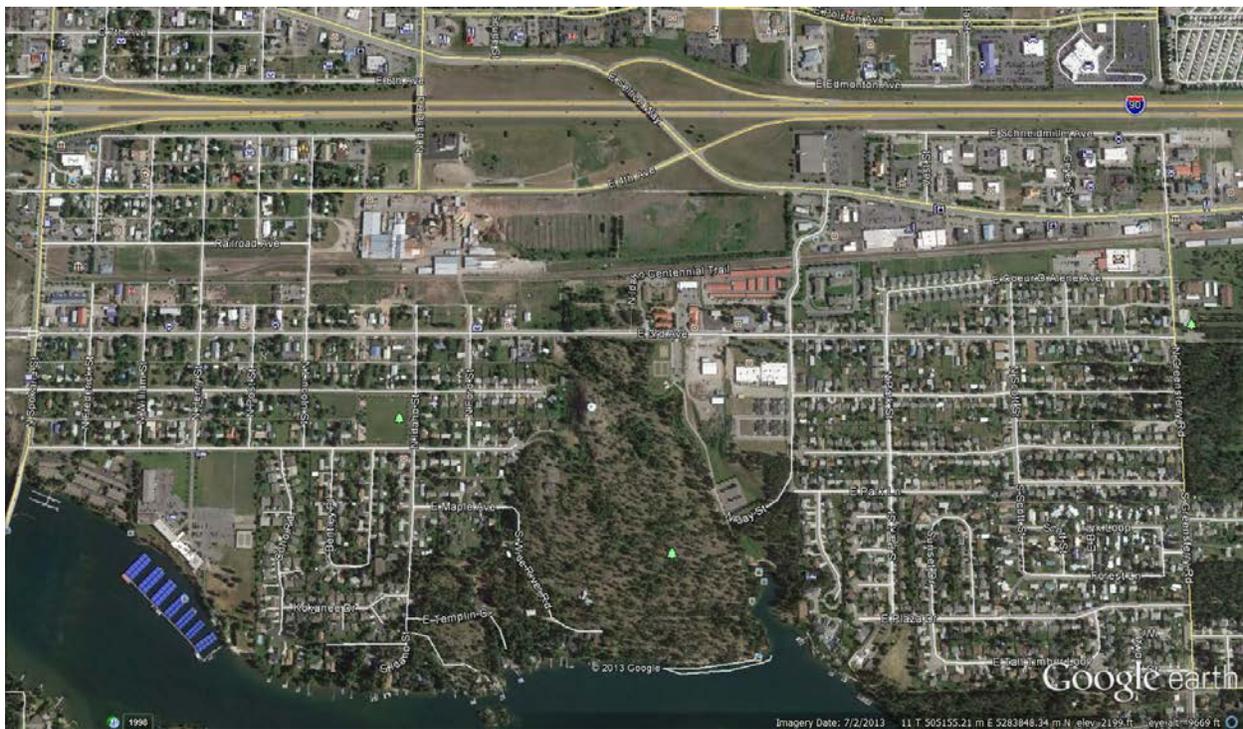
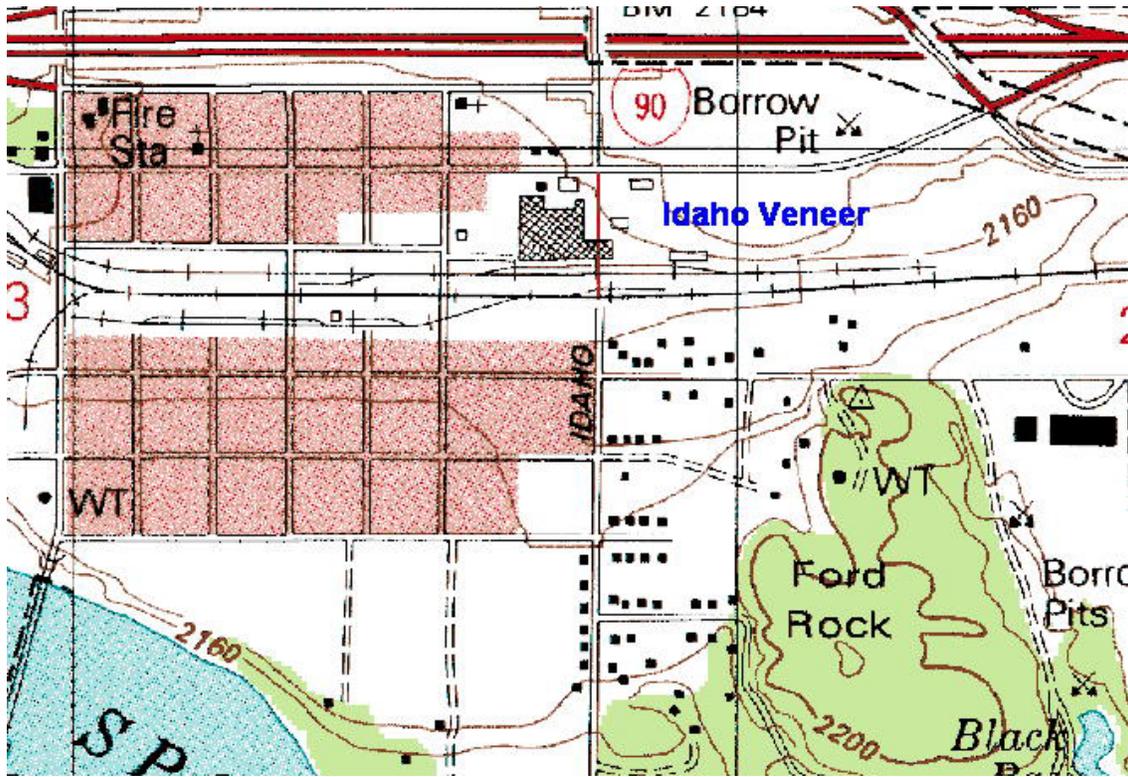
The proposed action would be a minor modification with net emissions decrease at a minor source. Appendix F includes a copy of the IDEQ completeness checklists for this type of PTC application, documenting how all application completeness requirements have been met.

The facility Emission Inventory (Tables 4-1 and 4-2 and in more detail in Appendix D) shows that facility-wide emissions are well below the 250 ton per year criteria pollutant major source category threshold for this non-designated facility, and below the 100 ton per year threshold for Title V major sources. Our emission estimates show potential HAP emissions are safely below the HAP major source threshold. Therefore, this proposed action will not change the classification of the facility from its current status as a minor source which is not a PSD facility and is not a major source of HAPs,.

## ***Project Location***

The Idaho Veneer facility is located between 3rd and 4th Avenues in Post Falls, Idaho, south of I-90 and north of the Spokane River in the vicinity of Ford Rock and Black Bay. The facility and the surrounding area feature fairly flat terrain in the wide Spokane River drainage. The facility operations are centered near UTM zone 11 coordinates 504750E, 5283875N in Post Falls. Figure 1-1 shows the location of the facility on the USGS topographic map. Section 7 provides a scaled plot plan of the facility property and ambient air boundary.

Figure 1-1 Facility location Idaho Veneer Company Facility Location on USGS Topographic Map, and in Google Earth aerial photo



## **1.0 Application Forms and Checklists**

All forms required to support this PTC application are provided in electronic format on the submittal disk in the directory 1213 IVC Permit Forms. That directory includes a checklist verifying all required forms.

Copies of the IDEQ PTC Application Checklist are included in Appendix E, along with text showing how each requirement in each checklist is met by this application.

## **2.0 Process Description**

### **Overview / Historic and Currently Permitted**

The IVC facility is primarily a cant and tie mill. Logs are first debarked in one of two debarkers. Rotary veneer is produced by conditioning the wood in steam chambers, turning the logs on a lathe, and drying the veneer in a Cremona dryer. Smaller, thin veneer is produced by squaring the logs (called cants) with a band saw, conditioning the cants in steam chambers, processing through one of four slicers, and drying in a Cremona dryer. Steam is produced by a Cleaver Brooks 13,800 pound steam per hour NG fired boiler and a Wellons 40,000 pound steam per hour hog fuel fired boiler.

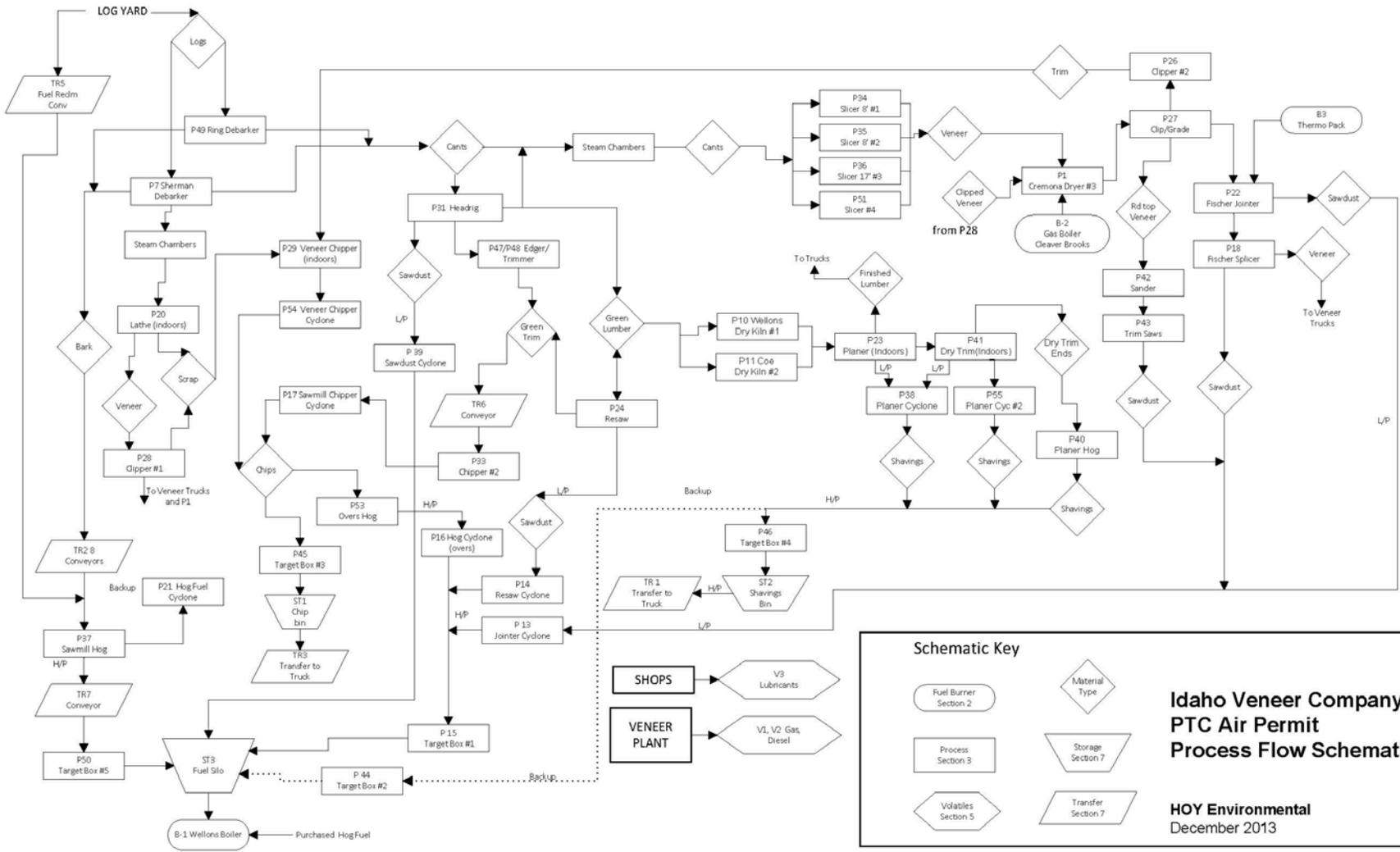
Boards can be produced from the portions of wood cut off during the initial cutting for the veneer process and from logs that are not veneer grade. That material goes through various sawing and trimming operations, is dried in one of two steam-heated dry kilns, planed to final dimension, trimmed to length, and shipped out via truck.

### **Proposed Action**

The only change proposed from currently permitted operations would be to use the facility's Cleaver Brooks NG fired boiler as their primary steam producer, and switch the Wellons 40,000 pounds steam per hour hog fuel fired boiler, previously the primary boiler, into a supporting or backup role. The result of that action would be an across the board reduction in annual potential and actual air pollutant emissions along with a slight decrease in allowable heat (MMbtu) and steam production. On the short term, a slight increase in emissions from the two natural gas fired boilers, primarily the production Cleaver Brooks 13,800 pound steam per hour boiler, would be more than offset by larger decreases in emissions from the Wellons hog fuel boiler.

### **3.0 Process Flow Diagram**

The process flow figure that follows shows the facility process flow. This process flow diagram is unchanged from that used to support the facility's current PTC / Tier 2 permit application. The proposed action does not represent any change in process flow, with the exception of making the Cleaver Brooks natural gas fired boiler B2 the primary steam production boiler, and relegating the Wellons hog fuel fired boiler B1 to a supporting role.



LOG YARD

TR3 Fuel Redm Conv

Log

P49 Ring Debarker

P7 Sherman Debarker

Steam Chambers

P20 Lathe (Indoors)

P28 Clipper #1

TR2 8 Conveyors

P37 Sawmill Hog

TR7 Conveyor

P50 Target Box #5

ST3 Fuel Silo

B-1 Wellons Boiler

Purchased HogFuel

P21 HogFuel Cyclone

TR3 Transfer to Truck

ST1 Chip bin

P45 TargetBox #3

P52 Overs Hog

P17 Sawmill Chipper Cyclone

Chips

P29 Veneer Chipper (Indoors)

P54 Veneer Chipper Cyclone

P39 Sawdust Cyclone

TR6 Conveyor

P33 Chipper #2

P16 Hog Cyclone (overs)

P14 Resaw Cyclone

P13 Jonter Cyclone

P15 Target Box #1

P44 Target Box #2

P24 Resaw

Green Lumber

P47/P48 Edger/Trimmer

P31 Heading

Steam Chambers

Cants

P34 Slicer #1

P35 Slicer #2

P36 Slicer 17 #3

P51 Slicer #4

Veneer

Clipped Veneer

P1 Cremona Dryer #3

B-2 Gas Boiler Cleaver Brooks

P26 Clipper #2

P27 Clip/Grade

P22 Fischer Jointer

P18 Fischer Splicer

P42 Sander

P43 Trim Saws

P40 Planer Hog

P46 Target Box #4

ST2 Shavings Bin

TR1 Transfer to Truck

P23 Planer (Indoors)

P38 Planer Cyclone

P41 Dry Trim (Indoors)

P55 Planer Cyc #2

P10 Wellons Dry Kiln #1

P11 Coe Dry Kiln #2

Finished Lumber

To Trucks

Shavings

## 4.0 Applicable Regulatory Requirements

The IDEQ Statement of Basis for the current permit provides the following regulatory determinations:

### ***Attainment Designation (40 CFR 81.313)***

The facility is located in Kootenai County which is designated as attainment or unclassifiable for PM<sub>10</sub>, PM<sub>2.5</sub>, CO, NO<sub>2</sub>, SO<sub>x</sub>, and Ozone. Reference 40 CFR 81.313.

### ***Permit to Construct (IDAPA 58.01.01.201)***

The facility is subject to a permit to construct because the permitting action is a modification that requires the change of previously permitted emission rates and throughput limits.

### ***Tier II Operating Permit (IDAPA 58.01.01.401)***

The facility is subject to a Tier II operating permit because of the facility-wide modeling requirement to determine compliance with the NAAQS.

### ***Title V Classification (IDAPA 58.01.01.300, 40 CFR Part 70)***

This facility is not applicable to Title V.

### ***PSD Classification (40 CFR 52.21)***

This facility is not applicable to PSD.

### ***NSPS Applicability (40 CFR 60)***

This facility is not applicable to NSPS.

### ***NESHAP Applicability (40 CFR 61)***

This facility is not applicable to NESHAP.

### ***MACT Applicability (40 CFR 63)***

This facility is not applicable to MACT.

### ***CAM Applicability (40 CFR 64)***

This facility is not applicable to CAM.

All those determinations remain valid, with the exception that the federal Boiler GACT, NESHAPS Subpart JJJJJ regulations new since the issuance of the 2008 permit, are applicable.

In preparing and submitting this application, Idaho Veneer has evaluated the applicability of state and Federal regulations to the facility.

### **4.1 GREENHOUSE GAS TAILORING RULE**

Since the initial Tier I permit was issued, EPA promulgated new regulations related to greenhouse gas emissions. In addition to requirements to monitor and report annual greenhouse gas emissions, EPA established thresholds that determine whether greenhouse gas emissions trigger applicability of the major source status under Title V or EPA's

preconstruction permitting program. In both cases, EPA established that greenhouse gas emissions of 100,000 tons CO<sub>2</sub> equivalent or more would make a facility "major" for Title V and for new source review.

Although Idaho Veneer's boilers generates greenhouse gases, emissions from the biomass (wood) combustion are considered biogenic and are ignored when evaluating applicability of the PSD or Title V permit programs. Even when including the potential emissions from wood combustion, the emission inventory in section 5, and in more detail in Appendix D, shows the facility's potential greenhouse gas emissions are currently 11,978 tons/yr of CO<sub>2</sub> eq, and would be reduced by 1,809 tons/yr to 10,169 tons per year of CO<sub>2</sub> eq, well below the threshold for this regulation. Consequently, the Idaho Veneer facility is not a major source with respect to New Source Review.

EPA also has established that greenhouse gas monitoring and reporting requirements are not applicable requirements with respect to minor sources.

#### 4.2 FEDERAL RICE REGULATIONS

The facility has no generators, nor any other stationary engines for which these federal regulations (NSPS subpart ZZZZ or NSPS Subpart IIII) apply.

#### 4.3 BOILER

Table 4-1 contains a summary of the requirements that currently apply to the Wellons Hog Fuel Boiler, B1.

**Table 4-1 Current Boiler Applicable Regulations Summary**

Citation	Requirement	Monitoring and Recordkeeping Requirements	Reporting Requirement
Tier 2 T2-2008.0115 3.3	PM, PM <sub>10</sub> , SO <sub>2</sub> , NO <sub>x</sub> , VOC, and CO emissions do not exceed Thresholds in Table 3-2	Tier 2 T2-2008.0115 2.7, 2.8, 2.12, 3.8 - 3.10, 7.6, 7.7	Tier 2 T2-2008.0115 2.10, 7.8
Tier 2 T2-2008.0115 3.4	Wellons hog fuel boiler fuel throughput does not exceed 15,000 green tons per rolling 12 month period	Tier 2 T2-2008.0115 3.7, 7.7	Tier 2 T2-2008.0115 2.10, 7.8
Tier 2 T2-2008.0115 3.4:	Cumulative NG throughput through the boilers does not exceed 20 million cubic feet green tons per rolling 12 month	Tier 2 T2-2008.0115 7.7	Tier 2 T2-2008.0115 2.10, 7.8
Tier 2 T2-2008.0115 2.7, 2.8 IDAPA 58.01.01.625	20% opacity for any 6- minute period, or any aggregated 3 minutes in an hour	Tier 2 T2-2008.0115 2.8, 6.6, 7.7	Tier 2 T2-2008.0115 2.10, 7.8
Tier 2 T2-2008.0115 3.6	Wellons hog fuel boiler steam production does not exceed 27,902 lbs/hr unless higher rate justified by subsequent source test	Tier 2 T2-2008.0115 3.9, 7.7	Tier 2 T2-2008.0115 2.10, 7.8
Tier 2 T2-2008.0115 2.12	Boilers should not emit more than 0.015 gr./dscf for NG combustion or 0.08 gr./dscf for wood combustion	Tier 2 T2-2008.0115 2.7, 2.8, 2.12, 3.8 - 3.10, 7.6, 7.7	Tier 2 T2-2008.0115 2.10, 7.8

The proposed action would change the requirements in the second and third rows, resulting in the following proposed permit boiler requirements in Table 4-2

**Table 4-1 Current Boiler Applicable Regulations Summary**

<b>Citation</b>	<b>Requirement</b>	<b>Monitoring and Recordkeeping Requirements</b>	<b>Reporting Requirement</b>
Tier 2 T2-2008.0115 3.3	PM, PM <sub>10</sub> , SO <sub>2</sub> , NO <sub>x</sub> , VOC, and CO emissions do not exceed Thresholds in Table 3-2	Tier 2 T2-2008.0115 2.7, 2.8, 2.12, 3.8 - 3.10, 7.6, 7.7	Tier 2 T2-2008.0115 2.10, 7.8
Tier 2 T2-2008.0115 3.4	Wellons hog fuel boiler fuel throughput does not exceed 10,000 green tons per rolling 12 month period	Tier 2 T2-2008.0115 3.7, 7.7	Tier 2 T2-2008.0115 2.10, 7.8
Tier 2 T2-2008.0115 3.4:	Cumulative NG throughput through the boilers does not exceed 48 million cubic feet green tons per rolling 12 month	Tier 2 T2-2008.0115 7.7	Tier 2 T2-2008.0115 2.10, 7.8
Tier 2 T2-2008.0115 2.7, 2.8 IDAPA 58.01.01.625 40CFR60.43b(t)	20% opacity for any 6- minute period, or any aggregated 3 minutes in an hour	Tier 2 T2-2008.0115 2.8, 6.6, 7.7	Tier 2 T2-2008.0115 2.10, 7.8
Tier 2 T2-2008.0115 3.6	Wellons hog fuel boiler steam production does not exceed 27,902 lbs/hr unless higher rate justified by subsequent source test	Tier 2 T2-2008.0115 3.9, 7.7	Tier 2 T2-2008.0115 2.10, 7.8
Tier 2 T2-2008.0115 2.12	Boilers should not emit more than 0.015 gr./dscf for NG combustion or 0.08 gr./dscf for wood combustion	Tier 2 T2-2008.0115 2.7, 2.8, 2.12, 3.8 - 3.10, 7.6, 7.7	Tier 2 T2-2008.0115 2.10, 7.8

The current permit Table 3-2 emission limits would be updated to be consistent with the emission inventory in Section 5 and in more detail in Appendix D

*Boiler NESHAPs Requirements*

EPA promulgated final NESHAP for Area Sources: Industrial, Commercial, and Institutional Boilers (NESHAP Subpart JJJJJ) on December 21, 2012. Idaho Veneer's hog fuel-fired boiler is classified as an existing boiler designed to burn biomass/bio-based solid fuel located at an area source of HAP and is therefore subject to work practice standards that include performing initial and subsequent tune-ups

Idaho Veneer's Wellons boiler is subject to the following NESHAP JJJJJ requirements:

- The permittee must conduct the initial tune-up no later than March 21, 2014
- The permittee must conduct the energy assessment no later than March 21, 2014.
- Since the boiler has an oxygen trim system, the permittee must conduct a tune-up of the boiler every five years. Each biennial tune-up specified must be conducted no more than 61 months after the previous tune-up. The management practices in Table 2 apply at all times. [40 CFR 63 Subpart JJJJJ Table 2, 63.11201(b),(d), 63.11223(a)]
- The permittee must conduct a one-time energy assessment performed by a qualified energy assessor. Must have a one-time energy assessment performed on the major source facility by a qualified energy assessor. The energy assessment must include:
  - o A visual inspection of the boiler or process heater system.
  - o An evaluation of operating characteristics of the facility, specifications of energy using systems, operating and maintenance procedures, and unusual operating constraints,
  - o An inventory of major energy consuming systems,
  - o A review of available architectural and engineering plans, facility operation and maintenance procedures and logs, and fuel usage,
  - o A review of the facility's energy management practices and provide recommendations for improvements consistent with the definition of energy management practices,
  - o A list of major energy conservation measures,
  - o A list of the energy savings potential of the energy conservation measures identified, and
  - o A comprehensive report detailing the ways to improve efficiency, the cost of specific improvements, benefits, and the time frame for recouping those investments. [40 CFR 63 Subpart JJJJJ, Table 2]
- The permittee must operate and maintain the unit in a manner consistent with safety and good air pollution control practices for minimizing emissions. [40 CFR 63.11205(a)]
- The permittee must demonstrate initial compliance with the work practice standard and management practice above by the dates listed above. [40 CFR 63.11210(c)]
- The permittee must conduct a tune-up and submit a signed statement in the Notification of Compliance Status report that indicates that the tune-up has been completed. [40 CFR 63.11214(b)]
- The permittee must submit a signed certification in the Notification of Compliance Status report that indicates that an energy assessment of the boiler and energy use system has been completed and submit, upon request, the energy assessment report. [40 CFR 63.11214(c)]

- ! The permittee must conduct a tune-up of the boiler or process heater biennially to demonstrate continuous compliance as follows:
  - o As applicable, inspect the burner, and clean or replace any components of the burner as necessary (you may delay the burner inspection until the next scheduled unit shutdown, but you must inspect each burner at least once every 36 months);
  - o Inspect the flame pattern, as applicable, and adjust the burner as necessary to optimize the flame pattern. The adjustment should be consistent with the manufacturer's specifications, if available;
  - o Inspect the system controlling the air-to-fuel ratio, as applicable, and ensure that it is correctly calibrated and functioning properly;
  - o Optimize total emissions of carbon monoxide. This optimization should be consistent with the manufacturer's specifications, if available;
  - o Measure the concentrations in the effluent stream of carbon monoxide in parts per million, by volume, and oxygen in volume percent, before and after the adjustments are made (measurements may be either on a dry or wet basis, as long as it is the same basis before and after the adjustments are made); and
  - o Maintain on-site and submit, if requested by the Administrator, a biennial report containing the following information:
    - The concentrations of carbon monoxide in the effluent stream in parts per million by volume, and oxygen in volume percent, measured before and after the adjustments of the boiler;
    - A description of any corrective actions taken as a part of the combustion adjustment; and
    - The type and amount of fuel used over the 12 months prior to the biennial tune-up.
  - o If the unit is not operating on the required date for a tune-up, the tune-up must be conducted within one week of startup. [40 CFR 63.11223(b)]
- ! The permittee must submit an initial notification as specified in §63.9(b)(2) not later than 120 days after May 20, 2011. [40 CFR 63.11225(a)(1)-(2)]. Idaho Veneer met that notification requirement.
- ! The permittee must submit a Notification of Compliance Status in accordance with 40 CFR 63.9(h) no later than 120 days after the applicable compliance dates for tune-ups and energy assessment listed above (EPA will not enforce violation of this deadline). In addition to the information required in 40 CFR 63.9(h)(2) the notification must include the following statements, as applicable:
  - o "This facility complies with the requirements in §63.11214 to conduct an initial tune-up of the boiler."
  - o "This facility has had an energy assessment performed according to §63.11214(c)." [40 CFR 63.11225(a)(4)]
- ! The permittee must prepare by March 1 of every other year, and submit to the delegated authority upon request, a biennial compliance certification report. If there are any instances of deviations from applicable requirements during the reporting period, the permittee must submit the report by March 15. The report must include the following:
  - o Company name and address.
  - o Statement by a responsible official, with the official's name, title, phone number, e-mail address, and signature, certifying the truth, accuracy and completeness of the notification and a statement of whether the source has complied with all the relevant standards and other requirements of this subpart

- o If the source experiences any deviations from the applicable requirements during the reporting period, include a description of deviations, the time periods during which the deviations occurred, and the corrective actions taken. [40 CFR 63.11225(b)]
- The permittee must keep the following records:
  - o Copies of each notification and report submitted to comply with this subpart and all documentation supporting any Initial Notification or Notification of Compliance Status.
  - o Records of the date of each tune-up, the procedures followed for tune-up, and the manufacturer's specifications to which the boiler was tuned.
  - o Records documenting the fuel type used monthly, including, but not limited to, a description of the fuel, including whether the fuel has received a non-waste determination by you or EPA, and the total fuel usage amount with units of measure.
  - o Records of the occurrence and duration of each malfunction of the boiler, or of the associated air pollution control and monitoring equipment.
  - o Records of actions taken during periods of malfunction to minimize emissions in accordance with the general duty to minimize emissions in §63.11205(a), including corrective actions to restore the malfunctioning boiler, air pollution control, or monitoring equipment to its normal or usual manner of operation. [40 CFR 63.11225(c)]
- Records must be in a form suitable and readily available for expeditious review. Records must be kept for 5 years, two of which must be on-site. Records may be kept off-site for the remaining three years. [40 CFR 63.11225(d)]
- If the permittee intends to commence or recommence combustion of solid waste, you must provide 30 days prior notice of the date upon which you will commence or recommence combustion of solid waste. The notification must identify:
  - o The name of the owner or operator of the affected source, the location of the source, the boiler(s) or process heater(s) that will commence burning solid waste, and the date of the notice.
  - o The currently applicable subcategory under this subpart.
  - o The date on which you became subject to the currently applicable emission limits.
  - o The date upon which you will commence combusting solid waste. [40 CFR 63.11225(£)]
- If you intend to switch fuels, and this fuel switch may result in the applicability of a different subcategory, you must provide 30 days prior notice of the date upon which you will switch fuels. The notification must identify:
  - o The name of the owner or operator of the affected source, the location of the source, the boiler(s) that will switch fuels, and the date of the notice.
  - o The currently applicable subcategory under this subpart.
  - o The date on which you became subject to the currently applicable standards.
  - o The date upon which you will commence the fuel switch. [40 CFR 63.11225(g)]
- The permittee may assert affirmative defense to a claim for civil penalties for exceeding the emission and operating standards listed above, according to the procedures listed in § 63.11226
- The permittee must comply with the General Provisions provided in Table 8 of Subpart JJJJJJ. [40 CFR 63.11235]

#### 4.4 LUMBER DRY KILNS AND VENEER DRYER

Table 4-3 summarizes requirements that apply to the dry kilns cumulatively, and the target boxes.

Table 4-3 Dry Kiln and Target Boxes Applicable Regulations Summary

<b>Citation</b>	<b>Requirement</b>	<b>Monitoring and Recordkeeping Requirements</b>	<b>Reporting requirement</b>
Tier 2 T2-2008.0115 4.5	Veneer dryer throughput shall not exceed 10.5 MMsf per any rolling 12-month period	Tier 2 T2-2008.0115 4.8, 7.7	Tier 2 T2-2008.0115 7.8
Tier 2 T2-2008.0115 2.7, 2.8 IDAPA 58.01.01.625	20% opacity for any 6-minute period, or any aggregated 3 minutes in an hour	Tier 2 T2-2008.0115 2.8, 2.12, 56.5, 7.7	Tier 2 T2-2008.0115 7.8
Tier 2 T2-2008.0115 4.4	Kiln throughput shall not exceed 35 MMbf per any rolling 12-month period	Tier 2 T2-2008.0115 4.9, 7.7	Tier 2 T2-2008.0115 7.8
Tier 2 T2-2008.0115 4.6	Log throughput shall not exceed 23 MMbf log scale per any rolling 12-month period	Tier 2 T2-2008.0115 4.7, 7.7	Tier 2 T2-2008.0115 7.8

#### 4.5 CYCLONES

Table 4-4 summarizes requirements that apply to the dry kilns cumulatively, and the target boxes.

Table 4-4 Cyclones

<b>Citation</b>	<b>Requirement</b>	<b>Monitoring and Recordkeeping Requirements</b>	<b>Reporting requirement</b>
Tier 2 T2-2008.0115 5.3	Cumulative cyclone emissions shall not exceed 1.7 tons per year	Tier 2 T2-2008.0115 5.4-5.6, 7.7	Tier 2 T2-2008.0115 7.8
Tier 2 T2-2008.0115 2.7, 2.8 IDAPA 58.01.01.625	20% opacity for any 6-minute period, or any aggregated 3 minutes in an hour	PTC T1-2007.0161 2.8, 2.12. 5.5, 7.7	Tier 2 T2-2008.0115 7.8

#### 4.6 FACILITY-WIDE EMISSION LIMITS

Table 4-5 contains a summary of the requirements that apply facility-wide.

**Table 4-5 Facility-wide Applicable Regulations Summary**

<b>Citation</b>	<b>Requirement</b>	<b>Monitoring and Recordkeeping Requirements</b>	<b>Reporting requirement</b>
Tier 2 T2-2008.0115 2.1 IDAPA 58.01.01.650-651	Reasonably control fugitive dust	Tier 2 T2-2008.0115 2.2 - 2.4	Tier 2 T2-2008.0115 2.2 - 2.4
Tier 2 T2-2008.0115 2.5	Do not allow or cause odors in quantity to represent air pollution	Tier 2 T2-2008.0115 2.6, 2.12, 7.7	Tier 2 T2-2008.0115 7.8
Tier 2 T2-2008.0115 2.7, 2.8 IDAPA 58.01.01.625	20% opacity for any 6-minute period, or any aggregated 3 minutes in an hour	Tier 2 T2-2008.0115 2.8, 2.12	Tier 2 T2-2008.0115 2.8, 7.8
Tier 2 T2-2008.0115 7.8 IDAPA 58.01.01.130 - 136	Comply with IDAPA Excess Emissions rules and regulations	Tier 2 T2-2008.0115 7.7, 7.8, IDAPA 58.01.01.133-136	Tier 2 T2-2008.0115 2.10, 7.8 IDAPA 58.01.01.133-136
Tier 2 T2-2008.0115 2.9 IDAPA 58.01.01.600 - 616	No Open Burning		Tier 2 T2-2008.0115 7.8
Tier 2 T2-2008.0115 5.3	Emission limits in current permit Table 6-1	Referenced in previous subsections of section 4 here	Referenced in previous subsections of section 4 here

The facility-wide limits would change, primarily for the boiler, consistent with the inventory of potential emissions in Section 5 and in more detail in Appendix D.

#### **4.7 INSIGNIFICANT ACTIVITIES**

Section 1 of the facility's Tier 2 permit, Tier 2 T2-2008.0115, lists all regulated sources covered by this permit. Sections 3-6 of the permit provide requirements for the regulated sources. Other sources onsite, including space heating or those included in the emission inventory but not listed as regulated sources, qualify as insignificant activities under IDAPA 58.01.01.317.01(b).

There are no monitoring, recordkeeping, or reporting requirements for those insignificant activities.

## 5.0 Potential To Emit / Emission Sources

Existing permitted air emission sources at the facility include a sawmill, a wood fired boiler, two smaller natural gas fired boilers, two lumber dry kilns, a veneer dryer, and numerous wood by-products handling fugitive sources, and onsite haul routes. Detailed emissions sources are reflected on the PTC forms in Appendix B, and individually identified in the inventory of potential emissions in Appendix D. The emissions for all those sources are documented on the emission inventory in this section, and in more detail with their derivations, references, and defense in the emission inventory in Appendix D. The emission inventory is also provided in electronic form in the files on the accompanying CD-ROM.

The proposed action does not include any new sources of potential emissions, nor does it change the short term potential to emit of any regulated source. It does include a change in potential annual emissions from the facility's three boilers that results in a slight decrease in potential MMBtus/yr generated and a decrease in potential emissions of all criteria air pollutants. Potential emissions of all HAPs and TAPs emitted by both natural gas and biomass combustion decrease. There are a few HAPs and TAPs that are emitted by natural gas combustion but not wood combustion that have potential net increases, though total potential HAP emissions decrease and the only two IDAPA 585 or 586 TAPs with net potential increases have increases below their applicable IDAPA screening ELs. Emission factors for all calculations of potential emissions are clearly documented in the inventory of potential emissions in Appendix D and/or in the associated electronic copy of the spreadsheets providing those calculations accompanying this application. Colored highlights in Table 5-1 and the more detailed emission inventory in Appendix D indicate changes in this emission inventory as a result of the proposed action: purple for currently permitted potential emissions, blue for potential emissions under the proposed action, and green for the change.

More conservatism is included in the emission inventory because many of the emission factors used for material transfers do not consider in their derivation the size or moisture content of the material moved. Often, they are derived from moving finer, drier material rather than the coarser and moister wood by-products handled at Idaho Veneer. Also, the veneer dryer emission factors from AP-42 are for thicker veneers, so are very conservative in estimating emissions for the thinner veneers produced at the facility which feature all material much closer to the surface and therefore easier to dry.

**Table 5-1 Facility-Wide Potential to Emit (tons per year)**

Source	PM	PM 10	PM2.5	VOC's	SO2	CO	NOx	Total HAPs	CO2 eq
Process	9.58	7.58	6.68	14.11	0.00	0.37	0.00	13.4177	
Fuel Storage	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.0000	
Storage	0.82	0.40	0.20	0.00	0.00	0.00	0.00		
Transfer	0.34	0.12	0.04	0.00	0.00	0.00	0.00		
Boilers proposed	6.91	6.74	6.64	1.49	0.88	22.84	10.04	0.8418	10169
Boilers currently permitted	10.17	9.91	9.76	2.09	1.31	32.08	12.45	1.2136	11978
Boilers proposed change	-3.26	-3.17	-3.12	-0.60	-0.43	-9.24	-2.42	-0.3718	-1809
TOTAL proposed	17.85	14.84	13.56	15.64	0.88	23.22	10.04	14.26	10,169
TOTAL currently permitted	20.91	18.02	16.68	16.24	1.31	32.45	12.45	14.63	11,978
TOTAL proposed change	-3.26	-3.17	-3.12	-0.60	-0.43	-9.24	-2.42	-0.37	-1809

Source	Total HAPs	Methane	Methanol	Formaldehyde	Acetaldehyde	Propionaldehyde	Benzene	Toluene	o-xylene	Phenol	Acrolein	MEK	Dichlorobenzene	Hexane
Process	13.4177	0.0000	1.3948	0.1311	0.2499	0.0126	0.0031	0.0058	0.0074	0.0000	0.0068	0.0228		
Fuel Storage	0.0000													
Storage														
Transfer														
Boilers proposed	0.8418												0.00	0.0432
Boilers currently permitted	1.2136	1.0934		0.2298	0.0432	0.0032	0.2187	0.0479	0.0013	0.0027	0.2083		0.00	0.0180
Boilers proposed change	-0.3718	-0.3645		-0.0753	-0.0144	-0.0011	-0.0729	-0.0159	-0.0004	-0.0009	-0.0694		0.00	0.0252
									emission increase reach IDEQ TAP ELs?				no	no
TOTAL proposed	14.26	0.00	1.39	0.13	0.25	0.01	0.00	0.01	0.01	0.00	0.01	0.02	0.00	0.04
TOTAL currently permitted	14.63	1.09	1.39	0.36	0.29	0.02	0.22	0.05	0.01	0.00	0.22	0.02	0.00	0.02
TOTAL proposed change	-0.37	-0.36	0.00	-0.08	-0.01	0.00	-0.07	-0.02	0.00	0.00	-0.07	0.00	0.00	0.03

Potential hourly emissions from each emission source at the facility remain unchanged. Potential annual emissions show a net decrease facility-wide for all criteria pollutants and HAPs and TAPs emitted by both biomass and natural gas emissions, and for cumulative potential HAP emissions. The two TAPs with potential emissions increases (from natural gas emissions for TAPs not emitted from biomass combustion) are shown to have increases in potential emissions below applicable IDAPA 585 or 586 screening ELs.

While potential annual emissions facility-wide decrease for all criteria pollutants, potential annual emissions from the two natural gas boilers, B2 and B3, show increases in criteria pollutants documented in Table 5-2 below.

**Table 5-2 Potential to Emit from Facility Boilers**

**Combined Natural Gas Boilers**

Pollutant	proposed		currently permitted		proposed change from currently permitted	
	Potential Emissions	Potential Emissions				
	(tons/yr)	(lb/hr)	(tons/yr)	(lb/hr)	(tons/yr)	(lb/hr)
Particulate	0.182	0.041	0.076	0.041	0.106	0.000
PM 10	0.182	0.041	0.076	0.041	0.106	0.000
PM 2.5	0.182	0.041	0.076	0.041	0.106	0.000
SO 2	0.014	0.003	0.006	0.003	0.008	0.000
CO	2.016	0.453	0.840	0.453	1.176	0.000
NOx	2.400	0.539	1.000	0.539	1.400	0.000
VOC	0.132	0.030	0.055	0.030	0.077	0.000
CO2 eq	2885.006	738.204	1051.825	738.204	1833.181	0.000

**All Facility Boilers (2 NG fired, one Biomass fired)**

Pollutant	proposed		currently permitted		proposed change from currently permitted	
	Potential Emissions	Potential Emissions				
	(tons/yr)	(lb/hr)	(tons/yr)	(lb/hr)	(tons/yr)	(lb/hr)
Particulate	6.911	11.841	10.169	11.841	-3.258	0.000
PM 10	6.740	11.541	9.913	11.541	-3.172	0.000
PM 2.5	6.638	11.362	9.760	11.362	-3.121	0.000
SO 2	0.882	1.525	1.308	1.525	-0.425	0.000
CO	22.842	36.975	32.079	36.975	-9.237	0.000
NOx	10.036	13.930	12.454	13.930	-2.418	0.000
VOC	1.486	2.404	2.086	2.404	-0.600	0.000
CO2 eq	10169.165	13511.983	11978.064	13511.983	-1808.899	0.000

The upper table in Table 5-2, in the rightmost of the two blue columns, shows the potential emission increases from the natural gas fired boilers, the only increases in potential emissions associated with the proposed action, are below 1 ton per year for all criteria air pollutants except for CO and NOx. Those emission increases are below IDEQ Modeling Guidance Level 1 and Level 2 modeling thresholds for all pollutants, with the possible exception that the NOx emission increase barely reaches the IDEQ Level 1 modeling threshold for NO<sub>2</sub> if all NOx is assumed to be NO<sub>2</sub>. IDEQ Modeling Guidance recommends the Level 1 modeling thresholds primary for fugitive emissions or emissions that do not have much loft. the heated emissions from the elevated boiler stacks are not fugitive and they have significant loft. The IDEQ approved modeling protocol in Appendix E verifies IDEQ concurrence that no modeling is required for any changes in emissions associated with the proposed actions, including the annual increase in potential NO<sub>2</sub> emissions from the natural gas boilers.

## 6.0 Facility Classification

The Idaho Veneer facility is located in Kootenai County, which the current IDEQ permit for the facility documents is designated by the US EPA as “attainment” or “unclassified” for all criteria pollutants. There are no Class I areas within 10 kilometers of the facility, which is located in AQCR 62 and UTM zone 11. For attainment or unclassified areas, a source is considered a Prevention of Significant Deterioration of Air Quality (PSD) Program major source if it has the potential to emit: (1) 10 tons per year or more of any hazardous air pollutant, or (2) 25 tons per year or more of combined hazardous air pollutants or, (3) 100 tons per year or more of a regulated pollutant if the source is classified as one of twenty-eight designated industrial source categories or, (4) 250 tons per year or more of a regulated pollutant from a stationary source. For the Title V Operating Permit program, a source is considered major if potential emissions exceed 100 tons per year. For HAPs, a source is considered major if it emits more than 10 tons per year of an individual HAP or more than 25 tons of HAPs per year cumulatively. From the IDEQ 2013 Tier 2 / PTC Permit, the SIC code defining the facility is 2436.

The Idaho Veneer mill is not a designated facility and will not produce emissions in excess of any of the PSD thresholds. The facility is not a Title V major source, as documented in the Statement of Basis for the facility's current permit, and will remain not a Title V source as a result of the proposed action as documented by the inventory of potential emissions which shows a net emissions decrease as a result of the proposed action. As documented by the tables in Section 4 of this application, the facility's potential to emit has been, and will remain as a result of the proposed action, sufficiently low (less than 250 tons per year for all criteria air pollutants, less than the 10 ton per year individual and 25 ton cumulative HAP major source threshold, and not a Title V source) for Idaho Veneer to be considered a minor source of air emissions, not reaching PSD, and/or a HAP area source thresholds.



## **8.0 Proposed Permit Limits**

The proposed action requests only two changes in one section of the existing permit, Section 3.4 describing boiler fuel throughput limits. We request that the current 20 million cubic feet combined throughput for the facility's two gas fired boilers be increased to 48 million cubic feet, and that the 15,000 green ton limit for the Wellons hog fuel boiler be lowered to 10,000 green tons.

The proposed change would result in a net decrease in emissions of all inventoried air pollutants, criteria, HAPs, and TAPs.

.

## **Appendix A**

### **IDEQ Permit Application Forms**



**DEQ AIR QUALITY PROGRAM**  
 1410 N. Hilton, Boise, ID 83706  
 For assistance, call the  
 Air Permit Hotline – 1-877-5PERMIT

Cover Sheet for Air Permit Application – Permit to Construct **Form CSPTC**

Please see instructions on page 2 before filling out the form.

**COMPANY NAME, FACILITY NAME, AND FACILITY ID NUMBER**

1. Company Name	Idaho Veneer Company		
2. Facility Name	Idaho Veneer	3. Facility ID No.	055-00004
4. Brief Project Description - One sentence or less	Renew existing Tier 2 / PTC into a PTC only, switch from Wellons hog fuel to Cleaver Books NG fueled as primary boiler		

**PERMIT APPLICATION TYPE**

5.  New Source New Source at Existing Facility  PTC for a Tier I Source Processed Pursuant to IDAPA 58.01.01.209.05.c  
 Unpermitted Existing Source  Facility Emissions Cap  Modify / renew Existing Source: Permit No.: T2-2008.0155 as PTC only  
 Date Issued: 8/22/2013  
 Required by Enforcement Action: Case No.: \_\_\_\_\_

6.  Minor PTC  Major PTC

**FORMS INCLUDED**

Included	N/A	Forms	DEQ Verify
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Form CSPTC – Cover Sheet	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Form GI – Facility Information	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Form EU0 – Emissions Units General	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Form EU1– Industrial Engine Information Please specify number of EU1s attached: _____	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Form EU2– Nonmetallic Mineral Processing Plants Please specify number of EU2s attached: _____	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Form EU3– Spray Paint Booth Information Please specify number of EU3s attached: _____	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Form EU4– Cooling Tower Information Please specify number of EU3s attached: _____	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Form EU5 – Boiler Information Please specify number of EU4s attached: _____	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Form CBP– Concrete Batch Plant Please specify number of CBPs attached: _____	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Form HMAP – Hot Mix Asphalt Plant Please specify number of HMAPs attached: _____	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	PERF – Portable Equipment Relocation Form	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Form AO – Afterburner/Oxidizer	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Form CA – Carbon Adsorber	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Form CYS – Cyclone Separator	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Form ESP – Electrostatic Precipitator	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Form BCE– Baghouses Control Equipment	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Form SCE– Scrubbers Control Equipment	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Form VSCE – Venturi Scrubber Control Equipment	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Form CAM – Compliance Assurance Monitoring	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Forms EI– Emissions Inventory	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	PP – Plot Plan	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Forms MI1 – MI4 – Modeling (Excel workbook, all 4 worksheets)	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Form FRA – Federal Regulation Applicability	<input type="checkbox"/>



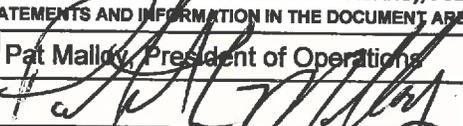
**DEQ AIR QUALITY PROGRAM**  
 1410 N. Hilton, Boise, ID 83706  
 For assistance, call the  
**Air Permit Hotline – 1-877-5PERMIT**

# PERMIT TO CONSTRUCT APPLICATION

Revision 3  
 03/26/07

Please see instructions on page 2 before filling out the form.

**All information is required. If information is missing, the application will not be processed.**

IDENTIFICATION	
1. Company Name	Idaho Veneer Company
2. Facility Name (if different than #1)	Idaho Veneer
3. Facility I.D. No.	055-00004
4. Brief Project Description:	PTC/ Tier 2 renewal into PTC, switch from B1(Wood) to B2 (NG) as primary boiler
FACILITY INFORMATION	
5. Owned/operated by: (√ if applicable)	<input type="checkbox"/> Federal government <input type="checkbox"/> County government <input type="checkbox"/> State government <input type="checkbox"/> City government
6. Primary Facility Permit Contact Person/Title	Pat Malloy, President of Operations
7. Telephone Number and Email Address	(208) 347-2111 x228      pmalloy@idahoveneer.com
8. Alternate Facility Contact Person/Title	
9. Telephone Number and Email Address	(208) 773-4511
10. Address to which permit should be sent	PO Box 339
11. City/State/Zip	Post Falls, Idaho 83877
12. Equipment Location Address (if different than #10)	704 E. 4th St.,
13. City/State/Zip	Post Falls, Idaho
14. Is the Equipment Portable?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
15. SIC Code(s) and NAISC Code	Primary SIC: 2436      Secondary SIC (if any):      NAICS:
16. Brief Business Description and Principal Product	Veneer and dimensional lumber manufacturing
17. Identify any adjacent or contiguous facility that this company owns and/or operates	No known nearby industrial facilities
PERMIT APPLICATION TYPE	
18. Specify Reason for Application	<input type="checkbox"/> New Facility <input type="checkbox"/> New Source at Existing Facility <input type="checkbox"/> Unpermitted Existing Source <input checked="" type="checkbox"/> Modify Existing Source: Permit No.: T2-2008.0115      Date Issued: 8/22/13 Tier 2/PTC renewal to PTC <input type="checkbox"/> Permit Revision <input type="checkbox"/> Required by Enforcement Action: Case No.:
CERTIFICATION	
IN ACCORDANCE WITH IDAPA 58.01.01.123 (RULES FOR THE CONTROL OF AIR POLLUTION IN IDAHO), I CERTIFY BASED ON INFORMATION AND BELIEF FORMED AFTER REASONABLE INQUIRY, THE STATEMENTS AND INFORMATION IN THE DOCUMENT ARE TRUE, ACCURATE, AND COMPLETE.	
19. Responsible Official's Name/Title	Pat Malloy, President of Operations
20. RESPONSIBLE OFFICIAL SIGNATURE	 Date: 12/16/13
21. <input checked="" type="checkbox"/> Check here to indicate you would like to review a draft permit prior to final issuance.	



**DEQ AIR QUALITY PROGRAM**  
 1410 N. Hilton, Boise, ID 83706  
 For assistance, call the  
 Air Permit Hotline – 1-877-5PERMIT

# PERMIT TO CONSTRUCT APPLICATION

Revision 3  
 03/26/07

Please see instructions on page 2 before filling out the form.

## IDENTIFICATION

Company Name: Idaho Veneer Company	Facility Name: Idaho Veneer	Facility ID No: 055-00004
---------------------------------------	--------------------------------	------------------------------

Brief Project Description:

## APPLICABILITY DETERMINATION

1. Will this project be subject to 1990 CAA Section 112(g)? (Case-by-Case MACT)	<input checked="" type="checkbox"/> NO	<input type="checkbox"/> YES*	* If YES, applicant must submit an application for a case-by-case MACT determination [IAC 567 22-1(3)"b" (8)]
2. Will this project be subject to a New Source Performance Standard? (40 CFR part 60)	<input checked="" type="checkbox"/> NO	<input type="checkbox"/> YES*	*If YES, please identify sub-part: _____
3. Will this project be subject to a MACT (Maximum Achievable Control Technology) regulation? (40 CFR part 63)	<input checked="" type="checkbox"/> NO	<input type="checkbox"/> YES*	*If YES, please identify sub-part: _____
THIS ONLY APPLIES IF THE PROJECT EMITS A HAZARDOUS AIR POLLUTANT			
4. Will this project be subject to a NESHAP (National Emission Standards for Hazardous Air Pollutants) regulation? (40 CFR part 61)	<input type="checkbox"/> NO	<input checked="" type="checkbox"/> YES*	*If YES, please identify sub-part: <u>Boiler GACT</u>
5. Will this project be subject to PSD (Prevention of Significant Deterioration)? (40 CFR section 52.21)	<input checked="" type="checkbox"/> NO	<input type="checkbox"/> YES	
6. Was netting done for this project to avoid PSD?	<input checked="" type="checkbox"/> NO	<input type="checkbox"/> YES*	*If YES, please attach netting calculations

**IF YOU ARE UNSURE HOW TO ANSWER ANY OF THESE QUESTIONS, CALL THE AIR PERMIT HOTLINE AT 1-877-5PERMIT**

## **Required IDEQ Permit Forms in Permit Application Document**

Consistent with our pre-application meeting discussion, the information included on the following forms is included in the Permit Application document. The location that information can be found is described here.

### **Form PP**

All information required on form PP can be found in Figure 6.1 in Section 6 of the Permit As noted there, a large format scaled plot plan (covered by the certification statement in the application) will be sent to IDEQ permit writer Darrin Pampaian separately before the December 23 application due date.

### **EI Forms**

The Idaho Veneer PTC application submittal meets all requirements on all applicable IDEQ EI forms. Specifically,

- the requirements on facility-wide PTE inventory are met by the tons per year summary in Tables 5-1 and 5-2 of the application and in more detail with more supporting documentation in worksheet "Total" on the Inventory of potential emissions (IVC EI 120413.xls) showing current and proposed potential emissions, and the proposed change in emissions (a decrease for all criteria pollutants and most TAPs and HAPs)
- The requirements of the Facility-wide HAP summary and the facility-wide TAP summary are documented in Appendix D worksheets "Fuel Burner HAPs", "Process", and "Total"

## Appendix B

### Equipment List

No new emission sources are proposed beyond those currently permitted.

Our current permit lists the following regulated sources

Emission Unit /ID No.	Emissions Unit Description	Control Device Description	Emissions Discharge Point ID No.and/or Description
B-1	<u>Wellons Boiler</u> Manufacturer: Wellons Rated capacity: 40,000 lbs of steam/hr Installed: 1976 Burner type: Fuel cell Fuels: wood fired	Multiclone	B-1
B-2	<u>Cleaver Brooks Boiler</u> Manufacturer: Cleaver Brooks Rated heat capacity: 13.6 MMJbs steam/hr Installed: 1971 Fuels: Natural gas	None	B-2
B-3	<u>Thermopack Boiler</u> Manufacturer: Thermopack Rated heat capacity: 600,000 Btu/hr Installed: 1980 Fuels: Natural gas	None	B-3
P-10 A-C & P-11 A-C	Wellons Dry Kiln No. 1 and Coe Dry Kiln No. 2 Size rated: 1370 bdf/hr each	None	P-10 A-C & P-11 A-C
P - 1	Cremona Dryer Rating: 10,000 tfl/hr (3/8" veneer) Steam Chambers	None	P - 1
P-21 P-38 AND P-55  P-39 P-13 P-14 P-14 P-17 P-54	Cyclones Hog Fuel Cyclone (P21) Planer Cyclone No.1 and No. 2 (P-38 and P-55) Sawdust Cyclone (P-39) Jointer Cyclone (P-13) Resaw Cyclone (P-14) Hog Overs Cyclone (P-16) Sawmill Chipper Cyclone (P-17) Veneer Chipper Cyclone (P-54)	None  None	P-21 P-38 AND P-55  P-39 P-13 P-14 P-16 P-17 P-54

The inventory of Potential emissions in Appendix D identified the following additional sources, all assumed to be insignificant sources by IDAPA definition

Source ID	Source
Chippers #1 and #2	#2 outside sawmill (green wood only), and #1 in the veneer plant (mostly green feed)
Hog (sawmill)	P37 (green bark and wet slabs)
Planer hog	P40 Inside building
Target Box #1	P15 Chip overs (green)
Target Box #2	P44 Shavings silo
Target Box #3	P45 Chip bin
Target Box #4	P46 Shavings bin
Ring Debarker	P7 Debarks watered green wood outside under shed roof
Target Box #5 (hog fuel)	P50 Hog fuel target box
Hog - chip overs	P40 Hog grinding oversize chips at P53
Gasoline tank	
Diesel tank	
Lube / oil storage	
4 conveyer transfers	Four conveyors transferring wood by-products
2 bin to truck transfers	Transfers from chip and shavings truck bins to trucks below

**Appendix C**  
**Application Fee**

**IDAHO VENEER COMPANY** Post Falls, Idaho 83854

ACCOUNT NO.	VOUCHER	INVOICE NUMBER	INVOICE DATE	INVOICE AMOUNT	AMOUNT PAID	DISCOUNT TAKEN	CHECK NO.
		119909 PERMIT 2014	12/13/13	1,000.00	1,000.00	.00	011632
<b>CHECK TOTAL</b>							<i>EM</i> 1,000.00

**IDAHO VENEER COMPANY**  
 P.O. Box 339  
 Post Falls, Idaho 83877

**COMMUNITY 1ST BANK**  
 707 N. Post Street  
 Post Falls, ID 83854-7031  
 (208) 457-9610

11-24  
 1210  
**11632**

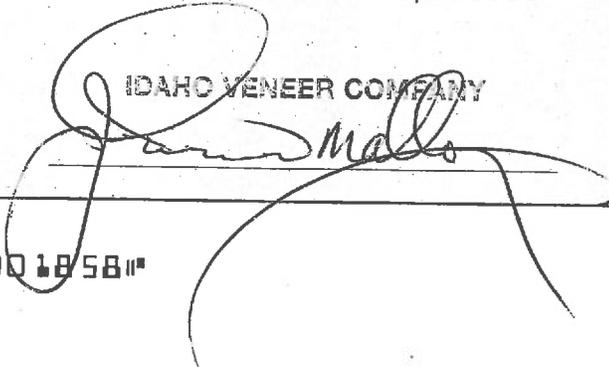
CHECK NO. CHECK DATE VENDOR NO.  
 12/12/13 IDEQ

PAY ONE THOUSAND AND 00/100 DOLLARS\*\*\*\*\*

CHECK AMOUNT  
 \$\*\*\*\*\*1,000.00

TO THE STATE OF IDAHO - IDEQ  
 ORDER DIV. OF ENVIRONMENTAL QUALITY  
 OF 1410 N. HILTON  
 BOISE ID 83706-1255

**IDAHO VENEER COMPANY**



⑈011632⑈ ⑆123103907⑆ 3500001858⑈

**IDAHO VENEER COMPANY** Post Falls, Idaho 83854

ACCOUNT NO.	VOUCHER	INVOICE NUMBER	INVOICE DATE	INVOICE AMOUNT	AMOUNT PAID	DISCOUNT TAKEN	CHECK NO.
		119909 PERMIT 2014	12/13/13	1,000.00	1,000.00	.00	011632
<b>CHECK TOTAL</b>							1,000.00

## **Appendix D**

# **Emission Inventory and Emission Source Supporting Documents**

The same information is presented in electronic form in spreadsheet  
"Idaho Veneer Permit App PTE 1213.xls"

**BOILER EMISSIONS**

Rated Capacity: 40,000 lb steam

Date Installed: 1976

Manufacturer: Wellons

Model: Fuel Cell

One wood (log fired) boiler, B1

**B-1 Wellons Boiler**

Pollutant	Emission Factor	EF Units	Permit Req	proposed		currently permitted		proposed change from currently permitted	
				Potential Emissions (tons/yr)	Potential Emissions (lb/hr)	Potential Emissions (tons/yr)	Potential Emissions (lb/hr)	Potential Emissions (tons/yr)	Potential Emissions (lb/hr)
Particulate*	0.193857143	lb/MMBTU	69,421	6.73	11.30	10.08	11.30	-3.36	0.00
PM 10	0.113928571	lb/MMBTU	69,421	6.56	11.20	9.84	11.20	-3.28	0.00
PM 2.5	0.183989683	lb/MMBTU	69,421	6.46	11.32	9.68	11.32	-3.23	0.00
SO2	0.025	lb/MMBTU	69,421	0.87	1.52	1.30	1.52	-0.43	0.00
CO	0.60	lb/MMBTU	69,421	20.83	36.52	31.24	36.52	-10.41	0.00
NOx	0.22	lb/MMBTU	69,421	7.64	13.29	11.43	13.29	-3.82	0.00
TOC	0.039	lb/MMBTU	69,421	1.35	2.37	2.03	2.37	-0.08	0.00
VOCs	0.017	lb/MMBTU	69,421	0.59	1.03	0.89	1.03	-0.30	0.00
CO2	206.79	lb/MMBTU	69,421	14,177.7	24,871.2	20,946.07	24,871.2	-3,894.94	0.00
CH4	0.07	lb/MMBTU	69,421	2.46	4.27	3.52	4.27	-0.51	0.00
N2O	0.01	lb/MMBTU	69,421	0.69	1.19	1.00	1.19	-0.19	0.00
CO2eq	209.85	lb/MMBTU	69,421	14,478.1	25,113.5	21,047.07	25,113.5	-4,066.43	0.00

-34,710

EF  
CO2  
CH4  
N2O  
CO2 equiv

CO2 eq and contrib EIs from EPA Emission Factors for Greenhouse Gas Inventories, Co2 equiv multipliers 1 for CO, 21 for CH4, 310 for N2O

PM emission rate conversion, with current permit. PM10 and PM2.5 values conservatively lower than AP-42 rates of 91% and 54% for substation control

\*Source: see Sept 20, 2011 results show 0.1311 lb/MMbtu  
AP2 Table 1.6.5  
for multiple boilers  
91% of PM  
54% of PMd

max G tons burned  
08 BTU/g lb value  
BTU/g ton value  
MMBTU/g

18000  
10,000  
5036.50  
10,061,000  
69,421

PTE used here  
188.19%

source that  
6.35 lbs PM10/hr  
23250 lbs steam/hr  
35.38043478 Mmbtu/hr  
0.151213516 lbs PMd/hr  
3.59 lbs PM10/hr  
23250 lbs steam/hr  
35.38043478 Mmbtu/hr  
0.10146851 lbs PMd/hr

**B-2 Cleaver Brooks Gas Boiler**

Pollutant	Emission Factor	EF Units	Throughput (10 <sup>6</sup> cu ft)	proposed		currently permitted		proposed change from currently permitted	
				Potential Emissions (tons/yr)	Potential Emissions (lb/hr)	Potential Emissions (tons/yr)	Potential Emissions (lb/hr)	Potential Emissions (tons/yr)	Potential Emissions (lb/hr)
Particulate ****	7.6	lb/10 <sup>6</sup> cu ft	42.0	0.360	0.037	0.007	0.037	0.093	0.000
PM 10 ****	7.6	lb/10 <sup>6</sup> cu ft	42.0	0.360	0.037	0.007	0.037	0.093	0.000
PM 2.5 ****	7.6	lb/10 <sup>6</sup> cu ft	42.0	0.360	0.037	0.007	0.037	0.093	0.000
SO 2 ***	0.6	lb/10 <sup>6</sup> cu ft	42.0	0.018	0.003	0.005	0.005	0.007	0.000
CO *	84	lb/10 <sup>6</sup> cu ft	42.0	3.768	0.404	0.735	0.404	1.029	0.000
NOx **	100	lb/10 <sup>6</sup> cu ft	42.0	4.200	0.481	0.875	0.481	1.225	0.000
VOC ***	5.5	lb/10 <sup>6</sup> cu ft	42.0	0.231	0.116	0.048	0.116	0.067	0.000
CO2	116.98	lb/MMBTU	42.0	4,913.16	522.17	502.17	522.17	141.229	0.00
CH4	0.0022	lb/MMBTU	42.0	0.092	0.02	0.02	0.02	0.05	0.00
N2O	0.0002	lb/MMBTU	42.0	0.008	0.001	0.001	0.001	0.006	0.00
CO2eq	117.05	lb/MMBTU	42.0	4,921.36	524.28	504.28	524.28	142.85	0.00

8,736 lb/yr  
52 weeks/year x 24 hr/day x 7 day/week  
M3/hr  
0.0168  
Rated Capacity: 13,800 lbs steam/hr  
Date Installed: 1971  
Manufacturer: Cleaver-Brooks  
Model: Natural Gas  
BTU/10<sup>6</sup> NG  
1027  
Mmbtu/MM3 h  
1027

B-2 max Fuel Estim:  
therms/mc  
x  
therms/yr  
gives: 1 therm = 100 cu ft.  
cu ft/yr =  
/  
Mmbtu/yr  
10<sup>6</sup> cu ft/yr =  
10<sup>6</sup> cu ft/yr =  
4.94 Mmbtu/yr

EF  
CO2  
CH4  
N2O  
CO2 equiv

**B-3 Thermo Pack (For Fisher)**

Pollutant	Emission Factor	EF Units	Max Throughput (10 <sup>6</sup> cu ft)	proposed		currently permitted		proposed change from currently permitted	
				Potential Emissions (tons/yr)	Potential Emissions (lb/hr)	Potential Emissions (tons/yr)	Potential Emissions (lb/hr)	Potential Emissions (tons/yr)	Potential Emissions (lb/hr)
Particulate ****	7.6	lb/10 <sup>6</sup> cu ft	6,000	0.0228	0.0044	0.0005	0.0044	0.0133	0.0000
PM 10 ****	7.6	lb/10 <sup>6</sup> cu ft	6,000	0.0228	0.0044	0.0005	0.0044	0.0133	0.0000
PM 2.5 ****	7.6	lb/10 <sup>6</sup> cu ft	6,000	0.0228	0.0044	0.0005	0.0044	0.0133	0.0000
SO 2 ***	0.6	lb/10 <sup>6</sup> cu ft	6,000	0.0018	0.0004	0.0008	0.0004	0.0011	0.0000
CO *	84	lb/10 <sup>6</sup> cu ft	6,000	0.2520	0.0491	0.1030	0.0491	0.1470	0.0000
NOx **	100	lb/10 <sup>6</sup> cu ft	6,000	0.6000	0.1200	0.1250	0.0804	0.1750	0.0000
VOC ***	5.5	lb/10 <sup>6</sup> cu ft	6,000	0.0330	0.0032	0.0009	0.0032	0.0096	0.0000
CO2	116.98	lb/MMBTU	6,000	7,018.80	722.12	702.12	722.12	200.68	0.00
CH4	0.0022	lb/MMBTU	6,000	0.1320	0.02	0.02	0.02	0.05	0.00
N2O	0.0002	lb/MMBTU	6,000	0.0120	0.001	0.001	0.001	0.006	0.00
CO2eq	117.05	lb/MMBTU	6,000	7,026.80	726.28	706.28	726.28	203.98	0.00

4,500 lb/yr  
5 days/week x 18 hrs/day x 50 wk/yr

B-3 max Fuel Estim:  
therms/mc  
x  
therms/yr  
gives: 1 therm = 100 cu ft.  
cu ft/yr =  
/  
Mmbtu/yr  
10<sup>6</sup> cu ft/yr =  
10<sup>6</sup> cu ft/yr =  
1.37 Mmbtu/yr

Date Installed: 1980  
Manufacturer: Thermoapak  
Model: Natural Gas  
capacity (Btu/hr)  
capacity (M3/hr) 0.00058423

**TOTALS**

Both NG boilers (B2 and B3)

Pollutant	proposed		currently permitted		proposed change from currently permitted	
	Potential Emissions (tons/yr)	Potential Emissions (lb/hr)	Potential Emissions (tons/yr)	Potential Emissions (lb/hr)	Potential Emissions (tons/yr)	Potential Emissions (lb/hr)
Particulate	0.182	0.041	0.076	0.041	0.106	0.000
PM 10	0.182	0.041	0.076	0.041	0.106	0.000
PM 2.5	0.182	0.041	0.076	0.041	0.106	0.000
SO 2	0.094	0.003	0.006	0.003	0.008	0.000
CO	2.016	0.453	0.860	0.432	1.176	0.000
NOx	2.400	0.339	1.000	0.339	1.400	0.000
VOC	0.132	0.030	0.005	0.030	0.077	0.000
CO2 eq	2841.980	738.204	1020.000	104.200	1821.980	0.00

Combined NG  
28,758  
Mmbtu/yr increase

All three boilers, Wellons wood fired boiler B1 and two NG fired boilers (B2 and B3)





**EMISSION FACTORS**

2022 Base

Code	Description	Unit	PI	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	P12	P13	P14	P15	P16	P17	P18	P19	P20	P21	P22	P23	P24	P25	P26	P27	P28	P29	P30	P31	P32	P33	P34	P35	P36	P37	P38	P39	P40	P41	P42	P43	P44	P45	P46	P47	P48	P49	P50	P51	P52	P53	P54	P55	P56	P57	P58	P59	P60	P61	P62	P63	P64	P65	P66	P67	P68	P69	P70	P71	P72	P73	P74	P75	P76	P77	P78	P79	P80	P81	P82	P83	P84	P85	P86	P87	P88	P89	P90	P91	P92	P93	P94	P95	P96	P97	P98	P99	P100	P101	P102	P103	P104	P105	P106	P107	P108	P109	P110	P111	P112	P113	P114	P115	P116	P117	P118	P119	P120	P121	P122	P123	P124	P125	P126	P127	P128	P129	P130	P131	P132	P133	P134	P135	P136	P137	P138	P139	P140	P141	P142	P143	P144	P145	P146	P147	P148	P149	P150	P151	P152	P153	P154	P155	P156	P157	P158	P159	P160	P161	P162	P163	P164	P165	P166	P167	P168	P169	P170	P171	P172	P173	P174	P175	P176	P177	P178	P179	P180	P181	P182	P183	P184	P185	P186	P187	P188	P189	P190	P191	P192	P193	P194	P195	P196	P197	P198	P199	P200	P201	P202	P203	P204	P205	P206	P207	P208	P209	P210	P211	P212	P213	P214	P215	P216	P217	P218	P219	P220	P221	P222	P223	P224	P225	P226	P227	P228	P229	P230	P231	P232	P233	P234	P235	P236	P237	P238	P239	P240	P241	P242	P243	P244	P245	P246	P247	P248	P249	P250	P251	P252	P253	P254	P255	P256	P257	P258	P259	P260	P261	P262	P263	P264	P265	P266	P267	P268	P269	P270	P271	P272	P273	P274	P275	P276	P277	P278	P279	P280	P281	P282	P283	P284	P285	P286	P287	P288	P289	P290	P291	P292	P293	P294	P295	P296	P297	P298	P299	P300	P301	P302	P303	P304	P305	P306	P307	P308	P309	P310	P311	P312	P313	P314	P315	P316	P317	P318	P319	P320	P321	P322	P323	P324	P325	P326	P327	P328	P329	P330	P331	P332	P333	P334	P335	P336	P337	P338	P339	P340	P341	P342	P343	P344	P345	P346	P347	P348	P349	P350	P351	P352	P353	P354	P355	P356	P357	P358	P359	P360	P361	P362	P363	P364	P365	P366	P367	P368	P369	P370	P371	P372	P373	P374	P375	P376	P377	P378	P379	P380	P381	P382	P383	P384	P385	P386	P387	P388	P389	P390	P391	P392	P393	P394	P395	P396	P397	P398	P399	P400	P401	P402	P403	P404	P405	P406	P407	P408	P409	P410	P411	P412	P413	P414	P415	P416	P417	P418	P419	P420	P421	P422	P423	P424	P425	P426	P427	P428	P429	P430	P431	P432	P433	P434	P435	P436	P437	P438	P439	P440	P441	P442	P443	P444	P445	P446	P447	P448	P449	P450	P451	P452	P453	P454	P455	P456	P457	P458	P459	P460	P461	P462	P463	P464	P465	P466	P467	P468	P469	P470	P471	P472	P473	P474	P475	P476	P477	P478	P479	P480	P481	P482	P483	P484	P485	P486	P487	P488	P489	P490	P491	P492	P493	P494	P495	P496	P497	P498	P499	P500	P501	P502	P503	P504	P505	P506	P507	P508	P509	P510	P511	P512	P513	P514	P515	P516	P517	P518	P519	P520	P521	P522	P523	P524	P525	P526	P527	P528	P529	P530	P531	P532	P533	P534	P535	P536	P537	P538	P539	P540	P541	P542	P543	P544	P545	P546	P547	P548	P549	P550	P551	P552	P553	P554	P555	P556	P557	P558	P559	P560	P561	P562	P563	P564	P565	P566	P567	P568	P569	P570	P571	P572	P573	P574	P575	P576	P577	P578	P579	P580	P581	P582	P583	P584	P585	P586	P587	P588	P589	P590	P591	P592	P593	P594	P595	P596	P597	P598	P599	P600	P601	P602	P603	P604	P605	P606	P607	P608	P609	P610	P611	P612	P613	P614	P615	P616	P617	P618	P619	P620	P621	P622	P623	P624	P625	P626	P627	P628	P629	P630	P631	P632	P633	P634	P635	P636	P637	P638	P639	P640	P641	P642	P643	P644	P645	P646	P647	P648	P649	P650	P651	P652	P653	P654	P655	P656	P657	P658	P659	P660	P661	P662	P663	P664	P665	P666	P667	P668	P669	P670	P671	P672	P673	P674	P675	P676	P677	P678	P679	P680	P681	P682	P683	P684	P685	P686	P687	P688	P689	P690	P691	P692	P693	P694	P695	P696	P697	P698	P699	P700	P701	P702	P703	P704	P705	P706	P707	P708	P709	P710	P711	P712	P713	P714	P715	P716	P717	P718	P719	P720	P721	P722	P723	P724	P725	P726	P727	P728	P729	P730	P731	P732	P733	P734	P735	P736	P737	P738	P739	P740	P741	P742	P743	P744	P745	P746	P747	P748	P749	P750	P751	P752	P753	P754	P755	P756	P757	P758	P759	P760	P761	P762	P763	P764	P765	P766	P767	P768	P769	P770	P771	P772	P773	P774	P775	P776	P777	P778	P779	P780	P781	P782	P783	P784	P785	P786	P787	P788	P789	P790	P791	P792	P793	P794	P795	P796	P797	P798	P799	P800	P801	P802	P803	P804	P805	P806	P807	P808	P809	P810	P811	P812	P813	P814	P815	P816	P817	P818	P819	P820	P821	P822	P823	P824	P825	P826	P827	P828	P829	P830	P831	P832	P833	P834	P835	P836	P837	P838	P839	P840	P841	P842	P843	P844	P845	P846	P847	P848	P849	P850	P851	P852	P853	P854	P855	P856	P857	P858	P859	P860	P861	P862	P863	P864	P865	P866	P867	P868	P869	P870	P871	P872	P873	P874	P875	P876	P877	P878	P879	P880	P881	P882	P883	P884	P885	P886	P887	P888	P889	P890	P891	P892	P893	P894	P895	P896	P897	P898	P899	P900	P901	P902	P903	P904	P905	P906	P907	P908	P909	P910	P911	P912	P913	P914	P915	P916	P917	P918	P919	P920	P921	P922	P923	P924	P925	P926	P927	P928	P929	P930	P931	P932	P933	P934	P935	P936	P937	P938	P939	P940	P941	P942	P943	P944	P945	P946	P947	P948	P949	P950	P951	P952	P95
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# SOLVENT/VOLATILE CALCULATIONS

Name/contents	Code	Throughput (gallons)	VOC		HAP		Inside Bldg? (y/n)	VOC's (tons/yr)	HAP (tons/yr)	Tank Type
			E. Factor (lb/1000 gal)	E. Factor (lb/1000 gal)						
Gasoline	V 1	12,000	8.20	0.00	No	0.05	0.000000	0.000000	500 gal steel AST	
Diesel	V 2	30,000	0.02	0.0002	No	0.0003	0.000003	0.000003	1,000 gal steel AST	
Lubes/Oils	V 3	5,000	insig	insig	Yes	insig	insig	insig	Misc	
Total							0.0495	0.000003		

\*Assume HAPS emissions are directly proportional to % by weight.

# TRANSFER/CONVEYOR CALCULATIONS

Conveyors	Name	Code	Wind Speed (MPH)	Moisture (%)	Throughput (BDT tons/yr)	PM Emission Factor *	PM 10 Emission Factor *	PM 2.5 Emission Factor *	PM (tons/yr)	PM 10 (tons/yr)	PM 2.5 (tons/yr)	Material Type of	PM (lb/hr)	PM 10 (lb/hr)	PM 10 (lb/hr)
	8 Conveyor Belts - (bark)	TR 2	9	50	450	0.04785	0.01675	0.00526	0.011	0.004	0.001	bark	0.027	0.009	0.003
	Conveyor Belt (green trim)	TR 6	9	50	150	0.04785	0.01675	0.00526	0.004	0.001	0.000	green trim	0.009	0.003	0.001
	Conveyor Belt (oversize)	TR 7	9	50	800	0.04785	0.01675	0.00526	0.019	0.007	0.002	oversize	0.048	0.017	0.005
	Conveyor Belt - (reclaim)	TR 5	9	50	400	0.04785	0.01675	0.00526	0.010	0.003	0.001	hog fuel	0.024	0.008	0.003

800 hours based upon 2 days/wk x 8 hr/day x 50 wks/yr

**Conveyor Total 0.043 0.015 0.005**

moisture content sawdust = 56 %  
 moisture content bark = 50 %  
 moisture content chips = 47 %  
 moisture content shavings = 10 %

Bin to Truck Transfers	Name	Code	PM Em. Factor (lb/hr)	PM 10 Em. Factor (lb/hr)	PM 10 Throughput (BDT)	Opr hours	PM Emissions (tons/yr)	PM 10 Emissions (tons/yr)	PM 2.5 Emissions (tons/yr)	PM (lb/hr)	PM 10 (lb/hr)	PM 2.5 (lb/hr)
	Transfer to Truck (shavings)	TR 1	0.4555	0.1594	0.0501	800	0.18	0.06	0.02	0.46	0.16	0.05
	Transfer to Truck (chips)	TR 3	0.0522	0.0183	0.0057	4,500	0.12	0.04	0.01	0.05	0.02	0.01

800 hours based upon 4 days/wk x 4 hr/day x 50 wks/yr

4500 hours based upon 5 days/wk x 18 hr/day x 50 wks/yr

**Bin To Truck Total 0.30 0.10 0.03**

**TOTAL all Transfers 0.343 0.120 0.038**

\* Use AP 42.13.2.4 Aggregate Handling  
 $E = K(0.032)^{(10/5)^{**1.3}}(QM/2)^{**1.4}$   
 particulate matter multiplier (k) = .35 for pm 10  
 k = .11 for PM2.5  
 average wind speed = 9 mph

at 50% moisture content PM-2.5 EF = 0.0053 lbs/ton PM-10 EF = 0.0167 lbs/ton  
 at 47% moisture content PM-2.5 EF = 0.0057 lbs/ton PM-10 EF = 0.0183 lbs/ton  
 at 43% moisture content PM-2.5 EF = 0.0065 lbs/ton PM-10 EF = 0.0207 lbs/ton  
 at 10% moisture content PM-2.5 EF = 0.0501 lbs/ton PM-10 EF = 0.1594 lbs/ton  
 at 5% moisture content PM-2.5 EF = 0.1322 lbs/ton PM-10 EF = 0.4207 lbs/ton

# STORAGE CALCULATIONS

## PILES

Name	Code	Width		Length		Height		Area		Material		TSP		PM 10		Operating		PM 10		PM 2.5	
		Ft.	Ft.	Ft.	Ft.	Ft.	Ft.	Acres	Acres	lb/acre/day	lb/acre/day	Factor *	Factor *	tons/yr	tons/yr	tons/yr	tons/yr	(lbs/hr)	(lbs/hr)	(lbs/hr)	(lbs/hr)
Woodwaste	ST 4	120	150	15	15	0.41	0.41	9.35	9.35	Wood	Wood	4.5	4.5	0.71	0.34	0.17	24.7-52	0.1614	0.0777	0.0388	0.0388

\* Use AP 42 Table 8.19.1

## BINS

Name	Code	Throughput (BDT/yr)	E. Factor		E. Factor		Material	Max Transf ** (BDT/hr)	Avg Trans (BDT/hr)	Effici	PM		PM 2.5		Operating hrs		w/efftc		w/efftc	
			(lb/ton)	(lb/ton)	(lb/ton)	(lb/ton)					(tons/yr)	(tons/yr)	PM	PM 2.5	PM	PM 2.5	(lbs/hr)	(lbs/hr)	(lbs/hr)	(lbs/hr)
Chip Bin	ST 1	630	1	0.58	0.29	Chips	0.09	0.07	95%	0.3	0.2	0.1	4,500	0.0070	0.0041	0.0020	0.0020			
Shavings Bin	ST 2	2,150	1	0.58	0.29	Shavings	0.30	0.25	95%	1.1	0.6	0.3	800	0.1344	0.0779	0.0390	0.0390			
Fuel Silo ***	ST 3	1,655	1	0.58	0.29	Mixed wood	0.23	0.19	95%	0.8	0.5	0.2	4,500	0.0184	0.0107	0.0053	0.0053			

Use AP 42 Table 10.4 - 2

assume PM2.5 EF = half PM10 EF

\*\* assume 20% greater than average rate

Note: All storage bins are enclosed, with small vent openings for air, (assume 95% efftc).

800 hours based upon 2 days/wk x 8 hr/day x 50 wks/yr

4500 hours based upon 5 days/wk x 18 hr/day x 50 wks/yr

<b>Bin Total</b>	<b>2.2</b>	<b>1.3</b>	<b>0.6</b>
<b>Bin w/efftc</b>	<b>0.11</b>	<b>0.06</b>	<b>0.03</b>

**All Storage combined (T/yr) w/efftc:**

<b>PM</b>	<b>PM10</b>	<b>PM2.5</b>
<b>0.82</b>	<b>0.40</b>	<b>0.20</b>

**TOTAL EMISSIONS (tons/yr)**

Source	PM	PM 10	PM2.5	VOC's	SO2	CO	NOx	Total HAPs	Methane	Methanol	Formald	Acetalde hyde	Propionalde hyde	Benzene	Tolene	o-xylene	Phenol	Acrolicia	MEK	only two boiler TAPs with net proposed increase				
																				Dichlorob enzene	Hexane	CO2 eq		
Process	9.58	7.58	6.68	14.11	0.00	0.37	0.00	13.4177	0.0660	1.3948	0.1311	0.2499	0.0126	0.0031	0.0058	0.0074	0.0000	0.0068	0.0228					
Fuel Storage	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.0000																
Storage	0.82	0.40	0.20	0.30	0.00	0.00	0.00																	
Transfer	0.34	0.12	0.04	0.00	0.00	0.00	0.00																	
Boilers proposed	6.91	6.74	6.64	1.49	0.88	22.84	10.04	0.8418													0.00003	0.0432	107169	
Boilers currently permitted	10.17	9.91	9.76	2.09	1.31	32.08	12.45	1.2136	1.0934	0.2298	0.0432	0.0032	0.0032	0.2187	0.0479	0.0013	0.0027	0.2083			0.00001	0.0180	17527	
Boilers proposed change	-3.26	-3.17	-3.12	-0.60	-0.43	-9.24	-2.42	-0.3718	-0.3645	-0.0753	-0.0144	-0.0011	-0.0001	-0.0729	-0.0159	-0.0003	-0.0000	-0.0694			0.00002	0.0252	-1809	
emission increase reach IDEQ TAP ELs?																						NO	NO	

TOTAL proposed	17.65	14.84	13.56	15.64	0.88	23.22	10.04	14.26	0.00	1.39	0.13	0.25	0.01	0.00	0.01	0.01	0.00	0.01	0.02	0.00	0.04	0.00	0.04	10,169
TOTAL currently permitted	20.91	18.02	16.68	16.24	1.31	32.45	12.45	14.63	1.09	1.39	0.36	0.29	0.02	0.22	0.05	0.01	0.00	0.22	0.02	0.02	0.00	0.02	0.02	17,527
TOTAL proposed change	-3.26	-3.17	-3.12	-0.60	-0.43	-9.24	-2.42	-0.37	-0.36	-0.00	-0.08	-0.01	0.00	-0.07	-0.02	0.00	0.00	-0.07	0.00	0.00	0.00	0.00	0.00	-1,809

## Appendix E

### Permit Application Supporting Documents

#### Attachment 1

#### Modeling Protocol and IDEQ Approval

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From: cjenv@hotmail.com  
To: kevin.schilling@deq.idaho.gov  
CC: darrin.pampaian@deq.idaho.gov; william.rogers@deq.idaho.gov  
Subject: Modeling protocol for Idaho Veneer Co. PTC application  
Date: Tue, 3 Dec 2013 17:46:29 +0000

Kevin,

This message immediately follows up on the pre-application meeting for this project, consistent with our discussion, and represents the proposed modeling protocol. For background, Idaho Veneer currently has a PTC / Tier 2 combination permit that expires December 22. The facility will propose a new PTC [permit, with no Tier 2 component. The only change from the current permit will be to reallocate the current two production size boilers; cutting back the annual fuel throughput for the Wellons hog fuel fired boiler by a third and increasing the use of natural gas primarily through their Cleaver Brooks natural gas fired boiler. The net results will be a slight decrease in Btus of heat produced (and therefore steam produced), and a decrease in emissions of all criteria air pollutants and all IDEQ TAPs, except for two TAPs emitted from natural gas but not wood, which will have emission increases below IDAPA TAP ELs;

As discussed, the potential hourly or daily emissions from all equipment would be unchanged. As shown in green in rows 103 - 113 in the draft inventory of potential emissions, annual emissions from the natural gas fired boilers would increase cumulatively by 0.1 tons/yr for particulates, 1.4 tons/yr for NO<sub>x</sub>, 1.1 tons/yr for CO, and less than 1 ton/yr for VOCs and SO<sub>x</sub>. The change in emissions for IDAPA TAPs are shown in worksheet Fuel Burner HAPs. Cells S 113 - 155 show net increases from NG increase alone. Column T shows cumulative change in emissions for HAPs emitted from both wood and natural gas combustion. Columns U and V verify that for any TAP with a net increase, the increase is below IDAPA 585 or 586 ELs.

Comparison with all emission increases shows all TAP increases are below IDAPA ELs, so no modeling is required. For criteria pollutants, proposed emission increases are well below IDEQ Level 2 modeling thresholds for all pollutants. For one pollutant, NO<sub>2</sub>, the emission increase is at or near the IDEQ Level 2 threshold. Assuming 100% of the NO<sub>x</sub> is NO<sub>2</sub>, the emission

increase would be just above the 1.2 ton/yr Level 1 threshold. If less than 85.7% of the NOx is NO2, the emissions increase would be below the IDEQ Level 1 threshold. Typically, NO2 % of NOx is 75%, so that alone could show increases do not meet IDEQ modeling thresholds. As discussed, all natural gas emissions will be from boilers, and would have good loft. The primary production increase would come from boiler B2 on the veneer building, a 30' high stack with 270 degree exhaust. The thermopack NG boiler, B3, has only 600,000 btu/hr capacity, less than 10% of the capacity of either other boiler. Emission reductions more than offsetting the NOx emission increases from those NG boilers will be from B1, which is slightly closer to the property boundary than B2. The attached figure, from previous IDEQ approved modeling analyses of the facility, shows facility layout.

IDEQ guidance indicates that the Level 1 thresholds apply primarily to sources without loft and/or near property boundaries. The NO2 emission increases are arguably below the IDEQ Level 1 modeling threshold, plus are neither close to the property boundary or low loft. For these reasons, the facility believes no modeling requirements should apply to this application.

Thank you,

...cj

Chris Johnson  
(208) 628-4036

## **RE: Modeling protocol for Idaho Veneer Co. PTC application**

Kevin.Schilling@deq.idaho.gov

12/05/13

To: cjenv@hotmail.com Cc: Darrin.Pampaian@deq.idaho.gov,

Chris,

Based on what you submitted, air impact analyses would not be required. I will write up a more formal response and send it to you in the next week. I wanted to get a quick note to you so that you could proceed with development of the permit application.

Kevin

# Attachment 1

## IDEQ Permit To Construction Application Checklist

### Department of Environmental Quality - Air Quality Division Minor Source Permit to Construct Application Completeness Checklist

This checklist is designed to aid the applicant in submitting a complete permit to construct application. In addition to the items in this checklist, information requested by DEQ during review of the application should be provided in accordance with IDAPA 58.01.01.202.03, or the application may be denied.

*Information on how each requirement has been met is included in italics below the each checklist listing*

#### I. Actions Recommended Before Submitting Application

- Refer to the Rule. Read the Permit to Construct requirements contained in IDAPA 58.01.01.200-228, Rules for the Control of Air Pollution in Idaho. The Rules are available on the Department of Administration's website (go to <http://adminrules.idaho.gov/rules/current/58/0101.pdf>).

*Rules reviewed, including with IDEQ prior to and during Pre-Application meeting*

- Refer to DEQ's Permit to Construct Guidance Document. DEQ has developed a guidance document to aid applicants in submitting a complete permit to construction application. The guidance document is located on DEQ's website (go to <http://www.deq.idaho.gov/media/656219-applicant-deq-responsibilities.pdf>).

*Guidance documents reviewed and followed, as this checklist verifies*

- Consult with DEQ Representatives. It is recommended that the applicant schedule a pre-application meeting with DEQ to discuss application requirements before submitting the permit to construct application. The meeting can be in person or on the phone. Contact DEQ's Air Quality Hotline at 877-5PERMIT to schedule the pre-application meeting.

*Numerous consultations with IDEQ including before and during Pre-Application meeting*

- Submit Ambient Air Quality Modeling Protocol. It is strongly recommended that an ambient air quality modeling protocol be submitted to DEQ at least two (2) weeks before the permit to construct application is submitted. Contact DEQ's Air Quality Hotline at 877-5PERMIT for information about the protocol.

*Consultations, Pre-application meeting, and IDEQ regs and policy verify no modeling required because the proposed action results in a net decrease in all air pollutants except two IDAPA HAPs, both of which see increases below IDAPA screening ELs.*

#### II. Application Content

**Application content should be prepared using the checklist below. The checklist is based on the requirements contained in IDAPA 58.01.01.202.**

- Apply for a Permit to Construct. Submit a Permit to Construct application using forms available on DEQ's website at <http://www.deq.idaho.gov/permitting/air-quality-permitting/forms-checklists.aspx>.

*Required forms are enclosed in Attachment A and also provided electronically with this application*

- Permit to Construct Application Fee.** The permit to construct application fee of \$1000 must be submitted at the time the original permit to construct application is submitted. Refer to IDAPA 58.01.01.224. If the permit to construct application is withdrawn or denied and a new application is submitted, a new \$1,000 application fee is required to be submitted. The application fee is not transferable or refundable. The application fee can be paid by check, credit card or Electronic Funds Transfer (EFT). If you choose to pay by credit card or EFT, contact DEQ's Fiscal Office at (208) 373-0502 to complete the necessary paper work. If you choose to pay by check, enclose the check with your permit to construct application.

*The application fee has been sent to IDEQ per IDEQ guidance. A copy of the application fee check is included in Attachment C*

- Process Description(s).** The process or processes for which construction is requested must be described in sufficient detail and clarity such that a member of the general public not familiar with air quality can clearly understand the proposed project. A process flow diagram is required for each process.

*The process description has not changed from previous IDEQ submittals, except for the change from the Wellons hog fuel boiler to the Cleaver Brooks NG fired boiler as the primary boiler. A copy of the facility's process description, which is enhanced from the description included in the IDEQ Statement of Basis, is included in Section 2.*

- Equipment List.** All equipment that will be used for which construction is requested must be described in detail. Such description includes, but is not limited to, manufacturer, model number or other descriptor, serial number, maximum process rate, proposed process rate, maximum heat input capacity, stack height, stack diameter, stack gas flowrate, stack gas temperature, etc. All equipment that will be used for which construction is requested must be clearly labeled on the process flow diagram.

*A detailed equipment list is included in Appendix B*

- Potential to Emit.** Submit the uncontrolled potential to emit (pre-control equipment emissions estimates) and the controlled potential to emit (post-control equipment emissions estimates) for all equipment for which construction is requested. Any limit on the equipment for which is construction is requested may become a limit on that equipment in the permit to construct.

*The Potential To Emit is summarized in Section 5. Appendix D and the accompanying spreadsheet IVC PTE 1213 provide detailed documentation of potential emissions and emission factors*

- Potential to Emit and Modeled Ambient Concentration for All Regulated Air Pollutants.** All proposed emission limits and modeled ambient concentrations for all regulated air pollutants must demonstrate compliance with all applicable air quality rules and regulations. Regulated air pollutants include criteria air pollutants, toxic air pollutants listed pursuant to IDAPA 58.01.01.585 and 586, and hazardous air pollutants listed pursuant to Section 112 of the 1990 Clean Air Act Amendments (go to <http://www.epa.gov/ttn/atw/188polls.html>). Describe in detail how the proposed emissions limits and modeled ambient concentrations demonstrate compliance with each applicable air quality rule and regulation. It is requested that emissions calculations, assumptions, and documentation be submitted with sufficient detail so DEQ can verify the validity of the emissions estimates.

*The italic type immediately above documents the Potential To Emit calculations and supporting documentation. The IDEQ approved modeling protocol in Appendix E documents that no air quality modeling is required to support the proposed action.*

- Scaled Plot Plan.** A scaled plot plan is required, with the location of each proposed process and the equipment that will be used in each process clearly labeled.

- Schedule for Construction.** A schedule for construction is required, including proposed dates for commencement and for completion. For phased projects, proposed dates are required for each phase of the project.

*No new construction is proposed*

- List all Applicable Requirements.** All applicable requirements must be cited by the rule or regulation section/subpart that applies for each emissions unit.

*Section 4 of the application text and form FRA document applicable regulations*

- Certification of Permit to Construct Application. The permit to construct application must be signed by the Responsible Official and must contain a certification signed by the Responsible Official. The certification must state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete. Refer to IDAPA 58.01.01.123.

*The signature on form GI in Attachment A provides the certification for this application and all its contents and supporting documentation*

- Submit the Permit to Construct Application. Submit the permit to construct application and application fee to the following address:

Air Quality Program Office – Application Processing  
Department of Environmental Quality  
1410 N. Hilton  
Boise, ID 83706-1255

*This application documents our submittal*

## Attachment 2

### Department of Environmental Quality - Air Quality Division Toxic Air Pollutant (TAP) Preconstruction Compliance Application Completeness Checklist

#### I. Actions Needed Before Submitting Application

- Refer to the Rule. Read the Demonstration of Preconstruction Compliance with Toxic Standards contained in IDAPA 58.01.01.210 (Rules Section 210) Rules for the Control of Air Pollution in Idaho (Rules). Toxic air pollutants (TAPs) are regulated in accordance with Rules Section 210 only from emission units constructed or modified on or after July 1, 1995.

Determine if a new (constructed after June 30, 1995) emission unit has the potential to emit a TAP listed in IDAPA 58.01.01.585 (Rules Section 585) or IDAPA 58.0101.586 ( Rules Section 586). Potential toxic air pollutants can be determined by reviewing commonly available emission factors, such as EPA's AP-42, or calculating emissions using a mass balance. For TAPs that are emitted but not listed in Rules Section 585 and 586, contact the Air Permit Hotline at 877-5PERMIT.

**Will the new or modified source result in new or increased potential emissions of TAPs?**

- Yes.** If yes, continue to section II.

#### II. Application Content

If a new source has the potential to emit a TAP, or if a modification to an existing source increases the potential to emit of a TAP, then one of the following methods (A-J) of demonstrating TAP preconstruction compliance must be documented for each TAP. Standard methods are one of A-C. The applicant may also use one of the specialized methods in D-J. Fugitive TAP emissions shall be included in the analysis. The compliance methods are based on the requirements of Rules Section 210. Applicants are often able to demonstrate preconstruction TAP compliance using a combination of methods A and B.

##### Emission Calculations

Emissions calculation methodologies used are dependent on whether a specific TAP is a non-carcinogen or a carcinogen and whether the compliance method chosen from the list below calls for controlled or uncontrolled emissions. Non-carcinogens are regulated based on a 24-hour averaging period and emission rates used for comparison to the non-carcinogen screening emissions level (EL) should be the maximum controlled or uncontrolled emissions quantity during any 24-hour period divided by 24. Carcinogens are regulated as a long term increment and emission rates used for comparison to the carcinogen EL should be the maximum controlled or uncontrolled emissions quantity during any 1 year period divided by 8760.

##### Modeling Analyses

Atmospheric dispersion modeling is required when controlled TAP emissions rates exceed ELs. Modeling analyses should be conducted in accordance with IDAPA 58.01.01.210.03. Quantification of Ambient Concentrations and the State of Idaho Air Quality Modeling Guideline ([http://www.deq.idaho.gov/air/data\\_reports/publications.cfm#model](http://www.deq.idaho.gov/air/data_reports/publications.cfm#model)). For non-carcinogen 24-hour increments, compliance is demonstrated using the maximum modeled 24-hour-averaged concentration from available meteorological data (typically a five-year data set). For carcinogen

long-term increments, compliance is demonstrated using the maximum modeled average concentration for the duration of the data set (one-year to five-year data set).

A submitted modeling report should clearly specify modeled emissions rates and results. All electronic model input files should be submitted, including BPIP input files.

#### Poly aromatic Hydrocarbons

Questions often arise regarding polyaromatic hydrocarbons as they are listed in Rules Section 586 of the Rules. The following two points are provided for clarification.

- 1) The following group of 7 PAH's (i.e. named POM), shall be combined and considered as one TAP equivalent in potency to benzo(a)pyrene:  
Benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, dibenzo(a, h)anthracene, chrysene, indeno(1,2,3,-cd) pyrene, benzo (a) pyrene
- 2) All other PAH's are considered as a single pollutant and the emission of each is compared the PAH increment listed in Rules Section 586.

#### Compliance Methods

Fill in letter(s) (A-J) from the list below for TAP compliance demonstration method(s) used: A.

#### A. TAPs Compliance Using Uncontrolled Emissions (Rules Section 210.05)

- Calculate the uncontrolled emissions (Rules Section 210.05) of each TAP from new emissions units. Uncontrolled emission rates are emissions at maximum capacity without the effect of physical or operational limitations. See Quantification of Emission Rates (Rules Section 210.02). Show calculations and state all assumptions.
- Calculate the increase of TAP emissions from modified emissions units. Show calculations and state all assumptions. The increase in emissions for a modified emission unit is determined by subtracting the potential to emit the TAP before the modification from the uncontrolled potential to emit after the modification. In conducting this analysis please note the following for TAP emission rate increase determinations:  
  
Uncontrolled emission rates after the modification are emissions at maximum capacity without the effect of physical or operational limitations.  
  
When determining the emissions increase from existing permitted emissions units the emission rate before the modification is equivalent to the emission limits contained in the permit for the TAPs or, if there no emission limits in the permit, by determining what the emission rate is under the physical or operational limitations contained in the permit.
- Aggregate the uncontrolled emissions for each TAP from all new emissions units with the increase in emissions from all modified emissions units.
- If the aggregated emissions increase for each TAP from the new and modified units, as determined above, are less than or equal to the respective TAP screening emissions level (EL) then preconstruction compliance with toxic standards has been demonstrated and no further analysis is required. Submit a table comparing the uncontrolled emissions rate to the applicable EL.

If aggregated emissions are greater than the respective screening emissions level (EL) for any pollutants, use another compliance demonstration method for those pollutants, such as methods B, C, or D.



Iaho DEQ Emission Factor Guide for Wood Industry

ATTACHMENT C

01/08/97  
VAB

Process/Equipment	Description	Units	Pounds PM	Pounds PM-10	Pounds SO <sub>x</sub>	Pounds NO <sub>x</sub>	Unit Throughput CO	VOC	PM/PM-10 Adj. Factor	For Condition	Reference	
Wood-fired	Dutch Oven/Pot cell	1000 lb Sln Tons burned	0.40	0.20	0.014	0.31	3.0	0.13	-	-	3	
	Spreader-Stoker	1000 lb Sln Tons burned	0.40	0.20	0.014	0.31	2.0	0.12	-	-	3	
	Fluidized bed	1000 lb Sln Tons burned	0.40	0.20	0.014	0.31	1.0	0.13	-	-	3	
Wood-fired	Uncontrolled	Tons burned	5.5	4.4	-	-	-	-	-	-	3	
	With flyash re-injection	Tons burned	4.2	2.6	-	-	-	-	-	-	3	
Bark-fired	Uncontrolled	Tons burned	47	17	-	-	-	-	-	-	3	
	With flyash re-injection	Tons burned	14	11	-	-	-	-	-	-	3	
Woodbark-fired	Uncontrolled	Tons burned	5.0	3.2	-	-	-	-	-	-	3	
	With wet scrubber	Tons burned	2.8	2.5	-	-	-	-	-	-	3	
	Uncontrolled	Tons burned	7.2	6.5	-	-	-	-	-	-	3	
	With flyash re-injection	Tons burned	6.0	5.5	-	-	-	-	-	-	3	
Paper/Dryer-Gas Heat	Doug Fir (Uncont)	1000 sq. ft. on 3/8" basis	0.62	0.52	-	0.12	0.02	0.22	-	-	3	
	(Burlap or 45% Cr)	1000 sq. ft. on 3/8" basis	0.29	0.29	-	0.12	0.02	0.22	-	-	3	
	Hemlock Fir (Uncont)	1000 sq. ft. on 3/8" basis	0.15	0.15	-	0.12	0.02	0.22	-	-	3	
Sim Heat	(Burlap or 45% Cr)	1000 sq. ft. on 3/8" basis	0.10	0.10	-	-	-	-	-	-	3	
	Doug Fir (Uncont)	1000 sq. ft. on 3/8" basis	1.01	1.01	-	-	-	0.04	-	-	3	
	(Burlap or 45% Cr)	1000 sq. ft. on 3/8" basis	0.55	0.55	-	-	-	0.04	-	-	3	
Wood Fired	Hemlock Fir (Uncont)	1000 sq. ft. on 3/8" basis	0.25	0.25	-	-	-	0.04	-	-	3	
	(Burlap or 45% Cr)	1000 sq. ft. on 3/8" basis	0.15	0.15	-	-	-	0.04	-	-	3	
	All Species (<20% moist. in heat fuel) (> 20% moisture in heat unit fuel)	1000 sq. ft. on 3/8" basis	0.73	0.36	-	0.4	1.4	0.2	-	-	3	
Plywood/Particleboard	General, not waste	10000 sq. ft. of or 3/8" board	4.25	2.47	-	-	-	1.52	-	-	1,2	
	Drying:	Fir/Sapwood/Spr Fir	10000 sq. ft. of or 3/8" boards	4.54	2.58	0	-	-	0.45	-	-	1,2
		Fir/Sapwood/Gas Fr	10000 sq. ft. of or 3/8" boards	2.37	1.37	0	-	-	7.55	-	-	1,2
		Fir/Softwood Ply	10000 sq. ft. of or 3/8" boards	3.18	1.84	0	-	-	1.3	-	-	1,2
		Larch Plyed Veneer	10000 sq. ft. of or 3/8" boards	4.14	2.4	0	-	-	0.19	-	-	1,2
		Soft Fir Ply Veneer	10000 sq. ft. of or 3/8" boards	3.7	2.15	0	-	-	2.94	-	-	1,2
		Particleboard	Tons Process	0.6	0.26	0	0	0	0	-	-	1,2
	Hardboard:	Coac Hardboard	T Dry Product	-	-	0	0.5	-	1.0	-	-	1,2
		Waterboard	10M ft Dried	899.0	494.0	17.0	114.0	-	499.0	-	-	1,2
		Pressing	T Dry Product	-	-	0	0	-	1.45	-	-	1,2
		Tempering	T Dry Product	-	-	0	0	-	0	-	-	1,2
		Soak oven	T Dry Product	-	-	0	0.1	-	0.003	-	-	1,2
Pre-dryer		T Dry product	-	-	0	0.3	-	1.0	-	-	1,2	
Log Debarling	Uncontrolled Emiss.	Tons of logs	0.024	0.011	-	-	-	-	-	-	1,2	
Boiling Logs	Uncontrolled Emiss.	Tons of Logs	0.26	0.2	-	-	-	0.4-1.0 <sup>m</sup>	55-85% H2O in log	-	1,2	
Residue Pile	Uncontrolled Emiss.	Tons Handled	1.0	0.35	-	-	-	0.4-1.0	50-85% H2O in pile	-	1,2	
Lumber Drying Kilns	Uncontrolled Emiss.	M Board Feet	0.33	0.19	-	-	-	1.50	-	-	1,4	
Sawdust Exhaust	Dry & Green Chips, Shavings, Hogged Fuel/Bark, Green Sawdust	Bonedry Tons	0.5	0.25 (both for Medium Efficiency)*	-	-	-	-	-	-	3	
	Mix Mix	(grains/scr Air)	0.2	0.15 (both for High Efficiency)*	-	-	-	-	-	-	3	
	Mix Mix	(grains/scr Air)	0.001	0.001 (with Baghouse)	-	-	-	-	-	-	3	
	Mix Mix	(grains/scr Air)	2.0	1.5 (both-- for High Efficiency)*	-	-	-	-	-	-	3	
	Sawdust	Bonedry Tons	0.04	0.04 (with Baghouse)	-	-	-	-	-	-	3	
	Sawdust	(grains/scr Air)	0.055	0.028 (both for Medium Efficiency)*	-	-	-	-	0.65-1.0 <sup>m</sup>	50-85% H2O in Mix	3	
Sawdust Exhaust	Sawdust	(grains/scr Air)	0.025	0.02 (both for High Efficiency)*	-	-	-	-	0.65-1.0 <sup>m</sup>	50-85% H2O in Mix	3	
	Sawdust	(grains/scr Air)	0.001	0.001 (with Baghouse)	-	-	-	-	0.65-1.0 <sup>m</sup>	50-85% H2O in Mix	3	
	Sawdust	(grains/scr Air)	0.001	0.001 (with Baghouse)	-	-	-	-	0.65-1.0 <sup>m</sup>	50-85% H2O in Mix	3	
Log Box	Medium Efficiency	Bonedry Tons	0.1	0.05	-	-	-	-	-	-	3	
Saw Wood	Bin Venting	Tons Handled	1.0	0.55	-	-	-	-	0.4-1.0	50-85% H2O content	1,2	
	Bin Unloading	Tons Handled	3.0	1.2	-	-	-	-	0.4-1.0	50-85% H2O content	1,2	

EPA 450/4-90-003, March 1990, "AIRS Facility Subsystem Source Classification Codes and Emission Factor Listing for Criteria Air Pollutants." AP-42, dated February 1990.

Oregon DEQ/DAQ Permitting and Inspection Manual, November 1993. Bullen, R. and Washington, E., ET Report 1/20 and 1/26/92 by Environmental Measurement, Flagstaff, AZ, 1992. AP-42, dated January 1988.

\*Efficiency range determined per G. E. Loppa equations: (Air Pollution Control by C. D. Cooper and F. C. Atty; Chapter 4). Consider site whether operation is inside and how well enclosed.

<sup>m</sup>Mix is less dry and more coarse than Sander Dust. <sup>n</sup>Both come from same source and overlapped ranges. Use the lower number for both if good operation of boiler.







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**EMISSION FACTORS**  
**PM<sub>2.5</sub> fractions of PM<sub>10</sub>**

**AQ-EF08**

<b>Emission Unit</b>	<b>Fuel</b>	<b>Controls</b>	<b>% PM<sub>2.5</sub> of PM<sub>10</sub></b>	<b>Source of % PM<sub>2.5</sub></b>
Boiler	Natural gas LPG	None	100	AP-42 Table 1.4-2
Boiler - Utility	#6 oil	None	76 <sup>i</sup>	AP-42 Table 1.3-4
Boiler - Utility	#6 oil	ESP	98 <sup>i</sup>	AP-42 Table 1.3-4
Boiler - Utility	#6 oil	Scrubber	98 <sup>i</sup>	AP-42 Table 1.3-4
Boiler - Industrial	#6 oil	None	68 <sup>i</sup>	AP-42 Table 1.3-5
Boiler - Industrial	#6 oil	Multiclone	44 <sup>i</sup>	AP-42 Table 1.3-5
Boiler - Industrial	#2 oil	None	67 <sup>i</sup>	AP-42 Table 1.3-6
Boiler - Commercial	#6 oil	None	44 <sup>i</sup>	AP-42 Table 1.3-7
Boiler - Commercial	#2 oil	None	89 <sup>i</sup>	AP-42 Table 1.3-5
Boiler	Wood <sup>i</sup>	None	84	AP-42 Table 1.6-5
Boiler	Wood	Multiclones <sup>ii</sup>	60	AP-42 Table 1.6-5
Boiler	Wood	Wet scrubber	100	AP-42 Table 1.6-5
Boiler	Wood	ESP	91	AP-42 Table 1.6-1
Boiler	Wood	Fabric filter	90	AP-42 Table 1.6-1
Boiler	Wood	EGB <sup>iii</sup>	90	AP-42 Table 1.6-1
Boiler	Wood	DEGF <sup>iv</sup>	88 <sup>v</sup>	AP-42 Table 1.6-5
Recovery Boiler – w/o dry contact evaporator		ESP	90 <sup>v</sup>	AP-42 Table 10.2-3
Lime kiln		None	63 <sup>v</sup>	AP-42 Table 10.2-4
Lime kiln		Venturi scrubber	98 <sup>v</sup>	AP-42 Table 10.2-4
Lime kiln		ESP	94 <sup>v</sup>	AP-42 Table 10.2-5



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**EMISSION FACTORS**  
**PM<sub>2.5</sub> fractions of PM<sub>10</sub>**

**AQ-EF08**

<b>Emission Unit</b>	<b>Fuel</b>	<b>Controls</b>	<b>% PM<sub>2.5</sub> of PM<sub>10</sub></b>	<b>Source of % PM<sub>2.5</sub></b>
Smelt dissolving tank		None	83 <sup>v</sup>	AP-42 Table 10.2-6
Smelt dissolving tank		Packed tower	89 <sup>v</sup>	AP-42 Table 10.2-6
Smelt dissolving tank		Venturi scrubber	91 <sup>v</sup>	AP-42 Table 10.2-7
Asphalt dryer/hot screens/mixer		None	1 <sup>v</sup>	AP-24
Asphalt dryer/hot screens/mixer		Fabric filter	85 <sup>v</sup>	AP-42 Table 11.1-2
Asphalt drum mixer dryer		None	24 <sup>v</sup>	AP-42 Table 11.1-4
Asphalt drum mixer dryer		Fabric filter	70 <sup>v</sup>	AP-42 Table 11.1-4
Portland Cement Kiln – wet process		None	29 <sup>v</sup>	AP-42 Table 11.6-5
Portland Cement Kiln – dry process		None	43 <sup>v</sup>	AP-42 Table 11.6-5
Portland Cement Kiln – wet process		ESP	75 <sup>v</sup>	AP-42 Table 11.6-5
Portland Cement Kiln – dry process		Fabric filter	54 <sup>v</sup>	AP-42 Table 11.6-5
Portland Cement Clinker Coolers		None	1 <sup>v</sup>	AP-42 Table 11.6-6
Portland Cement Clinker Coolers		Gravel bed filter	53 <sup>v</sup>	AP-42 Table 11.6-6
Concrete Truck Mix Operations		None	18 <sup>v</sup>	AP-42
Concrete Truck Mix Operations		Controlled	See equation	AP-42 Equation 11.12-1
Concrete Central Mix Operations		None	See equation	AP-42 Equation 11.12-1
Concrete Central Mix Operations		Controlled	See equation	AP-42 Equation 11.12-1
Glass Melting Furnace		None	96 <sup>v</sup>	AP-42 Table 11.15-3
Glass Melting Furnace		ESP	71 <sup>v</sup>	AP-42



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**EMISSION FACTORS**  
**PM<sub>2.5</sub> fractions of PM<sub>10</sub>**

**AQ-EF08**

Emission Unit	Fuel	Controls	% PM <sub>2.5</sub> of PM <sub>10</sub>	Source of % PM <sub>2.5</sub>
				Table 11.15-3
Crushed Stone – tertiary crushing		Controlled	19 <sup>v</sup>	AP-42 Table 11.19.2-2
Crushed Stone – fines crushing		Controlled	6 <sup>v</sup>	AP-42 Table 11.19.2-2
Crushed Stone - screening		Controlled	7 <sup>v</sup>	AP-42 Table 11.19.2-2
Crushed Stone – conveyor transfer point		Controlled	28 <sup>v</sup>	AP-42 Table 11.19.2-2
Plywood Press	---	None	50	DEQ estimate
Particleboard Press Fugitives	---	None	50	DEQ estimate
Particleboard Board Cooler	---	None	50	DEQ estimate
Dry Kiln	---	None	100	DEQ estimate
Truck Loadout	---	None	50	DEQ estimate
Debarking	---	None	50	DEQ estimate
Sawing	---	None	50	DEQ estimate
Any	---	Cyclone	50	DEQ estimate
Any	---	Baghouse	100	DEQ estimate
Any	---	RTO	100	DEQ estimate
Any	---	RCO	100	DEQ estimate
Any	---	Biofilter	100	DEQ estimate
Storage Piles	---	None	15	AP-42 <sup>vi</sup>
Paved Roads	---	None	25	AP-42 Table 13.2.1-1
Unpaved Roads	---	None	10	AP-42 <sup>vi</sup>

<sup>i</sup> The PM<sub>2.5</sub> percentage for oil fired boilers is based on both filterable and condensable PM<sub>2.5</sub>.

<sup>ii</sup> Mechanical collector

<sup>iii</sup> EGB = electrolyzed gravel bed

<sup>iv</sup> DEGF = dry electrostatic granular filter

<sup>v</sup> The PM<sub>2.5</sub> percentage is based on filterable PM<sub>2.5</sub> only.

<sup>vi</sup> Background Document for **Revisions to Fine Fraction Ratios** Used for AP-42 Fugitive Dust Emission Factors (November 2006)

**EMISSION FACTORS  
WOOD PRODUCTS**

**AQ-EF02**

Process Equipment	Description	Throughput Units	Pounds of Pollutant per Throughput Unit <sup>1</sup>				
			PM <sub>2.5</sub>	SO <sub>2</sub>	NO <sub>x</sub>	CO	VOC
Wood-Fired Boilers	Dutch Oven	1000 lb steam	0.4 <sup>3</sup>	0.014	0.31 <sup>4</sup>	3.0 <sup>4</sup>	0.13
	Spreader-Stoker	1000 lb steam	0.4 <sup>3</sup>	0.014	0.31 <sup>4</sup>	2.0 <sup>4,5</sup>	0.13
	Fuel Cell	1000 lb steam	0.4 <sup>3</sup>	0.014	0.31 <sup>4</sup>	1.0 <sup>4,6</sup>	0.13
Veneer Dryer – Gas Heat	Doug Fir (uncontrolled)	1000 ft <sup>2</sup> (3/8" basis)	0.52	NA <sup>7</sup>	0.12	0.02	0.22
	Doug Fir (Burley or 45% control)	1000 ft <sup>2</sup> (3/8" basis)	0.29	NA	0.12	0.02	0.22
	Hemlock, White Fir (uncontrolled)	1000 ft <sup>2</sup> (3/8" basis)	0.15	NA	0.12	0.02	0.22
	Hemlock, White Fir (Burley or 45% control)	1000 ft <sup>2</sup> (3/8" basis)	0.10	NA	0.12	0.02	0.22
Veneer Dryer – Steam Heat	Doug Fir (uncontrolled)	1000 ft <sup>2</sup> (3/8" basis)	1.01	NA	NA	NA	0.04
	Doug Fir (Burley or 45% control)	1000 ft <sup>2</sup> (3/8" basis)	0.56	NA	NA	NA	0.04
	Hemlock, White Fir (uncontrolled)	1000 ft <sup>2</sup> (3/8" basis)	0.25	NA	NA	NA	0.04
	Hemlock, White Fir (Burley or 45% control)	1000 ft <sup>2</sup> (3/8" basis)	0.15	NA	NA	NA	0.04
Veneer Dryer – Wood Fired	All species (<20% moisture in fuel)	1000 ft <sup>2</sup> (3/8" basis)	0.75 <sup>8</sup>	NA	0.4	1.4	0.2
	All species (≥20% moisture in fuel)	1000 ft <sup>2</sup> (3/8" basis)	1.50	NA	0.4	1.4	0.2
Cyclone- Dry and Green chips, Shavings, Hogged Fuel/Bark, Green Sawdust	Medium Efficiency	Bone dry tons	0.5	NA	NA	NA	NA
	High Efficiency	Bone dry tons	0.2	NA	NA	NA	NA
	Baghouse control	Bone dry tons	0.001	NA	NA	NA	NA
Cyclone - Sanderdust	High Efficiency	Bone dry tons	2.0	NA	NA	NA	NA
	Baghouse control	Bone dry tons	0.04	NA	NA	NA	NA
Target Box		Bone dry tons	0.1	NA	NA	NA	NA
Lumber Dry Kilns	Douglas Fir	1000 board feet	0.02 <sup>9</sup>	NA	NA	NA	0.6
	Hemlock	1000 board feet	0.05 <sup>9</sup>	NA	NA	NA	0.39 <sup>12</sup>
	Ponderosa Pine	1000 board feet	ND <sup>10</sup>	NA	NA	NA	1.7 <sup>10</sup>
Press Vents - uncontrolled	Particleboard	1000 ft <sup>2</sup> (3/4" basis)	SS <sup>11</sup>	NA	NA	NA	SS
	Hardboard	1000 ft <sup>2</sup> (1/8" basis)	SS	NA	NA	NA	SS

<sup>1</sup> The emissions factors listed in this table should only be used when better information (i.e., source test data) is not available.

<sup>2</sup> The PM<sub>10</sub> and PM<sub>2.5</sub> fractions are dependent upon the type of control equipment. See AQ-EF03 for estimated PM<sub>10</sub> and PM<sub>2.5</sub> fractions.

<sup>3</sup> The PM factors are equivalent to 0.1 gr/dscf at 65% boiler efficiency. For other allowable emissions concentrations, the emission factor may be ratioed (e.g., 0.2/0.1 gr/dscf x 0.40 = 0.80 lb/10<sup>3</sup> steam).

<sup>4</sup> These factors are based on collective source tests as of 1992.

<sup>5</sup> Spreader-Stokers with small combustion chambers may exhibit higher CO levels.

<sup>6</sup> Recent tests have shown CO levels in the range of 0.1 to 0.5.

<sup>7</sup> There is no applicable emission factor because the pollutant is either not emitted or emitted at negligible levels.

<sup>8</sup> Based on statewide rule limit.

<sup>9</sup> Based on OSU study (2000)

<sup>10</sup> No data available, but expected to be less than Douglas fir factor.

<sup>11</sup> Use source specific data because most plants have performed source testing.

<sup>12</sup> Based on OSU Study (2006)

