



RECEIVED
FEB 15 2012

DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE A Q PROGRAM

687 W. CANFIELD AVE., STE. 100 COEUR D' ALENE, ID 83815 IDAHOFORESTGROUP.COM 208.762.6630

February 7, 2012

Bill Rogers, P.E.
Idaho Department of Environmental Quality
Air Quality Division
1410 N. Hilton
Boise, ID 83706
Tel: (208) 373 – 0502

**Re: Idaho Forest Group – Laclede
Facility ID No. 017-00027**

Dear Bill,

Idaho Forest Group (IFG) is submitting the enclosed Tier I Permit Renewal application for the Sawmill and Planer facility located at Laclede, Idaho. The IFG – Laclede facility is regulated under Tier I Operating Permit No. T1-2008.0201, issued on December 4, 2007 and modified on January 21, 2010. The Tier I permit expires on December 4, 2012 and the renewal application is due by June 4, 2012.

Idaho DEQ staff thoroughly reviewed the Laclede Tier I permit during the modification process in 2009/2010. Nothing at the facility has changed or is projected to change in the foreseeable future. IFG is not requesting any permit changes during this Tier I renewal.

Application Materials

This application includes Idaho Form CSTI and a signed Form GI. Form FRA is also included for applicable federal regulations including NESHAPS Subparts ZZZZ, DDDD and DDDDD. Subpart DDDDD is the Boiler MACT, which has not been finalized yet. The applicability review for the Form FRA has a place holder for the Subpart DDDDD applicability review.

Form CAM is being resubmitted for each of the two hog fuel boilers, without any changes to the Compliance Assurance Monitoring (CAM) conditions. The CAM requirements in the Tier I permit were updated to the current permit format during the previous permit modification.

The application includes an updated facility-wide emissions inventory. The inventory includes updated EPA emission factors and has been expanded to include PM_{2.5}. The emission inventory does not represent any changes in equipment or methods of operation at the Laclede Facility. The emissions inventory spreadsheet will be provided to the DEQ permitting engineer upon request.

Please contact Larry Benda at (208) 255-3220 or Diane Lorenzen at (406) 549-0210 if you have any questions about the application materials.

Signature by Responsible Official

Based on the information and belief formed after reasonable inquiry, the statements and information contained herein are true, accurate and complete, to the best of my knowledge.

Sincerely,


Scott Atkison
President

Attachment
Enclosures

CC Mike Henley, Idaho Forest Group
Diane Lorenzen, Pioneer Technical Services



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 – Tier I **Form CSTI**
 Revision 5
 08/28/08

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

COMPANY NAME, FACILITY NAME, AND FACILITY ID NUMBER			
1. Company Name	Idaho Forest Group		
2. Facility Name	Laclede	3. Facility ID No.	017-00027
4. Brief Project Description - One sentence or less	Tier I Permit Renewal Application		

PERMIT APPLICATION TYPE	
5. <input type="checkbox"/> Initial Tier I	<input type="checkbox"/> Tier I Administrative Amendment
<input type="checkbox"/> Tier I Minor Modification	<input type="checkbox"/> Tier I Significant Modification
<input checked="" type="checkbox"/> Tier I Renewal: Permit No.: _____ Date Issued: _____	

FORMS INCLUDED			
Include d	N/A	Forms	DEQ Verify
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Form CSTI – Cover Sheet	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Form GI – Facility Information	<input type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Form EU0 – Emissions Units General	<input type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Form EU1– Industrial Engine Information	Please specify number of EU1s attached: _____ <input type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Form EU2– Nonmetallic Mineral Processing Plants	Please specify number of EU2s attached: _____ <input type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Form EU3– Spray Paint Booth Information	Please specify number of EU3s attached: _____ <input type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Form EU4– Cooling Tower Information	Please specify number of EU4s attached: _____ <input type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Form EU5 – Boiler Information	Please specify number of EU5s attached: _____ <input type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Form CBP– Concrete Batch Plant	Please Specify number of CBPs attached: _____ <input type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Form HMAP – Hot Mix Asphalt Plant	Please specify number of HMAPs attached: _____ <input type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>	PERF – Portable Equipment Relocation Form	<input type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Form BCE– Baghouses Control Equipment	<input type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Form SCE– Scrubbers Control Equipment	<input type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Form VSCE – Venturi Scrubber Control Equipment	<input type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Form ESP – Electrostatic Precipitator	<input type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Form AO – Afterburner/Oxidizer	<input type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Form CYS – Cyclone Separator	<input type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Form CA – Carbon Adsorber	<input type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Forms EI-CP1 - EI-CP4– Emissions Inventory– criteria pollutants (Excel workbook, all 4 worksheets)	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Form CAM – Compliance Assurance Monitoring	<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

General Information **Form GI**
 Revision 7
 2/18/10

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	2. Facility Name:
Idaho Forest Group	Laclede
3. Brief Project Description:	Tier I Permit Renewal Application

FACILITY INFORMATION	
4. Primary Facility Permit Contact Person/Title	Mike Henley Mill Manager
5. Telephone Number and Email Address	(208) 255-3220 mhenley@idahoforestgroup.com
6. Alternate Facility Contact Person/Title	Larry Benda Boiler Lead
7. Telephone Number and Email Address	(208) 255-9228 lbenda@idahoforestgroup.com
8. Address to Which the Permit Should be Sent	P.O. Box 220
9. City/County/State/Zip Code	Laclede Bonner Idaho 83841
10. Equipment Location Address (if different than the mailing address above)	30 Riley Creek Park Drive
11. City/County/State/Zip Code	Laclede Bonner Idaho 83841
12. Is the Equipment Portable?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
13. SIC Code(s) and NAICS Code	Primary SIC: 2421 Secondary SIC: NAICS: 321113
14. Brief Business Description and Principal Product	Sawmill, dry kilns and planer mill that produce finished lumber. Two hog-fuel boilers which provide steam to heat the dry kilns.
15. Identify any adjacent or contiguous facility that this company owns and/or operates	None
16. Specify the reason for the application	<input type="checkbox"/> Permit to Construct (PTC) <div style="border: 1px solid black; padding: 5px; margin: 5px 0;"> <p>For Tier I permitted facilities only: If you are applying for a PTC then you must also specify how the PTC will be incorporated into the Tier I permit.</p> <input type="checkbox"/> Incorporate the PTC at the time of the Tier I renewal <input type="checkbox"/> Co-process the Tier I modification and PTC <input type="checkbox"/> Administratively amend the Tier I permit to incorporate the PTC upon your request (IDAPA 58.01.01.209.05.a, b, or c) </div> <input checked="" type="checkbox"/> Tier I Permit <input type="checkbox"/> Tier II Permit <input type="checkbox"/> Tier II/Permit to Construct

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(s) are true, accurate, and complete.	
17. Responsible Official's Name/Title	Scott Atkinson President
18. Responsible Official's Signature	Date: 2/7/12
19. <input checked="" type="checkbox"/> Check here to indicate that you would like to review the 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

AIR PERMIT APPLICATION

Revision 6
 10/7/09

For each box in the table below, CTRL+click on the blue underlined text for instructions and information.

IDENTIFICATION	
1. Company Name: <p style="text-align: center;">Idaho Forest Group</p>	2. Facility Name: <p style="text-align: center;">Laclede</p>
3. Brief Project Description: Tier I Permit Renewal Application	
APPLICABILITY DETERMINATION	
4. List applicable subparts of the New Source Performance Standards (NSPS) (40 CFR part 60). Examples of NSPS affected emissions units include internal combustion engines, boilers, turbines, etc. The applicant must thoroughly review the list of affected emissions units.	List of applicable subpart(s): <p style="text-align: center;">Not Applicable</p>
5. List applicable subpart(s) of the National Emission Standards for Hazardous Air Pollutants (NESHAP) found in 40 CFR part 61 and 40 CFR part 63 . Examples of affected emission units include solvent cleaning operations, industrial cooling towers, paint stripping and miscellaneous surface coating. EPA has a web page dedicated to NESHAP that should be useful to applicants.	List of applicable subpart(s): <p>NESHAP Subpart DDDD – Plywood and Composite Wood Products MACT</p> <p>NESHAP Subpart ZZZZ – Reciprocating Internal Combustion Engines. Applies to fire-water pump engine.</p> <p>NESHAP Subpart DDDDD – Boiler MACT</p>
6. For each subpart identified above, conduct a complete a regulatory analysis using the instructions and referencing the example provided on the following pages. <p>Note - Regulatory reviews must be submitted with sufficient detail so that DEQ can verify applicability and document in legal terms why the regulation applies. Regulatory reviews that are submitted with insufficient detail will be determined incomplete.</p>	<input checked="" type="checkbox"/> A detailed regulatory review is provided (Follow instructions and example).

Applicability Review for Attachment to Idaho Form FRA

PART 63_NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS FOR SOURCE. Subpart ZZZZ_National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines

§ 63.6585 Am I subject to this subpart?

You are subject to this subpart if you own or operate a stationary RICE at a major or area source of HAP emissions ... (a) A stationary RICE is any internal combustion engine which uses reciprocating motion to convert heat energy into mechanical work and which is not mobile. **The Laclede fire-water pump engine is a diesel-fired (compression ignition) RICE. IFG's Laclede facility is a Major Source of HAP.**

§ 63.6590 What parts of my plant does this subpart cover?

This subpart applies to each affected source... (ii) For stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions, a stationary RICE is existing if you commenced construction or reconstruction of the stationary RICE before June 12, 2006. **The Laclede fire-water pump engine is an affected source. It is an existing stationary RICE with a site rating of 220 brake HP, and was installed in 2004.**

§ 63.6595 When do I have to comply with this subpart?

(a) *Affected sources.* (1) If you have an existing stationary RICE.. you must comply with the applicable emission limitations and operating limitations no later than June 15, 2007.

§ 63.6602 What emission limitations must I meet if I own or operate an existing stationary RICE with a site rating of equal to or less than 500 brake HP located at a major source of HAP emissions?

If you own or operate an existing stationary RICE with a site rating of equal to or less than 500 brake HP located at a major source of HAP emissions, you must comply with the emission limitations in Table 2c to this subpart which apply to you.

Table 2c to Subpart ZZZZ of Part 63—

For each . . .	You must meet the following requirement, except during periods of startup . . .	During periods of startup you must . . .
1. Emergency stationary CI RICE and black start stationary CI RICE. ¹	a. Change oil and filter every 500 hours of operation or annually, whichever comes first; ² b. Inspect air cleaner every 1,000 hours of operation or annually, whichever comes first; c. Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary. ³	Minimize the engine's time spent at idle and minimize the engine's startup time at startup to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes, after which time the non-startup emission limitations apply. ³

The Laclede fire-water pump engine is an emergency engine. It is only used for fire suppression. It is tested regularly to ensure readiness.

§ 63.6640 How do I demonstrate continuous compliance with the emission limitations and operating limitations?

IFG must comply with the following conditions for operation of the emergency fire-water pump engine.

(f) Requirements for emergency stationary RICE. (1) If you own or operate an existing emergency stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions...you must operate the emergency stationary RICE according to the requirements in paragraphs (f)(1)(i) through (iii) of this section.

(i) There is no time limit on the use of emergency stationary RICE in emergency situations.

(ii) You may operate your emergency stationary RICE for the purpose of maintenance checks and readiness testing, provided that the tests are recommended by Federal, State or local government, the manufacturer, the vendor, or the insurance company associated with the engine.

(iii) You may operate your emergency stationary RICE up to 50 hours per year in non-emergency situations, but those 50 hours are counted towards the 100 hours per year provided for maintenance and testing.

§ 63.6645 What notifications must I submit and when?

(5) This requirement does not apply if you own or operate an existing stationary RICE less than 100 HP, an existing stationary emergency RICE, or an existing stationary RICE that is not subject to any numerical emission standards.

According to 63.6645(5), notifications are not required for an existing stationary emergency CI RICE. IFG understands that notification is not required for the fire-water pump engine.

§ 63.6650 What reports must I submit and when?

(a) You must submit each report in Table 7 of this subpart that applies to you.

No reports in Table 7 apply.

Sec. 63.6655 What records must I keep?

IFG must keep records of engine operation for 5 years, as described below.

(f) If you own or operate any of the stationary RICE in paragraphs (f)(1) or (2) of this section, you must keep records of the hours of operation of the engine that is recorded through the nonresettable hour meter. The owner or operator must document how many hours are spent for emergency operation, including what classified the operation as emergency and how many hours are spent for non-emergency operation. If the engines are used for demand response operation, the owner or operator must keep records of the notification of the emergency situation, and the time the engine was operated as part of demand response.

Applicability Review for Attachment to Idaho Form FRA

TITLE 40--PROTECTION OF ENVIRONMENT, CHAPTER I--ENVIRONMENTAL PROTECTION AGENCY, PART 63_NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS FOR SOURCE CATEGORIES. Subpart DDDD - National Emission Standards for Hazardous Air Pollutants: Plywood and Composite Wood Products

Sec. 63.2231 Does this subpart apply to me?

This subpart applies to you if you meet the criteria in paragraphs (a) and (b) of this section.

(a) You own or operate a PCWP manufacturing facility. A PCWP manufacturing facility is a facility that manufactures plywood... and/or composite wood... **Plywood and composite wood products manufacturing facilities also include facilities that manufacture dry veneer and lumber kilns located at any facility.** Plywood and composite wood products include, but are not limited to, plywood, veneer, particleboard, oriented strandboard, hardboard, fiberboard, medium density fiberboard, laminated strand lumber, laminated veneer lumber, wood I-joists, kiln-dried lumber, and glue-laminated beams.

(b) The PCWP manufacturing facility is located at a major source of HAP emissions.

The IFG Laclede facility is a major source of HAPs and includes lumber dry kilns. Therefore the PCWP NESHAPS applies.

Sec. 63.2232 What parts of my plant does this subpart cover?

(a) This subpart applies to each new, reconstructed, or existing affected source at a PCWP manufacturing facility. (b) ... **The affected source includes lumber kilns at PCWP manufacturing facilities and at any other kind of facility.** (c) An affected source is a new affected source if you commenced construction of the affected source after January 9, 2003, and you meet the applicability criteria at the time you commenced construction. (d) An affected source is reconstructed if you meet the criteria as defined in Sec. 63.2. (e) An affected source is existing if it is not new or reconstructed.

The lumber kilns at the Laclede sawmill are an affected existing source.

Sec. 63.2252 What are the requirements for process units that have no control or work practice requirements?

...For process units not subject to the compliance options or work practice requirements specified in Sec. 63.2240 (including, but not limited to, lumber kilns), you are not required to comply with the compliance options, work practice requirements, performance testing, monitoring, SSM plans, and recordkeeping or reporting requirements of this subpart, or any other requirements in subpart A of this part, except for the initial notification requirements in Sec. 63.9(b).

There are no applicable requirements in the PCWP MACT regulations for lumber dry kilns except for initial notification requirements. The previous owner of the Laclede sawmill, Riley Creek Lumber, submitted the initial notification for the PCWP MACT on January 25, 2005.

Applicability Review for Attachment to Idaho Form FRA

TITLE 40--PROTECTION OF ENVIRONMENT, CHAPTER I--ENVIRONMENTAL PROTECTION AGENCY, PART 63_ NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS FOR SOURCE CATEGORIES. Subpart DDDDD - National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters

§ 63.7485 Am I subject to this subpart?

You are subject to this subpart if you own or operate an industrial, commercial, or institutional boiler or process heater as defined in § 63.7575 that is located at, or is part of, a major source of HAP .. **The two Laclede boilers are located at a major source of HAPs and are subject to this subpart.**

§ 63.7490 What is the affected source of this subpart?

(a) This subpart applies to new, reconstructed, or existing affected sources .. (d) A boiler or process heater is existing if it is not new or reconstructed. **The two Laclede boilers are existing sources.**

This regulation is still under development by EPA. IFG will file a complete applicability review when the regulation is final.



Please see instructions on pages 3-8 before filling out the form.

IDENTIFICATION			
1. Company Name:	Idaho Forest Group LLC	2. Facility Name:	Idaho Forest Group– Laclede
3. Facility ID No.:		017-00027	
4. Brief Project Description: Tier I Permit Renewal, No change to Form CAM			

MONITORING APPROACH SUBMITTAL

Background		
5. Emissions Unit	Description (type of emission point): Hog Fuel Boiler #1	Identification (emission point number): Perry Smith/ABCO Boiler #1
6. Applicable Regulation, Limits, and Requirements	Emission Monitoring Applicable regulation citation: IDAPA 58.01.01.677 and PTC NO. 017-00027	Pollutant: PM Emission limit: 0.200 gr/dscf @ 8% oxygen
		Pollutant: PM Emission limit: 22 lb/hr and 96 tpy
		Pollutant: Emission limit:
		Monitoring requirements: Pressure drop across multiclone. Voltage/current applied by each transformer/rectifier (T/R) set.
7. Control Technology		Brief description: Multiclone followed by ESP with three fields.

Table 1. Monitoring Approach			
	Indicator No. 1	Indicator No. 2	Indicator No. 3
I. Indicator Description Measurement Approach	Pressure drop across the multiclone.	Voltage applied by each T/R set to the discharge electrodes.	Current applied by each T/R set to the discharge electrodes.
	Pressure differential gauge with operator readout for each T/R set.	Continuous voltage monitor with operator readout for each T/R set.	Continuous current monitor with operator readout for each T/R set.
II. Indicator Range (Quality improvement plan threshold optional)	0.5 to 5.9 inches water column (IWC)	30 to 45 kilovolts (kV)	10 to 150 milliamps (mA)
III. Performance Criteria	_____	_____	_____
A. Data Representativeness	The pressure differential ports are located upstream and downstream of the cyclone array in the multiclone.	The voltage is measured using instrumentation provided with the ESP	The current is measured using instrumentation provided with the ESP
B. Verification of Operational Status	Pressure differential gauge properly installed as per manufacturer instructions.	Verify that voltage meter is properly calibrated following any repair or maintenance.	Verify that current (amp) meter is properly calibrated following any repair or maintenance.
C. QA/QC Practices and Criteria	Confirm the gauge zeros out when there is no flow through unit.	Confirm that meter reads zero when the ESP is not operating.	Confirm that meter reads zero when the ESP is not operating.
D. Monitoring Frequency	Recorded once per day.	Recorded hourly. Monitoring complete if 20 of 24 hours recorded.	Recorded hourly. Monitoring complete if 20 of 24 hours recorded.
Data Collection Procedures	Data recorded in log book, maintained for 5 years.	Data recorded on daily log forms. Maintained for 5 years.	Data recorded on daily log forms. Maintained for 5 years.
Averaging Period	Reading is instantaneous at time	Voltage reading is instantaneous	Current reading is instantaneous

	recorded.	at the time recorded.	at the time recorded.
--	-----------	-----------------------	-----------------------

Justification	<p>Present justification for selection of monitoring approach(es) and indicator range(s):</p> <p>Justification for Indicator 1: Multiclone pressure drop below the range may indicate a leak allowing bypass of the cyclones. Pressure drop above the range may indicate blockage, leading to high pressure and PM being forced through.</p> <p>Justification for Indicator 2: Voltage drop below the range could indicate a malfunction, such as grounded electrodes.</p> <p>Justification for Indicator 3: Current drop below the range could indicate collection plates not clean, or other malfunction.</p>
---------------	---



Please see instructions on pages 3-8 before filling out the form.

IDENTIFICATION			
1. Company Name:	Idaho Forest Group LLC	2. Facility Name:	Idaho Forest Group - Laclede
3. Facility ID No.:		017-00027	
4. Brief Project Description: Tier I Permit Renewal, No change to Form CAM			

MONITORING APPROACH SUBMITTAL

Background		
5. Emissions Unit	Description (type of emission point): Hog Fuel Boiler #2	Identification (emission point number): Kipper & Sons, Boiler #2
6. Applicable Regulation, Limits, and Requirements	Emission Monitoring Applicable regulation citation: IDAPA 58.01.01.676 and PTC NO. 017-00027	Pollutant: PM Emission limit: 0.080 gr/dscf @ 8% oxygen
		Pollutant: PM Emission limit: 12 lb/hr and 53 tpy
		Pollutant: Emission limit:
7. Control Technology		
Brief description: Multiclone followed by ESP with two fields.		

Table 1. Monitoring Approach			
	Indicator No. 1	Indicator No. 2	Indicator No. 3
I. Indicator Description Measurement Approach	Pressure drop across the multiclone.	Voltage applied by each T/R set to the discharge electrodes.	Current applied by each T/R set to the discharge electrodes.
	Pressure differential gauge with operator readout for each T/R set.	Continuous voltage monitor with operator readout for each T/R set.	Continuous current monitor with operator readout for each T/R set.
II. Indicator Range (Quality improvement plan threshold optional)	0.5 to 5.9 inches water column (IWC)	30 to 45 kilovolts (kV)	10 to 150 milliamps (mA)
III. Performance Criteria	_____	_____	_____
A. Data Representativeness	The pressure differential ports are located upstream and downstream of the cyclone array in the multiclone.	The voltage is measured using instrumentation provided with the ESP	The current is measured using instrumentation provided with the ESP
B. Verification of Operational Status	Pressure differential gauge properly installed as per manufacturer instructions.	Verify that voltage meter is properly calibrated following any repair or maintenance.	Verify that current (amp) meter is properly calibrated following any repair or maintenance.
C. QA/QC Practices and Criteria	Confirm the gauge zeros out when there is no flow through unit.	Confirm that meter reads zero when the ESP is not operating.	Confirm that meter reads zero when the ESP is not operating.
D. Monitoring Frequency	Recorded once per day.	Recorded hourly. Monitoring complete if 20 of 24 hours recorded.	Recorded hourly. Monitoring complete if 20 of 24 hours recorded.
Data Collection Procedures	Data recorded in log book, maintained for 5 years.	Data recorded on daily log forms. Maintained for 5 years.	Data recorded on daily log forms. Maintained for 5 years.
Averaging Period	Reading is instantaneous at time	Voltage reading is instantaneous	Current (amp) reading is

	recorded.	at the time recorded.	instantaneous at the time recorded.
--	-----------	-----------------------	-------------------------------------

Justification	<p>Present justification for selection of monitoring approach(es) and indicator range(s):</p> <p>Justification for Indicator 1: Multiclone pressure drop below the range may indicate a leak allowing bypass of the cyclones. Pressure drop above the range may indicate blockage, leading to high pressure and PM being forced through.</p> <p>Justification for Indicator 2: Voltage drop below the range could indicate a malfunction, such as grounded electrodes.</p> <p>Justification for Indicator 3: Current drop below the range could indicate collection plates not clean, or other malfunction.</p>
---------------	---

IDAHO FOREST GROUP
LACLEDE, IDAHO
Emission Inventory/Calculations
PTE Emission Calculations

Fugitive Sources	PM (ton/yr)	PM10 (ton/yr)	PM2.5 (ton/yr)	SO ₂ (ton/yr)	NOx (ton/yr)	VOCs (ton/yr)	CO (ton/yr)	HAPS (ton/yr)
Log and Bark Handling, Fugitives								
DEBARKER	11.4	6.30	0.63	---	---	---	---	---
BARK HOG	0.49	0.24	0.02	---	---	---	---	---
HOG FUEL TRANSFER TO FUEL HOUSE	4.9	2.43	0.24	---	---	---	---	---
HOG FUEL LOADING	4.9	2.43	0.24	---	---	---	---	---
Sawmill, Fugitives								
SAWMILL, INDOOR	2.00	1.14	0.11	---	---	---	---	---
SAWMILL SCREEN (CLASSIFIER), INDOOR	1.12	0.56	0.06	---	---	---	---	---
SAWMILL CHIPPER, INDOOR	1.12	0.56	0.06	---	---	---	---	---
SAWDUST CONVEYING	5.95	2.98	0.30	---	---	---	---	---
SAWDUST BIN TRUCK LOADOUT	5.95	2.98	0.30	---	---	---	---	---
SAWMILL CHIP BIN TRUCK OR RAIL CAR LOADOUT	11.15	5.58	0.56	---	---	---	---	---
Planer, Fugitives								
PLANER SHAVINGS BIN TRUCK LOADOUT	2.40	1.20	0.12	---	---	---	---	---
PLANER CHIPS LOADOUT - RAILCAR OR TRUCK BIN	2.40	1.20	0.12	---	---	---	---	---
Fugitive Road Dust	1.78	0.36	0.09	---	---	---	---	---
Fugitive Totals	55.50	27.93	2.84	0.00	0.00	0.00	0.00	0.00
Point Sources								
Lumber Drying								
LUMBER DRY KILNS, PTE Emissions	3.18	3.18	1.59	---	---	181	---	24
Sawmill Point Sources								
PNEUMATIC CHIP - TARGET BOX	11.15	5.58	0.56	---	---	---	---	---
Planer Point Sources								
PLANER SHAVINGS CYCLONE BAGHOUSE	9.39	9.39	0.94	---	---	---	---	---
PLANER CHIPPER ROOM DUST CYCLONE	3.94	1.97	0.20	---	---	---	---	---
PLANER CHIP BIN TARGET BOX - RAILCAR OR TRUCK	2.40	1.20	0.12	---	---	---	---	---
Steam Plant								
BOILER #1	96	96	77	9.5	84	6.5	203	10
BOILER #2	53	53	42	8.8	77	6.0	306	9.1
Point Source Totals	179.06	170.31	122.60	18.25	160.60	193.02	509	43
Plant Wide Total	235	198.2	125.4	18.3	160.6	193.0	509	42.9

Greenhouse Gas, plantwide, excludes biogenic CO2

3,000 metric ton equivalent CO₂

IDAHO FOREST GROUP, LACLEDE
Emission Inventory/Calculations

Production Information Supporting PTE Calculations

Lumber Production

Sawmill	318,000	mbdft/year
Dry Kilns	318,000	mbdft/year
Planer	318,000	mbdft/year
Logs Used	1,144,800	tons/year
Sawmill Hours	8,760	hours/year, PTE
Planer Hours	8,760	hours/year, PTE
Kiln Hours	8,760	hours/year, PTE
Boiler #1 Hours	8,760	hours/year, PTE
Boiler #1 Steam	480,000	thousand pounds/yr, PTE
Boiler #2 Hours	8,760	hours/year, PTE
Boiler #2 Steam	438,000	thousand pounds/yr

Residuals Production

	tons/year	Estimation Factor	
Sawmill Chips	223,000	1400	lb chips/mbdft sawmill
Sawdust	119,000	750	lb sawdust/mbdft sawmill
Hog Bark	97,000	170	lb bark/ton logs
Planer Chips	48,000	300	lb chips/mbdft planer
Shavings	95,000	600	lb shavings/mbdft planer

BOILER #2 KIPPER AND SONS - SPREADER-STOKER w/ESP

Design Boiler Capacity	50,000 lb steam/hr, permit limit
	8,760 Hours/Year
	438,000 1000 lb steam/yr, potential
	700,000 mmBtu/yr, potential, 1191 Btu/lb steam, 75% efficiency
	73,000 tons hog fuel burned at 9.6 MMBtu/ton

CRITERIA POLLUTANTS

PM (controlled):		
Emissions:	53 tons/year	Permit Limit (condition 4.2)
	288 lbs/day	
	12 lbs/hr	Permit Limit (condition 4.2)
PM10 (controlled):		
Emissions:	53 tons/year	Assume 100% of PM is PM10
	288 lbs/day	
	12 lbs/hr	Assume 100% of PM is PM10
PM2.5 (controlled):		
Emissions:	42 tons/year	Assume 80% of PM10 is PM2.5
	230 lbs/day	
	9.6 lbs/hr	Assume 80% of PM10 is PM2.5
Sulfur Dioxide:		
Emission Factor:	0.025 lb/mmBtu	(AP-42 TABLE 1.6-2, Rev 9/03)
Emissions:	8.75 tons/year	PTE, from Emission Factor
	47.95 lbs/day	
	2.00 lbs/hr	
Nitrogen Oxides (NOx)		
Emission Factor:	0.22 lb/mmBtu	(AP-42 TABLE 1.6-2, Rev 9/03)
Emissions:	77.00 tons/year	PTE, from Emission Factor
	422 lbs/day	
	17.58 lbs/hr	
Volatile Organic Compounds (VOC)		
Emission Factor:	0.017 lb/mmBtu	(AP-42 TABLE 1.6-3, Rev 9/03)
Emissions:	5.95 tons/year	PTE, from Emission Factor
	32.6 lbs/day	
	1.36 lbs/hr	
Carbon Monoxide (CO)		
Emissions:	306 tons/year	Permit Limit (condition 4.3)
	1680 lbs/day	
	70 lbs/hr	Permit Limit (condition 4.3)

**IDAHO FOREST GROUP - LACLEDE BOILERS
HAZARDOUS AIR POLLUTANTS (HAPS)**

Operating Parameters:

Hours of Operation, 2 boilers 17,520 hours/yr
 Boiler #1 Fraction 0.52 fraction
 Boiler #2 Fraction 0.48 fraction
 Annual Boiler Heat Input, potential 1,460,000 mmBtu /yr

Emission Factors:

AP-42 Ch. 1.6, Tables 1.6-3 and 1.6-4 (9/03) and NCASI TB No. 858 factors, the EPA's MACT Database, and Environment Canada; publically available information	E.F. Source	Emission Factor (lb/mmBtu)	Total Annual Emissions (tons/yr)
Acetaldehyde	EPA MACT Database Avg. ⁽¹⁾	7.78E-06	5.68E-03
Acetophenone	AP-42 Ch. 1-6, Table 1.6-3	3.20E-09	2.34E-06
Acrolein	AP-42 Ch. 1-6, Table 1.6-3	4.00E-03	2.92E+00
Benzene	EPA MACT Database Avg. ⁽¹⁾	1.89E-06	1.38E-03
Benzo(a)pyrene	AP-42 Ch. 1-6, Table 1.6-3	2.60E-06	1.90E-03
bis(2-ethylhexyl)phthalate	AP-42 Ch. 1-6, Table 1.6-3	4.70E-08	3.43E-05
Bromomethane (methyl bromide)	AP-42 Ch. 1-6, Table 1.6-3	1.50E-05	1.10E-02
2-Butanone (MEK)	AP-42 Ch. 1-6, Table 1.6-3	5.40E-06	3.94E-03
Carbon tetrachloride	AP-42 Ch. 1-6, Table 1.6-3	4.50E-05	3.29E-02
Chlorine	EPA MACT Database Avg. ⁽¹⁾	4.57E-03	3.34E+00
Chlorobenzene	AP-42 Ch. 1-6, Table 1.6-3	3.30E-05	2.41E-02
Chloroform	AP-42 Ch. 1-6, Table 1.6-3	2.80E-05	2.04E-02
Chloromethane (Methyl Chloride)	AP-42 Ch. 1-6, Table 1.6-3	2.30E-05	1.68E-02
1,2-Dichloroethane	AP-42 Ch. 1-6, Table 1.6-3	2.90E-05	2.12E-02
Dichloromethane (Methylenechloride)	AP-42 Ch. 1-6, Table 1.6-3	5.40E-04	3.94E-01
1,2-Dichloropropane (Propylene dichloride)	AP-42 Ch. 1-6, Table 1.6-3	3.30E-05	2.41E-02
2,4-Dinitrophenol	AP-42 Ch. 1-6, Table 1.6-3	1.80E-07	1.31E-04
Ethylbenzene	AP-42 Ch. 1-6, Table 1.6-3	3.10E-05	2.26E-02
Formaldehyde	EPA MACT Database Avg. ⁽¹⁾	7.30E-04	5.33E-01
Hydrogen chloride	EPA MACT Database Avg. ⁽¹⁾	1.12E-02	8.18E+00
Hydrogen fluoride	EPA MACT Database Avg. ⁽¹⁾	4.09E-04	2.99E-01
Methanol	NCASI Technical Bulletin No. 858 ⁽²⁾	8.60E-04	6.28E-01
Naphthalene	AP-42 Ch. 1-6, Table 1.6-3	9.70E-05	7.08E-02
4-Nitrophenol	AP-42 Ch. 1-6, Table 1.6-3	1.10E-07	8.03E-05
Pentachlorophenol	AP-42 Ch. 1-6, Table 1.6-3	5.10E-08	3.72E-05
Phenol	AP-42 Ch. 1-6, Table 1.6-3	5.10E-05	3.72E-02
Propionaldehyde	AP-42 Ch. 1-6, Table 1.6-3	6.10E-05	4.45E-02
Toluene	AP-42 Ch. 1-6, Table 1.6-3	9.20E-04	6.72E-01
1,1,1-Trichloroethane	AP-42 Ch. 1-6, Table 1.6-3	3.10E-05	2.26E-02
2,4,6-Trichlorophenol	AP-42 Ch. 1-6, Table 1.6-3	2.20E-07	1.61E-04
Vinyl Chloride	AP-42 Ch. 1-6, Table 1.6-3	1.80E-05	1.31E-02
o-Xylene	AP-42 Ch. 1-6, Table 1.6-3	2.50E-05	1.83E-02
Polycyclic Organic Matter (POM)		3.12E-05	2.27E-02
Acenaphthene	AP-42 Ch. 1-6, Table 1.6-3	9.10E-07	
Acenaphthylene	AP-42 Ch. 1-6, Table 1.6-3	5.00E-06	
Anthracene	AP-42 Ch. 1-6, Table 1.6-3	3.00E-06	
Benzo(a)anthracene	AP-42 Ch. 1-6, Table 1.6-3	6.50E-08	
Benzo(a)pyrene	AP-42 Ch. 1-6, Table 1.6-3	2.60E-06	
Benzo(e)pyrene	AP-42 Ch. 1-6, Table 1.6-3	2.60E-09	
Benzo(b)fluoranthene	AP-42 Ch. 1-6, Table 1.6-3	1.00E-07	
Benzo(g,h,i)perylene	AP-42 Ch. 1-6, Table 1.6-3	9.30E-08	
Benzo(j,k)fluoranthene	AP-42 Ch. 1-6, Table 1.6-3	1.60E-07	
Benzo(k)fluoranthene	AP-42 Ch. 1-6, Table 1.6-3	3.60E-08	
2-Chloronaphthalene	AP-42 Ch. 1-6, Table 1.6-3	2.40E-09	
Chrysene	AP-42 Ch. 1-6, Table 1.6-3	3.80E-08	
Fluoranthene	AP-42 Ch. 1-6, Table 1.6-3	1.60E-06	
Fluorene	AP-42 Ch. 1-6, Table 1.6-3	3.40E-06	
Indeno(1,2,3,cd)pyrene	AP-42 Ch. 1-6, Table 1.6-3	8.70E-08	
2-Methylnaphthalene	AP-42 Ch. 1-6, Table 1.6-3	1.60E-07	
Perlyene	AP-42 Ch. 1-6, Table 1.6-3	5.20E-10	
Phenanthrene	AP-42 Ch. 1-6, Table 1.6-3	7.00E-06	
Propanal	AP-42 Ch. 1-6, Table 1.6-3	3.20E-06	
Pyrene	AP-42 Ch. 1-6, Table 1.6-3	3.70E-06	

Emission Factors:			
AP-42 Ch.1.6, Tables 1.6-3 and 1.6-4 (9/03) and NCASI TB No. 858 factors, the EPA's MACT Database, and Environment Canada; publically available information			
	E.F. Source	Emission Factor (lb/mmBtu)	Total Annual Emissions (tons/yr)
Styrene	AP-42 Ch. 1-6, Table 1.6-3	3.20E-05	2.34E-02
Dioxins and Dioxin-like Compounds (non AP-42)		1.01E-10	7.35E-08
2,3,7,8-TCDD	EPA MACT Database Avg. ⁽¹⁾	2.77E-12	
1,2,3,7,8-PeCDD	EPA MACT Database Avg. ⁽¹⁾	4.33E-12	
1,2,3,4,7,8-HxCDD	EPA MACT Database Avg. ⁽¹⁾	2.83E-12	
1,2,3,6,7,8-HxCDD	EPA MACT Database Avg. ⁽¹⁾	4.93E-12	
1,2,3,7,8,9-HxCDD	EPA MACT Database Avg. ⁽¹⁾	4.74E-12	
1,2,3,4,6,7,8-HpCDD	EPA MACT Database Avg. ⁽¹⁾	8.49E-12	
1,2,3,4,6,7,8,9-OCDD	Factor from Canada Environment ⁽³⁾	2.25E-11	
2,3,7,8-TCDF	EPA MACT Database Avg. ⁽¹⁾	9.84E-12	
1,2,3,7,8-PeCDF	EPA MACT Database Avg. ⁽¹⁾	6.29E-12	
2,3,4,7,8-PeCDF	EPA MACT Database Avg. ⁽¹⁾	7.74E-12	
1,2,3,4,7,8-HxCDF	EPA MACT Database Avg. ⁽¹⁾	5.77E-12	
1,2,3,6,7,8-HxCDF	EPA MACT Database Avg. ⁽¹⁾	5.28E-12	
1,2,3,7,8,9-HxCDF	EPA MACT Database Avg. ⁽¹⁾	2.07E-12	
2,3,4,6,7,8-HxCDF	EPA MACT Database Avg. ⁽¹⁾	3.76E-12	
1,2,3,4,6,7,8-HpCDF	EPA MACT Database Avg. ⁽¹⁾	5.44E-12	
1,2,3,4,7,8,9-HpCDF	EPA MACT Database Avg. ⁽¹⁾	2.99E-12	
1,2,3,4,6,7,8,9-OCDF	Factor from Canada Environment ⁽³⁾	9.26E-13	
Antimony	EPA MACT Database Avg. ⁽¹⁾	1.89E-05	1.38E-02
Arsenic	EPA MACT Database Avg. ⁽¹⁾	2.60E-05	1.90E-02
Beryllium	EPA MACT Database Avg. ⁽¹⁾	2.75E-06	2.01E-03
Cadmium	EPA MACT Database Avg. ⁽¹⁾	1.09E-05	7.92E-03
Chromium, total	EPA MACT Database Avg. ⁽¹⁾	4.21E-05	3.08E-02
Chromium, hexavalent	AP-42 Ch. 1-6, Table 1.6-4	3.50E-06	2.56E-03
Cobalt	EPA MACT Database Avg. ⁽¹⁾	5.92E-07	4.32E-04
Lead	EPA MACT Database Avg. ⁽¹⁾	2.38E-04	1.74E-01
Manganese	EPA MACT Database Avg. ⁽¹⁾	1.88E-03	1.37E+00
Mercury	EPA MACT Database Avg. ⁽¹⁾	1.32E-06	9.64E-04
Nickel	EPA MACT Database Avg. ⁽¹⁾	2.73E-05	2.00E-02
Selenium	EPA MACT Database Avg. ⁽¹⁾	1.17E-05	8.57E-03
		TOTAL HAPS	19.05
	Boiler #1 Total HAPS	9.91	
	Boiler #2 Total HAPS	9.13	

Notes:

⁽¹⁾ Data from EPA's source test database titled: "Emissions Database for Boilers and Process Heaters Containing Stack Test, CEM, & Fuel Analysis Data Reported Under ICR No. 2286.01 and ICR No. 2286.03 (Version 6).mdb", available with the EPA boiler MACT website. Data averages are based on source test results for boilers burning clean woody biomass such as hog fuel and unadulterated wood. Source tests with results below the testing method detection limit were excluded.

⁽²⁾ Emission factors from NCASI Technical Bulletin No. 858 are in common usage for reporting and permit applications in the U.S and Canada. NCASI values have been used where AP-42 and EPA MACT database values are not available.

⁽³⁾ Emission factors derived from Environment Canada case studies available at: <http://www.ec.gc.ca/inrp-npri/default.asp?lang=En&n=DCD947AC-1#intro>. Used where factors from other sources are not available.

LUMBER DRY KILNS, PTE Emissions

Wood mix is typical, based on 2010 reporting.

318,000 mbdft/yr, lumber dried
8760 hours per year

CRITERIA POLLUTANTS

PM/PM10 :

Emission Factor: 0.02 lbs/1000 bd.ft. Oregon General Permit
Emissions: 3.18 tons/year AQGP-010

PM2.5 :

Emission Factor: 0.01 lbs/1000 bd.ft. Assume PM2.5 is 50% of PM10
Emissions: 1.59 tons/year AQGP-010

VOC:

Emission Factor: 1.14 lbs/1000 bd.ft. VOC Emissions based on
Emissions: 181 tons/year mix shown below.

Wood Species:

	% of Total	VOC (lb/MBdft)	Weighted (lb/Mbdft)	
Redwood	0%	0.12	0.00	University of Idaho, 1997
Cedar	18%	0.12	0.02	University of Idaho, 1997
Douglas Fir Sap Wood	0%	0.21	0.00	University of Idaho, 1997
Hemlock	3%	0.39	0.01	ODEQ AQGP-010
Coastal Douglas Fir	0%	0.34	0.00	University of Idaho, 1997
Grand Fir	0%	0.53	0.00	University of Idaho, 1997
White Fir	0%	0.33	0.00	ODEQ AQGP-010
Douglas Fir , all	30%	0.60	0.18	ODEQ AQGP-010
Ponderosa Pine	33%	1.7	0.56	ODEQ AQGP-010
Lodgepole Pine	0%	1.3	0.00	ODEQ AQGP-010
White Pine	16%	2.26	0.36	University of Idaho, 1997
Other	0%	1.30	0.00	Use Lodgepole Pine Factor
Total	100%		1.14	

Idaho Forest Group - Laclede
Dry Kiln Haps

EMISSIONS YEAR	PTE
----------------	-----

* white wood is Engleman spruce, white fir, etc.

ENTER	
Total MBF processed	318,000
% Douglas Fir /Larch	33%
% Hemlock	3%
% Ponderosa Pine	33%
% White Wood*	15%
% Cedar	16%
% Other (name species)	0%
	100%

104,940 MBF/Yr by species
9,540
104,940
47,700
50,880
0
318,000

EMISSION FACTORS:						
Pollutant	Total HAP	Methanol	Formal- dehyde	Acetal- dehyde	Propion- aldehyde	Acrolein
Douglas Fir	0.097	0.038	0.001	0.057	0.00055	0.00065
Western Hemlock	0.199	0.082	0.0028	0.113	0.001	0.0016
Pinderosa Pine	0.184	0.065	0.0029	0.113	0.001	0.0016
White Fir (white wood)	0.24	0.122	0.001	0.113	0.001	0.0016
Cedar (use DF)	0.097	0.023	0.001	0.057	0.00055	0.00065

EMISSIONS

Emission lb/Yr

Species	Total HAP	Methanol	Formal- dehyde	Acetal- dehyde	Propion- aldehyde	Acrolein
Douglas Fir	10179	3988	105	5982	58	68
Western Hemlock	1898	782	27	1078	10	15
Pinderosa Pine	19309	6821	304	11858	105	168
White Fir (white wood)	11448	5819	48	5390	48	76
Cedar	4935	1170	51	2900	28	33
TOTAL, lb/yr	47,770	18,581	535	27,208	248	361
TOTAL, ton/yr	23.88	9.29	0.27	13.60	0.12	0.18

LOGS AND BARK, FUGITIVE EMISSIONS

DEBARKER

1,144,800 Tons of Logs/Year
8,760 Hours/Year

PM:	Emission Factor:	0.02 lbs/ton	AIRS 3-07-008-01
	Emissions:	11.45 tons/year	
		2.61 lbs/hr	
PM10:	Emission Factor:	0.011 lbs/ton	AIRS 3-07-008-01
	Emissions:	6.30 tons/year	
		1.44 lbs/hr	
PM2.5:	Emission Factor:	0.0011 lbs/ton	10% of PM10 for non-combustion source
	Emissions:	0.63 tons/year	
		0.14 lbs/hr	

BARK HOG

97,000 Tons of Bark/Year
8,760 Hours/Year

PM:	Emission Factor:	0.01 lbs/ton	General Material Handling Factor
	Emissions:	0.49 tons/year	Bark Hog is enclosed, 90% control.
		0.11 lbs/hr	
PM10:	Emission Factor:	0.005 lbs/ton	General Material Handling Factor
	Emissions:	0.24 tons/year	Bark Hog is enclosed, 90% control.
		0.06 lbs/hr	
PM2.5:	Emission Factor:	0.0005 lbs/ton	10% of PM10 for non-combustion source
	Emissions:	0.02 tons/year	
		0.01 lbs/hr	

HOG FUEL TRANSFER TO FUEL HOUSE

97,000 Tons of Bark/Year
8,760 Hours/Year

PM:	Emission Factor:	0.1 lbs/ton	General Material Handling Factor
	Emissions:	4.85 tons/year	
		1.11 lbs/hr	
PM10:	Emission Factor:	0.05 lbs/ton	General Material Handling Factor
	Emissions:	2.43 tons/year	
		0.55 lbs/hr	
PM2.5:	Emission Factor:	0.005 lbs/ton	10% of PM10 for non-combustion source
	Emissions:	0.24 tons/year	
		0.06 lbs/hr	

HOG FUEL LOADING

97,000 Tons of Bark/Year
8,760 Hours/Year

PM:	Emission Factor:	0.1 lbs/ton	General Material Handling Factor
	Emissions:	4.85 tons/year	
		1.11 lbs/hr	
PM10:	Emission Factor:	0.05 lbs/ton	General Material Handling Factor
	Emissions:	2.43 tons/year	
		0.55 lbs/hr	
PM2.5:	Emission Factor:	0.005 lbs/ton	10% of PM10 for non-combustion source
	Emissions:	0.24 tons/year	
		0.06 lbs/hr	

SAWMILL PROCESSES

SAWMILL, INDOOR

1,144,800 Tons of Logs/Year
8,760 hr/yr

PM:	Emission Factor:	0.35 lbs/ton	Idaho Factor
	Corrected Factor:	0.0035 lbs/ton	Indoors with pneumatic dust pickup.
	Emissions:	2.00 tons/year	99% removal efficiency.
		0.46 lbs/hr	
PM10:	Emission Factor:	0.2 lbs/ton	Idaho Factor
	Corrected Factor:	0.002 lbs/ton	Indoors with pneumatic dust pickup.
	Emissions:	1.14 tons/year	99% removal efficiency.
		0.26 lbs/hr	
PM2.5:	Emission Factor:	0.02 lbs/ton	Idaho Factor
	Corrected Factor:	0.0002 lbs/ton	PM2.5 is 10% of PM10 for non-combustion sources
	Emissions:	0.11 tons/year	
		0.03 lbs/hr	

SAWMILL SCREEN (CLASSIFIER), INDOOR

223,000 Tons of Chips/Year
8,760 hr/yr

PM:	Emission Factor:	0.1 lbs/ton	General Material Handling Factor
	Corrected Factor:	0.01 lbs/ton	Enclosed process, 90% control.
	Emissions:	1.12 tons/year	
		0.25 lbs/hr	
PM10:	Emission Factor:	0.05 lbs/ton	General Material Handling Factor
	Corrected Factor:	0.005 lbs/ton	Enclosed process, 90% control.
	Emissions:	0.56 tons/year	
		0.13 lbs/hr	
PM2.5:	Emission Factor:	0.005 lbs/ton	PM2.5 is 10% of PM10 for non-combustion sources
	Corrected Factor:	0.0005 lbs/ton	Enclosed process, 90% control.
	Emissions:	0.06 tons/year	
		0.01 lbs/hr	

SAWMILL CHIPPER, INDOOR

223,000 Tons of Chips/Year
8,760 hr/yr

PM:	Emission Factor:	0.1 lbs/ton	General Material Handling Factor
	Corrected Factor:	0.01 lbs/ton	Enclosed process, 90% control.
	Emissions:	1.12 tons/year	
		0.25 lbs/hr	
PM10:	Emission Factor:	0.05 lbs/ton	General Material Handling Factor
	Corrected Factor:	0.005 lbs/ton	Enclosed process, 90% control.
	Emissions:	0.56 tons/year	
		0.13 lbs/hr	
PM2.5:	Emission Factor:	0.005 lbs/ton	PM2.5 is 10% of PM10 for non-combustion sources
	Corrected Factor:	0.0005 lbs/ton	Enclosed process, 90% control.
	Emissions:	0.06 tons/year	
		0.01 lbs/hr	

SAWMILL PROCESSES (cont.)

SAWDUST CONVEYING

119,000 Tons of Sawdust/Year
8,760 Hours per year, PTE

PM:	Emission Factor:	0.1 lbs/ton	Idaho DEQ Target Box Factor
	Emissions:	5.95 tons/year 1.36 lbs/hr	Site observations show that emissions are similar to target box emissions for the same material.
PM10:	Emission Factor:	0.05 lbs/ton	Idaho DEQ Target Box Factor
	Emissions:	2.98 tons/year 0.68 lbs/hr	Site observations show that emissions are similar to target box emissions for the same material.
PM2.5:	Emission Factor:	0.005 lbs/ton	PM2.5 is 10% of PM10 for non-combustion sources
	Emissions:	0.30 tons/year 0.07 lbs/hr	

SAWDUST BIN TRUCK LOADOUT

119,000 Tons of Sawdust/Year
8,760 Hours per year, PTE

PM:	Emission Factor:	0.1 lbs/ton	Idaho DEQ Target Box Factor
	Emissions:	5.95 tons/year 1.36 lbs/hr	Site observations show that emissions are similar to target box emissions for the same material.
PM10:	Emission Factor:	0.05 lbs/ton	Idaho DEQ Target Box Factor
	Emissions:	2.98 tons/year 0.68 lbs/hr	Site observations show that emissions are similar to target box emissions for the same material.
PM2.5:	Emission Factor:	0.005 lbs/ton	PM2.5 is 10% of PM10 for non-combustion sources
	Emissions:	0.30 tons/year 0.07 lbs/hr	

PNEUMATIC CHIP - TARGET BOX

223,000 Tons of Chips/Year
8,760 Hours per year, PTE

PM:	Emission Factor:	0.1 lbs/ton	Idaho DEQ Target Box Factor
	Emissions:	11.15 tons/year 2.55 lbs/hr	Site observations show that emissions are similar to target box emissions for the same material.
PM10:	Emission Factor:	0.05 lbs/ton	Idaho DEQ Target Box Factor
	Emissions:	5.58 tons/year 1.27 lbs/hr	Site observations show that emissions are similar to target box emissions for the same material.
PM2.5:	Emission Factor:	0.005 lbs/ton	PM2.5 is 10% of PM10 for non-combustion sources
	Emissions:	0.56 tons/year 0.13 lbs/hr	

SAWMILL CHIP BIN TRUCK OR RAIL CAR LOADOUT

223,000 Tons of Chips/Year
8,760 Hours per year, PTE

PM:	Emission Factor:	0.1 lbs/ton	Idaho DEQ Target Box Factor
	Emissions:	11.15 tons/year 2.55 lbs/hr	Site observations show that emissions are similar to target box emissions for the same material.
PM10:	Emission Factor:	0.05 lbs/ton	Idaho DEQ Target Box Factor
	Emissions:	5.58 tons/year 1.27 lbs/hr	Site observations show that emissions are similar to target box emissions for the same material.
PM2.5:	Emission Factor:	0.005 lbs/ton	PM2.5 is 10% of PM10 for non-combustion sources
	Emissions:	0.56 tons/year 0.13 lbs/hr	

PLANER PROCESSES

PLANER, INDOOR

There are no emissions from the planers because they are pneumatically controlled through the shavings transport system.

PLANER SHAVINGS CYCLONE BAGHOUSE

Planer shavings are transferred pneumatically to the cyclone and baghouse.

		50,000 scfm	Rated Flow
		8,760 hours/yr	Potential
PM/PM10:	Emission Factor:	0.005 gr/dscf	Guaranteed Baghouse Emission Rate
	Emissions:	9.39 tons/year	
		2.14 lbs/hr	
PM2.5:	Emission Factor:	0.0005 gr/dscf	PM2.5 is 10% of PM10 for non-combustion sources
	Emissions:	0.94 tons/year	
		0.21 lbs/hr	

PLANER SHAVINGS BIN TRUCK LOADOUT

		48,000 Tons of Planer Shavings/Year	
PM:	Emission Factor:	0.1 lbs/ton	Idaho DEQ Factor
	Emissions:	2.40 tons/year	
		0.55 lbs/hr	
PM10 :	Emission Factor:	0.05 lbs/ton	Idaho DEQ Factor.
	Emissions:	1.20 tons/year	
		0.27 lbs/hr	
PM2.5:	Emission Factor:	0.005 lbs/ton	PM2.5 is 10% of PM10 for non-combustion sources
	Emissions:	0.12 tons/year	
		0.03 lbs/hr	

PLANER CHIP BIN TARGET BOX - RAILCAR OR TRUCK BIN

		48,000 Tons of Planer Chips/Year	
TSP :	Emission Factor:	0.1 lbs/ton	Idaho DEQ Target Box Factor
	Emissions:	2.40 tons/year	
		0.55 lbs/hr	
PM10 :	Emission Factor:	0.05 lbs/ton	Idaho DEQ Factor.
	Emissions:	1.20 tons/year	
		0.27 lbs/hr	
PM2.5:	Emission Factor:	0.005 lbs/ton	PM2.5 is 10% of PM10 for non-combustion sources
	Emissions:	0.12 tons/year	
		0.03 lbs/hr	

PLANER CHIPS LOADOUT - RAILCAR OR TRUCK BIN

		48,000 Tons of Planer Chips/Year	
PM:	Emission Factor:	0.1 lbs/ton	Idaho DEQ Factor
	Emissions:	2.40 tons/year	
		0.55 lbs/hr	
PM10 :	Emission Factor:	0.05 lbs/ton	Idaho DEQ Factor.
	Emissions:	1.20 tons/year	
		0.27 lbs/hr	
PM2.5:	Emission Factor:	0.005 lbs/ton	PM2.5 is 10% of PM10 for non-combustion sources
	Emissions:	0.12 tons/year	
		0.03 lbs/hr	

PLANER CHIPPER ROOM DUST CYCLONE

		3,500 scfm	Rated Flow
		8,760 hours/yr	Potential
PM:	Emission Factor:	0.03 gr/dscf	Idaho cyclone emission factor
	Emissions:	3.94 tons/year	
		0.90 lbs/hr	
PM10 :	Emission Factor:	0.015 gr/dscf	Idaho cyclone emission factor
	Emissions:	1.97 tons/year	
		0.45 lbs/hr	
PM2.5:	Emission Factor:	0.0015 gr/dscf	PM2.5 is 10% of PM10 for non-combustion sources
	Emissions:	0.20 tons/year	
		0.05 lbs/hr	

Fugitive Dust - PAVED ROADS

Calculations based on AP-42 Section 13.2.1.3, rev. 1/11

Source	Class	Number Trips Per Year	Distance per Trip (miles)	VMT per Year	Avg. Vehicle Weight W	Weighted Vehicle Weight
Log Trucks	Paved, Loaded	40,886	0.20	8,177	40	9.08
	Paved, Empty	40,886	0.20	8,177	13	2.95
Log Loaders	Paved, Loaded	959	0.15	144	20	0.08
	Paved, Empty	959	0.15	144	15	0.06
Chip Trucks	Paved, Loaded	9,489	0.25	2,372	40	2.63
	Paved, Empty	9,489	0.25	2,372	13	0.86
Shavings Trucks	Paved, Loaded	4,657	0.25	1,164	40	1.29
	Paved, Empty	4,657	0.25	1,164	13	0.42
Sawdust Trucks	Paved, Loaded	4,167	0.25	1,042	40	1.16
	Paved, Empty	4,167	0.25	1,042	13	0.38
Lumber Trucks	Paved, Loaded	17,667	0.25	4,417	40	4.90
	Paved, Empty	17,667	0.25	4,417	13	1.59
Bucket Loaders	Paved, Loaded	500	0.15	75	15	0.03
	Paved, Empty	500	0.15	75	12	0.02
Misc. Vehicles incl employee	Paved	5,000	0.25	1,250	3	0.10
		161,647		36,031		26

$$E = k(sL)^{0.91}(W)^{1.02} * [1 - 1.2 * P/N]$$

	PM	PM10	PM2.5	P=	120
k =	0.011	0.0022	0.00054	N=	365
sL =	1.1	1.1	1.1		
W =	26	26	26		
E =	0.198	0.040	0.010		
	lb/VMT	lb/VMT	lb/VMT		
% control from washing/sw	50%	50%	50%		

Total PM Emissions:	1.8	tpy
Total PM10 Emissions:	0.36	tpy
Total PM2.5 Emissions:	0.09	tpy

**IFG Laclede
Greenhouse Gas Calculations, PTE**

Hog Fuel Boilers	1,460,000 MMBtu/year
Carbon Dioxide (CO2) (not actually a greenhouse gas when emitted from biomass burning)	
Emission Factor:	207 lb/mmbtu EPA Mandatory Reporting Rule
Emissions:	151,110 tpy CO2
Methane	
Emission Factor:	7.05E-02 lb/mmbtu EPA Mandatory Reporting Rule
Emissions:	102,930 lb/yr 982.51 metric tons CO2e, GWP = 21
Nitrous Oxide	
Emission Factor:	9.26E-03 lb/mmbtu EPA Mandatory Reporting Rule
Emissions:	13,520 lb/yr 1,905.03 metric tons CO2e, GWP = 310
Propane Combustion	2,000 gallons/year, maximum
Carbon Dioxide (CO2)	
Emission Factor:	12500 lb/1000 gallons (AP-42 TABLE 1.5-1, Rev 07/08)
Emissions:	13 tpy CO2 11 metric tons CO2e, GWP = 1
Methane	
Emission Factor:	0.2 lb/1000 gallons (AP-42 TABLE 1.5-1, Rev 07/08)
Emissions:	0.40 lb/yr 0.004 metric tons CO2e, GWP = 21
Nitrous Oxide	
Emission Factor:	0.3 lb/1000 gallons (AP-42 TABLE 1.5-1, Rev 07/08)
Emissions:	1 lb/yr 0.08 metric tons CO2e, GWP = 310
Total GHG Emissions (excluding biogenic CO2)	
Carbon Dioxide	11
Methane	982.52
Nitrous Oxide	1,905.12
	3,000 metric tons CO2e