STANDARD

AIR CONTAMINANT DISCHARGE PERMIT

Department of Environmental Quality
Northwest Region
1550 NW Eastman Parkway, Suite 290
Gresham, Oregon 97030
(503) 667-8414

This permit is being issued in accordance with the provisions of ORS 468A.040 and based on the land use compatibility findings included in the permit record.

ISSUED TO:

Stimson Lumber Company
5900 Moffett Road
Tillamook, OR 97141

INFORMATION RELIED UPON:

Application No.: 021630
Date Received: 12/09/2005

PLANT SITE LOCATION:

5900 Moffett Road
Tillamook, OR 97141

LAND USE COMPATIBILITY FINDING:

Approving Authority: Tillamook County
Approval Date: 6/02/1990

ISSUED BY THE DEPARTMENT OF ENVIRONMENTAL QUALITY

Cynthia Wind for Ed Druback, Northwest Region Air Quality Manager — October 17, 2008 Dated

Source(s) Permitted to Discharge Air Contaminants (OAR 340-216-0020):

Table 1 Code	Source Description	SIC/ NAICS
Part B, #62	Sawmills and/or Planing Mills, 25,000 or more Bd. Ft./ Maximum 8 hr. finished product	2421/ 321113

Modification and Re-issuance

In accordance with OAR 340-216-0084, the permit has been re-issued in it's entirety to reflect the addition to increase dry-lumber production by installing a new 68-foot, single-track lumber kiln and by replacing the existing stacker with a more efficient stacker unit. The modification will result in an increase in the hogged fuel boilers annual steaming rate.

1.0 GENERAL EMISSION STANDARDS AND LIMITS

1.1. Visible Emissions

The permittee must comply with the following visible emission limits, as applicable:

a. Emissions from any air contaminant source must not exceed an opacity equal to or greater than 20% for a period aggregating more than 3 minutes in any one hour.

1.2. Particulate Matter Emissions

The permittee must comply with the following particulate matter emission limits, as applicable:

b. Particulate matter emissions from any fuel burning equipment must not exceed 0.1 grains per standard cubic foot, corrected to 12% CO_2 or 50% excess air.

c. Particulate matter emissions from any air contaminant source other than fuel burning equipment and fugitive emission sources must not exceed 0.1 grains per standard cubic foot.

1.3. Fugitive Emissions

The permittee must take reasonable precautions to prevent fugitive dust emissions by:

a. Treating vehicular traffic areas of the plant site under the control of the permittee.

b. Operating all air contaminant-generating processes so that fugitive type dust associated with the operation will be adequately controlled at all times.

c. Storing collected materials from air pollution control equipment in a covered container or other method equally effective in preventing the material from becoming airborne during storage and transfer.

1.4. Particulate Matter Fallout

The permittee must not cause or permit the emission of any particulate matter larger than 250 microns in size at sufficient duration or quantity, as to create an observable deposition upon the real property of another person. The Department will verify that the deposition exists and will notify the permittee that the deposition must be controlled.

1.5. Nuisance and Odors

The permittee must not cause or allow air contaminants from any source to cause a nuisance. Nuisance conditions will be verified by Department personnel.

3.0 OPERATION AND MAINTENANCE REQUIREMENTS

3.1. ESP Monitoring Plan

The permittee must monitor the ESP in accordance with the approved operation and maintenance plan required by Condition 5.2.

3.2. Control System

The permittee must prepare, implement, and maintain a routine plan to check on the ESP and the baghouse systems, and repair any control system within 24 hours after notice of malfunction or damage.

3.3. Oxygen Monitoring Plan

The permittee must monitor the Boiler Excess Oxygen for the wood fired hogged fuel boilers in accordance with the approved operation and maintenance plan submitted by the permittee to the Department.

4.0 PLANT SITE EMISSION LIMITS

4.1. Plant Site Emission Limits (PSEL)

Plant site emissions must not exceed the following:

Pollutant	Limit	Units
PM	24	tons per year
PM_{10}	14	tons per year
SO_2	39	tons per year
NO_X	45	tons per year
CO	99	tons per year
VOC	69	tons per year
Single HAP	9	tons per year
Combined HAPs	24	tons per year

4.2. Annual Period

The annual plant site emissions limits apply to any 12-consecutive calendar month period.

during the source test, which are result of the consultation with source test personnel, equipment vendors or consultants may render the source test invalid.

Tested Pollutant	Reference Test Method[1]
NO_X	EPA Method 7E
CO	EPA Method 10 Note: Method 10 must be modified to include improved quality assurance procedures of Method 6C – Contact the Departments Regional Field office for details.
PM/PM^{10}	Oregon Method 5 or 8 as applicable
VOC	EPA Method 18, 25 or 25A
Opacity	EPA Method 9

5.2. ESP Monitoring Plan

The permitte must maintain a monitoring plan for the ESP and must monitor the operation of the ESP in accordance with the plan.

5.3. Boilers Oxygen Monitoring

The permittee must monitor the performance of Boilers 1 and 2 and associated pollution control devices in accordance with the following conditions:

i. For each boiler, the permittee must calibrate, operate, maintain, and record the output of a continuous excess oxygen monitor in accordance with the manufacturer's written instructions. Real time data must be displayed/recorded at least once every minute that the boiler is in operation. Hourly averages of the data must be recorded once each clock hour that the boiler is in operation. The minimum data availability shall be 75% of the operating hours per day for 90% of the operating days per calendar quarter. . Monitor availability must be determined excluding periods of calibrations and routine maintenance.

ii. The permittee must maintain excess oxygen levels within the range of 4% to 14% except during periods of boiler startup and shut down. The permittee must record any instance in which the excess oxygen level is found outside this range and take immediate corrective action to return the boiler(s) to efficient operation.

5.5. PSEL Compliance Monitoring

Compliance with the PSEL must be calculated monthly and is determined for each 12-consecutive calendar month period based on the following calculation for each pollutant:

$$E = \Sigma(EF \times P)/2000 \text{ lbs}$$

where,

E = pollutant emissions (ton/yr);
EF = pollutant emission factor (see Condition 13.0);
P = process production (see Condition 14.0)

5.6. VOC PSEL Compliance Monitoring

Annual VOC emissions for each 12 consecutive calendar month period must be calculated monthly by the following formula:

$E_{VOC-A} = \Sigma[E_{VOC-MB} + E_{VOC-B/K}] \times 1 \text{ ton}/2000 \text{ lb}$
$E_{VOC-MB} = [\Sigma(C_X * D_X * K_X) - W]$
$E_{VOC-B/K}$ = Boiler/Kiln VOC emissions determined in Condition 5.5.

Where,

E_{VOC-A} = Annual VOC emissions in tons
E_{VOC-MB} = Mass balance
$E_{VOC-B/K}$ = Boiler/kiln
C = Material usage for the period in gallons
D = Material density in pounds per gallon
K = VOC concentration expressed as a decimal
X = Subscript x represents a specific material
W = Weight of VOC shipped offsite

5.7. Emission Factors

The permittee must use the emission factors provided in Condition 13.0 for calculating pollutant emissions, unless alternative emission factors are approved by the Department. The permittee may request or the Department may require using alternative emission factors provided they are based on actual test data or other documentation (e.g., AP-42 compilation of emission factors) that has been reviewed and approved by the Department.

8.0 REPORTING REQUIREMENTS

8.1. Excess Emissions

The permittee must notify the Department of excess emissions events if the excess emission is of a nature that could endanger public health.

a. Such notice must be provided as soon as possible, but never more than one hour after becoming aware of the problem. Notice must be made to the regional office identified in Condition 10.3 by e-mail, telephone, facsimile, or in person.

b. If the excess emissions occur during non-business hours, the permittee must notify the Department by calling the Oregon Emergency Response System (OERS). The current number is 1-800-452-0311.

c. The permittee must also submit follow-up reports when required by the Department.

8.2. Annual Report

For each year this permit is in effect, the permittee must submit to the Department by **February 15** two (2) copies of the following information for the previous calendar year:

a. Operating parameters required by Condition 5.2.

b. All PSEL calculations required in Condition 5.4 and 5.5.

b. MBF/month of Douglas fir processed through the dry kilns.

d. MBF/month of Hemlock and Spruce processed through the dry kilns.

e. Monthly and annual steam production of theWellon Boilers (lbs/month).

f. VOC content of antisapstain applied (lbs/gal).

g. Records of all planned and unplanned excess emissions events.

h. Summary of complaints relating to air quality received by permittee during the year.

i. List permanent changes made in plant process, production levels, and pollution control equipment which affected air contaminant emissions.

10.0 DEQ CONTACTS / ADDRESSES

10.1. Business Office

The permittee must submit payments for invoices, applications to modify the permit, and any other payments to DEQ's Business Office:

Department of Environmental Quality
Business Office
811 SW Sixth Avenue
Portland, Oregon 97204-1390

10.2. Permit Coordinator

The permittee must submit all Notices and applications that do not include payment to the Northwest Region's Permit Coordinator:

Department of Environmental Quality
Northwest Region
2020 SW 4th Avenue, Suite 400
Portland, OR 97201-4987
Telephone: (503) 229-5582

10.3. Field Office

Unless otherwise notified, the permittee must submit all reports (annual reports, source test plans and reports, etc.) to field office noted below.

Department of Environmental Quality
NWR-ESO/AQ
1550 NW Eastman Pkwy, Suite 290
Gresham, OR 97030
Telephone: (503) 667-8414

10.4. Web Site

Information about air quality permits and the Department's regulations may be obtained from the DEQ web page at www.deq.state.or.us

11.0 FEES

11.1. Annual Compliance Fee

The Annual Fee specified in OAR 340-216-0020, Table 2, Part 2 for a Standard ACDP is due on **December 1** of each year this permit is in effect. An invoice indicating the amount, as determined by Department regulations, will be mailed prior to the

12.7. Open Burning The permittee may not conduct any open burning except as allowed by OAR 340 Division 264.

12.8. Asbestos The permittee must comply with the asbestos abatement requirements in OAR 340, Division 248 for all activities involving asbestos-containing materials, including, but not limit to, demolition, renovation, repair, construction, and maintenance.

12.9. Property Rights The issuance of this permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of federal, state, or local laws or regulations.

12.10. Termination, Revocation, or Modification The Department may modify or revoke this permit pursuant to OAR 340-216-0082 and 340-216-0084.

13.0 EMISSION FACTORS

Criteria Pollutant	Source	Emission Factor (EF)	EF Reference
VOC	Sapstain application	VOC content of sapstain applied (lbs/gal)	Manufacturer's data
PM/PM_{10}	Boilers 1&2	0.04 lb/Mlb-steam	3/1/2000 source test** see note. DEQ approved factor PM_{10} *** see note
SO_2	Boilers 1&2	0.008 lb/Mlb-steam	AP-42 Table 1.6-2
CO	Boilers 1&2	0.66 lb/Mlb-steam	3/27/2008 source test
NO_x	Boilers 1&2	0.30 lb/Mlb-steam	3/27/2008 source tests
VOC	Boilers 1&2	0.049 lb/Mlb-steam	AP-42 Table 1.6-2
Total HAPs	Boilers 1&2	0.029 lb/Mlb-steam	DEQ Emission Factor
PM/PM_{10}	Shavings Bag house	0.001 gr/SCF at 10,000 SCFM	Manufacturer's specification
PM/PM_{10}	Sawdust Baghouse	0.01 gr/SCF at 3,600 SCFM	Engineering estimate
PM/PM_{10}	Dry Kiln	Douglas fir 0.02/MBF Hemlock 0.05/MBF	DEQ Emission Factor
VOC * see note	Dry Kiln	Douglas fir 0.5/MBF Hemlock 0..25/MBF	DEQ Emission Factor
Total HAPs	Dry Kiln	Douglas fir 0.13/MBF Hemlock 0.19/MBF	DEQ Emission Factor

15.0 ABBREVIATIONS, ACRONYMS, AND DEFINITIONS

ACDP	Air Contaminant Discharge Permit
ASTM	American Society for Testing and Materials
AQMA	Air Quality Maintenance Area
calendar year	The 12-month period beginning January 1st and ending December 31st
CFR	Code of Federal Regulations
CO	carbon monoxide
DEQ	Oregon Department of Environmental Quality
dscf	dry standard cubic foot
EPA	US Environmental Protection Agency
FCAA	Federal Clean Air Act
gal	gallon(s)
gr/dscf	grains per dry standard cubic foot
HAP	Hazardous Air Pollutant as defined by OAR 340-244-0040
I&M	inspection and maintenance
lb	pound(s)
MMBtu	million British thermal units
NA	not applicable
NESHAP	National Emissions Standards for Hazardous Air Pollutants
NO_X	nitrogen oxides
NSPS	New Source Performance Standard
NSR	New Source Review
O_2	oxygen
OAR	Oregon Administrative Rules
ORS	Oregon Revised Statutes
O&M	operation and maintenance
Pb	lead
PCD	pollution control device
PM	particulate matter
PM_{10}	particulate matter less than 10 microns in size
ppm	part per million
PSD	Prevention of Significant Deterioration
PSEL	Plant Site Emission Limit
PTE	Potential to Emit
RACT	Reasonably Available Control Technology
scf	standard cubic foot
SER	Significant Emission Rate
SIC	Standard Industrial Code
SIP	State Implementation Plan
SO_2	sulfur dioxide
Special Control Area	as defined in OAR 340-204-0070
VE	visible emissions
VOC	volatile organic compound
year	A period consisting of any 12-consecutive calendar months

Document2

Department of Environmental Quality
Northwest Region
Air Quality Program

Standard
AIR CONTAMINANT DISCHARGE PERMIT
REVIEW REPORT

Stimson Lumber Company
5900 Moffett Road
Tillamook, OR 97141
503-842-3164

Unassigned emissions	
Emission credits	
Source test	
COMS	
CEMS	
Compliance schedule	
Special conditions	
Annual report	X
Semi-annual report	
Quarterly report	

Monthly report	
Excess emissions report	
NSPS	X
NESHAP	
NSR	
PSD	
RACT	
FCE	
Public Notice	III

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(500-J) for discharge of Boiler Blowdown water for this facility (WQ File # 105191). Stormwater from this facility is covered by an NPDES General Permit (1200-Z) issued to The Port of Tillamook Bay (WQ File # 70615).

ATTAINMENT STATUS

8. The source is located in an attainment area for all pollutants.

SOURCE DESCRIPTION

OVERVIEW

9. Stimson Lumber Company processes wood logs to manufacture industrial and dimension grade lumber. Site activities include: debarking, saw cutting, chipping, planing, drying and fuel burning. Drying is accomplished utilizing four (5) kilns, which utilize steam supplied by two (2) hogged fuel boilers.

The two boilers are both dutch-oven type units manufactured by Wellon's equipped with two independent multiclones. Particulate emissions are controlled by one electrostatic precipitator that serves both combustion units and exhausts through a common stack. Fuel is primarily comprised of Douglas Fir and Hemlock bark, sawdust and planer shavings.

Stimson-Tillamook is proposing to increase dry-lumber production. Stimson recently installed a new 68-foot, single-track lumber kiln and replaced the existing stacker with a more efficient stacker unit. These modifications result in an increase in the hogged fuel boilers annual steaming rate. It is proposed to utilize the current maximum steaming capacity therefore modifications to the hogged fueled boilers will not be required.

The plant is in Tillamook, Oregon; Universal Transverse Mercator (UTM) coordinates 5,029,790 Northing and 436,891 Easting (UTM zone 10, NAD 27).

Raw logs are transported to the site by truck and unloaded into log storage piles until needed. The logs are then loaded onto the in-feed deck of the debarker, the bark is removed, and the logs are cut down to length. The logs proceed to the primary breakdown line, where parallel faces are sawn into the log to produce a cant. The cants then go through a process of trimming, edging, resawing and planing to produce green stud lumber. Wood residuals that are produced from this process are transferred to storage bins by mechanical conveyors. Wood treatment for sap stain is applied to the green stud lumber that is not kiln dried.

Lumber to be dried is processed in the steam heated kilns. Rough sawn lumber is stacked on cribs with stickers between each course and level to promote air circulation. The cribs are placed into the kiln on railed tracks. Steam from the boiler is introduced into the kiln heat exchangers. Kiln vents open and close as required to allow the wood moister to

per year would be less than the emissions from burning wood and therefore are conservatively addressed by treating them as if they were from burning wood.

16. An action level regulating excess air for the boilers and optimal reduction of CO air emissions has been included in the permit under Condition 5.3.

17. A production drying temperature for the dry kilns has been included in the permit under Condition 6.2.

OPERATION & MAINTENANCE REQUIREMENTS

18. The permittee is required to monitor the electrostatic precipitator (ESP) in accordance with the approved operation and maintenance plan submitted by the permittee to the Department.

EMISSIONS

19. Proposed PSEL information:

Pollutant	Baseline Emission Rate (tons/yr)	Netting Basis		Plant Site Emission Limits (PSEL)		
		Previous (tons/yr)	Proposed (tons/yr)	Previous PSEL (tons/yr)	Proposed PSEL (tons/yr)	PSEL Increase (tons/yr)
PM	0	0	0	24	24	0
PM_{10}	0	0	0	14	14	0
SO_2	0	0	0	39	39	0
NO_x	0	0	0	39	45	6
CO	0	0	0	99	99	0
VOC	0	0	0	39	69	30

a. The PSEL is a federally enforceable limit on the potential to emit.
b. The Department's approval is required for any request for increase in the PSEL.
c. The requested increase for NO_X emissions meets all applicable requirements for acceptable ambient impacts in accordance with 340-222-0041(c).
d. The requested increase for VOC does not have a significant impact and is outside the Ozone Precursor Distance.

OZONE PRECURSOR SIGNIFICANT DEMONSTRATION

The air quality analysis was consistent with the DEQ guidance document titled, "Guidance to DEQ Air Quality Staff for Portland and Medford AQMAs: Evaluating Demonstrations of Ozone Precursor Significant & Offset Amounts." The guidance outlines steps that DEQ staff take in evaluating the significance of a source as an ozone precursor, and determining the level of offsets, if required.

Initial Screening:

Stimson-Tillamook requested a 48 tons/yr VOC increase over the Netting basis. This is greater than the Significant Emission Rate of 40 tons/yr. The facility is approximately 48.6 km from the nearest boundary of the Portland AQMA, which is less than the screening threshold distance of 100 km. Therefore, the initial screening approach failed to prove that this was a non-significant source.

A NAAQs and PSD Increment standard has not been defined for VOC's and the use of controversial models that account for the complicated atmospheric chemistry involved in forming Secondary VOC pollutants are beyond the scope of this project. Therefore, VOC modeling was not performed during this ambient air quality analysis.

Demonstration Stage (Significance Area Maps)

The most recent Significance Area Maps available were used to demonstrate the Stimson-Tillamook facility is not considered a potentially significant source of ozone.

22. Production and Process Rates:

Description	Projected Annual Rates			Estimated (uncontrolled) PTE Annual Rates		
Sawmill Production	245,000	MBF*	(1)	350,000	MBF*	(1)
Kiln Production	158,000	MBF*	(2)	200,000	MBF*	(2)
Boiler Annual Steam Production (combined)	300,000	Mlbs-steam	(3)	330,252	Mlbs-steam	(a)

*MBF is thousand Board feet.

NOTES:

(a) Estimated PTE annual boiler steam production (Mlb-steam/yr) = (hourly maximum boiler steam rating {Mlbs-steam/hr}) x (PTE hours of operation hrs/yr)

Existing boiler hourly maximum steam rating (Mlbs-steam) = 17.0 (5)
Installed 2004 boiler hourly maximum steam rating (Mlbs-steam) = 22.4 (8)

24. KILN DRYING EMISSIONS:

Emission Unit/Wood Species (1)	Pollutant	Emission Factor (b) (lbs/MBF)	Kiln Throughput		Annual Emissions (a)	
			Projected Annual (MBF/yr)	Est. PTE (MBF/yr)	Projected Annual (tons/yr)	Estimated (uncontrolled) PTE (tons/yr)
Kilns						
Douglas fir	PM/PM_{10} (2)	0.02 (4)	200,000	200,000	2.0 (1)	2.0
	VOC	0.5 (4)			50.0 (1)	50.0
	Methanol	0.04 (5)			4.0 (1)	4.0
	Formaldehyde	0.001 (5)			0.1 (1)	0.1
	Acetaldehyde	0.06			6.0	6.0
Hemlock	PM/PM_{10} (2)	0.05 (4)	158,000	200,000	4.0	5.0 (1)
	VOC	0.25 (4)			19.8	25 (1)
	Methanol (3)	0.07 (5)			5.5	7.0 (1)
	Formaldehyde (3)	0.003 (5)			0.24	0.3 (1)
	Acetaldehyde	0.113			8.9	11.3
				PM Highest Total (1)	4.0 Hemlock	5.0 Hemlock
				VOC Highest Total (1)	50 Doug Fir	50 Doug Fir
				HAP Highest Total	13.8 (6) Hemlock	17.6 (7) Hemlock

NOTES:

a. Annual emissions (tons/yr) = (annual kiln production {MBF/yr}) x (emission factor {lbs/MBF}) / (2000 lbs/ton).
b. Emission Factors from DEQ.

REFERENCES:

(1) According to the existing Standard ACDP dated 7/18/02, the facility is permitted to dry Douglas fir and Hemlock in the kilns. Small amounts of other coastal species are also dried. The facility mostly dries hemlock. Douglas fir emissions are used for the PTE scenario for criteria pollutants, but only Hemlock is considered in the projected normal operations scenario. When the facility does dry Douglas fir in the future, they would control operations to maintain emissions below the applicable PSELs.
(2) PM_{10} conservatively assumed to be 100% of PM.

(b) VOC content of typical Antisapstain, End Seal, and Solvent products. VOC content, usage and application rates may vary with different products used.

(c) Based on the information provided by Stimson, none of the process VOC products currently used have HAPs in them. However, future products may contain HAPs.

26. Bag house Particulate Emissions:

Emission Unit	Emission Factor (2) PM/PM10 (5)	Bag house Airflow (2) (dscf/min)	Annual Emissions (a) (3) (4)
Shavings Bag house (1)	0.001 (gr/dscf)	10,000	0.4
Sawdust Baghouse (1)	0.01 (gr/dscf)	3,600	1.4

NOTES:

(a) Annual emissions (tons/yr) = (bag house airflow {dscf/min}) x (50 mins/hr) x (emission factor {gr/dscf}) / (7000 gr/lb) x (annual hours of operation {Hrs/yr}) / (2000lbs/ton).
Annual hours of operation (hrs/yr) = 8760 (5)

REFERENCES:

(1) The Shavings bag house controls emissions from the shaving cyclone and the shavings bin vent. The Sawdust baghouse controls emissions from several saws.
(2) The bag house emission factor and airflow were taken from ACDP dated 7/18/02, for the shavings baghouse, and engineering estimates for the Sawdust baghouse.
(3) PM10 conservatively assumed to be 100% of PM.
(4) Assumes the projected annual emissions are equal to the estimated (unregulated) PTE emissions for the bag house.
(5) Assumes operation 24 hours a day 365 days a year.

27. PROJECTED ANNUAL EMISSIONS SUMMARY:

EMISSION UNIT	PROJECTED ANNUAL EMISSION RATES (tons/yr)					
	PM/PM_{10}	SO_2	NO_x	CO	VOC	Total HAPs
Hogged Fuel Boilers Combined	6.0	1.2	45.0	99.0	7.4	4.4
Drying Kilns (1)	4.0 (2)				50 (3)	15 (2)
VOC/HAP – Containing Material					11.6	0.1
Bag houses	1.8					
TOTAL	11.8	1.2	45.0	99.0	69.0	19.5

Hazardous Air Pollutant	Unregulated Potential to Emit (tons/year)
Methanol	6.0 (Hemlock)
Formaldehyde	0.30 (Hemlock)
Acetaldehyde	11.3 (Hemlock)
Total	17.6

30. The source's unregulated PTE for an individual HAP (acetaldehyde) is greater than 80% of the threshold values for Title V applicability therefore; full compliance evaluation (FCE) is required.

ADDITIONAL REQUIREMENTS

NSPS APPLICABILITY

31. 40 CFR Part 60, Subpart Dc is applicable to the source because of the facility's 29.4 million BTU/hr Wellons hogged fuel boiler.

NESHAPS/MACT APPLICABILITY

32. At the time of permitting there was no source at this facility for which NESHAP/MACT standards were promulgated.

RACT APPLICABILITY

33. The RACT rules are not applicable to this source because it is not in the Portland AQMA, Medford AQMA, or Salem SKATS.

TACT APPLICABILITY

34. The source is meeting the State's TACT/Highest and Best Rules by conducting the following activities:

    a. Multiclones and an electrostatic precipitator (ESP) control the boiler's particulate emissions.
    c. A bag house system is used to control particulate emissions from the planer shavings cyclone.