

**Georgia-Pacific Corporation Response to Comments
Proposed Oriented Strandboard Facility
Hosford, Florida**

**Re: February 18, 2000 Letter from Mr. Joe Kahn P.E., FDEP
to Mr. Ronald Paul, Georgia-Pacific Corporation**

0770010-002-1C

PSD-FL-282A

1. *The application information states that fugitive sources are not required for evaluating PSD applicability. Rule 62-212.400(2)(b), F.A.C., provides for exemption of fugitive emissions from the determination of whether this facility is major for PSD, but Rule 62-212.400(2)(f), F.A.C., requires emissions be included in determining which pollutants equal or exceed the significant emission rate. The facility is major because of VOC potential emissions, and is significant for PM and PM10, CO and NOx. Please address the PSD requirements of Rule 62-212.400, F.A.C., for PM10 and VOC. Include an analysis of BACT for PM and PM10 visible emissions, and VOC and an air quality analysis, that take into account all quantifiable fugitive emissions from the proposed facility.*

Response:

The point source emission totals are presented in Table 5-1 of the PSD permit application. Those totals are as follows:

PM/PM ₁₀	425.62 (PM)/425.60 (PM ₁₀) tons per year (tpy) (includes revisions to EP-4 and EP-5 and conversion of the edge sealing from a fugitive to point source)
VOCs	649.42 tpy
CO	708.41 tpy
NO _x	426.45 tpy
SO ₂	13.10 tpy
Pb	0.0006 tpy

Emission estimates for the fugitive sources are contained in Attachment B of the application and are as follows:

	VOCs (tpy)	PM/PM ₁₀ (tpy)
Storage Tanks	0.3	-----
Bark Handling	-----	0.0022/0.0016
Wind Erosion	-----	0.088/0.044
Paved Roads	-----	70.9/4.9
Unpaved Roads (service trucks)	-----	2.0/0.73
Debarker	-----	7.1/3.2
Bark Hog	-----	0.14/0.065
Blend House	0.41	-----
Finished Product Storage	0.18	-----

It should be noted that the emission estimates for roads, bark handling, the debarkers, and the bark hog have changed from what was originally submitted. This is due to a re-routing of the roads and the addition of various control measures. In addition, the edge sealing and stencilling of boards will now be conducted in a booth with emissions vented through a dry-filter equipped stack. As such, that source is now presented as a point source of emissions, as opposed to a fugitive emission source (as represented in the original PSD permit application submittal). The updated emission estimation sheets for the fugitive sources and the edge sealing/stencilling are presented in Attachment 1. The revised ambient air quality analysis for particulate matter, incorporating these changes, will be submitted under separate cover.

With regard to the Best Available Control Technology (BACT) analysis for the fugitive emission sources, during a recent telephone conversation, you indicated that a formal analysis is not required, but that we should demonstrate a reasonable effort to control these sources. We believe the following controls will satisfy the requirements contained in Rules 62-212.400 (BACT) and 62-296.320(c) (Unconfined Emissions of Particulate Matter), F.A.C:

Fugitive Source	Proposed Control Measure
Bark Handling	Enclosed chutes and transfer points
Wind Erosion	Walls erected on three sides to protect the piles from winds that will entrain particles
Roads	Maximize paving, watering of unpaved roads, as necessary; sweeping/vacuuming of paved roads, as necessary
Debarker	Drum debarkers; partial enclosure
Bark Hog	Enclosure
Edge Sealing of Boards	Dry filters on coating booth

The storage tanks, blend house, and finished product storage represent minimal fugitive emissions where added controls would not be practical. Total emissions estimated for these three sources are less than 1 tpy.

- The class 1 Significant Impact and Increment analyses do not include receptors in the western portion of the St. Marks National Wildlife Refuge. Please submit Class 1 Significant Impact and Increment analyses that utilize these receptors.*

Response:

The FDEP has provided specific modeling coordinates for the western portion of the St. Marks National Wildlife Refuge. These coordinates are in addition to the original set of coordinates provided by FDEP and presented in the February 1999 G-P modeling protocol. The additional coordinates have been modeled and the results of this analysis will be submitted under separate cover. The results indicate that the maximum impacts are all less than the allowable increments.

3. *Please submit a report that describes the procedures utilized in the CALPUFF analysis that was conducted for Bradwell Bay and St. Marks Class I Areas.*

Response:

The CALPUFF analysis presented in the permit application is a CALPUFF-Screening mode. G-P has discussed this analysis with Cleve Holladay and Chris Carlson. As a result of those discussions, the CALPUFF-Screening analysis will be superseded by a CALPUFF-Refined mode analysis. Thus, G-P will submit, under separate cover, a full report discussing the refined mode analysis. The screening mode analysis is obsolete, and therefore will not be addressed by the report.

4. *The application information states that during normal operations exhaust gases from the thermal oil system will be routed through the dryer system and the associated multiclones and RTOs. Under what conditions will these exhaust gases bypass this route and be emitted through EP-10, and what is the expected duration of these conditions?*

Response:

Normal operation of the thermal oil system will allow its exhaust gases to be routed through a dry electrostatic precipitator (ESP) and through the dryer system to the RTOs serving the dryers. Emissions from the thermal oil system will continuously pass through the dry ESP. From the dry ESP, the emissions will pass either through the dryers to the RTOs (normal operating condition) or directly to atmosphere.

There are two possible scenarios involving the venting of the thermal oil system exhaust gases to atmosphere. One condition that can occur is when the drying system experiences a fire detection and/or explosion, systematic mechanical or electrical problems, or when the drying system can not start-up, but there are enough dried flakes available to proceed with board forming and pressing. Under these circumstances, aborting to atmosphere, with the dry ESP on line, could occur from 10 minutes to several hours per week.

A second possible bypass scenario would involve aborting the thermal oil system directly to atmosphere due to malfunctions, fire, explosion, or overheating in the dry ESP. The abort to atmosphere could take anywhere from 10 minutes to several hours per month. In cases where the dry ESP is taken out of service for these, or similar reasons, the thermal oil system will be manually switched from wood to natural-gas firing until the problem is corrected.

5. *What is the fuel consumption rate for the regenerative thermal oxidizers?*

Response:

As presented in our permit application, there are two RTOs controlling the dryers. Each of the RTOs will have eight burners, with each burner rated at 4 MMBTU/hour. As such, the total burner rating for each of the dryer RTOs will be 32 MMBTU/hour. Assuming a heating value of 1000 BTU/SCF for natural gas, each RTO would consume 32,000 SCF/hour when operating at their rated capacity. The inlet process exhaust flow to the RTOs, however, contains significant VOC loading, whose BTU value will offset some of the actual, supplemental natural gas usage. The RTOs will also be equipped to operate in a natural gas injection mode, which enhances the BTU value of the inlet process gas and allows for self-sustaining operation without the use of the natural gas burners. This feature further reduces actual natural gas consumption and provides for significant nitrogen oxides reductions. The emissions resulting from the supplemental natural gas combustion are included in our overall emission estimates, based on use of the burners at their rated capacity.

The press RTO will contain four, 4 MMBTU/hour burners, for a total rating of 16 MMBTU/hour. As such, using the assumptions and qualifications presented above, the press RTO would consume 16,000 SCF/hour. As is the case with the dryer RTOs, the emissions resulting from the supplemental fuel firing of the burners at their rated capacity are included in the overall emission estimates for the press.

6. *The SCC numbers for emissions unit 010 are for the electric generation industry. SCC numbers such as 1-03-009-02 and 1-03-006-02 for commercial/institutional external combustion sources may be appropriate. Please confirm these codes are appropriate or suggest other codes.*

Response:

The emission unit 10 is not an electric generator. The correct SCC numbers are: 10300602 (External Combustion Natural Gas) and 10300901 (External Combustion Wood/Bark-fired Boiler).

7. *Please provide a copy of any available NCASI information that may be used to estimate emissions, either controlled or uncontrolled, from the drying and press operations.*

Response:

NCASI Technical Bulletin 772 was published January 1999. This technical bulletin addresses VOC emissions from the industry. There were four OSB facilities tested by NCASI, including two facilities located in the north central U.S. and two located in the southeast. With regard to the two facilities in the southeastern U.S. both facilities utilize both phenol-formaldehyde (PF) and methylene-diphenyl isocyanate (MDI) resins, while the proposed G-P facility will only utilize PF resin.

Attachment 2 contains process descriptions for the four mills and test results for the two southern pine mills. For the dryer and press RTO outlets at the first southern pine mill (#145), the only HAPs measured above the detection limit are formaldehyde and phenol. At the second southern pine mill (#410), acetaldehyde, methanol, formaldehyde, and phenol are measured above the detection limit for the dryer RTO. At this same facility, all of the HAPs are measured at or below the detection limit for the press RTO. The wood species used for the north central facilities would not be representative for Hosford.

8. *Please provide a copy of the BACT determinations and construction permits for the G-P facilities in Arkansas and Virginia, and, if possible, the Louisiana Pacific facility in Alabama.*

Response:

A copy of the PSD and Title V operating permit issued for the Fordyce, Arkansas OSB facility in June 1999 is included as Attachment 3. Since the time this permit was issued, and as construction has moved forward, some minor changes have been identified and a request for permit modification was submitted to the Arkansas DEQ in July 1999 and a final permit is pending. A copy of the text describing the requested changes is also included in the Attachment. The control equipment and emissions proposed for Hosford are identical to what has been permitted at Fordyce, with the exception of the dry ESP proposed for Hosford that is not part of the Fordyce design.

For the Brookneal, Virginia facility, we have enclosed three documents in Attachment 4 (permit to construct and review report). The original PSD permit allowed for a multi-clone/electrostatic precipitator (ESP) combination for the Wellons furnace/dryer system and a fan-powered stack for the press. The design of the drying system at the Brookneal facility was distinctly different than what is being proposed for Hosford. The Brookneal drying system recirculates the dryer exhaust to an energy system, or Wellons furnace, for use as combustion air and to generate the heat for the dryers. This was inherent to the design of the Brookneal dryers and was not an add-on control system. However, the design did allow for reductions in VOCs and CO. The Hosford drying system features individual, and independent, wood-fired suspension burners for each dryer with natural gas burners as back-up.

In 1997, the Brookneal facility replaced the fan-powered stack on the press with a dual-mode (regenerative or catalytic) oxidizer system. This oxidizer system is identical to what is being proposed at Hosford. The VOC control efficiency permitted for the Brookneal press is also the same as proposed at Hosford, 90 percent. However, the overall emission rate for Brookneal is lower. This is partially due to the fact that the plant is permitted at a lower production rate, but mainly due to the fact that the inlet VOC loadings at Brookneal are lower. The furnish at Brookneal is a mix of hardwood and softwood, whereas, Hosford will be primarily, if not totally, softwood. The use of a softwood furnish, generally, will result in a higher VOC inlet loading. This is true for both the dryer and press emissions. For the reasons stated above (*e.g.*, differences in dryer design, furnish, and production levels), the emission rates permitted for Brookneal are not an appropriate comparison for Hosford.

As requested, we have also enclosed the permit and BACT determination for the Louisiana-Pacific facility in Attachment 5. Based on telephone conversations with Jim Wilson of the Alabama Department of Environmental Management (ADEM), the emission rates presented in the BACT determination were superseded by higher emission rates in the current permit. These emission rates reflect actual BACT performance, as determined by source testing and no change in control options. As discussed in our BACT document, the control efficiencies presented in the Clearinghouse have never been revised to reflect actual BACT performance as reflected in the final permit conditions.

9. *Please provide information to support the emission factors used by the vendor to estimate uncontrolled and controlled emissions from the dryers. Interestingly, for particulate matter, VOC and NOx, emission factors from EPA's AP-42 section 10.6.1 results in much lower estimated emissions than estimated by the dryer vendor. Please address this as part of your response.*

Response:

The emission estimates for the dryers were prepared by the equipment vendor, M-E-C. With regard to a comparison against AP-42, the M-E-C calculations assume the maximum plant throughput and the wood furnish with the highest possible moisture content. The AP-42 information only represents average operating conditions, in terms of both wood species and moisture content of the furnish. The Louisiana-Pacific, Hanceville test data are not taken into account in the development of the AP-42 emission factors. As you also may be aware, EPA cautions that the determination of the representativeness of AP-42 factors to specific operations is the responsibility of the applicant and should be approached with due caution. The use of factors which represent average conditions is inappropriate for estimating maximum emissions in that, by definition, they reflect an emission rate which will be exceeded a significant percentage of the time.

10. *Emission factors from EPA's AP-42 section 10.6.1 results in much lower estimated emissions for VOC emissions from the press than estimated by the stack test data. Please comment and provide supporting information for the stack test to be used by the vendor, and provide additional stack test from the same or other facilities. Please provide a description of the equipment and processes used by this plant, and confirm whether this is or is not the Louisiana Pacific facility in Alabama listed in the RBLC database.*

Response:

We have reviewed the AP-42 information for press VOCs. The uncontrolled factor provided in AP-42 for a hot press with PF resin is 0.52 lb/MSF. The only controlled factor presented in AP-42 is for an MDI/PF resin. As such, that factor is not representative. We have reviewed EPA's background documentation (Emission Factor Documentation for AP-42, Section 10.6.1, Waferboard/Oriented Strandboard Manufacturing, Final Report, December 1998) developed in preparing the emissions factors for the section. Table 4-14 reports the range of uncontrolled VOC emission factors being from 0.081 to 2.6 lbs/MSF. The variables in the factors include wood species and resin type. None of the test values reflect operation of a press with 100% softwood and 100% PF resin.

The facility referenced in the vendor stack test is the Louisiana-Pacific in Hanceville, AL listed in the RBL database. A one-page summary of the test results for the dryers and press, supplied by M-E-C, is included as Attachment 6. The VOC inlet emission rate from the stack test at Hanceville is listed as 147.4 pounds per hour. The emission rate for Hosford utilizes this test data, applies a 90% estimated control efficiency, and scales that rate by the ratio of the production rates between Hosford and Hanceville (475 MMSF/350 MMSF) ($147.4 \text{ lbs/hour} \times 0.10 \times 475/350 = 20 \text{ lbs/hour}$). Without facility-specific testing at Hosford, and based on operation of other similar facilities, Georgia-Pacific and the equipment vendor do not feel that it is appropriate to permit a control efficiency of greater than 90% at this time. Please note that the EPA staff involved in drafting the MACT standard for this category have determined that a 90% reduction represents the capability for RTOs in these applications and will be proposing this as a final rule in the very near future.

11. *Information in the RBLC database suggests that other facilities achieve much lower hourly emissions than you have proposed as BACT, particularly for PM10, VOC and NOx from the dryers, and VOC from the press. Please address this and reevaluate the level of emissions proposed for these sources and pollutants.*

Response:

First, the hourly emission rates reflect the lower production rates of the other facilities – the Georgia-Pacific facility in Hosford is being permitted at a production rate of 475 MMSF annually, which is higher than most, if not all, of the other facilities referenced in the Clearinghouse. In addition, the exhaust from the thermal oil system, under normal operating conditions, will exit via the dryer RTOs, further increasing emissions from the RTO stacks at Hosford. Also, in some cases, there are significant differences in wood species, inlet moisture content of the furnish, and resin technology.

12. *For emissions units 003 through 009, the emission limit you proposed and BACT are higher than recent BACT determinations of the Department. The Department is likely to impose more stringent limits regardless of the vendor's guarantees. For example, the Department recently determined that the BACT emission limit for a planer mill controlled by a cyclone and baghouse combination was 0.004 grains per dscf. Please reevaluate the level of emissions proposed for these source.*

Response:

We are still of the opinion that the values that the vendor has provided for our operation are representative of what would be expected from controlled material handling operations at a facility manufacturing OSB. In your letter, you represent BACT emission limits that have been set for a planer mill. Generally, the characteristics of the materials handled at a planer mill are very different than what is handled in the processing of OSB. A planer mill would be expected to have much larger particles than what is present in OSB manufacturing. For example, the particles generated in the sanding of OSB are very fine and are somewhat difficult to control. Considering Emission Units 003 through 009, only Units 004 and 005 do not handle purely fine material. For these two units, Georgia-Pacific is comfortable accepting reduced particulate matter emission rates, based on a loading of 0.005 grain per cubic foot. Revised emission calculations are provided for these two sources in Attachment 7.

For the remaining material handling sources, Units 003 and Units 006 through 009, G-P does not agree that BACT emission limits established for a planer mill are representative for OSB manufacturing and we would not be comfortable accepting limits ultimately subject to Title V certification requirements on that basis.

13. *Enclosed are the preliminary comments from the U.S. Fish and Wildlife Service. We have similar concerns, some of which are reviewed above. Please respond to those comments, particularly the evaluation of acceptable BACT limits and the economic analysis.*

Response:

Our response to the comments submitted by the U.S. Fish and Wildlife Service and EPA Region IV, regarding BACT, is provided in Attachment 8.

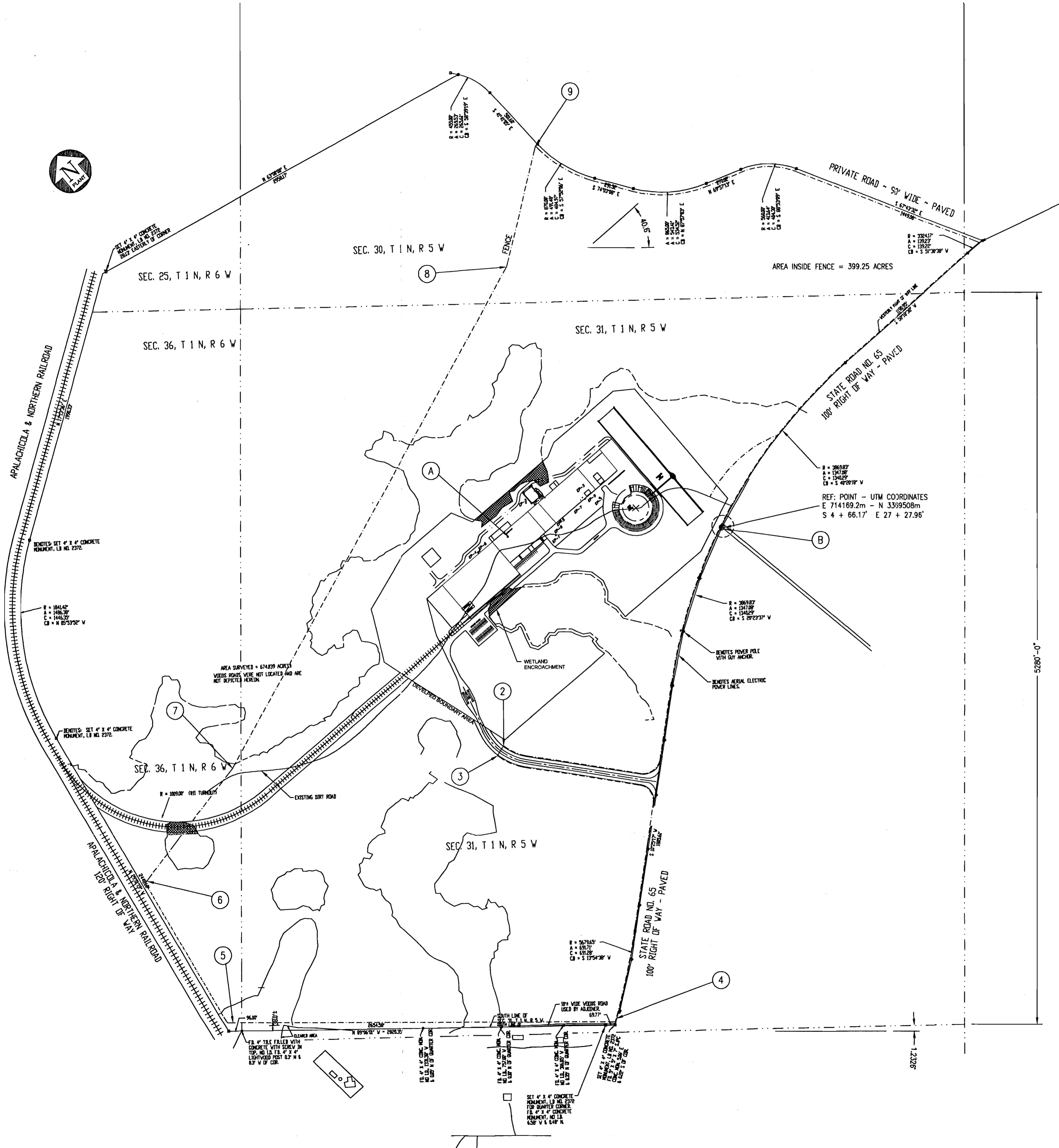
14. *Additional comments related to the case-by-case MACT determination required for this project will be sent to you by separate letter. Please respond to those comments with your response to the above.*

Response:

Our letter, responding to these questions, was forwarded to Ms. Cindy Phillips of FDEP on July 6, 2000. You were copied on this letter.

Summary of Attachments:

- Attachment 1: Revised Emissions for Fugitive and Stencilling Spray Booth
- Attachment 2: Excerpts from NCASI Technical Bulletin
- Attachment 3: Permit for G-P Fordyce OSB Plant
- Attachment 4: Construction and Operating Permit for G-P Brookneal Plant
- Attachment 5: Construction Permit and Title V Permit for Louisiana-Pacific Hanceville, AL Plant
- Attachment 6: Summary of Source Test Results for Louisiana-Pacific Hanceville, AL
- Attachment 7: Revised Emission Calculations for EP-4 and EP-5
- Attachment 8: Responses to EPA Region IV and FSW BACT Comments



FENCE AREA

POINT	REF. POINT	DESCRIPTION
A N5 + 00.00	E15 + 00.00	*** CENTER OF PRESS CONTROL POINT FOR PLANT
1 S 01 + 31.00	E59 + 91.00	NORTH EAST CORNER OF FENCE
B S 04 + 66.17	E27 + 27.96	REF. POINT INTERSECTION OF HWY 65 & ROAD
2 S 06 + 26.75	E 04 + 91.12	EAST CORNER OF GATE
3 S 06 + 52	E 04 + 9.58	WEST CORNER OF GATE
4 S 26 + 62.25	W 01 + 85.21	S.W. CORNER OF FENCE
5 S 08 + 20.13	W 23 + 34.24	N.W. CORNER OF FENCE
6 N 03 + 27.54	W 21 + 34.30	NORTH CORNER OF FENCE
7 N 05 + 37.66	W 11 + 14.21	N.W. INTERMEDIATE POINT OF FENCE
8 N 19 + 81.5	E 28 + 61	N.E. INTERMEDIATE POINT OF FENCE
9 N 24 + 97	E 35 + 80.7	N.E. CORNER OF FENCE

DESCRIPTION OF FENCED PROPERTY

NOTE: POINTS A & B ARE GIVEN FOR REFERENCE ONLY AND ARE NOT ON THE FENCE LINE. STARTING AT POINT #1 THE FENCE WILL BE 20ft SOUTH OF THE PRIVATE ROAD RIGHT OF WAY AND A MAXIMUM OF 5' NORTH OF THE RIGHT OF WAY FOR STATE HIGHWAY 65. THE FENCE WILL THEN FOLLOW THE CONTOURS OF STATE HWY 65 TO THE WEST & SOUTH UNTIL IT COMES TO THE NEW ENTRANCE ROAD. THE FENCE WILL THEN TURN AND FOLLOW THE ENTRANCE ROAD TO POINT #2. THE FENCE WILL THEN CROSS THE NEW ENTRANCE ROAD TO POINT #3. AT THIS POINT THE FENCE WILL TURN SOUTH AND FOLLOW THE NEW ENTRANCE ROAD BACK TO HWY 65. THEN TURN WEST AND FOLLOW THE CONTOURS OF HWY 65 TO POINT #4. THE FENCE WILL NOW TURN N.W. TO POINT #5. THEN THE FENCE WILL FOLLOW THE CONTOURS OF THE RAIL ROAD TRACKS TOWARD THE NORTH UNTIL CONTACTING POINT #6. THE FENCE WILL THEN TURN EAST TO POINT #7. THEN IT WILL TURN N.E. TO POINT #8. THE FENCE NOW TURNS NORTH TO POINT #9. FINALLY THE FENCE WILL REMAIN 20ft SOUTH OF THE PRIVATE ROAD FOLLOWING ITS CONTOURS BACK TO POINT #1.

NO.	REVISIONS	BY	DATE	APP'D. BY
A	RELEASED FOR APPROVAL	RPS	1/17/00	
B	REVISED ENTRANCE ROAD	JAD	2/25/00	
C	REVISED FENCE LINE FOR ENVIRONMENTAL REASONS	RPS	7/12/00	

GEORGIA-PACIFIC CORPORATION
 BUILDING PRODUCTS ENGINEERING DIVISION
 133 Peachtree St., 18th Floor
 ATLANTA, GEORGIA 30303
"Safety in Engineering. We Take It Seriously."

PLANT LOCATION: HOSFORD, FL. OSB

**SITE PLAN LAYOUT
 FENCE LINE LOCATION**

SCALE: 1"=400'	DRAWN BY: RPS	DRAWING NUMBER	REV. NO.
DATE: 1/17/00	CHECKED BY:	342-165-C-001-03	C
LOCATION: 342-165	APPROVED BY:	SHEET: 1 OF 1	

ATTACHMENT 1
Updated Fugitive Emission Calculations
and Revised Calculations for Edge Sealing (now a point source)

PAVED ROADS (Updated 07/06/00)

Paved Roads (Updated 07/06/00)

Log and bark trucks operate on the paved roads at the plant. Each truck is either delivering logs or receiving bark. Therefore, each truck will travel on the roads as "empty" one-way, and "loaded" the other way. There are also service trucks that can travel on the roads.

Emission Factors

The AP-42 Emission factor equation calculates the factor as follows:

Emission Factor (lbs. PM10/vehicle mile traveled) = $0.016 \times (\text{silt load}/2)^{0.65} \times (\text{truck wt}/3)^{1.5}$

Emission factor (lbs TSP PM/vehicle mile traveled) = $0.082 \times (\text{silt load}/2)^{0.65} \times (\text{truck wt}/3)^{1.5}$

Log and Bark Truck Travel

Emission Factor Determination:

Silt Load = 0.30 See AP-42 (used 1.5 for uncontrolled and assumed 80% control with the use of vacuum trucks, final "controlled silt loading is 0.30).

Weight of full truck = 40 tons

Weight of empty truck = 20 tons

Average truck weight = 30 tons

Calculated emission factors (lb/VMT) = 0.15 (PM10) and 2.15 (TSP)

Assume travel between the hours of 5 am and 10 pm

Travel Distance (Main Paved Road):

Road width = 45 feet

One way trip length = 2,309 feet

Number of log trucks/day = 160

Number of bark trucks/day = 10

Total trucks = 170

Vehicle miles traveled = 2,309 feet/truck (one-way) x 2 (return trip) x 170 trucks/day x mile/5,280 feet = 148.7 miles/day (54,270 miles/year)

Estimated Emissions for Main Paved Road:

PM10 = 148.7 VMT/day x 0.15 lb/VMT x day/17 hours = 1.29 lbs/hour
(4.0 tpy; 1.29 lbs/hour x 17 hours/day x 365 days/year x ton/2000 lbs)

TSP = 148.7 VMT/day x 2.15 lbs/VMT x day/17 hours = 18.81 lbs/hour
(58.4 tpy; 18.81 lbs/hour x 17 hours/day x 365 days/year x ton/2000 lbs)

Travel Distance (Alternate (Paved) Log Road):

Travel Distance (Alternate Paved Road):

Road width = 45 feet

One way trip length = 1050 feet

Number of log/bark trucks/day = 80

Vehicle miles traveled = 1,050 feet/truck (one-way) x 2 (return trip) x 80
trucks/day x mile/5,280 feet = 31.8 miles/day (11,614 miles/year)

Estimated Emissions for Alternate Paved Road:

PM10 = 31.8 VMT/day x 0.15 lb/VMT x day/17 hours = 0.28 lb/hour
(0.87 tpy; 0.28 lb/hour x 17 hours/day x 365 days/year x ton/2000 lbs)

TSP = 31.8 VMT/day x 2.15 lbs/VMT x day/17 hours = 4.02 lbs/hour
(12.5 tpy; 4.02 lbs/hour x 17 hours/day x 365 days/year x ton/2000 lbs)

Service Truck Travel

Emission Factor Determination:

Silt Load = 0.30 See AP-42 (used 1.5 for uncontrolled and assumed 80%
control with the use of vacuum trucks, final "controlled silt
loading is 0.30).

Average truck weight = 2 tons

Calculated emission factors (lb/VMT) = 0.0025 (PM10) and 0.037 (TSP)

Assume travel 24 hours per day

Travel Distance (Paved Service Road):

Road width = 45 feet

One way trip length = 500 feet

Number of trucks/day = 6

Vehicle miles traveled = 500 feet/truck (one-way) x 2 (return trip) x 6
trucks/day x mile/5,280 feet = 1.14 miles/day (415 miles/year)

Estimated Emissions for Paved Service Road:

PM10 = 1.14 VMT/day x 0.0025 lb/VMT x day/24 hours = 0.0001
lb/hour
(0.0005 tpy; 0.0001 lb/hour x 24 hours/day x 365 days/year x ton/2000
lbs)

TSP = 1.14 VMT/day x 0.037 lb/VMT x day/24 hours = 0.0018 lb/hour
(0.0077 tpy; 0.0018 lb/hour x 24 hours/day x 365 days/year x ton/2000
lbs)

Total Emission Rates for Paved Roads

PM10 (hourly) = 1.29 (main paved road) + 0.28 (alternate paved road) + 0.0001
(paved service road) = 1.57 lbs/hour

PM10 (annual) = 4.0 (main paved road) + 0.87 (alternate paved road) + 0.0005
(paved service road) = 4.87 tpy

TSP (hourly) = 18.81 (main paved road) + 4.02 (alternate paved road) + 0.0018
(paved service road) = 22.83 lbs/hour

TSP (annual) = 58.4 (main paved road) + 12.5 (alternate paved road) + 0.0077
(paved service road) = 70.91 tpy

UNPAVED ROADS (Updated 07/06/00)

Unpaved Roads (Updated 07/06/00)

Service Truck Travel

Emission Factor Determination:

Silt Load = 15 (See AP-42)
Average truck weight = 2 tons
Speed of trucks = 10 mph
Rain days = 110/year
Wheels = 4

Calculated emission factors (lb/VMT) = 0.99 (PM10) and 2.74 (TSP)

Assume travel 24 hours per day

Travel Distance (Unpaved Service Road):

Road width = 45 feet
One way trip length = 1770 feet
Number of trucks/day = 6

Vehicle miles traveled = 1770 feet/truck (one-way) x 2 (return trip) x 6 trucks/day x mile/5,280 feet = 4.02 miles/day (1468 miles/year)

Estimated Emissions for Unpaved Service Road:

PM10 = 4.02 VMT/day x 0.99 lb/VMT x day/24 hours = 0.17 lb/hour
(0.73 tpy; 0.17 lb/hour x 24 hours/day x 365 days/year x ton/2000 lbs)

TSP = 4.02 VMT/day x 2.74 lbs/VMT x day/24 hours = 0.46 lb/hour
(2.01 tpy; 0.46 lb/hour x 24 hours/day x 365 days/year x ton/2000 lbs)

BARK HANDLING (Updated 07/06/00)

Fugitive Emissions from Batch Drop of Bark onto Bark Pile (updated 07/06/00)

Emission Factor

AP-42 calculates an emission factor as follows:

$$\text{Factor (lbs. PM/ton bark dropped)} = ((k*0.0032*(U/5)^{1.3}/(M/2)^{1.4})$$

The AP-42 formula assumptions are:

For TSP PM, the value of K = 1

For PM10, the value of K = 0.74 see AP-42

U, Wind Speed = 7.1 miles per hour

M, Moisture content of bark = 50%

The emission factors are calculated as follows:

$$\begin{aligned} \text{PM10: } & 0.74 \times 0.0032 \times (7.1/5)^{1.3} \times (50/2)^{1.4} \\ & = 0.000041 \text{ lb PM10/ton bark} \end{aligned}$$

$$\begin{aligned} \text{TSP PM: } & 1 \times 0.0032 \times (7.1/5)^{1.3} \times (50/2)^{1.4} \\ & = 0.000055 \text{ lb TSP PM/ton bark} \end{aligned}$$

Bark Processed

Based on 475,000 MSF of board, and an approximate factor of 75.4 lbs. bark/MSF, the throughput is:

$$475,000 \text{ MSF/year} \times 75.4 \text{ lbs. bark/MSF} \times \text{ton}/2,000 \text{ lbs.} = 112,800 \text{ tons/year}$$

Emission Rate

G-P will have the option of either shipping bark material offsite or stockpiling. To move the bark from the debarkers to either the pile will require the use of conveyors. G-P estimates the number of transfer points along the transfer route to be seven. Therefore, the emission rate is calculated to be:

$$\begin{aligned} \text{TSP PM: } & 7 \times 112,800 \text{ tons/year} \times 0.000055 \text{ lb TSP PM/ton bark} \times 0.1 \text{ (assume} \\ & \text{90\% control due to enclosed chutes and transfer points)} = 4.3 \text{ lbs/year (0.0022} \\ & \text{tpy)} \end{aligned}$$

$$\begin{aligned} \text{PM10: } & 7 \times 112,800 \text{ tons/year} \times 0.000041 \text{ lb PM10/ton bark} \times 0.1 \text{ (assume 90\%} \\ & \text{control due to enclosed chutes and transfer points)} = 3.2 \text{ lbs/year (0.0016 tpy)} \end{aligned}$$

WIND EROSION (Not Updated)

Wind Erosion Calculation

Emission Factor:

The emissions factor is based on the exposed surface area and the following equation:

Gram PM/square meter surface area = $K \times 58 (u^* - u_{t^*})^2 + 25 (u^* - u_{t^*})$

U_{t^*} = threshold friction velocity. By using 1/2 of the loose coal factor,
 $u_{t^*} = 0.56$ meter/s

U^* = friction velocity = $0.53 \times$ "fastest velocity". Bt assuming fastest velocity = 30 miles/hour, $U^* = 0.689$

For PM10, the value of $k = 0.5$; for TSP PM, the value of $k = 1$. See AP-42.

For PM10, the emission factor is calculated as 4.19 gram/m² per wind event

For PM, the emissin factor is calculated as 8.38 grams/m² per wind event

Surface Area

The Surface area is calculated with the following factors:

Shape is conical

Height is 15 feet.

Radius is 50 feet.

Calculated Exposed Area = 8,200 square feet (762 square meters)

Wind Events

Assume 2 wind events per day, and 100 events per year above the threshold of 30 miles/hour

Emission Rate

The pile will be partially enclosed by retaining walls. Assuming that these walls block the wind from some surfaces of the pile, the calculation below assumes that only 25% of the total surface area is exposed to a wind event, the daily emission rates are:

PM10: $0.25 \times 762 \text{ square meters} \times 4.19 \text{ grams/square meter} \times 2$
events/day = 1,600 grams/day $\times \text{lb}/454 \text{ grams} = 3.6 \text{ lbs./day}$.

TSP PM: $0.25 \times 762 \text{ square meters} \times 8.38 \text{ grams/square meter} \times 2$
events/day = 1,600 grams/day $\times \text{lb}/454 \text{ grams} = 7.2 \text{ lbs./day}$.

The annual emission rates are calculated to be:

PM10: $0.25 \times 762 \text{ square meters} \times 4.19 \text{ grams/square meter} \times 100$
events/year = 39,900 grams/year $\times \text{lb}/454 \text{ grams} = 88 \text{ lbs./year}$ (0.044
ton/year)

TSP PM: $0.25 \times 762 \text{ square meters} \times 8.38 \text{ grams/square meter} \times 100$
events/year = 39,900 grams/year $\times \text{lb}/454 \text{ grams} = 176 \text{ lbs./year}$ (0.088
ton/year)

OTHER FUGITIVE EMISSION SOURCES (Updated 07/06/00)

Calculations for other fugitive emission sources

Debarker (PM emissions)(updated 07/06/00)

TSP PM	$134.5 \text{ tons logs/hour} \times 0.024 \text{ lb/ton (AP-42)} \times 0.5 \text{ (assume 50\% control – drum debarkers that are partially enclosed)} = 1.6 \text{ lbs/hr (7.1 tpy)}$
PM10	$134.5 \text{ tons logs/hour} \times 0.011 \text{ lb/ton (SCC)} \times 0.5 \text{ (assume 50\% control – drum debarkers that are partially enclosed)} = 0.75 \text{ lb/hr (3.2 tpy)}$

Bark Hog (PM emissions) (updated 07/06/00)

Assume bark = 10% by weight of total logs = 13.5 lbs/hr; use debarking factors as representative

TSP PM	$13.5 \text{ tons bark/hour} \times 0.024 \text{ lb/ton (AP-42)} \times 0.1 \text{ (assume 90\% control – enclosed source)} = 0.032 \text{ lb/hr (0.14 tpy)}$
PM10	$13.5 \text{ tons bark/hour} \times 0.011 \text{ lb/ton (SCC)} \times 0.1 \text{ (assume 90\% control – enclosed source)} = 0.015 \text{ lb/hr (0.065 tpy)}$

Blend House (VOC/HCOH emissions; Resin and wax are blended with dry wood in the blend house)

OSHA testing has indicated 0.47 ppm VOCs and formaldehyde; assume a fan flow of 40,000 acfm

$$\text{VOC } 0.47 \text{ ft}^3/\text{MMft}^3 \text{ air} \times 60 \text{ mins/hr} \times 40,000 \text{ ft}^3 \text{ air/min} \times 30.03 \text{ lb/lb-mol} \times \text{lb-mol}/359 \text{ ft}^3 = 0.09 \text{ lb/hr (0.41 tpy)}$$

HCOH Assume formaldehyde = VOCs

Finished Product Storage (VOC/HCOH emissions)

OSHA testing has indicated 0.21 ppm VOCs and formaldehyde; assume a fan flow of 40,000 acfm

$$\text{VOC } 0.21 \text{ ft}^3/\text{MMft}^3 \text{ air} \times 60 \text{ mins/hr} \times 40,000 \text{ ft}^3 \text{ air/min} \times 30.03 \text{ lb/lb-mol} \times \text{lb-mol}/359 \text{ ft}^3 = 0.04 \text{ lb/hr (0.18 tpy)}$$

HCOH Assume formaldehyde = VOCs

Edge Sealing of Boards (no longer a fugitive emission source – added stack)

Paint/Spray Booth Information

Paint/Spray Booth Emission Calculations (replaces prior fugitive emission source "Edge Sealing of Boards outside Spray Booth"):

Paint spraying is automated, air atomized

Amount of paint sprayed transferred to media = 70%, 30% to control device/exhaust

Filter is 98% efficient for total particulates

PM10 = 50% of total particulates

Annual Emissions

475,000,000 square feet of board painted per year

Edge seal

Paint Usage = 0.20 gal/1000 square feet of board

Solids content of paint = 54%

$0.20 \text{ gal/1000 square feet of board} \times 475,000,000 \text{ square feet/year} \times 0.54 \text{ (54\% solids content)} \times 0.30 \text{ (30\% overspray)} \times (1 - 0.98) \text{ (98\% control)} = 307.8 \text{ lbs PM/year} = (0.15 \text{ tpy})$

$\text{PM10} = 50\% \text{ of PM} = 0.5 \times 307.8 = 154 \text{ lbs PM10 /year} (0.077 \text{ tpy})$

Stencil paint

Paint Usage: 0.015 gal/1000 square feet of board

Solids content of paint = 63%

$0.015 \text{ gal/1000 square feet of board} \times 475,000,000 \text{ square feet/year} \times 0.63 \text{ (63\% solids content)} \times 0.30 \text{ (30\% overspray)} \times (1 - 0.98) \text{ (98\% control)} = 26.9 \text{ lbs PM/year} = (0.013 \text{ tpy})$

$\text{PM10} = 50\% \text{ of PM} = 0.5 \times 26.9 = 13.5 \text{ lbs PM10 /year} (0.007 \text{ tpy})$

Total Annual Emissions

$\text{PM} = 0.15 \text{ tpy (edge seal)} + 0.013 \text{ tpy (stencil paint)} = 0.16 \text{ tpy}$

$\text{PM10} = 0.077 \text{ tpy (edge seal)} + 0.007 \text{ tpy (stencil paint)} = 0.084 \text{ tpy}$

Paint/Spray Booth Emission Calculations (continued)

Hourly Emissions

Maximum hourly rate = 60,000 square feet of board

Edge seal

$0.20 \text{ gal}/1000 \text{ square feet of board} \times 60,000 \text{ square feet/hr} \times 0.54 \text{ (54\% solids content)} \times 0.30 \text{ (30\% overspray)} \times (1 - 0.98) \text{ (98\% control)} = 0.04 \text{ lb PM/hr}$

$\text{PM}_{10} = 50\% \text{ of PM} = 0.5 \times 0.04 = 0.02 \text{ lb PM}_{10} \text{ /hr}$

Stencil paint

$0.015 \text{ gal}/1000 \text{ square feet of board} \times 60,000 \text{ square feet/hr} \times 0.63 \text{ (63\% solids content)} \times 0.30 \text{ (30\% overspray)} \times (1 - 0.98) \text{ (98\% control)} = 0.003 \text{ lb PM/hr}$

$\text{PM}_{10} = 50\% \text{ of PM} = 0.003 \times 0.5 = 0.0015 \text{ lbs PM}_{10} \text{ /hr}$

Total Hourly Emissions

$\text{PM} = 0.04 \text{ tpy (edge seal)} + 0.003 \text{ tpy (stencil paint)} = 0.043 \text{ tpy LB/HR TYP0.}$

$\text{PM}_{10} = 0.02 \text{ tpy (edge seal)} + 0.0015 \text{ tpy (stencil paint)} = 0.022 \text{ tpy LB/HR TYP0.}$

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COLUMBUS INDUSTRIES' OVERSPRAY COLLECTOR PRODUCT LINE EFFICIENCY/HOLDING CAPACITY PERFORMANCE FOR TYPICAL COATINGS

Coating Type	Expected Efficiency Range (%)	Holding Capacity (lbs) (@ .5" W.C.)
STANDARD AND STANDARD MINI-MESH OVERSPRAY COLLECTORS*		
Air-Dry Enamel	95.0-98.0%	2.30-2.70
Bake-Dry Enamel	96.5-98.5%	4.10-4.40
Lacquer	87.0-90.0%	1.20-1.50
Primer	93.0-95.0%	7.00-7.50
Waterborne Enamel	96.0-98.0%	3.50-3.80
HIGH-CAPACITY AND HIGH-CAPACITY MINI-MESH OVERSPRAY COLLECTORS*		
Air-Dry Enamel	96.0-98.0%	4.80-5.20
Bake-Dry Enamel	97.0-99.0%	7.80-8.40
Lacquer	87.0-90.0%	1.50-1.80
Primer	93.0-95.0%	10.00-12.00
Waterborne Enamel	98.0-98.0%	6.80-7.20
SUPRA I AND SUPRA I MINI-MESH HIGH EFFICIENCY OVERSPRAY COLLECTORS		
High-Solids Bake Enamel	99.7-99.9%	5.30 (@ .35" W.C.)
Waterborne Bake Enamel	98.5-99.5%	4.20 (@ .50" W.C.)
(Tests conducted using one layer of filter media only)		
SUPRA II AND SUPRA II MINI-MESH HIGH EFFICIENCY OVERSPRAY COLLECTORS		
High-Solids Bake Enamel	98.5-99.5%	5.80 (@ .20" W.C.)
Waterborne Bake Enamel	97.5-99.0%	4.50 (@ .50" W.C.)
(Tests conducted using one layer of filter media only)		
HIGH-CAPACITY SUPRA AND HIGH-CAPACITY SUPRA MINI-MESH HIGH EFFICIENCY OVERSPRAY COLLECTORS		
High-Solids Bake Enamel	98.5-99.5%	9.40 (@ .20" W.C.)
Waterborne Bake Enamel	97.5-99.0%	7.80 (@ .50" W.C.)
(Tests conducted using one layer of filter media only)		
TYPE 480 OVERSPRAY COLLECTORS		
Lacquer	82.0-85.0%	0.80-1.20
Stain	85.0-90.0%	1.00-1.50
Sealer	85.0-90.0%	1.20-1.50
(Tests conducted using one layer of filter media only)		
<p>The only noticeable differences when using the Mini-Mesh constructions should be a holding capacity toward the lower edge of the ranges given while the efficiencies will be toward the higher edge of the ranges given.</p> <p>NOTE: Tests were conducted using a modified ASHRAE STANDARD 52-78 test apparatus and procedures. Test media size</p>		<p>consisted of 20" x 20" pads held in a frame/grid module just as it would be used in the field. Overspray was 100% from an air atomizing gun with the air velocity of 150 fpm.</p> <p>* These results were gained using Standard and High-Capacity collectors in tandem. Only the front pad is loaded and requires changing each time.</p>

ATTACHMENT 2
Excerpts from NCASI Technical Bulletin 772

ncasi

NATIONAL COUNCIL FOR AIR AND STREAM IMPROVEMENT

**VOLATILE ORGANIC COMPOUND
EMISSIONS FROM WOOD PRODUCTS
MANUFACTURING FACILITIES**

Part V - Oriented Strandboard

TECHNICAL BULLETIN NO. 772

JANUARY 1999

Mill Type	No. Mills Tested	Process Units Tested
Plywood/HW Veneer	11	Dryers, Presses, Veneer/Panel Chippers, Saws, Sanders, Log Steaming Vats
Engineered Wood Products	2	Presses, Wooden I-Beam Curing, Baghouse Vents
Particleboard	4	Dryers, Presses, Refiners, Board Coolers, Baghouse Vents, Blender Systems
OSB	4	Dryers, Presses, Panel Chipper, Baghouse Vents, Blender Systems
MDF	4	Dryers, Presses, Panel Chippers, Sanders, Blender Systems, Formers
Hardboard/Fiberboard	4	Dryers, Presses, Refiners, Board Coolers, Formers, Fiber Washers, Raw Material Chippers, Hardboard Tempering Ovens

Mill Code	Location	Product(s) Made While Testing	Wood Furnish	Areas Tested	Control Devices and Associated Process Unit(s) Tested
083	North Central	23/32", 3/8", 7/16" OSB	80% Aspen, 10% Birch, 10% Pine	Dryers, presses	RTO on Dryers RCO on Press RTO on Press
118	North Central	23/32" OSB	Primarily Aspen with Smaller Amounts of Maple	Press	Biofilter on Press
145	Southeast	7/16" OSB	Southern Pine	Dryers, Press	RTO on Dryers Wet ESP on Dryers RTO on Press
410	Southeast	7/16" OSB	Southern Pine	Dryers, Press, Sanderdust Handling System, Wafer Blender Aspiration System	RTO on Dryers RTO on Press

4.0 PROCESS DESCRIPTIONS AND TEST PROGRAMS

4.1 Process Description and Test Program, Mill 083

Mill 083 is an oriented strandboard (OSB) manufacturing facility located in the north-central United States that produces 500 million square feet (3/8 inch basis) of OSB per year. The normal wood furnish is 90% hardwood, consisting of a blend of approximately 90% aspen and 10% birch, with the remainder being various pine species. During testing the wood furnish was 100% hardwood. Figure 4.1.1 is a schematic representation of the process flow at Mill 083.

Logs are soaked and then debarked. Some of the bark is used as fuel in the thermal oil heater and the rest is trucked off-site. The debarked logs are fed to the waferizers, which are not enclosed. Green wafers are subsequently conveyed to green wafer bins which serve two identical production lines. Each line consists of two wafer dryers, two blenders and one multi-opening batch press. Also on each line one rotary dryer and one rotary resin blender are for core materials and the other dryer and blender for face materials. Phenol-formaldehyde (PF) resin is used for the face furnish and methylene diphenyl isocyanate (MDI) resin is used for the core furnish. After blending the wafers are fed to the former section where separate former heads deposit the face and core material on stainless-steel cauls, which are then conveyed to the press. A flying cut-off saw segments the continuous mat into sections to be loaded into the multi-opening batch press. The mat and caul are both loaded into the press. The mats are typically pressed at a temperature of approximately 400°F for approximately 2 to 3 minutes. As the mats are unloaded from the press, the steel caul is separated from the board and returned to the forming line. Boards are trimmed, cut to size, and sanded before being packaged for shipment. Both production lines have identical emission control systems on the dryer sections, consisting of one wet ESP on each dryer and one RTO serving the two wet ESPs on each production line. The no. 1 line batch press emission control device is a regenerative thermal oxidizer (RTO) that has been converted to a regenerative catalytic oxidizer (RCO). The no. 2 line batch press emission control device is an RTO. The emission test program for Mill 083 is contained in Table 4.1.1.

4.1.1 Rotary Dryer Description

Mill 083 has four triple-pass rotary dryers, two for each production line. Each of these MEC dryers is 12 feet in diameter by 48 feet in length and has a drying capacity of 19 tons (dry basis) of wafers per hour. Heat for the dryers is provided by suspension burners which are fueled by fines and sanderdust. Each dryer has a single suspension burner. Wafers enter the dryer at approximately 45% moisture (wet basis) and are dried to approximately 5% moisture (wet basis) in the face dryer and 3% (wet basis) in the core dryer. The average face dryer inlet and outlet temperatures during testing were 1400°F and 240°F, respectively. The average core dryer inlet and outlet temperatures during testing were 1395°F and 270°F, respectively. Dried furnish is separated from the dryer exhaust stream by a furnish cyclone. The air exhaust from the single furnish cyclone on each dryer is routed through a Geoenergy E-Tube wet ESP. On each of the two production lines exhaust from two wet ESPs are combined and ducted to an RTO. Three 1-hour emissions tests were conducted simultaneously at: (1) the point where exhaust from the two wet ESPs is combined prior to the no. 1 RTO, and (2) the no. 1 RTO exhaust stack. A diagram of the tested dryers and RTO are included as Figure 4.1.2. Process operating information for the line no. 1 rotary dryers is contained in Table 4.1.2. Operating information for the dryer RTOs is contained in Table 4.1.3 and discussed in Section 4.4.1.

4.1.2 OSB Hot Press Description

There are two Washington Iron Works batch presses at Mill 083. Each press is 8 feet wide by 16 feet in length, has 12 openings, and is heated by thermal oil circulation. Press temperatures were maintained at approximately 425°F during testing. The press cycle time for the line no. 2 press averaged 3.3 minutes, including loading and unloading time. The press cycle time for the line no. 1 press averaged 4.3 minutes, including loading and unloading time. On both lines, the press loading section, the press, and the unloader are completely enclosed. Emissions from the no. 1 press are collected and sent to a regenerative catalytic oxidizer (RCO). This device was built as a regenerative thermal oxidizer (RTO) and was reconfigured as an RCO by Engelhard. The redesign involved the addition of approximately 18 inches of platinum coated porcelain media on top of the existing porcelain thermal media. The exhaust fans for the no. 2 press enclosure exhaust emissions to a RTO manufactured by Huntington. Three 1-hour emissions tests were conducted simultaneously at the no. 2 press RTO inlet and outlet, and at the no. 1 press RCO inlet and outlet. Process operating information for the batch presses is contained in Table 4.1.4. Operating information for the no. 2 press RTO and the no. 1 press RCO is contained in Table 4.1.3. The RTO was operating in burner mode during testing. A diagram of the presses and control devices is included as Figure 4.1.3.

4.2 Process Description and Test Program, Mill 118

Mill 118 is an oriented strandboard (OSB) manufacturing facility, located in the northern United States, which produces approximately 400 million square feet (3/8 inch basis) of OSB per year. The wood furnish is primarily aspen, with a mixture of soft and hard maple making up the balance. Figure 4.2.1 is a schematic representation of the process flow at Mill 118. Whole logs are debarked on-site; the bark is shipped off-site. Debarked logs are fed into the waferizers and resulting wafers are conveyed to the feed bins for the four triple pass rotary dryers. After the wafers are dried, they are collected by cyclones, screened and graded. Belt conveyors transfer graded flakes to four storage bins, two for surface graded wafers and two for core wafers. The dry wafers are fed to either a core or a face blender, where phenol-formaldehyde (PF) resin is blended with the core and face wafers. After blending the wafers pass to the former section, where separate former heads deposit the resinated face and core material on stainless-steel caul screens, which are transported to the press on a conveyor belt. A flying cut-off saw segments the continuous mat into caul size sections to be loaded into a sixteen deck batch press. The mat and caul are loaded into the press and pressed at a temperature of approximately 400°F for approximately 2 to 8 minutes, depending on the board thickness. As the mats are unloaded from the press, the steel caul screen is separated from the board and returned to the former section. Boards are trimmed and cut to size for packaging and shipment. The emission test program for Mill 118 is contained in Table 4.2.1.

4.2.1 OSB Hot Press Description

Mill 118 has a batch press manufactured by Siempelkamp. It has 16 openings that are 8.5 feet wide and 25.8 feet in length. The press is heated by thermal oil circulation. Press temperatures averaged 401°F during testing. The approximate press cycle time was six minutes, including loading and unloading time. There is no enclosure over the press loading section. The press and the unloader are partially enclosed. Press emissions are removed by three exhaust fans which vent to the biofilter. Table 4.2.2 contains the process operating parameters for the batch press.

4.2.2 Biofilter Description

The biofilter, manufactured by PPC, Inc., consists of two 30' x 120' x 10' chambers which contain five-foot thick beds of Douglas fir bark. The temperature of the beds range from 80°F to 100°F. In the winter these temperatures are maintained by steam injection. Steam injection is not necessary during the summer months. A water spray quench is used at the inlet of the biofilter to saturate the gas stream. The water is continuously circulated from the media beds back to the quench supply sump. The quench circulation rate in the biofilter is approximately 3,000 gpm. The system requires 20 to 25 gpm of make-up water. Ten to 15 gpm of blowdown from the system is recycled in the mill. Three 1-hour emission tests were conducted simultaneously at the biofilter inlet and outlet. The biofilter test locations are shown in Figure 4.2.2. The steam injection system was not used during testing.

4.3 Process Description and Test Program, Mill 145

Mill 145 is an oriented strandboard (OSB) manufacturing facility, located in the southeastern United States, that produces 335 million square feet (3/8 inch basis) of OSB per year. The wood furnish is approximately 98% southern pine. Figure 4.3.1 is a schematic representation of the process flow at Mill 145. Pine logs are debarked. Bark is sorted and trucked off-site. The debarked logs are fed to the waferizers. The green wafers are subsequently conveyed to infeed bins for the individual rotary dryers. Green wafers are fed to the triple-pass rotary dryers, which reduce the moisture content from approximately 50% (wet basis) to approximately 10% (wet basis). Fines are removed from the dry wafers, and the wafers are conveyed to the resin blenders. Face and core material are mixed with resin in separate blenders. Phenol-formaldehyde resin is used on the face furnish, and methylene diphenyl isocyanate (MDI) resin is used on the core furnish. The resin coated wafers are then fed to the former section, where separate former heads deposit the face and core material on a conveyor line that utilizes stainless steel cauls. A flying cut-off saw segments the continuous mat into sections to be loaded into the multi-opening batch press. The mats are pressed at a temperature of approximately 400°F for approximately 2 to 3 minutes. As the mats are unloaded from the press, the steel caul is separated from the board and returned to the forming line. Boards are trimmed and cut to size before being packaged for shipment. The emission test program for Mill 145 is shown in Table 4.3.1. Samples of the recirculating wet ESP shower water were collected during emission testing. The liquid test program is detailed in Table 4.3.2.

4.3.1 Rotary Dryers Description

Mill 145 has five triple-pass rotary dryers, four of which were in operation during emissions testing. These dryers, which are illustrated in Figure 4.3.2, were manufactured by MEC and are 13 feet in diameter by 60 feet in length. Each dryer has a drying capacity of 15 oven dry tons of wafers per hour. Heat for the dryers is provided by individual suspension burners fueled by fines and sander dust. Hot flue gas exhaust from the suspension burner for the thermal oil heater is also ducted to the dryers as an additional heat source. The contribution of hot air from the thermal oil heater to the individual dryers was not monitored. Wafers enter the dryer at approximately 50% moisture (wet basis) and are dried to approximately 10% moisture (wet basis). The average dryer inlet and outlet temperatures during testing were 1050°F and 195°F, respectively. Dried furnish is separated from the dryer exhaust streams by furnish cyclones. The air exhaust from each furnish cyclone passes through a multi-clone and then a wet ESP for particulate removal. These e-tube type wet ESPs were manufactured by Geoenergy. A quench section is located at the inlet to each wet ESP. Quench water is recirculated. Blowdown from the quench system is mixed with the core wafers. Exhausts from the wet ESPs are combined in a vault and ducted to two seven chamber regenerative thermal oxidizers (RTOs). The wet ESPs and RTOs are diagrammed in Figure 4.3.3. Three 1-hour emission tests were conducted simultaneously at the following locations: (1) the vault or drop-out-box where exhausts from the wet ESPs are combined prior to the RTOs, (2) the no. 1 RTO exhaust stack, and (3) the no. 2 RTO exhaust stack. Source tests were also conducted on the wet ESP inlets (3DR4 and 4DR4) and outlets (3DR3 and 4DR3) for rotary dryers no. 3 and 4. The exhaust flowrate through the vault was determined by velocity measurements taken at the single duct exiting the vault. Dryer process operating information recorded during the testing of the rotary dryers and their control devices are contained in Table 4.3.3. Operating information for the dryer RTOs is contained in Table 4.3.4. Natural gas was added to enrich the inlet gas stream during testing of the dryer RTOs. This method of operation is sometimes referred to as "fuel mode."

4.3.2 Multi-Opening Batch Press, Mill 145

The Washington Iron Works OSB hot press at Mill 145 is illustrated in Figure 4.3.4. This 12 opening batch press is 8 feet wide by 24 feet long and is heated by thermal oil circulation. The press loading section, the press, and the unloader are completely enclosed. Emissions are collected by two exhaust fans and fed to a single RTO inlet vault or drop-out-box. Three 1-hour emission tests were conducted simultaneously at the press RTO inlet and outlet (1PB1, 1PB2). Process operating information collected during emission testing of the OSB press is contained in Table 4.3.5. Operating information for the press RTO is contained in Table 4.3.4. The press RTO was operating in fuel mode during testing.

4.4 Process Description and Test Program, Mill 410

Mill 410 is an oriented strandboard (OSB) manufacturing facility, located in the southeastern United States, which produces approximately 330 million square feet (3/8 inch basis) of OSB per year. The wood furnish is primarily southern pine, although soft hardwoods such as sweet gum, maple and sourwood can also be used. Figure 4.4.1 is a schematic representation of the process flow at Mill 410.

Whole logs are fed to one of two drum debarkers. The debarked logs are then fed to one of two waferizers. These waferizers are located inside a large building, and any emissions are vented through ridge vents in the top of the building. Green wafers are conveyed to dryer in-feed bins, which are located on top of each of five identical rotary dryers. The wafers are fed into these sanderdust-fired, triple pass rotary dryers at approximately 100% moisture and emerge at approximately 6% moisture. (Moistures are dry basis.) A cyclone at the exit of each dryer allows the wafers to drop to the screeners. Hot dryer gases then pass to a set of multiclones which remove fines from the air stream. Exit gases from the multiclones are ducted to a common vault and then fed to two parallel, identical regenerative thermal oxidizers (RTOs). The screeners separate the acceptable wafers from fines. Fines are sent to the raw fuel bin, and accepted wafers are conveyed to the dry wafer face and core bins. The dry wafer bins feed one core and two face blenders, where methylene diphenyl isocyanate (MDI) resin is blended with the core wafers, and phenol-formaldehyde (PF) resin is blended with the face wafers. These wafers are then deposited as layers in a continuous mat on the OSB forming line. A flying cut-off saw segments the continuous mat into sections to be loaded into the twelve-deck batch hot press. Each mat section is lying on a separate stainless steel caul that carries the wafer mat into the hot press loader. The mats are pressed at a temperature of approximately 400°F for 2 to 4 minutes, depending on the thickness of board produced. Sanderdust fueled suspension burners heat thermal oil, which is used to heat the OSB press. As the mats are unloaded from the press, the steel caul is separated from the board and returned to the forming line. The hot press (and its associated loader and unloader) at this mill is completely enclosed so that air emissions can be collected and burned in an RTO. Boards are trimmed, cut to size and edge painted before being packaged for shipment. Some of the OSB produced is also tongue and grooved. Sanderdust and trim from all process units are collected, hammermilled and used as fuel for the OSB dryers and the OSB press hot oil burners.

Table 4.4.1 summarizes the test plan at Mill 410, including process units tested, sources associated with each unit, sampling and analytical procedures used, and the test schedule.

4.4.1 Triple Pass Rotary OSB Wafer Dryer Description

The five identical triple-pass rotary OSB wafer dryers and two dryer RTOs at Mill 410 are illustrated in Figure 4.4.2. The dryers were manufactured by MEC. Each dryer has a drying capacity of 15 oven dried tons of wafers per hour, and is heated by a single sanderdust fired suspension burner. Hot exhaust gases from the OSB press thermal oil heaters are also ducted to the dryers as an additional heat source. The contribution of hot air from the thermal oil heaters to the individual dryers was not metered. Wafers enter the dryers at approximately 100% moisture (dry basis) and are dried to approximately 6% moisture (dry basis). Dryer inlet and outlet temperatures average approximately 1100°F and 210°F, respectively. Dried OSB wafers are separated from the dryer exhaust in furnish cyclones. The air exhaust from the furnish cyclones then passes through multi-clones, which serve to remove fines from the air stream. Individual ID fans (one for each dryer) feed the exhaust from the five multiclone sets to a common inlet vault or drop-out-box for two identical regenerative thermal oxidizers (RTOs). These RTOs, diagrammed in Figure 4.4.3, have seven identical chambers

and were manufactured by Smith. In each RTO, the seven chambers are packed with ceramic saddles. At any given time, three chambers are serving as inlets (thus preheating the incoming process exhausts), three are serving as outlets (thus absorbing heat from the RTO exhaust), and contents of the seventh chamber are being purged back to the RTO inlet duct prior to the seventh chamber's use as an outlet chamber (see Figure 4.4.3).

There are two combustion modes these RTOs may use. In "fuel mode," natural gas is blended with the incoming process exhaust stream and fed through the inlet chambers to the combustion chamber. During this testing, however, the RTOs were operated in "burner mode." In this mode, natural gas is supplied directly to burners in the combustion chamber, not into the process exhaust stream. Although the fuel mode is believed to be slightly more fuel efficient, the RTOs are designed to operate within permit limits in either mode, and are often run in burner mode to minimize RTO downtime.

Three one-hour emission tests were conducted simultaneously at these locations: (1) the vault where exhausts from the five OSB wafer dryers are combined prior to the RTOs (XDV3), (2) the No. 1 RTO exhaust stack (XDV1), and (3) the No. 2 RTO exhaust stack (XDV2). The exhaust flows of the individual wafer dryers were measured and summed to calculate the flow at the RTO inlet vault. Process operating information for the triple pass rotary OSB dryers is contained in Table 4.4.2, and operating information for the dryer RTOs is contained in Table 4.4.3.

4.4.2 OSB Hot Press Description

The 14 deck OSB hot press at Mill 410 is illustrated in Figure 4.4.4. This press, which was manufactured by Washington Iron Works, is located inside a vented enclosure and is heated by thermal oil circulation. Two exhaust fans vent gases from the press enclosure to an RTO, which is of very similar design and construction to the RTOs illustrated in Figure 4.4.3. Press temperatures average approximately 400°F, and press times average 2 to 4 minutes depending on the type and thickness of board produced. The press loader and unloader are located within the press enclosure. Exhaust gas from the booth where OSB is edge painted is also ducted to the press enclosure. Table 4.4.4 lists process operating information recorded during the OSB press testing. Process operating information for the hot press RTO is contained in Table 4.4.3. The OSB press RTO was operated in fuel mode during testing.

Two sampling points were selected to characterize emissions from the hot OSB press. Three simultaneous one-hour samples were collected from the hot OSB press RTO inlet (1PB2) and the hot OSB press RTO outlet (1PB1).

4.4.3 Baghouse Vent Descriptions

The baghouses tested at Mill 410 are diagrammed in Figure 4.4.5. Two of these are connected to the wood fuel handling system. Fines from the OSB wafer dryers and trim from board finishing are transported to the raw fuel bin. The material in the raw fuel bin is then passed through a hammermill, which reduces the assorted material to a homogeneous fine mixture which is commonly termed sanderdust. This is stored in the metering bin, which feeds the sanderdust to the suspension burners for the OSB wafer dryers and the hot press thermal oil heaters. The third baghouse tested was connected to the wafer blender aspiration system, which collects fugitive dust emissions from the wafer blending system.

5.3 Results of Tests at Mill 145

Tests to measure the volatile organic HAP and VOC emissions were conducted on the nos. 3 and 4 dryers, combined dryers, and presses at Mill 145. The results of these tests are contained in Tables 5.3.1 through 5.3.3, respectively. In addition to the individual compound results, total HAP and total VOC values are presented in Tables 5.3.1 through 5.3.3. Unit production rates and the source physical parameters (volumetric flow rate, moisture content, and dry-bulb temperature) are given for each source. Detailed information on process operating conditions during the tests is included in Section 4.3. The results of the GC/MS analysis of the shower water for the nos. 3 and 4 wet ESPs are summarized in Table 5.3.4. The results of the analyses for carbon monoxide and methane in the canister samples collected from the RTO inlet and outlet are presented in Table 5.3.5.

Table 5.3.2. Combined OSB Furnish Dryer and RTO Emissions, Mill 145									
Analyte		RTO Inlet (145-XDR3)		No. 1 RTO Outlet Stack (145-XDR1)		No. 2 RTO Outlet Stack (145-XDR2)		Average of No. 1 and No. 2 RTO Outlets	
		lb/ODT		lb/ODT		lb/ODT		lb/ODT	
acetaldehyde	(H)	1.1E-1	ND	1.2E-2	ND	1.3E-2	ND	1.3E-2	ND
acetone	(N)	1.5E-1	ND	1.2E-2	ND	1.3E-2	ND	1.3E-2	ND
acrolein	(H)	7.5E-2	ND	1.1E-2	ND	1.2E-2	ND	1.1E-2	ND
benzene	(H)	6.5E-3	ND	4.4E-3	ND	4.4E-3	ND	4.4E-3	ND
bromomethane	(H)	ND	3.7E-3	ND	5.4E-3	ND	5.4E-3	ND	5.4E-3
camphene		ND	1.1E-1	ND	1.5E-1	ND	1.5E-1	ND	1.5E-1
3-carene		ND	1.1E-1	ND	1.5E-1	ND	1.5E-1	ND	1.5E-1
chloroethane	(H)	ND	2.5E-3	ND	3.7E-3	ND	3.7E-3	ND	3.7E-3
chloroethene	(H)	ND	2.5E-3	ND	3.5E-3	ND	3.6E-3	ND	3.5E-3
cumene	(H)	ND	9.4E-2	ND	1.4E-1	ND	1.4E-1	ND	1.4E-1
p-cymene		ND	1.1E-1	ND	1.5E-1	ND	1.5E-1	ND	1.5E-1
1,2-dichloroethane	(H)	ND	3.9E-3	ND	5.6E-3	ND	5.6E-3	ND	5.6E-3
cis-1,2-dichloroethylene		ND	3.8E-3	ND	5.5E-3	ND	5.5E-3	ND	5.5E-3
formaldehyde	(H)		3.0E-1		1.6E-3		2.4E-3		2.0E-3
limonene			1.7E-1	ND	1.5E-1	ND	1.5E-1	ND	1.5E-1
p-mentha-1,5-diene		ND	1.1E-1	ND	1.5E-1	ND	1.5E-1	ND	1.5E-1
methanol	(H)		1.2E-1	ND	1.1E-2	ND	1.3E-2	ND	1.2E-2
methyl ethyl ketone (MEK)	(H)		8.1E-3	ND	1.4E-2	ND	1.5E-2	ND	1.4E-2
methyl isobutyl ketone	(H)		1.3E-2	ND	1.3E-2	ND	1.4E-2	ND	1.4E-2
methylene chloride	(H)	ND	3.3E-3	ND	4.8E-3	ND	4.8E-3	ND	4.8E-3
phenol	(H)		9.3E-3		2.8E-2		2.3E-2		2.6E-2
alpha-pinene			3.6E+0	ND	1.5E-1	ND	1.5E-1	ND	1.5E-1
beta-pinene			1.1E+0	ND	1.5E-1	ND	1.5E-1	ND	1.5E-1
propionaldehyde	(H)		8.6E-3	ND	1.2E-2	ND	1.3E-2	ND	1.3E-2
styrene	(H)	ND	4.1E-3	ND	5.9E-3	ND	5.9E-3	ND	5.9E-3
toluene	(H)		1.5E-2	ND	5.2E-3	ND	5.2E-3	ND	5.2E-3
1,2,4-trichlorobenzene	(H)	ND	7.1E-3	ND	1.0E-2	ND	1.0E-2	ND	1.0E-2
m,p-xylene	(H)		8.5E-3	ND	6.0E-3	ND	6.0E-3	ND	6.0E-3
o-xylene	(H)	ND	4.2E-3	ND	6.0E-3	ND	6.0E-3	ND	6.0E-3
THC as Carbon			7.5E+0		3.9E-1		3.9E-1		3.9E-1
Total HAPs			6.7E-1		3.0E-2		2.6E-2		2.8E-2
Total Terpenes			4.9E+0		0.0E+0		0.0E+0		0.0E+0
Production Rate (ODTH)			38.0		19.0		19.0		38.0
Vol. Flow Rate (DSCFM)			1.3E+5		9.1E+4		8.9E+4		1.8E+5
Source Moisture (%)			20.0		20.0		20.0		20.0
Source Temp (°C)			128.6		111.2		121.9		

ND = Below Detection Limit of x.xE; MSF = 1000 square feet; ODTH = Oven Dried Tons per Hour; H = CAA HAP; AI = Analytical Interference; N = Not a HAP or VOC as defined by US EPA

Table 5.3.3. OSB Batch Press and RTO Emissions, Mill 145					
Analyte		Hot Press RTO Inlet Stack (145-1PB2) lb/MSF 3/8"		Hot Press RTO Outlet Stack (145-1PB1) lb/MSF 3/8"	
acetaldehyde	(H)		1.6E-2	ND	8.9E-3
acetone	(N)		2.3E-2		6.8E-3
acrolein	(H)	ND	9.9E-3	ND	7.9E-3
benzene	(H)	ND	3.4E-3	ND	3.1E-3
bromomethane	(H)	ND	4.1E-3	ND	3.7E-3
camphene		ND	1.2E-1	ND	1.1E-1
3-carene		ND	1.2E-1	ND	1.1E-1
chloroethane	(H)	ND	2.8E-3	ND	2.5E-3
chloroethene	(H)	ND	2.7E-3	ND	2.5E-3
cumene	(H)	ND	1.0E-1	ND	9.5E-2
p-cymene		ND	1.2E-1	ND	1.1E-1
1,2-dichloroethane	(H)	ND	4.3E-3	ND	3.9E-3
cis-1,2-dichloroethylene		ND	4.2E-3	ND	3.8E-3
formaldehyde	(H)		5.8E-2		2.1E-3
limonene		ND	1.2E-1	ND	1.1E-1
p-mentha-1,5-diene		ND	1.2E-1	ND	1.1E-1
methanol	(H)		4.5E-1	ND	8.4E-3
methyl ethyl ketone (MEK)	(H)	ND	1.2E-2	ND	1.0E-2
methyl isobutyl ketone	(H)	ND	1.2E-2	ND	9.6E-3
methylene chloride	(H)	ND	3.7E-3	ND	3.3E-3
phenol	(H)		2.6E-2		5.4E-3
alpha-pinene			8.2E-1	ND	1.1E-1
beta-pinene			2.5E-1	ND	1.1E-1
propionaldehyde	(H)	ND	1.1E-2	ND	8.9E-3
styrene	(H)	ND	4.5E-3	ND	4.1E-3
toluene	(H)	ND	4.0E-3	ND	3.6E-3
1,2,4-trichlorobenzene	(H)	ND	7.8E-3	ND	7.2E-3
m,p-xylene	(H)	ND	4.6E-3	ND	4.2E-3
o-xylene	(H)	ND	4.6E-3	ND	4.2E-3
THC as Carbon			1.7E+0	ND	6.1E-3
Total HAPs			5.5E-1		7.5E-3
Total Terpenes			1.1E+0		0.0E+0
Production Rate (MSF 3/8 /hr)			37.6		37.6
Vol. Flow Rate (DSCFM)			1.3E+5		1.2E+5
Source Moisture (%)			2.2		2.2
Source Temp (°C)			39.6		105.0

ND x.xEx = Below Detection Limit of x.xEx; MSF = 1000 square feet; ODT = Oven Dried Tons per Hour; H = CAA HAP; AI = Analytical Interference; N = Not a HAP or VOC as defined by US EPA

5.4 Results of Tests at Mill 410

Tests to measure the volatile organic HAP and VOC emissions at Mill 410 were conducted on the dryers, press, and three miscellaneous sources (raw fuel bin baghouse vent, metering bin baghouse vent, and the wafer blender aspiration vent). The results of these tests are contained in Tables 5.4.1 through 5.4.3, respectively. In addition to the individual compound results, total HAP and total VOC values are presented in Tables 5.4.1 through 5.4.3. Unit production rates and the source physical parameters (volumetric flow rate, moisture content, and dry-bulb temperature) are given for each source. Detailed information on process operating conditions during the tests is included in Section 4.4. The results of the analyses for carbon monoxide in the canister samples collected from the dryer RTO inlet and outlets and the press RTO outlet are presented in Table 5.4.4.

Table 5.4.1. OSB Furnish Dryer and RTO Emissions, Mill 410

Analyte		RTO Inlet (410-XDR3) lb/ODT		No. 1 RTO Outlet (410-XDR1) lb/ODT		No. 2 RTO Outlet (410-XDR2) lb/ODT		Combined No. 1 and No. 2 RTO Outlet lb/ODT	
acetaldehyde	(H)		1.3E-1		1.6E-2		1.4E-2		1.5E-2
acetone	(N)		1.5E-1		7.6E-3		4.5E-3		6.1E-3
acrolein	(H)		8.2E-2	ND	1.0E-2	ND	8.7E-3	ND	9.4E-3
benzene	(H)		9.8E-3	ND	4.0E-3	ND	3.3E-3	ND	3.6E-3
bromomethane	(H)	ND	4.1E-3	ND	4.8E-3	ND	4.0E-3	ND	4.4E-3
camphene		ND	1.2E-1	ND	1.4E-1	ND	1.1E-1	ND	1.3E-1
3-carene		ND	1.2E-1	ND	1.4E-1	ND	1.1E-1	ND	1.3E-1
chloroethane	(H)	ND	2.8E-3	ND	3.3E-3	ND	2.7E-3	ND	3.0E-3
chloroethene	(H)	ND	2.7E-3	ND	3.2E-3	ND	2.6E-3	ND	2.9E-3
cumene	(H)	ND	1.0E-1	ND	1.2E-1	ND	1.0E-1	ND	1.1E-1
p-cymene		ND	1.2E-1	ND	1.4E-1	ND	1.1E-1	ND	1.3E-1
1,2-dichloroethane	(H)	ND	4.3E-3	ND	5.0E-3	ND	4.2E-3	ND	4.6E-3
cis-1,2-dichloroethylene		ND	4.2E-3	ND	4.9E-3	ND	4.1E-3	ND	4.5E-3
formaldehyde	(H)		3.1E-1		5.3E-2		8.1E-3		3.0E-2
limonene		ND	1.2E-1	ND	1.4E-1	ND	1.1E-1	ND	1.3E-1
p-mentha-1,5-diene		ND	1.2E-1	ND	1.4E-1	ND	1.1E-1	ND	1.3E-1
methanol	(H)		1.2E-1		9.0E-3		8.7E-3		8.9E-3
methyl ethyl ketone (MEK)	(H)	ND	1.2E-2	ND	1.3E-2	ND	1.1E-2	ND	1.2E-2
methyl isobutyl ketone	(H)	ND	1.1E-2	ND	1.2E-2	ND	1.1E-2	ND	1.1E-2
methylene chloride	(H)	ND	3.7E-3	ND	4.3E-3	ND	3.6E-3	ND	4.0E-3
phenol	(H)	ND	1.9E-2		1.5E-2	ND	1.8E-2		7.3E-3
alpha-pinene			1.8E+0	ND	1.4E-1	ND	1.1E-1	ND	1.3E-1
beta-pinene			6.8E-1	ND	1.4E-1	ND	1.1E-1	ND	1.3E-1
propionaldehyde	(H)		1.2E-2	ND	1.1E-2	ND	9.8E-3	ND	1.1E-2
styrene	(H)	ND	4.5E-3	ND	5.3E-3	ND	4.4E-3	ND	4.9E-3
toluene	(H)		1.7E-2	ND	4.7E-3	ND	3.9E-3	ND	4.3E-3
1,2,4-trichlorobenzene	(H)	ND	7.9E-3	ND	9.2E-3	ND	7.7E-3	ND	8.5E-3
m,p-xylene	(H)		9.9E-3	ND	5.4E-3	ND	4.5E-3	ND	4.9E-3
o-xylene	(H)	ND	4.6E-3	ND	5.4E-3	ND	4.5E-3	ND	4.9E-3
THC as Carbon			4.1E+0		1.8E-1		1.5E-1		1.7E-1
Total HAPs			6.9E-1		9.2E-2		3.1E-2		6.2E-2
Total Terpenes			2.5E+0		0.0E+0		0.0E+0		0.0E+0
Production Rate (ODTH)			41.4		20.7		20.7		41.4
Vol. Flow Rate (DSCFM)			1.2E+5		6.3E+4		5.9E+4		1.2E+5
Source Moisture (%)			22.9		23.1		21.8		
Source Temp (°C)			89.3		163.7		153.9		

ND x.xE = Below Detection Limit of x.xE; MSF = 1000 square feet; ODTH = Oven Dried Tons per Hour; H = CAA HAP; AI = Analytical Interference; N = Not a HAP or VOC as defined by US EPA

Table 5.4.2. OSB Hot Press and RTO Emissions, Mill 410					
Analyte		RTO Inlet (410-1PB2) lb/MSF 3/8"		RTO Outlet (410-1PB1) lb/MSF 3/8"	
acetaldehyde	(H)		3.9E-3	ND	9.5E-3
acetone	(N)		1.3E-2		2.7E-3
acrolein	(H)	ND	6.1E-3	ND	8.5E-3
benzene	(H)	ND	2.5E-3	ND	3.3E-3
bromomethane	(H)	ND	3.0E-3	ND	4.0E-3
camphene		ND	8.6E-2	ND	1.1E-1
3-carene		ND	8.6E-2	ND	1.1E-1
chloroethane	(H)	ND	2.0E-3	ND	2.7E-3
chloroethene	(H)	ND	2.0E-3	ND	2.6E-3
cumene	(H)	ND	7.6E-2	ND	1.0E-1
p-cymene		ND	8.5E-2	ND	1.1E-1
1,2-dichloroethane	(H)	ND	3.1E-3	ND	4.1E-3
cis-1,2-dichloroethylene		ND	3.1E-3	ND	4.1E-3
formaldehyde	(H)		2.6E-2	ND	2.3E-3
limonene		ND	8.6E-2	ND	1.1E-1
p-mentha-1,5-diene		ND	8.6E-2	ND	1.1E-1
methanol	(H)		2.5E-1	ND	9.0E-3
methyl ethyl ketone (MEK)	(H)	ND	7.7E-3	ND	1.1E-2
methyl isobutyl ketone	(H)	ND	7.5E-3	ND	1.0E-2
methylene chloride	(H)	ND	2.7E-3	ND	3.6E-3
phenol	(H)	ND	1.2E-2	ND	1.7E-2
alpha-pinene			4.0E-1	ND	1.1E-1
beta-pinene			1.4E-1	ND	1.1E-1
propionaldehyde	(H)	ND	6.9E-3	ND	9.6E-3
styrene	(H)	ND	3.3E-3	ND	4.4E-3
toluene	(H)	ND	2.9E-3	ND	3.9E-3
1,2,4-trichlorobenzene	(H)	ND	5.8E-3	ND	7.6E-3
m,p-xylene	(H)	ND	3.4E-3	ND	4.4E-3
o-xylene	(H)	ND	3.4E-3	ND	4.4E-3
THC as Carbon			1.0E+0		2.6E-2
Total HAPs			2.8E-1		0.0E+0
Total Terpenes			5.4E-1		0.0E+0
Production Rate (MSF 3/8 /hr)			33.4		33.4
Vol. Flow Rate (DSCFM)			8.0E+4		1.1E+5
Source Moisture (%)			3.8		1.6
Source Temp (°C)			51.7		105.3

ND x.xEx = Below Detection Limit of x.xEx; MSF = 1000 square feet; ODT = Oven Dried Tons per Hour; H = CAA HAP; AI = Analytical Interference; N = Not a HAP or VOC as defined by US EPA

ATTACHMENT 3
PSD Permit – Georgia-Pacific OSB, Fordyce, Arkansas

OPERATING AIR PERMIT

Pursuant to the Regulations of the Arkansas Operating Air Permit Program, Regulation #26:

Permit #: 1803-AOP-R0

IS ISSUED TO:

Georgia-Pacific Oriented Strandboard Facility
State Highway 274, Southeast of Fordyce
Fordyce, AR 71742
Calhoun County
CSN: 07-0212

THIS PERMIT AUTHORIZES THE ABOVE REFERENCED PERMITTEE TO INSTALL, OPERATE, AND MAINTAIN THE EQUIPMENT AND EMISSION UNITS DESCRIBED IN THE PERMIT APPLICATION AND ON THE FOLLOWING PAGES. THIS PERMIT IS VALID BETWEEN:


June 8, 1999

and

June 7, 2004

AND IS SUBJECT TO ALL LIMITS AND CONDITIONS CONTAINED HEREIN.

Signed:



Keith A. Michaels

June 8, 1999
Date

SECTION I: FACILITY INFORMATION

PERMITTEE: Georgia-Pacific Oriented Strandboard Facility
CSN: 07-0212
PERMIT NUMBER: 1803-AOP-R0

FACILITY ADDRESS: State Highway 274, Southeast of Fordyce
Fordyce, AR 71742

COUNTY: Calhoun

CONTACT NAME: Paul Vasquez
TELEPHONE NUMBER: (404) 652-7327

REVIEWING ENGINEER: Michael H. Watt

UTM North-South (X): 3735.9 km
UTM East-West (Y): 558.6 km

SECTION II: INTRODUCTION

Georgia-Pacific Corporation (GP) proposes to construct and operate an oriented strandboard (OSB) facility near Fordyce, Arkansas. This facility will have the capacity to produce 475 million square feet (MMSF), on a 3/8-inch basis, of OSB annually. This facility will include five dryers, a press, and associated materials handling equipment. The dryers and press will be controlled by three regenerative thermal oxidizers (RTOs). Two of the RTOs will be dedicated to the dryers and the third will control emissions from the press. Particulate matter emissions resulting from material handling will be controlled by a series of bag filters.

GP is considered a major stationary source under the Prevention of Significant Deterioration (PSD) Regulations. Emissions in this permit for PM/PM₁₀, VOC, CO, and NO_x are above the PSD significance levels. The emissions associated with this project and the significance levels are shown in the following table.

Plantwide Permitted Emissions (ton/yr)		
Pollutant	Proposed Air Permit 1803-AOP-R0	PSD Significance Level
PM	603.4	25
PM ₁₀	443.0	15
SO ₂	20.5	40
VOC	641.8	40
CO	179.0	100
NO _x	368.1	40

Permit 1803-AOP-R0 is the first operating permit for the GP Fordyce OSB facility under Regulation #26. In addition to PSD Regulations, GP is also subject to Regulations of the Arkansas Operating Air Permit Program (Title V, Regulation #26), Regulations of the Arkansas Plan of Implementation for Air Pollution Control (SIP, Regulation #19), and Arkansas Air Pollution Control Code (Code, Regulation #18).

None of the emission sources at the facility are listed as covered under the New Source Performance Standards (NSPS). In a memorandum, dated November 17, 1992, the US EPA recognized that there are both similarities and differences between traditional steam generating

**Georgia-Pacific Oriented Strandboard Facility
1803-AOP-R0
07-0212**

units and process dryers. In this memorandum, the EPA concluded that NSPS Subparts Db and Dc do not apply to process dryers.

The EPA is currently identifying the Maximum Achievable Control Technology (MACT) for the building products sector, including standards for hazardous air pollutant sources at oriented strandboard plants. Those standards are expected to be promulgated in November 2000. As such, there are no National Emission Standards for Hazardous Air Pollutants (NESHAPs) currently applicable for this type of facility.

Section 112(g) of the Clean Air Act requires that each newly constructed "major" emission source of hazardous air pollutants (HAPs) meets emission limits specified in the applicable 112(d) MACT standard or resulting case-by-case MACT determination when the 112(d) standard has not yet been promulgated for the specified source category. A major source of HAPs is defined as one that emits 10 tons per year or more of a single HAP or 25 tons per year or more of all HAPs combined. Formaldehyde emissions for this facility have been calculated to be less than 10 tons per year. As such, the facility is not subject to MACT review under 112(g).

PROCESS DESCRIPTION

Logs, resin, and wax are the primary raw materials used in OSB panel production. The production process is comprised of four principal manufacturing processes: (1) Furnish production, which includes debarking, slicing, and flaking; (2) Flake drying; (3) Forming and pressing; and (4) Finishing, which consists of sawing and sanding.

Furnish Production

Logs are unloaded and temporarily stored in the log yard. The logs are then cut to size, debarked, and processed into flakes. Bark from the debarkers and other green end material from the log yard is shipped off-site for use as wood fuel or for use in horticultural applications.

Flake Drying

The drying process consists of five horizontal, cylindrical rotary drum-type flake dryers heated by suspension-type burners, and a pneumatic system which conveys the flakes through the dryers. The suspension burners are designed to burn ground wood fuel. Raw wood fuel is first ground in the hammermill and then stored in a metering bin. From the metering bin, the ground wood fuel is pneumatically transferred and blown into the burner. Maximum heat input to each dryer is 40 million British thermal units per hour (MMBtu/hr). The wood fuel is introduced tangentially to the burners, creating a cyclonic flow pattern, thereby promoting combustion

Georgia-Pacific Oriented Strandboard Facility
1803-AOP-R0
07-0212

efficiency. The flue gases leaving the combustion zone are at approximately 1600 degrees Fahrenheit (°F), but are immediately cooled down to an approximate range of 600 to 1200°F by the addition of dilution air between the burner and the dryer. The hot exhaust from the burners combines with ambient air pulled through by the dryer's pneumatic system to dry the flakes. The amount of dilution air, and resulting gas temperature, are dependent on the dryer operating rate, wood moisture content, desired moisture content of the furnish, etc. Air pollutant emissions associated with the drying operation include products of wood fuel combustion, such as PM, VOCs, CO, NO_x, and SO₂. They also include additional PM, VOCs, CO, and formaldehyde, which are produced in the wood drying process.

Forming and Pressing

The dried wood flakes are blended with resin and wax, and are then placed as a mat on the forming line in layers, oriented at right angles, to provide structural integrity. The mat is then moved into the thermal-oil-heated press, where it is compressed and heated to bond the resin to the flakes. The thermal oil is heated to the appropriate temperature in a separate system, consisting of two, wood fuel, suspension-type burners. The exhaust gases from the burners are routed through the dryer system. Air pollutant emissions associated with the board press operation include PM, VOCs, CO, NO_x and formaldehyde.

Finishing

The pressed mats are cut to size, cooled, and the edges are sprayed with sealant to prevent swelling. The finished OSB is then packed and shipped off-site. Dry end material is either burned to heat the dryers and thermal oil system or shipped off-site for use as wood fuel or as furnish in other wood products manufacturing operations.

Numerous material handling operations, which represent both point sources and fugitive emission sources, are associated with the production of the OSB. Those operations that can be characterized as point sources include the screen fines with saw trim transfer pneumatics, saw trim and finishing line pneumatics, materials reject and flying saw pneumatics, specialty saw and sander pneumatics, fuel system pneumatics, forming bin pneumatics, and hammermill system pneumatics. Substantive pollutant emissions from these operations are limited to PM. The material handling operations responsible for fugitive emissions include the hog fuel truck dump, screen and storage equipment; the sawdust truck dump, screen and storage equipment and face reclaim hoppers; the chip truck dump, screen and storage equipment; and the core reclaim hoppers. PM is the only pollutant associated with these operations.

PREVENTION OF SIGNIFICANT DETERIORATION

BACT Analysis

For a PSD permit, the applicant must perform a BACT analysis for each new unit or affected emission unit that is undergoing a physical change or change in method of operation. The BACT evaluation must address each pollutant subject to PSD review emitted by each unit. A separate "top-down" BACT analysis was conducted for each pollutant that is exceeding PSD significance levels.

The first step in the top-down approach is to identify all the emission control technologies for each pollutant. The second step is to eliminate all technically infeasible options. The third step is to rank all of the options in order of control effectiveness, emission reductions, energy impacts, environmental impacts, and economic impacts. This establishes a hierarchy to use when selecting a BACT.

GP has grouped the facility into three source categories to facilitate BACT review. These are Dryers (SN-01), Press (SN-02), and Material Handling Sources (SN-03 through SN-09).

Dryers

Seven different control options were available through the RBLC in which GP considered for use on Dryers (SN-01). These options included the following:

1. Regenerative thermal oxidation (RTO) with particulate matter control.
2. Regenerative catalytic oxidation (RCO) with particulate matter control,
3. Biofilter with particulate matter control,
4. Recycle system with indirect heat exchange and particulate matter control,
5. Wet electrostatic precipitation (wet ESP),
6. Wet Scrubbers, and
7. Selective catalytic reduction (SCR) for NO_x.

The first four options are capable of controlling VOC, PM and CO emissions. Biofilters have shown potential to control NO_x in a controlled environment. Wet ESPs are a PM control device with a limited potential for VOC control.

Of the options identified, some can be eliminated on the grounds of being technically infeasible. Biofiltration, selective catalytic reduction (SCR), and Dryer exhaust recycle all need temperatures maintained above the current exit temperatures to maintain reductions of emissions.

Georgia-Pacific Oriented Strandboard Facility
1803-AOP-R0
07-0212

The following table is a summary of the control options considered and the control effectiveness for each.

BACT Control Effectiveness for Dryers (SN-01) (Percent Removed)			
Pollutant	PM	CO	VOC
RTO/Multiclones	90.0%	75.0%	90.0%
RCO/Multiclones	80.0%	75.0%	90.0%
Wet ESP	80.0%	0.0%	5.0%
Wet Scrubbers	80.0%	0.0%	5.0%

The final step is to evaluate the most effective control or controls to employ.

Since RTO with multiclones represents the highest overall degree of control technology feasible, it is selected as BACT for PM, CO, and VOC emissions. A low-NO_x burner design, combined with fuel enhancement, is proposed for BACT for NO_x emissions exiting the RTO.

Press

Four different options were analyzed for use on the Press (SN-02). These options included the following:

1. RTO,
2. RCO,
3. Biofilter,
4. Wet ESP, and
5. Wet Scrubber.

**Georgia-Pacific Oriented Strandboard Facility
1803-AOP-R0
07-0212**

The following table is a summary of the control options considered and the control effectiveness of each.

BACT Control Effectiveness for the Press (SN-02) (Percent Removed)			
Pollutant	PM	CO	VOC
RTO	75.0%	75.0%	90.0%
RCO	75.0%	75.0%	90.0%
Biofilter	0.0%	50.0%	90.0%
Wet ESP	80.0%	0.0%	5.0%
Wet Scrubbers	80.0%	0.0%	5.0%

Since RTO represents the highest overall degree of control technology feasible (shown here as equal to RCO, the overall PM control values for RCO are likely over-estimated), it is selected as BACT for PM, CO, and VOC emissions. A low-NO_x burner design is proposed for BACT for NO_x.

Material Handling Sources

GP considered only one control option when analyzing the Material Handling. Bagfilter-type dust collectors are feasible for controlling emissions from all Material Handling sources. Other PM control methods, such as wet scrubbers or ESP's, although feasible, are not considered practical for these sources since they could not be any more effective and either create problems such as wastewater disposal (wet scrubbing systems) or are overly complex and energy intensive (ESP).

Bagfilter-type dust collectors are feasible for controlling emissions from all of the point sources. Other methods of control, such as wet scrubbers or ESPs are not considered practical for these sources since they could not be any more effective and either create problems such as waste water disposal or they are more energy intensive. The vendor guarantees removal efficiencies between 98.67 and 99.96% for PM at each various source.

Since a bagfilter-type dust collector represents the highest overall degree of control technology feasible, it is selected as BACT for PM.

Class I Area Impact Analysis

PSD Regulations require that written notification be provided to the Federal Land Manager in the event that a major source or modification is located within 100 kilometers of a Class I Area. GP is not located within 100 kilometers from a Class I Area. Therefore, neither notification to the Federal Land Manager nor a Class I Area Impact Analysis is required by PSD Regulations.

The nearest PSD Class I Area to the proposed plant is the Caney Creek Wilderness Area, located at a distance of 151 km from the facility. Even though not required by the PSD Regulations, at the request of the Arkansas Department of Pollution Control & Ecology, an ambient impact modeling analysis for PM₁₀ and NO_x (the pollutants that underwent NAAQS modeling) was conducted for the Wilderness Area. The results of the analysis indicated that the proposed plant will not have an adverse impact on the Class I Area.

Class I Screening Analysis Results for PM ₁₀		
Averaging Period	Maximum Concentration (µg/m ³)	Screening Level (µg/m ³)
Annual	0.0066	0.2
24-Hour	0.14	0.3

Class I Screening Analysis Results for NO _x		
Averaging Period	Maximum Concentration (µg/m ³)	Screening Level (µg/m ³)
Annual	0.0056	0.1

Air Toxics Analysis

The facility emits formaldehyde from the dryers and the presses. In order to determine if these emissions pose a significant health risk to the general public, an analysis was performed using the procedures outlined in the ADPC&E's Non-Criteria Pollutant Control Strategy (Revised 1996) and federal guidelines on air quality modeling. The Control Strategy contains procedures for estimating the Presumptively Acceptable Impact Levels (PAILs). PAILs are 1/100th of the Threshold Limit Value (TLV) for the pollutant emitted.

Air Toxics Analysis Results for Formaldehyde		
Averaging Period	Maximum Concentration ($\mu\text{g}/\text{m}^3$)	Maximum Allowable Concentration ($\mu\text{g}/\text{m}^3$)
24-Hour	0.59	15.0

Preliminary Impact Analysis

A preliminary impact analysis was performed to determine if significance impacts occur and to define the impact area that they occur in. This information was then used as a basis for the NAAQS analysis and the PSD increment-consuming analysis.

At this facility, PM_{10} , CO, and NO_x emission rates exceed the PSD significant emission rate levels. Therefore, a significant impact analysis was performed for PM_{10} , CO, and NO_x to determine whether the emissions result in impacts in excess of the PSD modeling significance levels. The results were also compared to the EPA monitoring de minimis levels to determine if pre-construction monitoring is required.

Results indicated that PM_{10} impacts exceeded modeling and monitoring significance levels. NO_x impacts exceeded the modeling significance level, but did not exceed the monitoring significance level. CO emissions were below modeling and monitoring significance levels.

The maximum concentration results and the significance levels for PM_{10} , CO, and NO_x are included in the following tables.

Significant Impact Analysis Modeling				
Pollutant	Maximum Concentration Results ($\mu\text{g}/\text{m}^3$)			
	Annual	24-Hour	8-Hour	1-Hour
PM ₁₀	5.79	35.4	-	-
CO	-	-	20.6	52.2
NO _x	1.04	-	-	-

Significant Impact Analysis Modeling				
Pollutant	Modeling Significance Levels ($\mu\text{g}/\text{m}^3$)			
	Annual	24-Hour	8-Hour	1-Hour
PM ₁₀	1.0	5.0	-	-
CO	-	-	500.0	2000.0
NO _x	1.0	-	-	-

Significant Impact Analysis Modeling				
Pollutant	Monitoring Significance Levels ($\mu\text{g}/\text{m}^3$)			
	Annual	24-Hour	8-Hour	1-Hour
PM ₁₀	-	10.0	-	-
CO	-	-	575.0	-
NO _x	14.0	-	-	-

NAAQS Analysis

The NAAQS are the maximum concentrations, measured in terms of the total concentration of pollutant in the atmosphere. In the NAAQS analysis, GP's emissions were combined with those from other nearby sources that have the potential to contribute significantly to the receptors within the radius of impact (ROI). This analysis was performed for PM₁₀ and NO_x. Source data on all permitted sources within 50 km of the impact areas was requested from the Arkansas Department of Pollution Control and Ecology.

The highest results of the NAAQS Analysis for PM₁₀ and NO_x are contained in the following tables.

NAAQS Analysis Results for PM₁₀				
Averaging Period	Maximum Concentration (µg/m³)	Background (µg/m³)	Total (µg/m³)	NAAQS (µg/m³)
Annual	10.0	25.00	35.00	50.0
24-Hour	67.1	57.00	124.1	150.0

NAAQS Analysis Results for NO_x				
Averaging Period	Concentration (µg/m³)	Background (µg/m³)	Total (µg/m³)	NAAQS (µg/m³)
Annual	3.84	21.00	24.84	100.0

PSD Increment Analysis

PSD Increment is the maximum allowable increase in concentration that is allowed to occur above a set baseline concentration for a specific pollutant. The baseline concentration is defined for each pollutant and averaging time. It is the ambient concentration existing at the time that the first complete PSD permit is application submitted for a distinct area. PSD minor source trigger dates have not been established.

Georgia-Pacific Oriented Strandboard Facility
1803-AOP-R0
07-0212

Increment consuming sources were obtained using the same methodology for the NAAQS Analysis. Permitted dates of sources in Arkansas were evaluated to determine if the source was increment-consuming or in the baseline.

Emissions increases and decreases for all increment-affected sources located within the baseline area are modeled along with the emissions from GP.

The facility constructed an overall increment model. In this model, all increment consuming sources within the ROI were modeled. This was then compared to the total increment available. The highest results of the Increment Analysis for PM₁₀ is contained in the following table.

Total Increment Analysis Results for PM₁₀			
Averaging Period	Maximum Modeled Increment Consumption (µg/m³)	Total Increment (µg/m³)	Percent of Increment Consumed
Annual	5.79	17.0	34.1%
24-Hour	29.7	30.0	99.0%

Total Increment Analysis Results for NO_x			
Averaging Period	Maximum Modeled Increment Consumption (µg/m³)	Total Increment (µg/m³)	Percent of Increment Consumed
Annual	1.04	25.0	4.2%

According to §19.9.4(c)(4) of Regulation #19, if issuance of a permit would result in the consumption of more than 80% of the short-term increment, the permittee shall submit an assessment of (a) the effects that the consumption would have upon the industrial and economic development within the area, and (b) alternatives to the consumption including alternative siting of the source or portions. The results of this analysis are included below.

Georgia-Pacific Oriented Strandboard Facility
1803-AOP-R0
07-0212

(a) The area where greater than 80% of the 24-hour PM_{10} increment consumed was found to be very localized, extending less than 100 meters to the north of the property line. Because of this limited area, no adverse impacts on industrial and economic developments are expected.

In addition, the sources that contribute the most to the increment consumption are fugitives such as haul roads, stock piles, and material handling processes. The existing dispersion model tends to over-estimate impacts from ground-level fugitive sources.

(b) It would not be feasible to consider an alternative site to this facility. The facility is a new facility and the emissions would be the same wherever it is located. The proposed location is in an area that will have a limited impact on growth.

In summary, it has been determined that the primary sources contributing to the off-property impacts are ground-level fugitive sources and that the extent of the area exceeding 80% of the increment is limited.

Air Quality Monitoring

The modeling information as indicated in the Preliminary Impact Analysis (page 10) was also compared to monitoring de minimis concentrations to see if the facility would need to conduct pre-construction ambient air quality monitoring and post-construction ambient air quality monitoring. The facility will need pre-construction monitoring data for PM_{10} emissions. In lieu of pre-construction monitoring, the Department has accepted use of existing data from a PM_{10} monitor located in El Dorado because of its close proximity to the facility. The PM_{10} background concentrations were established using 1996 monitoring data to be $25 \mu g/m^3$ for the annual averaging period and $57 \mu g/m^3$ for the 24-hour averaging period. This monitor will also be used for post-construction modeling to demonstrate compliance with the NAAQS.

Additional Impacts Review

An additional impacts analysis, addressing the potential impacts on visibility in the nearest Class I Area, was performed. The analysis demonstrates that the increase in impacts due to the facility is extremely low. Regardless of the existing conditions in the vicinity of the site or in the Class I Area, the proposed project will not cause any significant adverse effects.

The secondary NAAQS are designed to protect soils and vegetation. As discussed above, the proposed project will neither cause or contribute to a violation of the NAAQS. As such, no adverse impact on soils or vegetation is predicted.

Georgia-Pacific Oriented Strandboard Facility
1803-AOP-R0
07-0212

A Level I visibility screening analysis was conducted following the procedures outlined in "Workbook for Estimating Visibility Impairment" (EPA, 1980). The Level I screening analysis is designed to provide a conservative estimate of plume visual impacts (i.e., impacts higher than expected). The EPA model VISCREEN was utilized for the analysis. PM₁₀ and NO_x emissions used for the calculations are based upon the total estimated emissions from the facility. The maximum visual impacts caused by the facility do not exceed the screening criteria inside or near the Class I Area.

Facility Emission Summary

The following table is a summary of emissions from the facility. Specific conditions and emissions for each source can be found starting on the page cross referenced in the table.

EMISSION SUMMARY					
Source No.	Description	Pollutant	Emission Rates		Cross Reference Page
			lb/hr	tpy	
Total Allowable Emissions		PM	138.0	603.4	
		PM ₁₀	101.4	443.0	
		SO ₂	4.7	20.5	
		VOC	146.5	641.8	
		CO	40.9	179.0	
		NO _x	84.0	368.1	
		Formaldehyde	2.29	9.85	
01	Dryers	PM	74.5	326.1	19
		PM ₁₀	74.5	326.1	
		SO ₂	4.7	20.5	
		VOC	126.3	553.0	
		CO	33.6	147.2	
		NO _x	73.3	321.1	
		Formaldehyde	1.85	8.10	

Georgia-Pacific Oriented Strandboard Facility
 1803-AOP-R0
 07-0212

EMISSION SUMMARY					
Source No.	Description	Pollutant	Emission Rates		Cross Reference Page
			lb/hr	tpy	
02	Press	PM	2.8	12.4	22
		PM ₁₀	2.8	12.4	
		VOC	20.0	87.9	
		CO	7.3	31.8	
		NO _x	10.7	47.0	
		Formaldehyde	0.24	1.05	
03	Screen Fines with Saw Trim Transfer	PM	2.1	9.2	25
		PM ₁₀	2.1	9.2	
04	Saw Trim/Finishing Line	PM	2.7	11.6	27
		PM ₁₀	2.7	11.6	
05	Mat Reject/Flying Saw	PM	3.2	13.8	29
		PM ₁₀	3.2	13.8	
06	Specialty Saw/Sander	PM	2.2	9.5	31
		PM ₁₀	2.2	9.5	
07	Fuel System	PM	0.4	1.5	33
		PM ₁₀	0.4	1.5	
08	Forming Bins	PM	1.3	5.6	35
		PM ₁₀	1.3	5.6	
09	Hammermill System	PM	2.1	9.2	37
		PM ₁₀	2.1	9.2	
10	Fugitive Emissions	PM	46.7	204.5	39
		PM ₁₀	10.1	44.1	
		VOC	0.2	0.9	
		Formaldehyde	0.20	0.70	

Georgia-Pacific Oriented Strandboard Facility
1803-AOP-R0
07-0212

SECTION III: PERMIT HISTORY

This is the initial permit for the proposed OSB Plant in Fordyce, Arkansas; therefore, there is no prior history for this facility.

Georgia-Pacific Oriented Strandboard Facility
1803-AOP-R0
07-0212

SECTION IV: EMISSION UNIT INFORMATION

SN-01
Dryers

Source Description

This source consists of five flake dryers. Each dryer is a horizontal, cylindrical rotary drum heated by suspension-type burners and a pneumatic system which conveys the flakes through the dryers. The burners burn ground wood fuel from the hammermill. Each dryer has a maximum heat input of 40 million BTU per hour. BACT for this source has been determined to be a shared system of multiclones followed by regenerative thermal oxidators (RTOs).

Specific Conditions

1. Pursuant to §19.501 et seq of the Regulations of the Arkansas State Implementation Plan for Air Pollution Control (Regulation #19) effective February 15, 1999, 19.901 et seq, and 40 CFR Part 52, Subpart E, the permittee shall not exceed the emission rates set forth in the following table. Compliance with this condition will be demonstrated by Specific Condition #5, maximum equipment throughput, and proper operation of the RTO and multiclones. Compliance assurance monitoring shall be demonstrated by Plantwide Conditions #6 through #11.

Pollutant	lb/hr	tpy
PM	74.5	326.1
PM ₁₀	74.5	326.1
SO ₂	4.7	20.5
VOC	126.3	553.0
CO	33.6	147.2
NO _x	73.3	321.1

Georgia-Pacific Oriented Strandboard Facility
1803-AOP-R0
07-0212

2. Pursuant to 18.801 of the Arkansas Air Pollution Control Code (Regulation #18) effective February 15, 1999, the permittee shall not exceed the emission rates set forth in the following table. Compliance with this condition will be demonstrated by Specific Condition #5, maximum equipment throughput, and proper operation of the RTO and multiclones. Compliance assurance monitoring shall be demonstrated by Plantwide Conditions #6 through #11.

Pollutant	lb/hr	tpy
Formaldehyde	1.85	8.10

3. Pursuant to 18.501 of Regulation #18 and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, the permittee shall not cause to be discharged to the atmosphere gases which exhibit an opacity greater than 5%. The opacity shall be measured in accordance with EPA Reference Method 9 as found in 40 CFR Part 60 Appendix A.
4. Pursuant to §18.1004 of the Regulation #18 and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, weekly observations of the opacity from SN-01 shall be conducted by personnel familiar with the permittee's visible emissions. The permittee shall maintain personnel trained in EPA Reference Method 9. If visible emissions which appear to be in excess of the permitted opacity are detected, the permittee shall immediately take action to identify the cause of the visible emissions, implement corrective action, and document that visible emissions did not appear to be in excess of the permitted opacity following the corrective action. If opacity is still greater than permit limits, a full Method 9 reading is required. The permittee shall maintain records which contain the following items in order to demonstrate compliance with this specific condition. These records shall be updated weekly, kept on site, and made available to Department personnel upon request.
- The date and time of the observation
 - If visible emissions which appeared to be above the permitted limit were detected
 - If visible emissions which appeared to be above the permitted limit were detected, the cause of the exceedance of the opacity limit, the corrective action taken, and if the visible emissions appeared to be below the permitted limit after the corrective action was taken.
 - The name of the person conducting the opacity observations.

Georgia-Pacific Oriented Strandboard Facility
1803-AOP-R0
07-0212

5. Pursuant to §19.702 of Regulation #19, 19.901 et seq, and 40 CFR Part 52. Subpart E. the permittee shall test one RTO in SN-01 each year for PM₁₀, NO_x, CO, and VOC emissions using EPA Reference Methods 5, 7E, 10, and 25A respectively, and for opacity using EPA Reference Method 9. These tests shall be performed simultaneously. While performing the tests, the dryer shall be operating at least 90% of the maximum throughput rate. If testing is conducted at a rate lower than 90%, the facility shall be limited to an operating rate of 110% of the tested rate until compliance at a higher rate is demonstrated. The permittee shall submit a written testing protocol to the Compliance Section Manager at least 15 days prior to any scheduled test.

6. Pursuant to §18.1002 of Regulation #18 and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, the permittee shall test one RTO in SN-01 each year for Formaldehyde emissions using the Acetylacetone Method. While performing the test, the dryer shall be operating at least 90% of the maximum throughput rate. If testing is conducted at a rate lower than 90%, the facility shall be limited to an operating rate of 110% of the tested rate until compliance at a higher rate is demonstrated. The permittee shall submit a written testing protocol to the Compliance Section Manager at least 15 days prior to any scheduled test.

SN-02
Press

Source Description

In the press, dried wood flakes are blended with resin and wax, and are then placed as a mat on the forming line in layers, oriented at right angles, to provide structural integrity. The mat is then moved into the thermal-oil-heated press, where it is compressed and heated to bond the resin to the flakes. The thermal oil is heated to the appropriate temperature in a separate system, consisting of two, wood fuel, suspension-type burners. The exhaust gases from the burners are routed through the dryer system. Air pollutant emissions associated with the board press operation include PM, VOCs, CO, NO_x, and formaldehyde.

Specific Conditions

7. Pursuant to §19.501 et seq of Regulation #19, 19.901 et seq, and 40 CFR Part 52, Subpart E, the permittee shall not exceed the emission rates set forth in the following table. Compliance with this condition will be demonstrated by Specific Condition #10.d, maximum equipment throughput, and proper operation of the RTO and multiclones. Compliance assurance monitoring shall be demonstrated by Plantwide Conditions #6 through #11.

Pollutant	lb/hr	tpy
PM	2.8	12.4
PM ₁₀	2.8	12.4
VOC	20.0	87.9
CO	7.3	31.8
NO _x	10.7	47.0

Georgia-Pacific Oriented Strandboard Facility
1803-AOP-R0
07-0212

8. Pursuant to 18.801 of Regulation #18, the permittee shall not exceed the emission rates set forth in the following table. Compliance with this condition will be demonstrated by Specific Condition #10.d, maximum equipment throughput, and proper operation of the RTO and multiclones. Compliance assurance monitoring shall be demonstrated by Plantwide Conditions #6 through #11.

Pollutant	lb/hr	tpy
Formaldehyde	0.24	1.05

9. Pursuant to 18.501 of Regulation #18 and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, the permittee shall not cause to be discharged to the atmosphere gases which exhibit an opacity greater than 5%. The opacity shall be measured in accordance with EPA Reference Method 9 as found in 40 CFR Part 60 Appendix A.
10. Pursuant to §18.1004 of the Regulation #18 and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, weekly observations of the opacity from SN-02 shall be conducted by personnel familiar with the permittee's visible emissions. The permittee shall maintain personnel trained in EPA Reference Method 9. If visible emissions which appear to be in excess of the permitted opacity are detected, the permittee shall immediately take action to identify the cause of the visible emissions, implement corrective action, and document that visible emissions did not appear to be in excess of the permitted opacity following the corrective action. If opacity is still greater than permit limits, a full Method 9 reading is required. The permittee shall maintain records which contain the following items in order to demonstrate compliance with this specific condition. These records shall be updated weekly, kept on site, and made available to Department personnel upon request.
- The date and time of the observation
 - If visible emissions which appeared to be above the permitted limit were detected
 - If visible emissions which appeared to be above the permitted limit were detected, the cause of the exceedance of the opacity limit, the corrective action taken, and if the visible emissions appeared to be below the permitted limit after the corrective action was taken.
 - The name of the person conducting the opacity observations.

Georgia-Pacific Oriented Strandboard Facility
1803-AOP-R0
07-0212

11. Pursuant to §19.702 of Regulation #19, 19.901 et seq, and 40 CFR Part 52. Subpart E, the permittee shall test the RTO in SN-02 each year for PM₁₀, NO_x, CO, and VOC emissions using EPA Reference Methods 5, 7E, 10, and 25A respectively, and for opacity using EPA Reference Method 9. These tests shall be performed simultaneously. While performing the tests, the press shall be operating at least 90% of the maximum throughput rate. If testing is conducted at a rate lower than 90%, the facility shall be limited to an operating rate of 110% of the tested rate until compliance at a higher rate is demonstrated. The permittee shall submit a written testing protocol to the Compliance Section Manager at least 15 days prior to any scheduled test.

12. Pursuant to §18.1002 of Regulation #18 and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, the permittee shall test the RTO in SN-02 each year for Formaldehyde emissions using the Acetylacetone Method. While performing the test, the press shall be operating at least 90% of the maximum throughput rate. If testing is conducted at a rate lower than 90%, the facility shall be limited to an operating rate of 110% of the tested rate until compliance at a higher rate is demonstrated. The permittee shall submit a written testing protocol to the Compliance Section Manager at least 15 days prior to any scheduled test.

SN-03
Screen Fines/Saw Trim Transfer Pneumatics

Source Description

The pressed mats are cut to size, cooled, and the edges are sprayed with sealant to prevent swelling. Dry end material is either burned to heat the dryers and thermal oil system or shipped off-site for use as wood fuel or as furnish in other wood products manufacturing operations.

Specific Conditions

13. Pursuant to §19.501 et seq of Regulation #19, 19.901 et seq, and 40 CFR Part 52. Subpart E, the permittee shall not exceed the emission rates set forth in the following table. Compliance with this condition will be demonstrated by maximum equipment throughput and proper operation of the bagfilters.

Pollutant	lb/hr	tpy
PM	2.1	9.2
PM ₁₀	2.1	9.2

14. Pursuant to 18.501 of Regulation #18 and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, the permittee shall not cause to be discharged to the atmosphere gases which exhibit an opacity greater than 5%. The opacity shall be measured in accordance with EPA Reference Method 9 as found in 40 CFR Part 60 Appendix A.

Georgia-Pacific Oriented Strandboard Facility
1803-AOP-R0
07-0212

15. Pursuant to §18.1004 of the Regulation #18 and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, weekly observations of the opacity from SN-03 shall be conducted by personnel familiar with the permittee's visible emissions. The permittee shall maintain personnel trained in EPA Reference Method 9. If visible emissions which appear to be in excess of the permitted opacity are detected, the permittee shall immediately take action to identify the cause of the visible emissions, implement corrective action, and document that visible emissions did not appear to be in excess of the permitted opacity following the corrective action. If opacity is still greater than permit limits, a full Method 9 reading is required. The permittee shall maintain records which contain the following items in order to demonstrate compliance with this specific condition. These records shall be updated weekly, kept on site, and made available to Department personnel upon request.
- a. The date and time of the observation
 - b. If visible emissions which appeared to be above the permitted limit were detected
 - c. If visible emissions which appeared to be above the permitted limit were detected, the cause of the exceedance of the opacity limit, the corrective action taken, and if the visible emissions appeared to be below the permitted limit after the corrective action was taken.
 - d. The name of the person conducting the opacity observations.

SN-04
Saw Trim/Finishing Line Pneumatics

Source Description

The pressed mats are cut to size, cooled, and the edges are sprayed with sealant to prevent swelling. Dry end material is either burned to heat the dryers and thermal oil system or shipped off-site for use as wood fuel or as furnish in other wood products manufacturing operations.

Specific Conditions

16. Pursuant to §19.501 et seq of Regulation #19, 19.901 et seq, and 40 CFR Part 52, Subpart E, the permittee shall not exceed the emission rates set forth in the following table. Compliance with this condition will be demonstrated by maximum equipment throughput and proper operation of the bagfilters.

Pollutant	lb/hr	tpy
PM	2.7	11.6
PM ₁₀	2.7	11.6

17. Pursuant to 18.501 of Regulation #18 and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, the permittee shall not cause to be discharged to the atmosphere gases which exhibit an opacity greater than 5%. The opacity shall be measured in accordance with EPA Reference Method 9 as found in 40 CFR Part 60 Appendix A.

Georgia-Pacific Oriented Strandboard Facility
1803-AOP-R0
07-0212

18. Pursuant to §18.1004 of the Regulation #18 and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, weekly observations of the opacity from SN-04 shall be conducted by personnel familiar with the permittee's visible emissions. The permittee shall maintain personnel trained in EPA Reference Method 9. If visible emissions which appear to be in excess of the permitted opacity are detected, the permittee shall immediately take action to identify the cause of the visible emissions, implement corrective action, and document that visible emissions did not appear to be in excess of the permitted opacity following the corrective action. If opacity is still greater than permit limits, a full Method 9 reading is required. The permittee shall maintain records which contain the following items in order to demonstrate compliance with this specific condition. These records shall be updated weekly, kept on site, and made available to Department personnel upon request.
- a. The date and time of the observation
 - b. If visible emissions which appeared to be above the permitted limit were detected
 - c. If visible emissions which appeared to be above the permitted limit were detected, the cause of the exceedance of the opacity limit, the corrective action taken, and if the visible emissions appeared to be below the permitted limit after the corrective action was taken.
 - d. The name of the person conducting the opacity observations.

Georgia-Pacific Oriented Strandboard Facility
1803-AOP-R0
07-0212

SN-05
Mat Reject/Flying Saw pneumatics

Source Description

The pressed mats are cut to size, cooled, and the edges are sprayed with sealant to prevent swelling. Dry end material is either burned to heat the dryers and thermal oil system or shipped off-site for use as wood fuel or as furnish in other wood products manufacturing operations.

Specific Conditions

19. Pursuant to §19.501 et seq of Regulation #19, 19.901 et seq, and 40 CFR Part 52, Subpart E, the permittee shall not exceed the emission rates set forth in the following table. Compliance with this condition will be demonstrated by maximum equipment throughput and proper operation of the bagfilters.

Pollutant	lb/hr	tpy
PM	3.2	13.8
PM ₁₀	3.2	13.8

20. Pursuant to 18.501 of Regulation #18 and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, the permittee shall not cause to be discharged to the atmosphere gases which exhibit an opacity greater than 5%. The opacity shall be measured in accordance with EPA Reference Method 9 as found in 40 CFR Part 60 Appendix A.

Georgia-Pacific Oriented Strandboard Facility
1803-AOP-R0
07-0212

21. Pursuant to §18.1004 of the Regulation #18 and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, weekly observations of the opacity from SN-05 shall be conducted by personnel familiar with the permittee's visible emissions. The permittee shall maintain personnel trained in EPA Reference Method 9. If visible emissions which appear to be in excess of the permitted opacity are detected, the permittee shall immediately take action to identify the cause of the visible emissions, implement corrective action, and document that visible emissions did not appear to be in excess of the permitted opacity following the corrective action. If opacity is still greater than permit limits, a full Method 9 reading is required. The permittee shall maintain records which contain the following items in order to demonstrate compliance with this specific condition. These records shall be updated weekly, kept on site, and made available to Department personnel upon request.
- a. The date and time of the observation
 - b. If visible emissions which appeared to be above the permitted limit were detected
 - c. If visible emissions which appeared to be above the permitted limit were detected, the cause of the exceedance of the opacity limit, the corrective action taken, and if the visible emissions appeared to be below the permitted limit after the corrective action was taken.
 - d. The name of the person conducting the opacity observations.

SN-06
Specialty Saw/Sander Pneumatics

Source Description

The pressed mats are cut to size, cooled, and the edges are sprayed with sealant to prevent swelling. Dry end material is either burned to heat the dryers and thermal oil system or shipped off-site for use as wood fuel or as furnish in other wood products manufacturing operations.

Specific Conditions

22. Pursuant to §19.501 et seq of Regulation #19, 19.901 et seq, and 40 CFR Part 52, Subpart E, the permittee shall not exceed the emission rates set forth in the following table. Compliance with this condition will be demonstrated by maximum equipment throughput and proper operation of the bagfilters.

Pollutant	lb/hr	tpy
PM	2.2	9.5
PM ₁₀	2.2	9.5

23. Pursuant to 18.501 of Regulation #18 and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, the permittee shall not cause to be discharged to the atmosphere gases which exhibit an opacity greater than 5%. The opacity shall be measured in accordance with EPA Reference Method 9 as found in 40 CFR Part 60 Appendix A.

Georgia-Pacific Oriented Strandboard Facility
1803-AOP-R0
07-0212

24. Pursuant to §18.1004 of the Regulation #18 and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, weekly observations of the opacity from SN-06 shall be conducted by personnel familiar with the permittee's visible emissions. The permittee shall maintain personnel trained in EPA Reference Method 9. If visible emissions which appear to be in excess of the permitted opacity are detected, the permittee shall immediately take action to identify the cause of the visible emissions, implement corrective action, and document that visible emissions did not appear to be in excess of the permitted opacity following the corrective action. If opacity is still greater than permit limits, a full Method 9 reading is required. The permittee shall maintain records which contain the following items in order to demonstrate compliance with this specific condition. These records shall be updated weekly, kept on site, and made available to Department personnel upon request.
- a. The date and time of the observation
 - b. If visible emissions which appeared to be above the permitted limit were detected
 - c. If visible emissions which appeared to be above the permitted limit were detected, the cause of the exceedance of the opacity limit, the corrective action taken, and if the visible emissions appeared to be below the permitted limit after the corrective action was taken.
 - d. The name of the person conducting the opacity observations.

SN-07
Fuel System Pneumatics

Source Description

The pressed mats are cut to size, cooled, and the edges are sprayed with sealant to prevent swelling. Dry end material is either burned to heat the dryers and thermal oil system or shipped off-site for use as wood fuel or as furnish in other wood products manufacturing operations.

Specific Conditions

25. Pursuant to §19.501 et seq of Regulation #19, 19.901 et seq, and 40 CFR Part 52, Subpart E, the permittee shall not exceed the emission rates set forth in the following table. Compliance with this condition will be demonstrated by maximum equipment throughput and proper operation of the bagfilters.

Pollutant	lb/hr	tpy
PM	0.4	1.5
PM ₁₀	0.4	1.5

26. Pursuant to 18.501 of Regulation #18 and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, the permittee shall not cause to be discharged to the atmosphere gases which exhibit an opacity greater than 5%. The opacity shall be measured in accordance with EPA Reference Method 9 as found in 40 CFR Part 60 Appendix A.

Georgia-Pacific Oriented Strandboard Facility
1803-AOP-R0
07-0212

27. Pursuant to §18.1004 of the Regulation #18 and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, weekly observations of the opacity from SN-07 shall be conducted by personnel familiar with the permittee's visible emissions. The permittee shall maintain personnel trained in EPA Reference Method 9. If visible emissions which appear to be in excess of the permitted opacity are detected, the permittee shall immediately take action to identify the cause of the visible emissions, implement corrective action, and document that visible emissions did not appear to be in excess of the permitted opacity following the corrective action. If opacity is still greater than permit limits, a full Method 9 reading is required. The permittee shall maintain records which contain the following items in order to demonstrate compliance with this specific condition. These records shall be updated weekly, kept on site, and made available to Department personnel upon request.
- a. The date and time of the observation
 - b. If visible emissions which appeared to be above the permitted limit were detected
 - c. If visible emissions which appeared to be above the permitted limit were detected, the cause of the exceedance of the opacity limit, the corrective action taken, and if the visible emissions appeared to be below the permitted limit after the corrective action was taken.
 - d. The name of the person conducting the opacity observations.

SN-08
Forming Bins Pneumatics

Source Description

The pressed mats are cut to size, cooled, and the edges are sprayed with sealant to prevent swelling. Dry end material is either burned to heat the dryers and thermal oil system or shipped off-site for use as wood fuel or as furnish in other wood products manufacturing operations.

Specific Conditions

28. Pursuant to §19.501 et seq of Regulation #19, 19.901 et seq, and 40 CFR Part 52, Subpart E, the permittee shall not exceed the emission rates set forth in the following table. Compliance with this condition will be demonstrated by maximum equipment throughput and proper operation of the bagfilters.

Pollutant	lb/hr	tpy
PM	1.3	5.6
PM ₁₀	1.3	5.6

29. Pursuant to 18.501 of Regulation #18 and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, the permittee shall not cause to be discharged to the atmosphere gases which exhibit an opacity greater than 5%. The opacity shall be measured in accordance with EPA Reference Method 9 as found in 40 CFR Part 60 Appendix A.

Georgia-Pacific Oriented Strandboard Facility
1803-AOP-R0
07-0212

30. Pursuant to §18.1004 of the Regulation #18 and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, weekly observations of the opacity from SN-08 shall be conducted by personnel familiar with the permittee's visible emissions. The permittee shall maintain personnel trained in EPA Reference Method 9. If visible emissions which appear to be in excess of the permitted opacity are detected, the permittee shall immediately take action to identify the cause of the visible emissions, implement corrective action, and document that visible emissions did not appear to be in excess of the permitted opacity following the corrective action. If opacity is still greater than permit limits, a full Method 9 reading is required. The permittee shall maintain records which contain the following items in order to demonstrate compliance with this specific condition. These records shall be updated weekly, kept on site, and made available to Department personnel upon request.
- a. The date and time of the observation
 - b. If visible emissions which appeared to be above the permitted limit were detected
 - c. if visible emissions which appeared to be above the permitted limit were detected, the cause of the exceedance of the opacity limit, the corrective action taken, and if the visible emissions appeared to be below the permitted limit after the corrective action was taken.
 - d. The name of the person conducting the opacity observations.

SN-09
Hammermill System Pneumatics

Source Description

The pressed mats are cut to size, cooled, and the edges are sprayed with sealant to prevent swelling. Dry end material is either burned to heat the dryers and thermal oil system or shipped off-site for use as wood fuel or as furnish in other wood products manufacturing operations.

Specific Conditions

31. Pursuant to §19.501 et seq of Regulation #19, 19.901 et seq, and 40 CFR Part 52, Subpart E, the permittee shall not exceed the emission rates set forth in the following table. Compliance with this condition will be demonstrated by maximum equipment throughput and proper operation of the bagfilters.

Pollutant	lb/hr	tpy
PM	2.1	9.2
PM ₁₀	2.1	9.2

32. Pursuant to 18.501 of Regulation #18 and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, the permittee shall not cause to be discharged to the atmosphere gases which exhibit an opacity greater than 5%. The opacity shall be measured in accordance with EPA Reference Method 9 as found in 40 CFR Part 60 Appendix A.

Georgia-Pacific Oriented Strandboard Facility
1803-AOP-R0
07-0212

33. Pursuant to §18.1004 of the Regulation #18 and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, weekly observations of the opacity from SN-09 shall be conducted by personnel familiar with the permittee's visible emissions. The permittee shall maintain personnel trained in EPA Reference Method 9. If visible emissions which appear to be in excess of the permitted opacity are detected, the permittee shall immediately take action to identify the cause of the visible emissions, implement corrective action, and document that visible emissions did not appear to be in excess of the permitted opacity following the corrective action. If opacity is still greater than permit limits, a full Method 9 reading is required. The permittee shall maintain records which contain the following items in order to demonstrate compliance with this specific condition. These records shall be updated weekly, kept on site, and made available to Department personnel upon request.
- a. The date and time of the observation
 - b. If visible emissions which appeared to be above the permitted limit were detected
 - c. If visible emissions which appeared to be above the permitted limit were detected, the cause of the exceedance of the opacity limit, the corrective action taken, and if the visible emissions appeared to be below the permitted limit after the corrective action was taken.
 - d. The name of the person conducting the opacity observations.

SN-10
Fugitive Emission Sources

Source Description

The material handling operations responsible for fugitive emissions include Debarker (PM), Bark Hog (PM), Blend House (VOC/HCHO), Finished Product Storage (VOC/HCHO), Edge Sealing of boards outside Spray Booth (PM), Resin Storage Tanks (VOC/HCHO), Paved roads (PM), and Outside Bark Storage Area (PM).

Specific Conditions

34. Pursuant to §19.501 et seq of Regulation #19, 19.901 et seq, and 40 CFR Part 52, Subpart E, the permittee shall not exceed the emission rates set forth in the following table. Compliance with this condition will be demonstrated by maximum equipment throughput and proper operating practices.

Pollutant	lb/hr	tpy
PM	46.7	204.5
PM ₁₀	10.1	44.1
VOC	0.2	0.9

35. Pursuant to 18.801 of Regulation #18, the permittee shall not exceed the emission rates set forth in the following table. Compliance with this condition will be demonstrated by maximum equipment throughput and proper operating practices.

Pollutant	lb/hr	tpy
Formaldehyde	0.20	0.70

36. Pursuant to 18.501 of Regulation #18 and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, the permittee shall not cause to be discharged to the atmosphere gases which exhibit an opacity greater than 20%. The opacity shall be measured in accordance with EPA Reference Method 9 as found in 40 CFR Part 60 Appendix A.

Georgia-Pacific Oriented Strandboard Facility
1803-AOP-R0
07-0212

37. Pursuant to §19.7 of the Regulation #19 and 40 CFR Part 52, Subpart E, daily observations of the opacity from the Debarker and Bark Hog shall be conducted by personnel familiar with the permittee's visible emissions. The permittee shall maintain personnel trained in EPA Reference Method 9. If visible emissions which appear to be in excess of the permitted opacity are detected, the permittee shall immediately take action to identify the cause of the visible emissions, implement corrective action, and document that visible emissions did not appear to be in excess of the permitted opacity following the corrective action. If opacity is still greater than permit limits, a full Method 9 reading is required. The permittee shall maintain records which contain the following items in order to demonstrate compliance with this specific condition. These records shall be updated weekly, kept on site, and made available to Department personnel upon request.
- a. The date and time of the observation
 - b. If visible emissions which appeared to be above the permitted limit were detected
 - c. If visible emissions which appeared to be above the permitted limit were detected, the cause of the exceedance of the opacity limit, the corrective action taken, and if the visible emissions appeared to be below the permitted limit after the corrective action was taken.
 - d. The name of the person conducting the opacity observations.

Georgia-Pacific Oriented Strandboard Facility
1803-AOP-R0
07-0212

SECTION V: COMPLIANCE PLAN AND SCHEDULE

Georgia-Pacific Oriented Strandboard Facility is in compliance with the applicable regulations cited in the permit application. Georgia-Pacific Oriented Strandboard Facility will continue to operate in compliance with those identified regulatory provisions. The facility will examine and analyze future regulations that may apply and determine their applicability with any necessary action taken on a timely basis.

SECTION VI: PLANTWIDE CONDITIONS

1. Pursuant to Section 19.704 of Regulation 19, 40 CFR Part 52, Subpart E, and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, the Director shall be notified in writing within thirty (30) days after construction has commenced, construction is complete, the equipment and/or facility is first placed in operation, and the equipment and/or facility first reaches the target production rate.
2. Pursuant to Section 19.410(B) of Regulation 19, 40 CFR Part 52, Subpart E, the Director may cancel all or part of this permit if the construction or modification authorized herein is not begun within 18 months from the date of the permit issuance if the work involved in the construction or modification is suspended for a total of 18 months or more.
3. Pursuant to Section 19.702(E), 40 CFR Part 52, Subpart E, and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, each emission point for which an emission test method is specified in this permit shall be tested in order to determine compliance with the emission limitations contained herein within sixty (60) days of achieving the maximum production rate, but in no event later than 180 days after initial start-up of the permitted source. The permittee shall notify the Department of the scheduled date of compliance testing at least fifteen (15) days in advance of such test. Two copies of the compliance test results shall be submitted to the Department within thirty (30) days after the completed testing. The permittee shall provide:
 - (1) Sampling ports adequate for applicable test methods
 - (2) Safe sampling platforms
 - (3) Safe access to sampling platforms
 - (4) Utilities for sampling and testing equipment
4. Pursuant to Section 19.303 of Regulation 19 and A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311, the equipment, control apparatus and emission monitoring equipment shall be operated within their design limitations and maintained in good condition at all times.
5. Pursuant to Section 19.303 of Regulation 19, 19.901 et seq, and 40 CFR Part 52, Subpart E, and A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311, the RTOs shall be operated at the minimum temperature set point as determined during the compliance test.

Georgia-Pacific Oriented Strandboard Facility
1803-AOP-R0
07-0212

6. Pursuant to §19.705 of Regulation #19, 19.901 et seq, and 40 CFR Part 52, Subpart E, the permittee shall maintain continuous records which demonstrate compliance with Plantwide Condition #5. Readings will be recorded every 15 minutes and averaged every 12 hours. These records shall be kept on site, provided to Department personnel upon request, and may be used by the Department for enforcement purposes.
7. Pursuant to Section 19.303 of Regulation 19, 19.901 et seq, and 40 CFR Part 52, Subpart E, and A.C.A. §8-4-203 as referenced by A.C. A. §8-4-304 and §8-4-311, the RTOs shall have a maximum volumetric flow rate of 120% of the maximum air flow established during the compliance test.
8. Pursuant to §19.705 of Regulation #19, 19.901 et seq, and 40 CFR Part 52, Subpart E, the permittee shall maintain continuous records which demonstrate compliance with Plantwide Condition #7. Readings will be recorded every 15 minutes and averaged every 12 hours. These records shall be kept on site, provided to Department personnel upon request, and may be used by the Department for enforcement purposes.
9. Pursuant to §19.705 of Regulation #19, 19.901 et seq, and 40 CFR Part 52, Subpart E, the permittee shall maintain continuous records of the static pressure at the inlet of each ID fan. Readings will be recorded hourly and averaged every 12 hours. These records shall be kept on site, provided to Department personnel upon request, and may be used by the Department for enforcement purposes.
10. Pursuant to §19.705 of Regulation #19, 19.901 et seq, and 40 CFR Part 52, Subpart E, the permittee shall maintain continuous records of the isolation damper position status. These records shall be kept on site, provided to Department personnel upon request, and may be used by the Department for enforcement purposes.

Title VI Provisions

11. The permittee shall comply with the standards for labeling of products using ozone depleting substances pursuant to 40 CFR Part 82, Subpart E:
 - a. All containers containing a class I or class II substance stored or transported, all products containing a class I substance, and all products directly manufactured with a class I substance must bear the required warning statement if it is being introduced to interstate commerce pursuant to §82.106.

Georgia-Pacific Oriented Strandboard Facility
1803-AOP-R0
07-0212

- b. The placement of the required warning statement must comply with the requirements pursuant to §82.108.
 - c. The form of the label bearing the required warning must comply with the requirements pursuant to §82.110.
 - d. No person may modify, remove, or interfere with the required warning statement except as described in §82.112.
12. The permittee shall comply with the standards for recycling and emissions reduction pursuant to 40 CFR Part 82, Subpart F, except as provided for MVACs in Subpart B:
- a. Persons opening appliances for maintenance, service, repair, or disposal must comply with the required practices pursuant to §82.156.
 - b. Equipment used during the maintenance, service, repair, or disposal of appliances must comply with the standards for recycling and recovery equipment pursuant to §82.158.
 - c. Persons performing maintenance, service repair, or disposal of appliances must be certified by an approved technician certification program pursuant to §82.161.
 - d. Persons disposing of small appliances, MVACs, and MVAC-like appliances must comply with record keeping requirements pursuant to §82.166. (“MVAC-like appliance” as defined at §82.152.)
 - e. Persons owning commercial or industrial process refrigeration equipment must comply with leak repair requirements pursuant to §82.156.
 - f. Owners/operators of appliances normally containing 50 or more pounds of refrigerant must keep records of refrigerant purchased and added to such appliances pursuant to §82.166.
13. If the permittee manufactures, transforms, destroys, imports, or exports a class I or class II substance, the permittee is subject to all requirements as specified in 40 CFR part 82, Subpart A, Production and Consumption Controls.

Georgia-Pacific Oriented Strandboard Facility
1803-AOP-R0
07-0212

14. If the permittee performs a service on motor (fleet) vehicles when this service involves ozone-depleting substance refrigerant (or regulated substitute substance) in the motor vehicle air conditioner (MVAC), the permittee is subject to all the applicable requirements as specified in 40 CFR part 82. Subpart B, Servicing of Motor Vehicle Air Conditioners.

The term "motor vehicle" as used in Subpart B does not include a vehicle in which final assembly of the vehicle has not been completed. The term "MVAC" as used in Subpart B does not include the air-tight sealed refrigeration system used as refrigerated cargo, or the system used on passenger buses using HCFC-22 refrigerant.

15. The permittee shall be allowed to switch from any ozone-depleting substance to any alternative that is listed in the Significant New Alternatives Program (SNAP) promulgated pursuant to 40 CFR part 82. Subpart G, Significant New Alternatives Policy Program.

Permit Shield

16. Compliance with the conditions of this permit shall be deemed compliance with all applicable requirements, as of the date of permit issuance, included in and specifically identified in item A of this condition:

- A. The following have been specifically identified as applicable requirements based upon information submitted by the permittee in an application dated June 1998.

Source No.	Regulation	Description
Facility	Arkansas Regulation #19	Regulations of the Arkansas Plan of Implementation for Air Pollution Control
Facility	Arkansas Regulation #26	Regulations of the Arkansas Operating Air Permit Program

- B. The following requirements have been specifically identified as not applicable, based upon information submitted by the permittee in an application dated June 1998.

Georgia-Pacific Oriented Strandboard Facility
 1803-AOP-R0
 07-0212

Description of Regulation	Regulatory Citation	Affected Source	Basis for Determination
New Source Performance Standards	40 CFR Part 60, Subpart Db	SN-01	In a memorandum, dated November 17, 1992, the US EPA EPA concluded that NSPS Subparts Db and Dc do not apply to process dryers.
New Source Performance Standards	40 CFR Part 60, Subpart Dc	SN-01	In a memorandum, dated November 17, 1992, the US EPA EPA concluded that NSPS Subparts Db and Dc do not apply to process dryers.

C. Nothing shall alter or affect the following:

Provisions of Section 303 of the Clean Air Act;

The liability of an owner or operator for any violation of applicable requirements prior to or at the time of permit issuance;

The applicable requirements of the acid rain program, consistent with section 408(a) of the Clean Air Act; or

The ability of the EPA to obtain information under Section 114 of the Clean Air Act.

SECTION VII: INSIGNIFICANT ACTIVITIES

Pursuant to §26.3(d) of Regulation 26, the following sources are insignificant activities. Insignificant and trivial activities will be allowable after approval and federal register notice publication of a final list as part of the operating air permit program. Any activity for which a state or federal applicable requirement applies is not insignificant even if this activity meets the criteria of §3(d) of Regulation 26 or is listed below. Insignificant activity determinations rely upon the information submitted by the permittee in an application dated June, 1998.

Pursuant to §26.3(d) of Regulation 26, the following emission units, operations, or activities have been determined by the Department to be insignificant activities. Activities included in this list are allowable under this permit and need not be specifically identified.

1. Combustion emissions from propulsion of mobile sources and emissions from refueling these sources unless regulated by Title II and required to obtain a permit under Title V of the federal Clean Air Act, as amended. This does not include emissions from any transportable units, such as temporary compressors or boilers. This does not include emissions from loading racks or fueling operations covered under any applicable federal requirements.
2. Air conditioning and heating units used for comfort that do not have applicable requirements under Title VI of the Act.
3. Ventilating units used for human comfort that do not exhaust air pollutants into the ambient air from any manufacturing/industrial or commercial process.
4. Non-commercial food preparation or food preparation at restaurants, cafeterias, or caterers, etc.
5. Consumer use of office equipment and products, not including commercial printers or business primarily involved in photographic reproduction.
6. Janitorial services and consumer use of janitorial products.
7. Internal combustion engines used for landscaping purposes.
8. Laundry activities, except for dry-cleaning and steam boilers.

Georgia-Pacific Oriented Strandboard Facility
1803-AOP-R0
07-0212

9. Bathroom/toilet emissions.
10. Emergency (backup) electrical generators at residential locations.
11. Tobacco smoking rooms and areas.
12. Blacksmith forges.
13. Maintenance of grounds or buildings, including: lawn care, weed control, pest control, and water washing activities.
14. Repair, up-keep, maintenance, or construction activities not related to the sources' primary business activity, and not otherwise triggering a permit modification. This may include, but is not limited to such activities as general repairs, cleaning, painting, welding, woodworking, plumbing, re-tarring roofs, installing insulation, paved/paving parking lots, miscellaneous solvent use, application of refractory, or insulation, brazing, soldering, the use of adhesives, grinding, and cutting.¹
15. Surface-coating equipment during miscellaneous maintenance and construction activities. This activity specifically does not include any facility whose primary business activity is surface-coating or includes surface-coating or products.
16. Portable electrical generators that can be "moved by hand" from one location to another.²
17. Hand-held equipment for buffing, polishing, cutting, drilling, sawing, grinding, turning, or machining wood, metal, or plastic.
18. Brazing or soldering equipment related to manufacturing activities that do not result in emission of HAPs.³

¹ Cleaning and painting activities qualify if they are not subject to VOC or HAP control requirements. Asphalt batch plant owners/operators must get a permit.

² "Moved by hand" means that it can be moved by one person without assistance of any motorized or non-motorized vehicle, conveyance, or device.

³ Brazing, soldering, and welding equipment, and cutting torches related to manufacturing and construction activities that emit HAP metals are more appropriate for treatment as insignificant activities based on size or production thresholds. Brazing, soldering, and welding equipment, and cutting torches related directly to plant maintenance and upkeep and repair or maintenance shop activities that emit HAP metals are treated as trivial and listed separately in this appendix.

Georgia-Pacific Oriented Strandboard Facility
1803-AOP-R0
07-0212

19. Air compressors and pneumatically operated equipment, including hand tools.
20. Batteries and battery charging stations, except at battery manufacturing plants.
21. Storage tanks, vessels, and containers holding or storing liquid substances that do not contain any VOCs or HAPs.⁴
22. Storage tanks, reservoirs, and pumping and handling equipment of any size containing soaps, vegetable oil, grease, animal fat, and no volatile aqueous salt solutions, provided appropriate lids and covers are used and appropriate odor control is achieved.
23. Equipment used to mix and package soaps, vegetable oil, grease, animal fat, and non-volatile aqueous salt solutions, provided appropriate lids and covers are used and appropriate odor control is achieved.
24. Drop hammers or presses for forging or metalworking.
25. Equipment used exclusively to slaughter animals, but not including other equipment at slaughter-houses, such as rendering cookers, boilers, heating plants, incinerators, and electrical power generating equipment.
26. Vents from continuous emissions monitors and other analyzers.
27. Natural gas pressure regulator vents, excluding venting at oil and gas production facilities.
28. Hand-held applicator equipment for hot melt adhesives with no VOCs in the adhesive.
29. Lasers used only on metals and other materials which do not emit HAPs in the process.
30. Consumer use of paper trimmers/binders.
31. Electric or steam-heated drying ovens and autoclaves, but not the emissions from the articles or substances being processed in the ovens or autoclaves or the boilers delivering the steam.

⁴ Exemptions for storage tanks containing petroleum liquids or other volatile organic liquids are based on size and limits including storage tank capacity and vapor pressure of liquids stored and are not appropriate for this list.

Georgia-Pacific Oriented Strandboard Facility
1803-AOP-R0
07-0212

32. Salt baths using non-volatile salts that do not result in emissions of any air pollutant covered by this regulation.
33. Laser trimmers using dust collection to prevent fugitive emissions.
34. Bench-scale laboratory equipment used for physical or chemical analysis not including lab fume hoods or vents.
35. Routine calibration and maintenance of laboratory equipment or other analytical instruments.
36. Equipment used for quality control/assurance or inspection purposes, including sampling equipment used to withdraw materials for analysis.
37. Hydraulic and hydrostatic testing equipment.
38. Environmental chambers not using hazardous air pollutant gases.
39. Shock chambers, humidity chambers, and solar simulators.
40. Fugitive emissions related to movement of passenger vehicles, provided the emissions are not counted for applicability purposes and any required fugitive dust control plan or its equivalent is submitted.
41. Process water filtration systems and demineralizers.
42. Demineralized water tanks and demineralizer vents.
43. Boiler water treatment operations, not including cooling towers.
44. Emissions from storage or use of water treatment chemicals, except for hazardous air pollutants or pollutants listed under regulations promulgated pursuant to Section 112(r) of the Act, for use in cooling towers, drinking water systems, and boiler water/feed systems.
45. Oxygen scavenging (de-aeration) of water.
46. Ozone generators.
47. Fire suppression systems.

Georgia-Pacific Oriented Strandboard Facility
1803-AOP-R0
07-0212

48. Emergency road flares.
49. Steam vents and safety relief valves.
50. Steam leaks.
51. Steam cleaning operations.
52. Steam and microwave sterilizers.
53. Site assessment work to characterize waste disposal or remediation sites.
54. Miscellaneous additions or upgrades of instrumentation.
34. Emissions from combustion controllers or combustion shutoff devices but not combustion units itself.
56. Use of products for the purpose of maintaining motor vehicles operated by the facility, not including air cleaning units of such vehicles (i.e. antifreeze, fuel additives).
57. Stacks or vents to prevent escape of sanitary sewer gases through the plumbing traps.
58. Emissions from equipment lubricating systems (i.e. oil mist), not including storage tanks, unless otherwise exempt.
59. Residential wood heaters, cookstoves, or fireplaces.
60. Barbecue equipment or outdoor fireplaces used in connection with any residence or recreation.
61. Log wetting areas and log flumes.
62. Periodic use of pressurized air for cleanup.
63. Solid waste dumpsters.
64. Emissions of wet lime from lime mud tanks, lime mud washers, lime mud piles, lime mud filter and filtrate tanks, and lime mud slurry tanks.

Georgia-Pacific Oriented Strandboard Facility
1803-AOP-R0
07-0212

65. Natural gas odoring activities unless the Department determines that emissions constitute air pollution.
66. Emissions from engine crankcase vents.
67. Storage tanks used for the temporary containment of materials resulting from an emergency reporting to an unanticipated release.
68. Equipment used exclusively to mill or grind coatings in roll grinding rebuilding, and molding compounds where all materials charged are in paste form.
69. Mixers, blenders, roll mills, or calendars for rubber or plastic for which no materials in powder form are added and in which no organic solvents, diluents, or thinners are used.
70. The storage, handling, and handling equipment for bark and wood residues not subject to fugitive dispersion offsite (this applies to the equipment only).
71. Maintenance dredging of pulp and paper mill surface impoundments and ditches containing cellulosic and cellulosic derived biosolids and inorganic materials such as lime, ash, or sand.
72. Tall oil soap storage, skimming, and loading.
73. Water heaters used strictly for domestic (non-process) purposes.
74. Facility roads and parking areas, unless necessary to control offsite fugitive emissions.
75. Agricultural operations, including onsite grain storage, not including IC engines or grain elevators.
76. The following natural gas and oil exploration production site equipment: separators, dehydration units, natural gas fired compressors, and pumping units. This does not include compressors located on natural gas transmission pipelines.

SECTION VIII: GENERAL PROVISIONS

1. Pursuant to 40 C.F.R. 70.6(b)(2), any terms or conditions included in this permit which specify and reference Arkansas Pollution Control & Ecology Commission Regulation 18 or the Arkansas Water and Air Pollution Control Act (A.C.A. §8-4-101 *et seq.*) as the sole origin of and authority for the terms or conditions are not required under the Clean Air Act or any of its applicable requirements, and are not federally enforceable under the Clean Air Act. Arkansas Pollution Control & Ecology Commission Regulation 18 was adopted pursuant to the Arkansas Water and Air Pollution Control Act (A.C.A. §8-4-101 *et seq.*). Any terms or conditions included in this permit which specify and reference Arkansas Pollution Control & Ecology Commission Regulation 18 or the Arkansas Water and Air Pollution Control Act (A.C.A. §8-4-101 *et seq.*) as the origin of and authority for the terms or conditions are enforceable under this Arkansas statute.
2. Pursuant to 40 C.F.R. 70.6(a)(2) and §26.7 of the Regulations of the Arkansas Operating Air Permit Program (Regulation 26), this permit shall be valid for a period of five (5) years beginning on the date this permit becomes effective and ending five (5) years later.
3. Pursuant to §26.4 of Regulation #26, it is the duty of the permittee to submit a complete application for permit renewal at least six (6) months prior to the date of permit expiration. Permit expiration terminates the permittee's right to operate unless a complete renewal application was submitted at least six (6) months prior to permit expiration, in which case the existing permit shall remain in effect until the Department takes final action on the renewal application. The Department will not necessarily notify the permittee when the permit renewal application is due.
4. Pursuant to 40 C.F.R. 70.6(a)(1)(ii) and §26.7 of Regulation #26, where an applicable requirement of the Clean Air Act, as amended, 42 U.S.C. 7401, *et seq* (Act) is more stringent than an applicable requirement of regulations promulgated under Title IV of the Act, both provisions are incorporated into the permit and shall be enforceable by the Director or Administrator.
5. Pursuant to 40 C.F.R. 70.6(a)(3)(ii)(A) and §26.7 of Regulation #26, records of monitoring information required by this permit shall include the following:
 - a. The date, place as defined in this permit, and time of sampling or measurements;
 - b. The date(s) analyses were performed;
 - c. The company or entity that performed the analyses;

Georgia-Pacific Oriented Strandboard Facility
1803-AOP-R0
07-0212

- d. The analytical techniques or methods used;
 - e. The results of such analyses; and
 - f. The operating conditions existing at the time of sampling or measurement.
6. Pursuant to 40 C.F.R. 70.6(a)(3)(ii)(B) and §26.7 of Regulation #26, records of all required monitoring data and support information shall be retained for a period of at least 5 years from the date of the monitoring sample, measurement, report, or application. Support information includes all calibration and maintenance records and all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by this permit.
7. Pursuant to 40 C.F.R. 70.6(a)(3)(iii)(A) and §26.7 of Regulation #26, the permittee shall submit reports of all required monitoring every 6 months. If no other reporting period has been established, the reporting period shall end on the last day of the anniversary month of this permit. The report shall be due within 30 days of the end of the reporting period. Even though the reports are due every six months, each report shall contain a full year of data. All instances of deviations from permit requirements must be clearly identified in such reports. All required reports must be certified by a responsible official as defined in §26.2 of Regulation #26 and must be sent to the address below.

Arkansas Department of Pollution Control and Ecology
Air Division
ATTN: Air Enforcement
Post Office Box 8913
Little Rock, AR 72219

8. Pursuant to 40 C.F.R. 70.6(a)(3)(iii)(B), §26.7 of Regulation #26, and Section 19.601 and 19.602 of Regulation #19, all deviations from permit requirements, including those attributable to upset conditions as defined in the permit shall be reported to the Department. An initial report shall be made to the Department within 24 hours of discovery of the occurrence. The initial report may be made by telephone and shall include:
- a. The facility name and location,
 - b. The process unit or emission source which is deviating from the permit limit,
 - c. The permit limit, including the identification of pollutants, from which deviation occurs,
 - d. The date and time the deviation started,

Georgia-Pacific Oriented Strandboard Facility
1803-AOP-R0
07-0212

- e. The duration of the deviation,
- f. The average emissions during the deviation,
- g. The probable cause of such deviations,
- h. Any corrective actions or preventive measures taken or being take to prevent such deviations in the future, and
- i. The name of the person submitting the report.

A full report shall be made in writing to the Department within five (5) business days of discovery of the occurrence and shall include in addition to the information required by initial report a schedule of actions to be taken to eliminate future occurrences and/or to minimize the amount by which the permits limits are exceeded and to reduce the length of time for which said limits are exceeded. If the permittee wishes, they may submit a full report in writing (by facsimile, overnight courier, or other means) within 24 hours of discovery of the occurrence and such report will serve as both the initial report and full report.

- 9. Pursuant to 40 C.F.R. 70.6(a)(5) and §26.7 of Regulation #26, and A.C.A. §8-4-203, as referenced by §8-4-304 and §8-4-311, if any provision of the permit or the application thereof to any person or circumstance is held invalid, such invalidity shall not affect other provisions or applications hereof which can be given effect without the invalid provision or application, and to this end, provisions of this Regulation are declared to be separable and severable.
- 10. Pursuant to 40 C.F.R. 70.6(a)(6)(i) and §26.7 of Regulation #26, the permittee must comply with all conditions of this Part 70 permit. Any permit noncompliance with applicable requirements as defined in Regulation #26 constitutes a violation of the Clean Air Act, as amended, 42 U.S.C. 7401, *et seq.* and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application. Any permit noncompliance with a state requirement constitutes a violation of the Arkansas Water and Air Pollution Control Act (A.C.A. §8-4-101 *et seq.*) and is also grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application.
- 11. Pursuant to 40 C.F.R. 70.6(a)(6)(ii) and §26.7 of Regulation #26, it shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

Georgia-Pacific Oriented Strandboard Facility
1803-AOP-R0
07-0212

12. Pursuant to 40 C.F.R. 70.6(a)(6)(iii) and §26.7 of Regulation #26, this permit may be modified, revoked, reopened, and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or of a notification of planned changes or anticipated noncompliance does not stay any permit condition.
13. Pursuant to 40 C.F.R. 70.6(a)(6)(iv) and §26.7 of Regulation #26, this permit does not convey any property rights of any sort, or any exclusive privilege.
14. Pursuant to 40 C.F.R. 70.6(a)(6)(v) and §26.7 of Regulation #26, the permittee shall furnish to the Director, within the time specified by the Director, any information that the Director may request in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating the permit or to determine compliance with the permit. Upon request, the permittee shall also furnish to the Director copies of records required to be kept by the permit. For information claimed to be confidential, the permittee may be required to furnish such records directly to the Administrator along with a claim of confidentiality.
15. Pursuant to 40 C.F.R. 70.6(a)(7) and §26.7 of Regulation #26, the permittee shall pay all permit fees in accordance with the procedures established in Regulation #9.
16. Pursuant to 40 C.F.R. 70.6(a)(8) and §26.7 of Regulation #26, no permit revision shall be required, under any approved economic incentives, marketable permits, emissions trading and other similar programs or processes for changes that are provided for elsewhere in this permit.
17. Pursuant to 40 C.F.R. 70.6(a)(9)(i) and §26.7 of Regulation #26, if the permittee is allowed to operate under different operating scenarios, the permittee shall, contemporaneously with making a change from one operating scenario to another, record in a log at the permitted facility a record of the scenario under which the facility or source is operating.
18. Pursuant to 40 C.F.R. 70.6(b) and §26.7 of Regulation #26, all terms and conditions in this permit, including any provisions designed to limit a source's potential to emit, are enforceable by the Administrator and citizens under the Act unless the Department has specifically designated as not being federally enforceable under the Act any terms and conditions included in the permit that are not required under the Act or under any of its applicable requirements.

Georgia-Pacific Oriented Strandboard Facility
1803-AOP-R0
07-0212

19. Pursuant to 40 C.F.R. 70.6(c)(1) and §26.7 of Regulation #26, any document (including reports) required by this permit shall contain a certification by a responsible official as defined in §26.2 of Regulation #26.
20. Pursuant to 40 C.F.R. 70.6(c)(2) and §26.7 of Regulation #26, the permittee shall allow an authorized representative of the Department, upon presentation of credentials, to perform the following:
 - a. Enter upon the permittee's premises where the permitted source is located or emissions-related activity is conducted, or where records must be kept under the conditions of this permit;
 - b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
 - c. Inspect at reasonable times any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit; and
 - d. As authorized by the Act, sample or monitor at reasonable times substances or parameters for the purpose of assuring compliance with this permit or applicable requirements.
21. Pursuant to 40 C.F.R. 70.6(c)(5) and §26.7 of Regulation #26, the permittee shall submit a compliance certification with terms and conditions contained in the permit, including emission limitations, standards, or work practices. This compliance certification shall be submitted annually and shall be submitted to the Administrator as well as to the Department. All compliance certifications required by this permit shall include the following:
 - a. The identification of each term or condition of the permit that is the basis of the certification;
 - b. The compliance status;
 - c. Whether compliance was continuous or intermittent;
 - d. The method(s) used for determining the compliance status of the source, currently and over the reporting period established by the monitoring requirements of this permit; and
 - e. Such other facts as the Department may require elsewhere in this permit or by §114(a)(3) and 504(b) of the Act.

Georgia-Pacific Oriented Strandboard Facility
1803-AOP-R0
07-0212

22. Pursuant to §26.7 of Regulation #26, nothing in this permit shall alter or affect the following:
- a. The provisions of Section 303 of the Act (emergency orders), including the authority of the Administrator under that section;
 - b. The liability of the permittee for any violation of applicable requirements prior to or at the time of permit issuance;
 - c. The applicable requirements of the acid rain program, consistent with §408(a) of the Act: or
 - d. The ability of EPA to obtain information from a source pursuant to §114 of the Act.
23. Pursuant to A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, this permit authorizes only those pollutant emitting activities addressed herein.

CERTIFICATE OF SERVICE

I, Keith A. Michaels, hereby certify that a copy of this permit has been mailed by first class mail to Georgia-Pacific Oriented Strandboard Facility, 133 Peachtree Street NE, 17th Floor, Atlanta, Georgia 30303, on this 8th day of June, 1999.



Keith A. Michaels, Chief, Air Division

3. INTRODUCTION

On June 8, 1999, Georgia-Pacific Corporation (G-P) received a permit for the construction and operation of a new oriented strandboard (OSB) facility in Fordyce, Arkansas. As construction plans for the facility have been finalized, G-P has identified two areas in the permit that need to be changed in order to accurately describe the facility. First, more accurate information is now available to describe expected fugitive emission sources. Second, revisions are needed in the language to more accurately represent the operational characteristics of the regenerative thermal oxidizers (RTOs) controlling emissions from the dryers and press. These changes are described in more detail in Section 3.2.

3.1 Facility Location

The facility will be located approximately 7 kilometers (km) southeast of Fordyce and 2.5 km due south of Tri-County Lake, just east of both State Highway 274 and the Fordyce and Princeton Railroad. The plant entrance will be located on Highway 274. A map showing the location of the proposed facility was included as Figure 3-1 in the original PSD permit application.

3.2 Description of Changes

Fugitive Emissions

Attachment B of the original PSD permit application contained emission estimates for the fugitive emission sources. These sources included the debarker (particulate matter (PM/PM₁₀), the bark hog (PM/PM₁₀), the blend house (volatile organic compounds (VOCs)/formaldehyde (HCOH), finished product storage (VOC/HCOH), edge sealing of boards outside the spray booth (PM/PM₁₀), and paved roads (PM/PM₁₀). This application is requesting that emissions from unpaved roads and outside storage of bark be added to the facility-wide fugitive emission total.

RTO Operation

Best Available Control Technology (BACT) must include relief during periods of start-up, shutdown, and Force Majeure events, as no process or control technology can be expected to operate 100 percent of the time. This was recognized when Georgia-Pacific entered into a Consent Decree with the U.S. Environmental Protection Agency (USEPA) that required the installation of RTOs at eleven wood products plants (including the plywood plants at Fordyce and Crossett, Arkansas). The permits for the RTOs at those two facilities contain language that provides relief under certain conditions. As such, Georgia-Pacific is requesting that similar language be included for the operation of the RTOs at the Fordyce OSB plant.

3.3 Requested Changes to Permit 1803-AOP-R0

In order to incorporate the changes described above, the following changes would be needed to the existing permit:

Section II (Introduction)

The PM emissions in the table on Page 3 should be increased from 603.4 to 682.4 tons per year (tpy).

The PM₁₀ emissions in the table on Page 3 should be increased from 443.0 to 474.2 tpy

The emission values included in the Facility Emission Summary on Page 15 should be updated. Specifically, the Total Allowable Emissions for PM should be set at 156 pounds per hour (lbs/hr) and 682.4 tpy. The Total Allowable Emissions for PM₁₀ should be at 108.5 lbs/hr and 474.2 tpy. On Page 16, Source 10 (Fugitive Emissions), the PM emissions should be set at 64.7 lbs/hr and 283.6 tpy. The PM₁₀ emissions in the same section should be set at 17.2 lbs/hr and 75.4 tpy.

Section IV (Emission Unit Information)

The Source Description for SN-10 (Fugitive Emission Sources) on Page 39 should be revised to include unpaved roads.

The table included under Specific Condition 34 for SN-10 on Page 39 should be updated to reflect the revised emission values for PM and PM₁₀. The PM emissions should be set at 64.7 lbs/hr and 283.6 tpy. The PM₁₀ emissions should be set at 17.2 lbs/hr and 75.4 tpy.

Section VI (Plantwide Conditions)

Insert a new condition, to follow existing Condition 4, to state, "Source permit limitations need not be maintained during periods when the dryer(s) and/or press are not operating or during previously scheduled start-up and shutdown periods (including bakeouts and washouts), and Force Majeure events (i.e., a Force Majeure event is an act beyond the control of the permittee that causes or may cause a delay or impediment to complying with the applicable permit emission limits and/or conditions). These start-up and shutdown periods shall not exceed the minimum amount of time necessary for these events, and during these events, the permittee shall minimize emissions to the greatest extent practicable. The permittee must, at the beginning of each month, record its maintenance schedule for the month".

ATTACHMENT 4
Operating Permit, Construction Permit, and Review Report – Georgia-Pacific OSB,
Brookneal, VA

Mr. Lawrence P. E. Otwell
Manager - Technical Issues
Georgia Pacific Corporation, Building Products Division
P.O. Box 105605
Atlanta, Georgia 30348

Location: Campbell County
Registration No: 30903
County-Plant No: 0580-0163

Dear Mr. Otwell:

Attached is a permit to construct and operate an Oriented Strandboard facility in accordance with the provisions of the Commonwealth of Virginia State Air Pollution Control Board Regulations for the Control and Abatement of Air Pollution.

The permit contains legally enforceable conditions. Failure to comply may result in a Notice of Violation and civil penalty. Please read all permit conditions carefully.

In the course of evaluating the application and arriving at a final decision to approve the project, the Department of Environmental Quality (DEQ) deemed the application complete on March 16, 1994 and solicited written public comments by placing a newspaper advertisement in The Lynchburg News and Daily Advance on March 27, 1994. The thirty day comment period (provided for in Section 120-08-01 G4) expired on April 28, 1994.

This approval to construct and operate shall not relieve Georgia Pacific Corporation, Building Products Division of the responsibility to comply with all other local, state and federal permit regulations.

Section 120-02-09 of the Board's Regulations provides that you may request a formal hearing from this case decision by filing a petition with the Board within 30 days after this case decision notice was mailed or delivered to you. Please consult the relevant regulations for additional requirements for such requests.

Additionally, as provided by Rule 2A:2 of the Supreme Court of Virginia, you have 30 days from the date you actually received this permit or the date on which it was mailed to you, whichever occurred first, within which to initiate an appeal to court by filing a Notice of Appeal with:

Richard N. Burton, Director
Department of Environmental Quality
P.O. Box 10009
Richmond, Virginia 23240-0009

In the event that you receive this permit by mail, three days are added to the period in which to file an appeal. Please refer to Part Two A of the Rules of the Supreme Court of Virginia for additional information including filing dates and the required content of the Notice of Appeal.

If you have any questions concerning this permit, please call the regional office at (804) 582-5120.

Sincerely,

Richard N. Burton
Director

TLH/thb/30903.Ptb

Attachment: Permit
NSPS Subpart Db and Subpart Kb

cc: Director, Office of Permit Evaluation
Director, Data Analysis and Special Studies
Manager, Air Toxics Enforcement and Compliance
Chief, Air Enforcement Branch (3AT20), U.S. EPA, Region III

NEW SOURCE PERFORMANCE STANDARDS PERMIT
STATIONARY SOURCE PERMIT TO CONSTRUCT AND OPERATE

In compliance with the Federal Clean Air Act and the Commonwealth of Virginia Regulations for the Control and Abatement of Air Pollution,

Georgia Pacific Corporation
Building Products Division
P.O. Box 105605
Atlanta, Georgia 30348

Registration No. 30903
County-Plant No. 0580-0163

is authorized to construct and operate an

Oriented Strandboard (OSB) Facility

located

10 miles north of Brookneal, Virginia at the intersection of Highway 501 and Route 650 in Campbell County, Virginia

in accordance with the Conditions of this permit.

Approved on _____.

Richard N. Burton
Director

Permit consists of 14 pages.
Permit Conditions 1 to 50.
Source Testing Report Format.

PERMIT CONDITIONS - the regulatory reference and authority for each condition is listed in parentheses () after each condition.

1. Except as specified in this permit, the permitted facility is to be constructed and operated as represented in the permit application dated July 13, 1993, including amendment sheets dated July 22, 1993, August 13, 1993, August 31, 1993, September 9, 1993, September 16, 1993, October 27, 1993, November 30, 1993, December 7, 1993, December 20, 1993, January 13, 1994, January 26, 1994 and March 14, 1994. Any changes in the permit application specifications or any existing facilities which alter the impact of the facility on air quality may require a permit. Failure to obtain such a permit prior to construction may result in enforcement action.
(Section 120-02-11 of State Regulations)

2. Equipment to be constructed consists of:

- a 424.4 x 10⁶ ft²/yr OSB manufacturing facility. The square footage is based on a panel thickness of 3/8 inches.

The major equipment to be included at the Brookneal OSB manufacturing facility includes:

- (1) 240 x 10⁶ BTU/hr wood-fired Energy System, including a 45 x 10⁶ BTU/hr thermal oil heat exchanger,
- (1) 45 x 10⁶ BTU/hr gas-fired, backup thermal oil heater
- (3) 13 feet diameter X 60 feet long (or equivalent capacity) rotary drum flake dryers each complete with process cyclone,
- (3) 10 feet diameter X 30 feet long (or equivalent capacity) rotary screens,
- (2) 10 feet diameter X 30 feet long (or equivalent capacity) rotary blenders,
- (1) 102 inch Continuous Mat forming machine,
- (1) 8 feet wide X 24 feet long, 14 opening simultaneous closing platen press,
- (1) panel edge spray booth,
- (1) 2 head belt sander,
- (1) 4 feet wide (or equivalent capacity) tongue and groove cutting machine,
- (1) 8 feet wide X 24 feet long (or equivalent capacity) panel saw,
- (3) multicyclones,
- (1) electrostatic precipitator,
- (6) reverse air cleaned fabric filters,
- (2) high efficiency cyclones
- (3) wood fuel storage bins
- (3) green flake storage bins
- (2) dry flake storage bins
- (2) CAE Fuji-King debarking machines
- (2) tree-length flaking machines
- (1) 15,000 gallon above ground, thermal oil storage tank,
- (3) 10,000 gallon above ground liquid storage tanks,
- (1) 6,000 gallon above ground liquid storage tank,
- (4) 1,000 gallon above ground liquid storage tanks,
- (2) 500 gallon above ground liquid storage tanks,

- (1) 350 gallon above ground liquid storage tank,
 - (2) 120 gallon above ground liquid storage tanks,
 - and miscellaneous covered flight, drag chain, and covered belt conveyors.

3. Carbon monoxide (CO), volatile organic compounds (VOC), and formaldehyde emissions from the flake dryers shall be controlled by the Energy System. The "Energy System" is defined as having two (2) sections. The "heat producing section" is defined as the four (4) fuel cells and the upper combustion zone. The "energy conservation section" is defined as the blend chamber and the downstream ductwork ending at the inlet to the first primary air heater. The Energy System shall be provided with adequate access for inspection. The energy conservation section of the Energy System shall be equipped with a device for the continuous measurement of the temperature at the inlet to the first primary air heater.
(Sections 120-08-01 H and 120-05-0403 of State Regulations)

4. Particulate emissions from the Energy System shall be controlled by three (3) multicyclones connected in parallel and followed by an Electrostatic Precipitator (ESP). Each multicyclone, and the ESP shall be provided with adequate access for inspection. An annual inspection of all internal and external components of each multicyclone shall be conducted by the permittee to insure structural integrity. Each multicyclone shall be equipped with a device to continuously measure differential pressure drop across the multicyclone. The ESP shall be equipped with a device for the continuous measurement of primary and secondary current and voltage (by field) across the ESP.
(Sections 120-08-01 H and 120-05-0403 of State Regulations)

5. The minimum combustion temperature in the Energy System shall be maintained at 1,400 °F when any dryer is processing flakes. The exhaust gas shall have a minimum one (1) second retention time. The maximum exhaust gas flow in the energy conservation section shall be 462,600 acfm (actual cubic feet per minute) at 1,400 °F. The energy conservation section shall be constructed so as to allow for flow rate testing and monitoring upon reasonable notice at any time, using appropriate methods. Test ports shall be provided at the appropriate locations.
(Section 120-08-01 H of State Regulations)

6. Total particulate, nitrogen oxides (NO_x), carbon monoxide (CO), volatile organic compounds (VOC), phenol, and formaldehyde emissions from the press shall be exhausted through a 137.5 feet tall, fan-powered stack. Total particulate is defined as filterable particulate matter plus condensable particulate matter.
(Section 120-08-01 H of State Regulations)

7. Particulate emissions from the low pressure material handling systems, defined as system numbers 6700, 6800, 6900, 6950, 8900, and 9500, shall be controlled by fabric filters. The fabric filters shall be provided with adequate access for inspection. The fabric filter shall be equipped with a device to continuously measure the differential pressure drop across the fabric filter. The device shall be installed in an accessible location and shall be maintained by the permittee such that it is in proper working order at all times.
(Sections 120-08-01 H and 120-05-0403 of State Regulations)
8. Particulate emissions from the high pressure material handling systems, defined as system numbers 8950 and 9600, shall be controlled by cyclones with a minimum design efficiency of 99.9 percent. The cyclones shall be provided with adequate access for inspection.
(Sections 120-08-01 H and 120-05-0403 of State Regulations)
9. Particulate emissions from the spray booth shall be controlled by a water curtain. The water curtain shall be provided with adequate access for inspection.
(Sections 120-08-01 H and 120-05-0403 of State Regulations)
10. The facility roads and those portions of the log yard subject to vehicular traffic shall be paved.
(Sections 120-08-01 H and 120-05-0403 of State Regulations)
11. Fugitive particulate emissions from open storage of wood materials shall be controlled by wet suppression when control is necessary to insure compliance with condition 39.
(Sections 120-08-01 H and 120-05-0403 of State Regulations)
12. The approved fuels for the Energy System are on-site generated wood, purchased wood, and on-site generated wastes. "On-site generated wood" is defined as wood feed stock, bark, resinated and unresinated saw dusts, sander dust, and other wood wastes capable of being hogged. This definition does not include wood contaminated with paints, plastics, finishing material or chemical treatments other than facility process resins, waxes, and edge sealers. "Purchased wood" is defined as clean wood and wood wastes which do not contain chemical treatments nor have affixed thereto paint and/or finishing materials or paper or plastic laminates or other foreign materials which might emit toxic air pollutants when burned. "On-site generated wastes" are defined as press vent cleanup wastes, spray booth blowdown water, waste resin and wax, oily water, and paper products. "Oily water" is defined as oil from the mobile equipment wash water which is collected and separated in the area's oil/water separator. This definition does not include oil generated from equipment maintenance including, but limited to, crankcase oil, transmission oil and transformer oil. "Paper products" are defined as cardboard and office paper. A change in the fuels may require a permit to modify and operate.
(Section 120-08-01 of State Regulations)
13. The approved fuels for the backup thermal oil heater are natural gas and propane. A change in the fuel may require a permit to modify and operate.
(Section 120-08-01 of State Regulations)

14. The permitted facility shall be constructed so as to allow for emissions testing and monitoring upon reasonable notice at any time, using appropriate methods. Test ports shall be provided at the appropriate locations.
(Section 120-05-03 F of State Regulations)
15. The Energy System shall consume no more than 225,800 tons per year of wood, 13 tons per year of press vent cleanup wastes, 104,000 gallons per year of spray booth blowdown water, 31.2 tons per year of waste resin and wax, 1,800 gallons per year of oily water, and 3.6 tons per year of paper products, each calculated as the sum of each consecutive 12 month period.
(Section 120-02-11 of State Regulations)
16. Except as specified in this permit, the Energy System is to be operated in compliance with Federal emissions requirements under 40 CFR 60, Subpart Db.
(Section 120-02-11 of State Regulations)
17. Except as specified in this permit, the thermal oil storage tank is to be operated in compliance with Federal emissions requirements under 40 CFR 60, Subpart Kb.
(Section 120-02-11 of State Regulations)
18. The annual throughput of the flakes on a dry basis shall not exceed 318,300 tons per year, calculated as the sum of each consecutive 12 month period.
(Section 120-02-11 of State Regulations)
19. The annual throughput of powdered resin shall not exceed 11,459 tons per year, calculated as the sum of each consecutive 12 month period.
(Section 120-02-11 of State Regulations)
20. The annual production of finished Oriented Strandboard shall not exceed 424.4×10^6 square feet per year, calculated as the sum of each consecutive 12 month period. The square footage is based on a panel thickness of 3/8 inches.
(Section 120-02-11 of State Regulations)
21. Initial performance tests shall be conducted for total particulate matter, volatile organic compounds (VOC), phenol, and formaldehyde from the press to determine compliance with the emission limits contained in Conditions 32 and 37. The tests shall be performed, and demonstrate compliance, within 60 days after achieving the maximum production rate but in no event later than 180 days after start-up of the permitted facility. Tests shall be conducted and reported and data reduced as set forth in Section 120-05-03 of State Regulations, and the test methods and procedures contained in each applicable section or subpart listed in Section 120-05-0502. The details of the tests are to be arranged with the Director, Lynchburg Air Office. The permittee shall submit a test protocol at least thirty (30) days prior to testing. Four (4) copies of the test results shall be submitted to the Director, Lynchburg Air Office within 45 days after test completion and shall conform to the test report format enclosed with this permit.
(Sections 120-05-03 and 120-08-01 J of State Regulations)

22. Initial performance tests shall be conducted for particulate matter from the system number 8950 cyclone and from the system number 9600 cyclone to determine compliance with the emission limits contained in Conditions 34 and 38. The tests shall be performed, and demonstrate compliance, within 60 days after achieving the maximum production rate but in no event later than 180 days after start-up of the permitted facility. Tests shall be conducted and reported and data reduced as set forth in Section 120-05-03 of State Regulations, and the test methods and procedures contained in each applicable section or subpart listed in Section 120-05-0502. The details of the tests are to be arranged with the Director, Lynchburg Air Office. The permittee shall submit a test protocol at least thirty (30) days prior to testing. Four (4) copies of the test results shall be submitted to the Director, Lynchburg Air Office within 45 days after test completion and shall conform to the test report format enclosed with this permit.
(Sections 120-05-03 and 120-08-01 J of State Regulations)
23. Initial performance tests shall be conducted for particulate matter, volatile organic compounds (VOC), and nitrogen oxides (NO_x) from the Energy System to determine compliance with the emission limits contained in Conditions 31, and 37. The tests shall be performed, and demonstrate compliance, within 60 days after achieving the maximum production rate but in no event later than 180 days after start-up of the permitted facility. Tests shall be conducted and reported and data reduced as set forth in Section 120-05-03 of the State Regulations, and the test methods and procedures contained in each applicable section or subpart listed in Section 120-05-0502. The details of the tests are to be arranged with the Director, Lynchburg Air Office. The permittee shall submit a test protocol at least thirty (30) days prior to testing. Four (4) copies of the test results shall be submitted to the Director, Lynchburg Air Office within 45 days after test completion and shall conform to the test report format enclosed with this permit.
(Sections 120-05-03 and 120-08-01 J of State Regulations)
24. Stack tests shall be conducted for particulate matter, carbon monoxide (CO), nitrogen oxides (NO_x), volatile organic compounds (VOC), and formaldehyde from the Energy System to determine compliance with the emission limits contained in Conditions 31 and 37. The tests shall be performed, and demonstrate compliance, within 180 days after the submittal to the Director, Lynchburg Air Office of the results of the performance tests required in Condition 23. Tests shall be conducted and reported and data reduced as set forth in Section 120-05-03 of State Regulations, and the test methods and procedures contained in each applicable section or subpart listed in Section 120-05-0502. The details of the tests are to be arranged with the Director, Lynchburg Air Office. The permittee shall submit a test protocol at least thirty (30) days prior to testing. Four (4) copies of the test results shall be submitted to the Director, Lynchburg Air Office within 45 days after test completion and shall conform to the test report format enclosed with this permit.
(Sections 120-05-03 and 120-08-01 J of State Regulations)
25. Concurrently with the initial performance tests, Visible Emission Evaluations (VEE) in accordance with 40 CFR, Part 60, Appendix A, Method 9, shall also be conducted by the permittee on the following equipment: the press, the system number 8950 cyclone, and the system number 9600 cyclone. Each test shall consist of thirty (30) sets of twenty-four (24) consecutive observations (at

fifteen (15) second intervals) to yield a six (6) minute average for each set. The details of the tests are to be arranged with Director, Lynchburg Air Office. The permittee shall submit a test protocol at least thirty (30) days prior to testing. The evaluation shall be performed within sixty (60) days of achieving maximum operation, but no later than 180 days after initial start up. Four (4) copies of the results of each shall be submitted to the Director, Lynchburg Air Office within 45 days after test completion and shall conform to the test report format enclosed with this permit.

(Sections 120-02-11 and 120-05-03 of State Regulations)

26. Concurrently with the initial performance tests, Visible Emission Evaluations (VEE) in accordance with 40 CFR, Part 60, Appendix A, Method 9, shall also be conducted by the permittee on the Energy System. Each test shall consist of sixty (60) sets of twenty-four (24) consecutive observations (at fifteen (15) second intervals) to yield a six (6) minute average for each set. The details of the tests are to be arranged with Director, Lynchburg Air Office. The permittee shall submit a test protocol at least thirty (30) days prior to testing. The evaluation shall be performed within sixty (60) days of achieving maximum operation, but no later than 180 days after initial start up. Four (4) copies of the results of each shall be submitted to the Director, Lynchburg Air Office within 45 days after test completion and shall conform to the test report format enclosed with this permit.

(Sections 120-02-11 and 120-05-03 of State Regulations)

27. Concurrently with the stack tests, Visible Emission Evaluations (VEE) in accordance with 40 CFR, Part 60, Appendix A, Method 9, shall also be conducted on the Energy System. The details of the tests are to be arranged with Director, Lynchburg Air Office.

(Sections 120-02-11 and 120-05-03 of State Regulations)

28. A continuous emission monitor shall be installed on the Energy System stack to measure and record opacity. The continuous emissions monitoring system shall conform to the design specifications stipulated in 40 CFR 60, Appendix B, Performance Specification 1. The monitoring system shall be installed, maintained, evaluated, calibrated and operated in accordance with 40 CFR 60.13, 40 CFR 60 Subpart Db and 40 CFR 60, Appendix B. During all periods of facility operation, the monitoring system shall be in continuous operation except for system breakdowns, repairs, calibration checks, and zero and span adjustments.

After the initial performance evaluation, the permittee shall conduct opacity monitoring system audits, on a regularly scheduled basis, to demonstrate compliance with the calibration error specification (40 CFR 60, Appendix B, Performance Specification 1). In no case shall the length of time between audits exceed twelve months. Prior to the first scheduled audit the permittee shall submit, for approval, to the Director, Lynchburg Air Office, the proposed audit procedures for the opacity monitoring system. A 30-day notification prior to the initial performance evaluation and each scheduled audit shall be submitted to the Director, Lynchburg Air Office.

The permittee shall submit a report of monitored excess emissions and monitor performance for every calendar quarter commencing at the time of completion of the performance evaluation. The reports are to be submitted, postmarked no later than 30 calendar days after the end of the quarter, to the Director, Lynchburg Air Office. The details and format of the report are to be

arranged with the Director, Lynchburg Air Office prior to the submission of the first report.
 (Sections 120-02-11 and 120-05-04 F of State Regulations)

29. The continuous monitoring system shall be installed and operational prior to conducting performance tests. Performance evaluations of the continuous monitoring system must take place during the performance tests under Section 120-05-03 or within thirty (30) days thereafter. Two (2) copies of the performance evaluations report shall be submitted to the Director, Lynchburg Air Office within forty-five (45) days of said evaluation. Verification of operational status shall, as a minimum, include completion of the manufacturer's written requirements or recommendations for installation, operation and calibration of the device.
 (Section 120-05-04 of State Regulations)
30. A continuous opacity monitoring system (COMS) may be used to satisfy visible emission initial performance compliance in lieu of Test Method 9 if the permittee fulfills the requirements of 40 CFR 60.11(e)(5). Reported test data is to include averages of all six (6) minute continuous periods.
 (Section 120-02-11 of State Regulations)
31. Emissions from the operation of the Energy System shall not exceed the limits specified below:

	<u>lbs/10⁶ Btu</u>	<u>lbs/hr</u>	<u>tons/yr</u>
Total Suspended Particulate	0.10	24.00	101.86
PM-10	0.10	24.00	101.86
Sulfur Dioxide	0.02	5.33	22.64
Nitrogen Oxides (as NO ₂)	0.20	48.00	203.72
Carbon Monoxide	0.20	48.00	203.72
Volatile Organic Compounds	0.10	24.00	101.86
Formaldehyde	---	1.52	6.46

In the event that the actual hourly emission rates as determined by the stack testing required in Condition 24 are less than 83.33 percent of the emission limits as stated in this Condition, after being normalized to 100 percent of the maximum design hourly production rate of dried flakes, the allowable emission limits shall be adjusted to 1.2 times the emission testing results.
 (Sections 120-05-0403 and 120-05-0303 of State Regulations)

32. Emissions from the operation of the press shall not exceed the limits specified below:

	<u>lbs/hr</u>	<u>tons/yr</u>
Total Suspended Particulate	15.00	63.66
PM-10	15.00	63.66
Nitrogen Oxides (as NO ₂)	0.30	1.27
Carbon Monoxide	7.00	29.71
Volatile Organic Compounds	5.00	21.22
Formaldehyde	0.50	2.12
Phenol	2.15	9.13

(Sections 120-05-0403 and 120-05-0303 of State Regulations)

33. Emissions from the operation of the low pressure material handling systems shall not exceed the limits specified below:

	<u>gr/dscf</u>	<u>lbs/hr</u>	<u>tons/yr</u>
Total Suspended Particulate	0.01	9.29	39.44
PM-10	0.01	9.29	39.44

(Sections 120-05-0403 and 120-05-0303 of State Regulations)

34. Emissions from the operation of the high pressure material handling systems shall not exceed the limits specified below:

	<u>gr/dscf</u>	<u>lbs/hr</u>	<u>tons/yr</u>
Total Suspended Particulate	0.01	0.73	3.09
PM-10	0.01	0.73	3.09

(Sections 120-05-0403 and 120-05-0303 of State Regulations)

35. Emissions from the operation of the spray booth shall not exceed the limits specified below:

	<u>lbs/hr</u>	<u>tons/yr</u>
Total Suspended Particulate	0.20	0.87
PM-10	0.20	0.87

(Sections 120-05-0403 and 120-05-0303 of State Regulations)

36. Emissions from the facility roads shall not exceed the limits specified below:

	<u>lbs/hr</u>	<u>tons/yr</u>
Total Suspended Particulate	7.80	34.17
PM-10	7.80	34.17

These emissions are derived from the estimated overall emission contribution. Compliance shall be determined as stated in Condition 39.

(Sections 120-05-0403 and 120-05-0303 of State Regulations)

37. Visible emissions from the Energy System and the press shall not exceed 10 percent opacity as determined by EPA Method 9 (reference 40 CFR 60, Appendix A). This Condition applies at all times except during startup, shutdown and malfunction.
(Sections 120-02-11 and 120-05-02 of State Regulations)
38. Visible emissions from the low pressure material handling systems's fabric filters, and from the high pressure material handling systems's cyclones shall not exceed 5 percent opacity as determined by EPA Method 9 (reference 40 CFR 60, Appendix A). This Condition applies at all times except during startup, shutdown and malfunction.
(Sections 120-02-11 and 120-05-02 of State Regulations)
39. Visible emissions from other fugitive emission points shall not exceed ten percent (10%) opacity.
(Sections 120-02-11 and 120-05-02 of State Regulations)
40. The permittee shall furnish written notification to the Director, Lynchburg Air Office of:
- The actual date on which construction of the Oriented Strandboard Plant commenced within thirty (30) days after such date.
 - The anticipated start-up date of the Oriented Strandboard Plant postmarked not more than sixty (60) days nor less than thirty (30) days prior to such date.
 - The actual start-up date of the Oriented Strandboard Plant within fifteen (15) days after

such date.

- d. The anticipated date of performance tests of the Oriented Strandboard Plant postmarked at least thirty (30) days prior to such date.
- e. The anticipated date upon which demonstration of the continuous monitoring system performance commences postmarked at least thirty (30) days prior to such date.
- f. The intention to use the continuous opacity monitoring system to satisfy visible emission initial performance compliance in lieu of Test Method 9 at least (30) days prior to the performance test.

Copies of written notifications referenced in items a, b, c, e and f above to be sent to:

Chief Air Enforcement Branch (3AT20)
U. S. Environmental Protection Agency
Region III
841 Chestnut Street
Philadelphia, PA 19107

(Sections 120-02-11 and 120-05-05 of State Regulations)

- 41. The permittee shall maintain records of all emission data and operating parameters necessary to demonstrate compliance with this permit. The content of and format of such records shall be arranged with the Director, Lynchburg Air Office. These records shall include, but are not limited to:
 - a. The daily and yearly consumption by the Energy System of wood in units of tons, press vent cleanup wastes in units of tons, spray booth blowdown water in units of gallons, waste resin and wax in units of tons, oily water in units of gallons, and paper products in units of tons. Each yearly consumption rate shall be calculated as the sum of each consecutive 12 month period.
 - b. The yearly throughput of flakes through the dryers, in units of tons per year on a dry basis, calculated as the sum of each consecutive 12 month period.
 - c. The yearly throughput of powdered resin, in units of tons per year, calculated as the sum of each consecutive 12 month period.
 - d. The yearly production of finished Oriented Strandboard, in units of square feet per year, calculated as the sum of each consecutive 12 month period. The square footage shall be based on a panel thickness of 3/8 inches.
 - e. Records of the occurrence and duration of any startup, shutdown, or malfunction in the operation of the Energy System; any malfunction of the air pollution control equipment; and any periods during which a continuous monitoring system or monitoring device is inoperative.

These records shall be available for inspection by the DEQ and shall be current for the most recent five (5) years.

(Section 120-05-05 of State Regulations)

42. This permit may be modified or revoked in whole or in part for cause, including, but not limited to, the following:

- a. Violation of any terms or conditions of this permit;
- b. Obtaining this permit by misrepresentation or failure to disclose fully all relevant facts;
- c. A change in any condition that requires either a temporary or permanent reduction or elimination of a permitted discharge; or
- d. Information that the permitted discharge of any pollutant poses a threat to human health, welfare, or the environment.

(Sections 120-02-11 and 120-08-01 of State Regulations)

43. The permittee shall allow authorized local, state and federal representatives, upon the presentation of credentials:

- a. To enter upon the permittee's premises on which the facility is located or in which any records are required to be kept under the terms and conditions of this permit;
- b. To have access to and copy at reasonable times any records required to be kept under the terms and conditions of this permit or the State Air Pollution Control Board Regulations;
- c. To inspect at reasonable times any facility, equipment, or process subject to the terms and conditions of this permit or the State Air Pollution Control Board Regulations; and
- d. To sample or test at reasonable times.

For purposes of this condition, the time for inspection shall be deemed reasonable during regular business hours or whenever the facility is in operation. Nothing contained herein shall make an inspection time unreasonable during an emergency.

(Section 120-02-11 of State Regulations)

44. If, for any reason, the permitted facility or related air pollution control equipment fails or malfunctions and may cause excess emissions for more than one hour, the owner shall notify the Director, Lynchburg Air Office within four (4) business hours of the occurrence. The portion of the facility which is subject to the provision of Rule 5-3 (toxics) shall shut down immediately upon request of the DEQ. In addition, the owner shall provide a written statement, within fourteen (14)

days, explaining the problem, corrective action taken, and the estimated duration of the breakdown/shut down.
(Section 120-02-34 of State Regulations)

45. In order to minimize the duration and frequency of excess emissions due to malfunctions of process equipment or air pollution control equipment, the permittee shall:

a. Develop a maintenance schedule and maintain records of all scheduled and non-scheduled maintenance. These records shall be maintained on site for a period of five (5) years and shall be made available to DEQ personnel upon request.

b. Maintain an inventory of spare parts that are needed to minimize durations of air pollution control equipment breakdowns.

(Section 120-02-11 of State Regulations)

46. The permittee shall have available written operating procedures for the air pollution control and monitoring equipment. Operators shall be trained in the proper operation of all such equipment and shall be familiar with the written operating procedures. These procedures shall be based on the manufacturer's recommendations, at a minimum. Training shall consist of a review and familiarization of the manufacturer's operating instructions, at a minimum. The permittee shall maintain records of training provided including names of trainees, date of training and nature of training. All records required by this condition shall be kept on site and made available for inspection by the DEQ.

(Section 120-02-11 of State Regulations)

47. This permit shall become invalid if construction of the proposed Oriented Strandboard Plant is not commenced within eighteen (18) months of the date of this permit or if it is discontinued for a period of eighteen (18) months.

(Section 120-08-01 K of State Regulations)

48. In the event of any change in control of ownership of the permitted source, the permittee shall notify the succeeding owner of the existence of this permit by letter and send a copy of that letter to the Director, Lynchburg Air Office.

(Section 120-02-11 of State Regulations)

49. Annual requirements to fulfill legal obligations to maintain current stationary source emissions data will necessitate your prompt response to requests for information to include, as appropriate: process and production data; changes in control equipment, and operating schedules. Such requests for information from the DEQ will either be in writing or by personal contact. The

availability of information submitted to the DEQ or the Board will be governed by applicable provisions of the Freedom of Information Act, §§ 2.1-340 through 2.1-348 of the Code of Virginia, § 10.1-1314 (addressing information provided to the Board), and Section 120-02-30 of the State Air Pollution Control Board Regulations. Information provided to federal officials is subject to appropriate federal law and regulations governing confidentiality of such information.

(Section 120-02-31 of State Regulations)

50. A copy of this permit shall be maintained on the premises of the facility to which it applies.
(Section 120-02-11 of State Regulations)

SOURCE TESTING REPORT FORMAT

Cover

1. Plant name and location
2. Units tested at source (indicate Ref. No. used by source in permit or registration)
3. Tester; name, address and report date

Certification

1. Signed by team leader / certified observer
(include certification date)
- * 2. Signed by reviewer

Introduction

1. Test purpose
2. Test location, type of process
3. Test dates
- * 4. Pollutants tested
5. Test methods used
6. Observers' names (industry and agency)
7. Any other important background information

Summary of Results

1. Pollutant emission results / visible emissions summary
2. Input during test vs. rated capacity
3. Allowable emissions
- * 4. Description of collected samples, to include audits when applicable
5. Discussion of errors, both real and apparent

Source Operation

1. Description of process and control devices
2. Process and control equipment flow diagram
3. Process and control equipment data

* Sampling and Analysis Procedures

1. Sampling port location and dimensioned cross section
2. Sampling point description
3. Sampling train description
4. Brief description of sampling procedures with discussion of deviations from standard methods
5. Brief description of analytical procedures with discussion of deviation from standard methods

Appendix

- * 1. Process data and emission results example calculations
2. Raw field data
- * 3. Laboratory reports
4. Raw production data
- * 5. Calibration procedures and results

6. Project participants and titles
7. Related correspondence
8. Standard procedures

_____ * Not applicable to visible emission evaluations.

MEMORANDUM

TO: Director, Air Division

FROM: T. L. Henderson

SUBJECT: Georgia Pacific Oriented Strandboard Plant; Brookneal
(Campbell County), Va.

DATE: 16 Mar 93

Filename: 30903.etb

I. Executive Summary

The Georgia Pacific Corporation (GP) plans to construct and operate a new oriented strandboard (OSB) manufacturing facility in Campbell County, 10 miles north of Brookneal, Virginia. The facility will be a state major source for CO (233.43 ton/yr), NO_x (205.00 ton/yr), VOC (123.10 ton/yr), and TSP/PM10 (243.09 ton/yr, including 34.17 ton/yr as fugitives).

The OSB process begins by sending logs through a debarking machine. The logs are then waferized into flakes which are fed to one of three rotary-drum dryers. The dried flakes are screened, classified and then conveyed to a blending operation where resins and wax are added. A "mat" of flakes is formed by orienting two layers of "face" flakes and multiple layers of "core" flakes. The mat is then placed in a 14 opening press which compresses it while adding heat.

After the material is pressed, the cured mats are trimmed and cut to panel size. Sanding and tongue-and-groove operations may be performed as required. The edge of the finished panels are sprayed with a sealant. A schematic diagram on the OSB facility is included in Section II B.1.

The emission units with the greatest potential for emissions in the OSB process are (1) the flake dryers (along

with the wood-fired Energy System which provides their heat), (2) the press and (3) the material handling systems. Some emissions are also expected from liquid storage tanks, spray booths and fugitives from paved road traffic on the site.

As originally proposed by Georgia Pacific, the Brookneal facility would have emitted CO and VOC at levels above the PSD Major thresholds. However, Georgia Pacific later changed its control strategy so that emission levels of these (as well as all other criteria pollutants) are estimated to be below PSD thresholds. The control strategy is essentially to recirculate dryer exhaust gases for use as combustion air for the Energy System and thereby provide sufficient temperature and time for VOC and CO destruction. (The control strategy is described in detail in Section II.B.1.)

The control of material handling particulate emissions is by fabric filters and high efficiency cyclones. Stack testing will be required to insure that cyclones meet or exceed BACT (ie., fabric filter standards for woodworking facilities).

The emissions from the tanks which store diesel fuel and gas are minimal; estimated to be approximately 0.014 tons per year. Georgia Pacific's Brookneal facility is designed to use the current industry standard, powdered resin which is very low in free formaldehyde.

The material used in the spray booth is an edge sealer which is a water-based product that does not contain any components which are on the current priority toxics list. Therefore, the only emission from the spray booth is particulate matter. The spray booth particulate emissions are controlled by a water curtain.

Wood yard fugitive emissions will be controlled by covered storage of the fuel for the Energy System (ie., fuel will be in silos or in buildings). Any open storage will be controlled by wet suppression. The log yard and the roads at the facility will be paved.

II. Introduction & Background

A. Company Background

1. Facility Description

- a. Company Name: Georgia-Pacific Corporation,
Building Products Division
- b. Type of Business: Oriented Strandboard
Manufacturing

2. Location of Project

- a. Specific Area: Approximately 10 miles north of Brookneal, Va (Campbell County) at the intersection of Highway 501 and Route 650.
- b. Site Suitability: The site was inspected on 1 Feb 94 and found to be suitable from an air pollution standpoint.
- c. UTM #
Energy System: 674.7 km E4110.4 km N
Press Vent: 674.8 km E4110.2 km N

B. Project Summary

1. Source Type Description:

The OSB process is described in Section I.

The Brookneal facility applies a pollution prevention approach to limit emissions from the flake dryers. As shown in the following process flow schematic (See Figure 1), the heated air used to dry the flakes comes from an air-to-air heat exchanger where hot exhaust gas from the Energy System heats ambient air. The ambient air is then used to dry the flakes. The dryer exhaust is fed back to either the "energy conservation section" of the Energy System (ie., the blend chamber) or the "heat producing section" of the Energy System (ie., the fuel cells and upper combustion zone). The VOC and CO laden ambient air from the dryers is oxidized in the blend chamber and downstream ductwork at a minimum temperature of 1400 °F and a minimum residence time of approximately 1.0 second. This residence time is computed on the maximum design blend chamber flow rate of 20% of the dryer exhaust (ie., 462,000 acfm at 1400 °F). The remaining 80% of the dryer exhaust is used as combustion air for the Energy System and the VOCs and CO are oxidized in the fuel cells and the upper combustion zone at 1600 °F and a residence time of greater than 2 seconds. The blend chamber control damper will modulate from 0 to 20% to maintain an average hot side temperature in the primary heat exchanger of 1400 °F in the most energy efficient manner. The Energy System exhaust passes through one of three multicyclones (connected in parallel) and then an Electrostatic Precipitator (ESP) in order to control particulate emissions.

Georgia-Pacific proposes using the Wellons Cell type Furnace as the heat producing section of the Energy System. The Wellons system is a vertical, pile burning furnace designed for controlled combustion of wet or dry solid fuels. Fuel is augured into the high temperature, primary combustion cell and forms a small pile on water cooled grates. Combustion air is simultaneously introduced into three separately controlled zones in the cell. Primary air, which represents approximately 30% of the total, is introduced beneath the grate and dries the wet fuel, and provides air for the gasification process and burning of fixed carbon. Secondary air, representing approximately 60% of the total air, enters tangentially through five stages of refractory tube with a wall temperature of about 2000 °F, for combustion of the volatiles and CO. Tertiary air is added at the top of the cell breaking up the cyclonic gas flow and providing the remaining total air requirement. The burning gases leave the cell and enter a large plenum (called the upper combustion zone) which is designed to allow time for completion of the combustion process. The temperature in this zone is maintained at approximately 1600 °F.

NO_x emissions will be minimized by the design of the Energy System combustion zone which introduces the combustion air in stages to limit excess air and also maintains a short combustion gas residence time in the high temperature (ie., greater than 1600 °F) region of the fuel cell.

The emissions from the press are captured and exhausted through a 137.5 ft fan-powered stack.

2. Process/Equipment Description

a. The major equipment to be included at the Brookneal facility is listed below. (Note: The parenthetical statement "or equivalent capacity" is included by Georgia Pacific's request since the stated physical dimensions are nominal and may vary somewhat in the design of future, replacement equipment.)

- (1) 240 x 10⁶ BTU/hr wood-fired Energy System, including a 45 x 10⁶ BTU/hr thermal oil heat exchanger,
- (1) 45 x 10⁶ BTU/hr gas-fired, backup thermal oil heater
- (3) 13 feet diameter X 60 feet long (or equivalent capacity) rotary drum flake dryers each complete

with process cyclone,

- (3) 10 feet diameter X 30 feet long (or equivalent capacity) rotary screens,
 - (2) 10 feet diameter X 30 feet long (or equivalent capacity) rotary blenders,
 - (1) 102 inch Continuous Mat forming machine,
 - (1) 8 feet wide X 24 feet long, 14 opening simultaneous closing platen press,
 - (1) panel edge spray booth,
 - (1) 2 head belt sander,
 - (1) 4 feet wide (or equivalent capacity) tongue and groove cutting machine,
 - (1) 8 feet wide X 24 feet long (or equivalent capacity) panel saw,
 - (3) multicyclones,
 - (1) electrostatic precipitator,
 - (6) reverse air cleaned fabric filters,
 - (2) high efficiency cyclones,
 - (3) wood fuel storage bins,
 - (3) green flake storage bins,
 - (2) dry flake storage bins,
 - (2) CAE Fuji-King debarking machines,
 - (2) tree-length flaking machines,
 - (1) 15,000 gallon above ground, thermal oil storage tank,
 - (3) 10,000 gallon above ground liquid storage tanks,
 - (1) 6,000 gallon above ground liquid storage tank,
 - (4) 1,000 gallon above ground liquid storage tanks,
 - (2) 500 gallon above ground liquid storage tanks,
 - (1) 350 gallon above ground liquid storage tank,
 - (2) 120 gallon above ground liquid storage tanks,
- and miscellaneous covered flight, drag chain, and covered belt conveyors.

b. Production Rates (see Appendix A, Table 1 for calculations)

Wood-fired energy system consumption rate:

- wood = 225,800 ton/yr; "Wood" is defined as both "on-site generated" and "purchased" (ie., from off-site). In each case, permit language will insure that no foreign materials which might emit toxic pollutants upon combustion are allowed.
- press vent cleanup (500 lb/wk; 13 ton/yr),
- spray booth water (2000 gal/wk; 104,000 gal/yr),
- waste resin and wax (1,200 lb/wk; 31.2

ton/yr)

- oily water for mobile equipment cleanup (150 gal/mon; 1800 gal/yr),
- Paper Products = 3.6 ton/yr; "Paper products" are defined as cardboard and office paper. (500 lb cardboard/mon and 100 lb office paper waste/mon)

Combined throughput rate of 3 dryers = 318,300 ton/yr

Powdered resin throughput rate = 11,459 ton/yr. This throughput is based on stack test information on which press emission calculations are based.

Facility production rate = $424.4 \times 10^6 \text{ ft}^2/\text{yr}$ on $3/8$ inch basis. This throughput is based on stack test information on which dryer emission calculations are based.

c. Proposed Production Schedule:

The maximum expected production operating schedule for the Brookneal facility will be 24 hours/day, 7 days/week and 52 weeks/year; with 8 hr/month allotted for scheduled maintenance. In addition, Georgia Pacific anticipates 2 percent unscheduled downtime. Therefore, the maximum expected annual operating hours are:

$$\begin{aligned} \text{Hr/yr} &= [8760 \text{ hr/yr} - (8 \text{ hr/month} \times 12 \text{ month/yr})] \\ &\times 0.98 = 8,488 \text{ hr/yr} \end{aligned}$$

The Form 7 shows the maximum production operating schedule for the facility as 24 hours/day, 7 days/week and 52 weeks/year, and the supporting calculations are based on this continuous (8,760 hr/yr) operation. Georgia Pacific has stated that this unrealistically high annual operating schedule was used so that the Brookneal facility could not be construed as a synthetic minor in regard to PSD applicability. As shown in Section IV.A.3 below, even at 8,760 hr/yr the facility does not exceed PSD thresholds.

Therefore, emission limits are based on the maximum expected annual operating hours which represent an annual utilization factor of approximately 96.9%. This value is said to be the facility manufacturing goal and is corroborated by the flake throughputs shown in the Form 7 as follows:

$$\begin{aligned} & (\text{max expected annual flake thruput}) / ((\text{max} \\ & \text{expected hourly thruput}) \times (8760 \text{ hr/yr})) = \\ & (318,300 \text{ ton/yr}) / ((37.5 \text{ ton/hr}) \times (8760)) = \\ & 96.9 \end{aligned}$$

C. Schedule of Project

1. Date Received Permit Application: 14 Jul 93
2. Proposed Construction Commencement Date: May 94
3. Proposed Start-up Date: October 95

III. Emissions Calculations

As shown in Appendix A, Table 2: Criteria Pollutants: Recommended Permit Limits Summary, criteria emissions result from five process categories and from fugitives. The first process category is "Drying". This category accounts for emissions generated in the drying of the flakes (and their reduction by the Energy System), and emissions generated in the Energy System itself. The "Forming" category considers emissions resulting from the forming of the mat into panels in the press. The third category, "Material Handling", accounts for the handling of dust from screening/classification operations and from sawing, sanding, trimming and finishing. The liquid storage category accounts for breathing and working losses of VOC from diesel and gasoline storage tanks. The fifth process category accounts for particulate emissions from the spray booths. Fugitive emissions from the wood yard are estimated using industrial paved road procedures.

The source total allowable emissions (including fugitives) are as follows:

	lb/hr	ton/yr
TSP	57.03	243.09
PM10	57.03	243.09
SO ₂	5.33	22.64
NO _x	48.30	205.00
CO	55.00	233.43
VOC	32.43	123.10
Lead	0.08	0.33

Detailed calculation of the data contained in Table 2 is shown in Appendix A, Tables 2.1 through 2.6 which are discussed individually below.

Drying Process

The estimated uncontrolled emissions of SO₂ and Lead are calculated based on AP-42 emission factors for waste wood combustion and are shown in Appendix A, Table 2.1. No additional emissions of these pollutants from either the drying or the pressing operations are anticipated. These uncontrolled emissions are below the Appendix R exemption levels for new sources.

The estimated emissions of PM, VOC, and CO from the dryer/Energy System are calculated based on vendor guaranteed emission factors as shown in Appendix A, Table 2.2. The vendor guarantee considers the Brookneal equipment arrangement to be more like a wood fired boiler than a conventional flake dryer with add-on controls and therefore emission estimates are stated in terms of lb/MMBTU. The validity of this approach is discussed in Section IV.D.5. below. The estimated emissions of NO_x from the dryer/Energy System are based on stack test data from Georgia Pacific's facilities at Skippers, Virginia, Russellville, South Carolina, and Prosperity, South Carolina.

The allowable emissions from the drying process are as follows:

	lb/hr	ton/yr
TSP	24.00	101.86
PM10	24.00	101.86
SO ₂	5.33	22.64
NO _x	48.00	203.72
CO	48.00	203.72
VOC	24.00	101.86
Lead	0.08	0.33

Forming Process

The estimated emissions of PM, VOC, CO and NO_x from the press are calculated based on stack test data from Georgia Pacific's Woodland, Maine OSB facility as shown in Appendix A, Table 2.3. Note that PM from Press includes both filterable and condensibles fractions. Press emissions are "controlled" by enhancing dispersion through the use of a 137.5 ft. tall, fan-powered stack.

The allowable emissions from the forming process are as follows:

		<u>lb/hr</u>	<u>ton/yr</u>
	TSP	15.00	63.66
	PM10	15.00	63.66
NO _x	0.30	1.27	
	CO	7.00	29.71
	VOC	5.00	21.22

Material Handling Processes

The estimated emissions of TSP and PM from the material handling processes are calculated based on the standard grain loading for fabric filters of 0.01 grain/DSCF as shown in Appendix A, Table 2.4. The cyclones are guaranteed by the vendor to meet the 0.01 grain/DSCF standard. A stack test will be required to verify the cyclone's performance.

The allowable emissions from the material handling processes are as follows:

	<u>lb/hr</u>	<u>ton/yr</u>
TSP	10.02	42.53
PM10	10.02	42.53

Spray Booth

The material used in the spray booth is an edge sealer which is a water-based product that does not contain any components which are on the current priority toxics list. Therefore, the only emission from the spray booth is particulate. The spray booth particulate emissions will be controlled by a water curtain. The booth will have two (2) stacks. As shown in Appendix A, Table 2.5, the allowable emissions from the spray booth are as follows:

	<u>lb/hr</u>	<u>ton/yr</u>
TSP	0.2	0.87
PM10	0.2	0.87

Liquid Storage

The liquid storage category accounts for breathing and working losses of VOC from diesel and gasoline storage tanks. The emissions from the gasoline tanks are calculated using the methods described in AP-42, Section 4.3 as shown in Appendix A, Table 6.

The allowable emissions from the tanks which store diesel fuel and gas are as follows:

	<u>lb/hr</u>	<u>ton/yr</u>
VOC	3.43	0.014

Fugitives

The facility roads and those portions of the log yard subject to vehicular traffic will be paved. The estimated fugitive emissions of PM from the Brookneal facility are calculated using industrial paved road procedures as shown in Appendix A, Table 2.6. Wood yard fugitive emissions will be controlled by covered storage of the fuel for the wood-fired Energy System. Any temporary open storage will be controlled by wet suppression. (A permanent wet suppression system installation is not required, but rather open storage will be wetted as required to meet the opacity standard for fugitives.)

The fugitive emissions are as follows:

	lb/hrton/yr
TSP	7.80 34.17
PM10	7.80 34.17

IV. Regulatory Review and Considerations

A. Criteria Pollutants

1. Appendix R Exemption Levels

a. The uncontrolled annual emission rates for SO₂ and lead from the Brookneal facility are 23.36 and 0.34 ton/yr, respectively. Each of these rates is below their current Appendix R exemption level for new sources (ie., SO₂ = 40 ton/yr and lead = 0.6 ton/yr).

b. The Brookneal facility has a backup thermal oil heater which is fired on natural gas or propane and is rated at 45 MMBTU/hr heat input. This heat input rating is below the current exemption threshold for fuel burning equipment using gaseous fuel (ie., 50 MMBTU/hr).

2. Nonattainment Review: not applicable

3. PSD Review

OSB manufacturing is not one of the 28 listed PSD source categories. Georgia Pacific submitted annual emissions based on continuous (ie., 8,760 hr/yr) operation with the stated purpose that the Brookneal facility could not be construed as a synthetic minor in regard to PSD applicability. However, as shown below, even at 8,760 hr/yr the facility does not exceed PSD thresholds. Therefore, synthetic minor status does not apply.

Pollutant	total allowable annual emissions (excluding fugitives) at 96.9% use	use factor	total allowable annual emissions (excluding fugitives) at 100% use
	[ton/yr] (A)	[decimal %] (B)	[ton/yr] (C) = A ÷ B
TSP	208.92	0.969	215.61
PM10	208.92	0.969	215.61
SO ₂	22.64	0.969	23.36
NO _x	205.00	0.969	211.56
CO	233.43	0.969	240.91
VOC (process)	123.08	0.969	127.02
VOC (tanks)	0.01	1	0.01
Lead	0.33	0.969	0.34

4. State Major: The Brookneal facility will have a potential to emit 100 tons or more per year of TSP, PM10, NO_x, CO, and VOC, and will therefore be subject to the requirements for new, major stationary sources as stated in § 120-08-01.

5. Minor Sources: Does not apply.

6. Model Results and Compare to NAAQS

In July, 1993, Georgia Pacific submitted an air quality impact analysis in support of a permit application to construct an OSB facility near Brookneal, Virginia. Prior to the July 1993 submittal, a modeling protocol was received for a PSD modeling analysis. At that time, proposed emissions of CO and VOCs exceeded the 250 tons per year threshold.

DEQ, Office of Permit Evaluation (OPE) reviewed the PSD protocol after discussions with Georgia Pacific representatives. Remaining concerns were outlined in a letter sent to Georgia Pacific in April, 1993. Subsequently, additional control equipment was proposed which would reduce the emissions of CO and VOCs to levels below the PSD significant emission thresholds.

The permit application and air quality compliance demonstration thus no longer fell under PSD regulations and guidance. Consequently, modeling was necessary only to demonstrate compliance with the National Ambient Air Quality Standards (NAAQS) for criteria pollutants and compliance with the Virginia Significant Ambient Air Concentrations (SAAC) for toxic pollutants.

Based upon a review of the air quality analysis as well as extensive confirmation modeling, DEQ has determined that Georgia Pacific adhered to all applicable state requirements for performing an air quality impact analysis. The confirmation analyses performed by DEQ, support the conclusion reached by Georgia Pacific that the proposed facility would not cause or contribute significantly to any violation of the NAAQS for criteria pollutants and the facility would not cause ambient concentrations in excess of the Virginia SAAC for toxic pollutants. The major elements of the DEQ review are included in Appendix B.

Note that facility emission rates have been adjusted since the modelling was submitted to OPE but that none of the adjustments changes their conclusion.

B. Toxic Pollutants

1. Apply Appendix R Exemption Levels

The spectrum of toxic pollutants anticipated from the dryer/Energy System was based on AP-42 data contained in Section 1.6, Wood Waste Combustion in Boilers. Aside from formaldehyde and phenol, very little data concerning toxic pollutant emissions associated with press operation is available. Of the toxic pollutants listed above, those which are on the current Virginia priority toxics list were analyzed. Emission factors were taken from the AP-42 data unless site specific data was available. For the dryer/Energy System, formaldehyde, acetaldehyde, acetone, acrolein, and butyraldehyde emissions data from the June 1991 stack test data from Georgia Pacific's Skippers, Virginia OSB facility was available and was used. For the press, formaldehyde and phenol data from the June 1992 stack test data of Georgia Pacific's Woodland, Maine OSB facility was available and was used.

As shown in Appendix A, Table 3, uncontrolled emissions of barium, chlorine, cobalt, manganese, vanadium, phenol, acrolein, and formaldehyde were found to be above the current exemption levels as contained in Appendix R. Note that phenol and formaldehyde are

emitted from both the Energy System and the press. Formaldehyde limits are set for both emissions units, but phenol limits are only set for the press since the potential to emit from the dryers is only 0.005 tons per year as compared to the Rule 5-3 exemption level of 2.755 tons per year (see Appendix A, Table 4).

The Energy System has the potential of burning several different fuels. Specifically, the Energy System will be used to burn waste products including press vent cleanup wastes, spray booth blowdown water, waste resin and wax, oily water from the mobile equipment cleanup area and paper products. The amount of waste fuel utilized is very small compared with the tonnage of wood burned in the Energy System. Therefore, wastes fuels are expected to have a minimal impact on the criteria pollutant emissions. Laboratory analyses of the spray sludge, waste resin and wax (sampled as blend area cleanup water) and oily water from the Skippers plant were submitted and compared to the current Virginia priority toxics list. Those materials found on the toxics list were compared to their respective Appendix R exemption levels and all were found to be exempt.

Plychlorinated dibenzo-p-dioxins and polychlorinated dibenzo-p-furans are on both the AP-42 and Virginia priority toxics lists. Trace amounts of dibenzo furans are also contained in the waste resin and wax, the spray booth blowdown water, and the oily water wastes to be combusted in the Energy System. These compounds do not have TLVs and therefore the Appendix R and Rule 5-3 exemptions equations are not applicable. However, the boilerplate procedures for Incinerators, 20 Jul 92 revision, shows an allowable maximum annual ambient concentration of $6.06 \times 10^{-8} \mu\text{g}/\text{m}^3$ for dioxins and furans. Using the highest average uncontrolled emission factor from AP-42 for any of the dioxins or furans and the sum of the estimated dibenzo furan from the three wastes yields a predicted maximum concentration below the maximum allowable annual value. Therefore, no further analysis of these compounds is required.

2. NESHAPS: OSB facilities are not among the source categories to which current NESHAPS are applicable.

3. Rule 5-3: As shown in Appendix A, Table 4, allowable emissions of barium, chlorine, cobalt,

manganese, vanadium, acrolein, phenol, and formaldehyde were found to be above the current exemption levels as contained in Rule 5-3. Therefore, these toxic emissions were modelled and compared to their respective SAACs.

4. Model Results and Compare to SAAC:

For a discussion of the modelling see Section IV.A.6 above. Emission limits will not be required for barium, chlorine, cobalt, manganese, vanadium, nor acrolein because, based on modeling results, none has an impact as large as 20% of their SAAC.

C. Control Technology Standards and Analysis

1. LAER: Does not apply.
2. NESHAPS: Does not apply.
3. RACT: Does not apply.
4. MACT: Does not apply.
5. BACT:

Four BACT determinations regarding the Brookneal facility warrant discussion. These are Dryer emissions, press control, the use of cyclones for particulate control, and the efficiency applied to the spray booth water curtains.

a. Dryer Emissions

The Brookneal facility represents one of a new generation of OSB facilities in regard to air pollution prevention/controls. The previous generation of facilities employed Wet Electrostatic Precipitators (WESPs) alone as BACT for the Energy System/dryer exhaust stream and did not control emission from the press vents at all. Georgia Pacific's Skippers plant is one of the previous generation and EPA has reported on stack testing at Skippers in the report "Oriented Strand Board Emission Test Report" EMB Report 91-WAF-01, April 1992. Also, as previously stated, the vendor guarantee considers the Brookneal equipment arrangement to be more like a wood fired boiler than a conventional flake dryer with add-on controls and therefore emission estimates are stated in terms of lb/MMBTU. Therefore, in order to determine if the Brookneal's dryer "control" strategy is equal to or better than relevant BACT, the Brookneal emission factors were compared to both AP-42 factors for wood fired boilers, and to Skippers stack test data.

As shown below, when normalized to common unit basis, the Brookneal emission factors meet or exceed the related factors except in two cases (see Appendix

A, Table 5 for detailed calculation). Discussion of each case follows the table.

Pollutant	AP-42 factor	Skippers factor	Brookneal factor
	[lb/MMBTU]	[lb/MMBTU]	[lb/MMBTU]
NO _x	0.17	0.17	0.20
CO	0.73	0.60	0.20
VOC	0.02	0.94	0.10
PM	0.19	0.10	0.10

NO_x factor

The first case is the Brookneal NO_x factor versus both the AP-42 factor and the Skippers factor. While the Brookneal facility will use the industry standard (ie., control of combustion air) to limit NO_x production in its Energy System's burners, the equipment arrangement has the result that more wood must be burned per ton of flakes dried. This is because the combustion air is not simply ambient air as in a conventional Energy System/dryer arrangement but is ambient air plus the large amount of moisture driven off of the flakes in the dryer. Since the source of NO_x at the Energy System's operating temperature is primarily fuel bound nitrogen, more fuel results in more NO_x. Note that while it is true that the Brookneal arrangement results in additional NO_x emissions of approximately 31 tons/year, the arrangement allows the reduction of VOCs in excess of 855 tons/year (compared to Skipper's controlled values).

Notwithstanding the benefit inherent in the NO_x:VOC ratio, currently there are no OSB facilities in operation nor any being planned which incorporate add-on controls for NO_x. If add-on controls were to be considered, Selective Catalytic Reduction (SCR) and Selective Non-Catalytic Reduction (SNCR) are the current technologies which have control potential. SCR is technically infeasible as add-on control. To understand why, consider (2) possible locations for an SCR unit. If the SCR unit is placed upstream of the particulate control devices, the catalytic beds would tend to clog. If the unit is placed downstream of the particulate control devices (which are themselves downstream of the recuperative heat exchangers) the

exhaust temperature of 400 °F is below the effective operating ranges of 600 to 1000 °F for SCR. SNCR is technically feasible but at the low concentration of NO_x expected in the exhaust stream is only 50 to 60 percent efficient even under otherwise ideal conditions. At 60 percent control efficiency the annualized cost of add-on SNCR would be prohibitive at an estimated minimum of \$5,130/ton_{removed}. (See Appendix A, Table 7 for cost effectiveness calculation.)

Therefore, combustion air control is considered BACT for NO_x. NO_x emission levels will be verified by stack testing.

VOC factor

The second case is the Brookneal VOC factor versus the AP-42 factor. Recalling that the combustion air is the VOC laden exhaust air from the dryers rather than ambient air as considered in the AP-42 wood fired boiler factor, an increase in the VOC emission factor is reasonable. Since the equipment arrangement at Brookneal allows a reduction of VOCs in excess of 855 ton/year as compared to the previous generation of OSB facility (Skipper's) controlled values, the arrangement is considered BACT for VOC. VOC emission levels will be verified by stack testing.

Note that the majority of the hydrocarbons volatilized in the drying process are associated with the turpentine component of the wood flakes and are broadly classified as terpenes. Terpenes have a typical ignition temperature well below 1000 °F. Therefore, the minimum Energy System temperature of 1400 °F should provide excellent VOC destruction.

b. Press Control

The previous generation of OSB plants typically allow press emissions to exit the facility by natural draft through roof top opening. The emissions from the Brookneal press are captured and exhausted through a 137.5 ft fan-powered stack. Two control alternatives and two control additions to the fan-powered stack were evaluated as candidates for BACT.

The first control alternative considered was to use the press exhaust as an additional source of combustion air for the Energy System. Even if the exhaust air volume could be reduced to 100,000 cfm (rather than the 225,000 cfm shown in the Form 7), the

increase would (1) significantly increase the fuel usage (and therefore the emissions) of the Energy System and (2) would necessitate substantial redesign of the Energy System. Also, in the planned equipment arrangement (which is based on manufacturing efficiency), the press and Energy System are physically approximately 800 ft apart so that capital and operating costs of transporting the press exhaust would be significant. Therefore, this alternative was eliminated.

The second control alternative considered was the use of Regenerative Thermal Oxidation (RTO) units as add-on control for the press CO and VOC emissions. Georgia Pacific is testing a pilot RTO unit at Skippers, and reports that the unit is experiencing problems with the reliability of valve operation. Also, Georgia Pacific (as well as RTO vendors) is concerned about the particulate fouling of the unit's heat exchange media. (Upstream particulate control would be an additional cost not included in the following cost effectiveness estimate.) Even if the press exhaust air volume could be reduced to 80,000 cfm, the annualized cost would be in excess of \$10,000/ton_{CO removed}. (For the Press, the CO emission rate is greater than the VOC rate.) Therefore, this alternative was eliminated.

The pollutant with the highest emission rate from the press is PM, and therefore, two filtration type approaches were considered as additions to the fan-powered stack. Based on the Woodland stack test data, approximately 43 percent of the particulate emissions are filterable (i.e., 0.13/0.3 lb/1000 ft²); the remaining 57 percent are condensibles. The first filtration approach considered both a condensing section and a mechanical filter section. Based on vendor quoted cost data (capital and operating), and Georgia Pacific tested control efficiency, the annualized cost would be in excess of \$4,500/ton. The second PM control approach considered a simple roll type mechanical filter to control the filterable fraction. Based on vendor budget quotes and control efficiency, and estimated operating costs, the annualized cost would be in excess of \$7,500/ton. Therefore, both filtration approaches were eliminated from consideration as BACT.

The fan-powered stack arrangement is considered BACT for the press. PM, VOC, phenol and formaldehyde

emission levels will be verified by stack testing.

c. Material Handling Cyclones

The particulate control of low pressure material handling systems is by fabric filters which is considered BACT for woodworking facilities.

The particulate control of the high pressure material handling systems (ie., dense phase transport systems) is by high efficiency cyclones. Georgia Pacific has submitted stack test data from two sawdust handling systems equipped with similar cyclones. The data indicates that the proposed cyclones meet or exceed the 0.01 grains/DSCF criteria accepted for fabric filters. Therefore, installation of the proposed high efficiency cyclones will be included in the permit and stack testing will be required to insure that they meet or exceed BACT performance.

d. Spray Booth Water Curtains

The particulate control of the Spray booth is proposed as water curtains. Georgia Pacific has submitted stack test data on the same equipment and the data shows a control efficiency of 99.7 plus percent. Particulate emissions estimates use a control efficiency of 98%. Water curtains at 98% are considered BACT.

6. NSPS

a. Subpart D:

Per OAQPS memorandum of November 17, 1992, Applicability of NSPS Subparts Db/Dc to Process Dryers (see Attachment 1), normally process dryers do not fit the intended definition of Steam Generating Units (SGU) as contained in Db and Dc since there is an intermixing of the combustion gases and the heat transfer medium. However, as configured in the Wellons Energy System there is a physical barrier between the two gas streams and therefore, in Georgia Pacific's case, the flake dryers do fit the definition of SGU and are affected facilities. Since the heat input rating of the Wellons system is 240×10^6 BTU/hr, NSPS Subpart Db is applicable.

The Energy System as configured also includes a heat exchanger used to heat thermal oil for the press operation. This 45×10^6 BTU/hr thermal oil

heater does fit the definition of a SGU and therefore, NSPS Subpart Dc would be applicable even if Db were not.

The Subpart Db requirements are incorporated in the permit and include monitoring, recordkeeping and reporting, and quantitative emission limits.

b. Subpart E, Incinerators, does not apply since the charging rate of material to be disposed of is less than 50 ton/day.

c. Subpart Kb, Volatile Organic Liquid (VOL) Storage Vessels, affects all VOL storage tanks constructed after 7/23/84 that have a 10,569 gallon storage capacity or larger. Tanks with a capacity of 19,817 gallons or less are exempt from all Kb standards except recordkeeping and reporting. GP proposes to install 1 tank which is subject to the recordkeeping and reporting requirements of Kb; the remaining tanks are exempt.

7. Modeling Parameters: (The major elements of the DEQ modeling review are included in Appendix B.)

a. Location and Dimensions of Structures:

A site plan is included in the Form 7 in Appendix A (see Drawing C003.02, Rev 1). The drawing "Environmental Plant Layout" (Drawing M002.02, Rev 1) and the drawing "Pneumatic and Fuel Systems Flow Diagram" (Drawing 342-168-D00201) show the intended equipment for the facility and are included in confidential file for registration number 30903.

b. Stack Parameters

(1) Energy System:

Height	135 ft
Diameter	8 ft
Location	674.7 km E4110.4 km N
Air Velocity	4,476 fpm
Temperature	400 °F

(2) Press Vent:

Height	137.5 ft
Diameter	8.5 ft
Location	674.8 km E4110.2 km N

Air Velocity 3,965 fpm
Temperature 100 °F

c. Terrain Discussions:

Terrain which is higher than the lowest of the Georgia-Pacific stacks, exists in the surrounding area. Therefore, a complex terrain analysis was necessary.

d. Meteorological Data and Model Used:

EPA's ISCST2 model was used for the simple terrain air quality modeling analysis. The meteorological data consisted of one year of pre-processed data collected in 1989 by Old Dominion Electric Cooperative (ODEC) near Clover, Virginia.

Based upon the arguments presented by Georgia Pacific, DEQ determined that the ODEC data would adequately represent meteorological conditions at the proposed facility.

The CTSCREEN model was used for the complex terrain analysis. CTSCREEN is a screening model with worst case meteorological conditions "built-in", so no additional meteorological data was necessary for use in the modeling.

e. Other Modeling Considerations:

An alternative load analysis was not required since stack exhaust temperatures and flow volumes are constant for all proposed plant processes except for the Energy System. For the Energy System, testing at another Georgia Pacific OSB mill shows that the temperature and flow are essentially constant.

V. Compliance Determination

A. Stack Tests

Stack testing of the Energy System, the press, and the cyclones will be required. The Energy System will be tested for particulate matter, NO_x, CO, VOC, and formaldehyde.

The press will be stack tested for total particulate matter, VOC, formaldehyde and phenol. The cyclones will be stack tested for TSP and PM10.

Three additional issues regarding stack testing warrant further discussion.

The first issue has to do with timing of the stack testing. The Brookneal facility is subject to NSPS subpart Db and therefore, stack testing must occur within 180 days of startup. (Startup is taken to mean the date on which the facility produces its first marketable product.) However, industry experience with new OSB facilities indicates that 12 months are required to tune the facility due to annual variations in the composition of the logs which are feed stock for the process. Therefore, it is recommended that the required stack tests be performed on two dates; the initial "Performance Test" to be within the required 180 day window and the following "Stack Test" to be within 1 year of startup.

The second issue has to do with use of the testing results to validate performance of the control used at Brookneal. As previously stated, this facility will be the first OSB facility to use the Energy System as "control" for the dryer. Because it is an innovative approach, vendor guarantees of their equipment's performance are stated in the Form 7 appendices to be conservative. However, should the equipment performance be better than guaranteed, it is reasonable to adjust the permitted emissions limits to reflect this level of control. Therefore, the permit includes provisions to administratively adjust the emission limits to 120 percent of the stack test results. In no case shall the adjusted limits exceed the original permit limits.

The third issue has to do with the position of the blend chamber control damper during testing. As previously stated, this control damper will modulate to allow from 0 to 20% flow through the blend chamber for energy conservation reasons. Assuming more complete destruction of VOC and CO in the fuel-cell/upper-combustion-zone route (higher temperature and longer time) and recalling that original permitted limits may be adjusted downward based on the results of the stack test, damper position becomes an issue. Forcing the damper to the maximum blend chamber flow position, should result in more fuel being consumed than is required and therefore, emissions should go up. Adjusted permit limits based on such data would overestimate potential emissions. Conversely, forcing the damper to the minimum blend chamber flow position, routes the entire dryer exhaust flow through the path with the more complete destruction and therefore emissions should go down. This may lead to an

underestimated potential to emit and could lead to failure of future testing or monitoring requirements.

Since arbitrarily fixing the damper position would have a direct impact on stack test results and since the adjusted permitted limits will be 120% of the test results, it is recommended that damper be allowed to modulate during testing.

- B. VEE's: Visible emissions from fabric filters and cyclones controlling material handling emissions will be limited to five percent (5%) opacity. Visible emissions from the Energy System, the press stack, and fugitive emission points will be limited to ten percent (10%) opacity.
- C. CEMS - Continuous Emission Monitoring System: NSPS Subpart Db requires an opacity CEM for wood fired installations.
- D. Record Keeping Requirements - Data Collection and Reporting
 - 1. Daily, monthly and annual records of the Energy System consumption rate.
 - 2. Monthly and annual records of the throughput of the following will be required:
 - Dryer throughput rate,
 - Powdered resin thruput rate, and
 - Facility OSB production rate on 3/8 inch basis

VI. Public Participation

- A. Public Hearing Notice: See Attachment 2
- B. Public Hearing Opening Statement: See Attachment 3
- C. Public Briefing: The public briefing will be held at the same location as the public hearing, starting one half (1/2) hour before the start of the public hearing.
- D. Virginia Register Notice: See Attachment 4

VII. Notification of Other Government Agencies (as applicable):

- A. Federal Agencies
 - 1. EPA: The regional office of EPA will be notified of the public hearing at the beginning of the

public comment period.

2. National Park Service (Federal Land Manager):
The Brookneal site is greater than 100 km (114.5 km) from the Shenandoah National Park and is not subject to PSD review. Therefore there is no requirement in the Memorandum of Understanding (MOU) between the Park Service and DEQ/Air to contact the Park Service. (Note: As originally described in meetings with Georgia Pacific, the Brookneal plant was subject to PSD and, as required by the MOU, the Park Service was made aware of the pending application. When the permit application was received showing emission levels below PSD thresholds the Park Service was sent a letter changing the status.)
3. Forest Service (Federal Land Manager):
The Brookneal plant is a Virginia Major source and is less than 100 km (58.6 km) from the James River Face Wilderness Area. Therefore, the Forest Service was sent a copy of the permit application and accompanying data in accordance with the MOU between the Forest Service and DEQ/Air.

In their acknowledgement of receipt letter, the Forest service said they would not require all of the documentation on this permit, but would like a copy of the final permit.

The Forest Service will be notified of the public hearing at the beginning of the public comment period.

VIII. Pollution Prevention: See Section II.B.1

IX. Documents List

1. Georgia-Pacific Corporation's permit application, dated July 13, 1993 and signed by Lawrence P. E. Otwell.
2. Georgia-Pacific Corporation's letter, dated July 22, 1993 and signed by A. T. Johnson regarding justification of items marked confidential in the permit application.
3. Trinity Consultants Incorporated's letter, dated August 13, 1993 and signed by D. Andrew Owens

responding to DEQ/LAO requests for various clarifications of the permit application.

4. Trinity Consultants Incorporated's letter, dated August 31, 1993 and signed by D. Andrew Owens responding to DEQ/LAO requests for various clarifications of the permit application.
5. Trinity Consultants Incorporated's letter, dated September 9, 1993 and signed by D. Andrew Owens providing all of the additional information requested in DEQ/LAO's "30 day" letter, dated August 12, 1993, except for the Plant Process flow diagram/schematic and the Process and Instrumentation Diagrams (P&ID) of the Wellons Energy System.
6. Georgia-Pacific Corporation's letter, dated September 16, 1993 and signed by A. T. Johnson providing the Plant Process flow diagram/schematic and the Process and Instrumentation Diagrams (P&ID) of the Wellons Energy System. This information requested to be held confidential.
7. Trinity Consultants Incorporated's letter, dated October 27, 1993 and signed by D. Andrew Owens providing revised BACT analysis.
8. Trinity Consultants Incorporated's fax, received November 30, 1993 and signed by D. Andrew Owens providing fabric filter guarantee documentation and additional Skippers stack test data.
9. Trinity Consultants Incorporated's fax, received November 30, 1993 and signed by D. Andrew Owens providing water curtain guarantee documentation.
10. Georgia-Pacific Corporation's letter, dated December 7, 1993 and signed by Russell Harms providing revised press PM emission data.
11. Georgia-Pacific Corporation's letter, dated December 20, 1993 and signed by Russell Harms providing justification for dryer PM and NO_x emission factors.
12. Georgia-Pacific Corporation's letter, dated January 13, 1994 and signed by Russell Harms providing miscellaneous data including roll filter

vendor literature, condensing/mechanical filter
vendor literature.

13. Georgia-Pacific Corporation's letter, dated January 25, 1994 and signed by Russell Harms providing revised roll filter emission calculation and waste analyses for three waste streams.
14. Georgia-Pacific Corporation's letter, dated January 26, 1994 and signed by Russell Harms providing revised residence time estimates.
15. Georgia-Pacific Corporation's letter, dated March 14, 1994, and signed by Russell Harms providing comments on the draft permit conditions, revised Form 7 pages, revised application appendix pages, and wood-fired boiler stack test documentation.

X. Recommendations

It is recommended that the permit be approved.

1. Prepared By: _____
2. Reviewed By: _____
3. Approved By: _____

Appendix A Calculations
Appendix B Modeling Report
Attachments

NEW SOURCE PERFORMANCE STANDARDS PERMIT
STATIONARY SOURCE PERMIT TO CONSTRUCT AND OPERATE

This permit supersedes your permit dated September 17, 1997, as amended April 10, 1998

In compliance with the Federal Clean Air Act and the Commonwealth of Virginia Regulations for the Control and Abatement of Air Pollution,

Georgia-Pacific Corporation
Building Products Division
P.O. Box 105605
Atlanta, Georgia 30348

Registration No. 30903
County-Plant No. 031-0163

is authorized to construct and operate an

Oriented Strandboard (OSB) Facility

located

10 miles north of Brookneal, Virginia at the intersection of Highway 501 and Route 650 in Campbell County, Virginia

in accordance with the Conditions of this permit.

Approved on December 3, 1999.

T.L. Henderson
Regional Director

Permit consists of 17 pages.
Permit Conditions 1 to 54.
Source Testing Report Format.

PERMIT CONDITIONS - the regulatory reference and authority for each condition is listed in parentheses () after each condition.

1. Except as specified in this permit, the permitted facility is to be constructed and operated as represented in the permit application dated July 13, 1993, including amendment sheets dated July 22, August 13, August 31, September 9, September 16, October 27, November 30, December 7, and December 20, 1993, January 13, January 26, and March 14, 1994, December 19, 1995, March 22, and October 28, 1996, April 21 and September 10, 1997, and July 15, October 19, and November 30, 1999. Any changes in the permit application specifications or any existing facilities which alter the impact of the facility on air quality may require a permit. Failure to obtain such a permit prior to construction may result in enforcement action.
(9 VAC 5-50-390 and 9 VAC.5-80-10 K4)
2. Equipment to be constructed consists of:
 - a 424.4×10^6 ft²/yr OSB manufacturing facility. The square footage is based on a panel thickness of 3/8 inches.

The major equipment to be included at the Brookneal OSB manufacturing facility includes:

- (1) 240 x 10⁶ BTU/hr wood-fired Energy System, including a 45 x 10⁶ BTU/hr thermal oil heat exchanger,
- (1) 45 x 10⁶ BTU/hr gas-fired, backup thermal oil heater,
- (3) 13 feet diameter X 60 feet long (or equivalent capacity) rotary drum flake dryers each complete with process cyclone,
- (3) 10 feet diameter X 30 feet long (or equivalent capacity) rotary screens,
- (2) 10 feet diameter X 30 feet long (or equivalent capacity) rotary blenders,
- (1) 102 inch Continuous Mat forming machine,
- (1) 8 feet wide X 24 feet long, 14 opening simultaneous closing platen press,
- (1) panel edge spray booth,
- (1) 2 head belt sander,

- (1) 4 feet wide (or equivalent capacity) tongue and groove cutting machine,
- (1) 8 feet wide X 24 feet long (or equivalent capacity) panel saw,
- (1) Regenerative Thermal Oxidizer, with a Thermal Catalytic Oxidizer option (RTO/TCO)
- (3) multicyclones,
- (1) electrostatic precipitator,
- (6) reverse air cleaned fabric filters,
- (2) high efficiency cyclones
- (3) wood fuel storage bins
- (3) green flake storage bins
- (2) dry flake storage bins
- (2) CAE Fuji-King debarking machines
- (2) tree-length flaking machines
- (1) 15,000 gallon above ground, thermal oil storage tank,

- (3) 10,000 gallon above ground liquid storage tanks,
 - (1) 6,000 gallon above ground liquid storage tank,
 - (4) 1,000 gallon above ground liquid storage tanks,
 - (2) 500 gallon above ground liquid storage tanks,
 - (1) 350 gallon above ground liquid storage tank,
 - (2) 120 gallon above ground liquid storage tanks,
- and miscellaneous covered flight, drag chain, and covered belt conveyors.
(9 VAC 5-80-10)
3. Carbon monoxide (CO), volatile organic compounds (VOC), and formaldehyde emissions from the flake dryers shall be controlled by the Energy System. The "Energy System" is defined as having two (2) sections. The "heat producing section" is defined as the four (4) fuel cells and the upper combustion zone. The "energy conservation section" is defined as the blend chamber and the downstream ductwork ending at the inlet to the first primary air heater. The Energy System shall be provided with adequate access for inspection. The energy conservation section of the Energy System shall be equipped with a device for the continuous measurement of the temperature at the inlet to the first primary air heater.
(9 VAC 5-80-10 H and 9 VAC 5-50-260)
4. Particulate emissions from the Energy System shall be controlled by three (3) multicyclones connected in parallel and followed by an Electrostatic Precipitator (ESP). Each multicyclone, and the ESP shall be provided with adequate access for inspection. An annual inspection of all internal and external components of each multicyclone shall be conducted by the permittee to insure structural integrity. Each multicyclone shall be equipped with a device to continuously measure differential pressure drop across the multicyclone. The ESP shall be equipped with a device for the continuous measurement of primary and secondary current and voltage (by field) across the ESP.
(9 VAC 5-80-10 H and 9 VAC 5-50-260)
5. The minimum combustion temperature in the Energy System shall be maintained at 1,400^o F when any dryer is processing flakes. The exhaust gas shall have a minimum one (1) second retention time. The maximum exhaust gas flow in the energy conservation section shall be 389,340 acfm (actual cubic feet per minute) at 1,400^o F. The energy conservation section shall be constructed so as to allow for flow rate testing and monitoring upon reasonable notice at any time, using appropriate methods. Test ports shall be provided at the appropriate locations.
(9 VAC 5-80-10 H)
6. Emissions from the press shall be captured by a Permanent Total Enclosure, and particulate and VOC emissions from the press shall be controlled by a Regenerative Thermal Oxidizer with a Thermal Catalytic Oxidizer option. For the purposes of this permit, the term "RTO" refers to operation of the control device in the non-catalytic mode, the term "TCO" refers to operation of the same control device in the catalytic mode, and the term "RTO/TCO" refers to the control device regardless of mode

of operation. The RTO/TCO shall be provided with adequate access for inspection. The RTO/TCO shall be equipped with a device to continuously measure and record the temperature in the combustion chamber. The RTO/TCO shall be equipped with a device to continuously measure the differential pressure drop across the RTO/TCO. Each measurement and recording device shall be installed in an accessible location and shall be maintained by the permittee such that it is in proper working order at all times.

(9 VAC 5-80-10 H)

7. The minimum combustion chamber temperature for the RTO shall be maintained at 1500 °F when the press is in operation. The RTO minimum combustion chamber temperature shall be an hourly average, calculated on a 15 minute rolling basis.

The minimum combustion chamber temperature for the TCO shall be maintained at 900 °F when the press is in operation. The TCO minimum combustion chamber temperature shall be an hourly average, calculated on a 15 minute rolling basis.

The exhaust gas from the press shall have a minimum one (1) second retention time at or above the applicable minimum combustion chamber temperature for the RTO/TCO. (9 VAC 5-80-10 H)

8. Particulate emissions from the low pressure material handling systems, defined as system numbers 6800, 6900, 8900, and 9500, shall be controlled by fabric filters. The fabric filters shall be provided with adequate access for inspection. The fabric filter shall be equipped with a device to continuously measure the differential pressure drop across the fabric filter. The device shall be installed in an accessible location and shall be maintained by the permittee such that it is in proper working order at all times.

(9 VAC 5-80-10 H and 9 VAC 5-50-260)

9. Particulate emissions from the high pressure material handling systems, defined as system numbers 8950 and 9600, shall be controlled by cyclones with a minimum design efficiency of 99.9 percent. The cyclones shall be provided with adequate access for inspection.

(9 VAC 5-80-10 H and 9 VAC 5-50-260)

10. Particulate emissions from the spray booth shall be controlled by a water curtain, filter collectors, or DEQ approved equivalent. The control device shall be provided with adequate access for inspection.

(9 VAC 5-80-10 H and 9 VAC 5-50-260)

11. Reasonable precautions to prevent particulate matter from becoming airborne as a result of vehicular traffic shall be taken.

(9 VAC 5-50-90)

12. Fugitive particulate emissions from open storage of wood materials shall be controlled by wet suppression when control is necessary to insure compliance with condition 43.
(9 VAC 5-80-10 H and 9 VAC 5-50-260)
13. The approved fuels for the Energy System are on-site generated wood, purchased wood, and on-site generated wastes. "On-site generated wood" is defined as wood feed stock, bark, resinated and unresinated saw dusts, sander dust, and other wood wastes capable of being hogged. This definition does not include wood contaminated with paints, plastics, finishing material or chemical treatments other than facility process resins, waxes, and edge sealers. "Purchased wood" is defined as clean wood and wood wastes which do not contain chemical treatments nor have affixed thereto paint and/or finishing materials or paper or plastic laminates or other foreign materials which might emit toxic air pollutants when burned. "On-site generated wastes" are defined as press vent cleanup wastes, paint solids collected by the spray booth water curtain, waste resin and wax, oily water, paper products, and hydraulic oil wastes. "Oily water" is defined as oil from the mobile equipment wash water which is collected and separated in the area's oil/water separator. "Paper products" are defined as cardboard and office paper. A change in the fuels may require a permit to modify and operate.
(9 VAC 5-80-10)
14. The approved fuels for the backup thermal oil heater are natural gas and propane. A change in the fuel may require a permit to modify and operate.
(9 VAC 5-80-10)
15. The permitted facility shall be constructed so as to allow for emissions testing and monitoring upon reasonable notice at any time, using appropriate methods. Test ports shall be provided at the appropriate locations.
(9 VAC 5-50-30 F)
16. The Energy System shall consume no more than 225,800 tons per year of wood, 13 tons per year of press vent cleanup wastes, 44 tons per year of paint solids collected by the spray booth water curtain, 31.2 tons per year of waste resin and wax, 1,800 gallons per year of oily water, 3.6 tons per year of paper products, and 35 tons per year of hydraulic oil wastes each calculated monthly as the sum of each consecutive 12 month period.
(9 VAC 5-170-160 and 9 VAC 5-80-10 H)
17. Except as specified in this permit, the Energy System is to be operated in compliance with Federal emissions requirements under 40 CFR 60, Subpart Db.
(9 VAC 5-170-160 and 9 VAC 5-50-410)
18. Except as specified in this permit, the thermal oil storage tank is to be operated in compliance with Federal emissions requirements under 40 CFR 60, Subpart Kb.
(9 VAC 5-170-160 and 9 VAC 5-50-410)

19. NOT USED
20. The annual throughput of powdered resin shall not exceed 11,459 tons per year, calculated monthly as the sum of each consecutive 12 month period.
(9 VAC 5-170-160 and 9 VAC 5-80-10 H)
21. The annual production of finished Oriented Strandboard shall not exceed 424.4×10^6 square feet per year, calculated monthly as the sum of each consecutive 12 month period. The square footage is based on a panel thickness of 3/8 inches.
(9 VAC 5-170-160 and 9 VAC 5-80-10 H)
22. Initial performance tests shall be conducted for particulate matter, volatile organic compounds (VOC), phenol, and formaldehyde from the press when controlled by the RTO to determine compliance with the emission limits contained in condition 36. The tests shall be performed, and demonstrate compliance not later than December 31, 1997. Tests shall be conducted and reported and data reduced as set forth in 9 VAC 5-50-30 of State Regulations, and the test methods and procedures contained in each applicable section or subpart listed in 9 VAC 5-50-410. The details of the tests are to be arranged with the Lynchburg Satellite Office. The permittee shall submit a test protocol at least thirty (30) days prior to testing. Two (2) copies of the test results shall be submitted to the Lynchburg Satellite Office within 45 days after test completion and shall conform to the test report format enclosed with this permit.
(9 VAC 5-50-30 and 9 VAC 5-80-10 J)
23. Initial performance tests shall be conducted for particulate matter, volatile organic compounds (VOC), phenol, and formaldehyde from the press when controlled by the TCO to determine compliance with the emission limits contained in condition 36. The tests shall be performed, and demonstrate compliance not later than December 31, 1997. In the event that the initial catalyst installation occurs after December 31, 1997, the tests shall be performed and demonstrate compliance within 60 days after the installation of the catalyst. Tests shall be conducted and reported and data reduced as set forth in 9 VAC 5-50-30 of State Regulations, and the test methods and procedures contained in each applicable section or subpart listed in 9 VAC 5-50-410. The details of the tests are to be arranged with the Lynchburg Satellite Office. The permittee shall submit a test protocol at least thirty (30) days prior to testing. Two (2) copies of the test results shall be submitted to the Lynchburg Satellite Office within 45 days after test completion and shall conform to the test report format enclosed with this permit.
(9 VAC 5-50-30 and 9 VAC 5-80-10 J)
24. Periodic activity tests shall be conducted on the TCO catalyst to determine the on-going activity level in terms of percent destruction of VOC. The baseline catalytic activity shall be determined by activity testing a sample of new, unused catalytic saddles of the same type as installed at Brookneal. The

periodic activity test requirement shall commence upon completion of the initial TCO performance test, specified in condition 23, and shall remain in effect so long as the oxidizer is operated as a catalytic unit. Unless otherwise approved in writing by the DEQ, the interval for these periodic activity tests shall not exceed 12 months of TCO operation, calculated from the month following the most

recent valid periodic activity test. Two (2) copies of the test results shall be submitted to the Lynchburg Satellite Office within 45 days after test completion and shall conform to the test report format enclosed with this permit.

(9 VAC 5-80-10 H)

25. Initial performance tests shall be conducted for particulate matter from the system number 8950 cyclone and from the system number 9600 cyclone to determine compliance with the emission limits contained in conditions 38 and 42. The tests shall be performed, and demonstrate compliance, within 60 days after achieving the maximum production rate but in no event later than 180 days after start-up of the permitted facility. Tests shall be conducted and reported and data reduced as set forth in 9 VAC 5-50-30 of State Regulations, and the test methods and procedures contained in each applicable section or subpart listed in 9 VAC 5-50-410. The details of the tests are to be arranged with the Lynchburg Satellite Office. The permittee shall submit a test protocol at least thirty (30) days prior to testing. Four (4) copies of the test results shall be submitted to the Lynchburg Satellite Office within 45 days after test completion and shall conform to the test report format enclosed with this permit.

(9 VAC 5-50-30 and 9 VAC 5-80-10 J)

26. Initial performance tests shall be conducted for particulate matter, volatile organic compounds (VOC), and nitrogen oxides (NO_x) from the Energy System to determine compliance with the emission limits contained in conditions 34, and 41. The tests shall be performed, and demonstrate compliance, within 60 days after achieving the maximum production rate but in no event later than 180 days after start-up of the permitted facility. Tests shall be conducted and reported and data reduced as set forth in 9 VAC 5-50-30 of the State Regulations, and the test methods and procedures contained in each applicable section or subpart listed in 9 VAC 5-50-410. The details of the tests are to be arranged with the Lynchburg Satellite Office. The permittee shall submit a test protocol at least thirty (30) days prior to testing. Four (4) copies of the test results shall be submitted to the Lynchburg Satellite Office within 45 days after test completion and shall conform to the test report format enclosed with this permit.

(9 VAC 5-50-30 and 9 VAC 5-80-10 J)

27. Stack tests shall be conducted for particulate matter, carbon monoxide (CO), nitrogen oxides (NO_x), volatile organic compounds (VOC), and formaldehyde from the Energy System to determine compliance with the emission limits contained in conditions 34, and 41. The tests shall be performed, and demonstrate compliance, within 180 days after the submittal to the Lynchburg Satellite Office of the results of the performance tests required in condition 26. Tests shall be conducted and reported

and data reduced as set forth in 9 VAC 5-50-30 of State Regulations, and the test methods and procedures contained in each applicable section or subpart listed in 9 VAC 5-50-410. The details of the tests are to be arranged with the Lynchburg Satellite Office. The permittee shall submit a test protocol at least thirty (30) days prior to testing. Two (2) copies of the test results shall be submitted to the Lynchburg Satellite Office within 45 days after test completion and shall conform to the test report format enclosed with this permit.

(9 VAC 5-50-30 and 9 VAC 5-80-10 J)

28. Concurrently with the initial performance tests, Visible Emission Evaluations (VEE) in accordance with 40 CFR, Part 60, Appendix A, Method 9, shall also be conducted by the permittee on the following equipment: the press, the system number 8950 cyclone, and the system number 9600 cyclone. Each test shall consist of thirty (30) sets of twenty-four (24) consecutive observations (at fifteen (15) second intervals) to yield a six (6) minute average for each set. The details of the tests are to be arranged with the Lynchburg Satellite Office. The permittee shall submit a test protocol at least thirty (30) days prior to testing. The evaluation shall be performed within sixty (60) days of achieving maximum operation, but no later than 180 days after initial start up. Two (2) copies of the results of each shall be submitted to the Lynchburg Satellite Office within 45 days after test completion and shall conform to the test report format enclosed with this permit.
(9 VAC 5-170-160 and 9 VAC 5-50-30)
29. Concurrently with the initial performance tests, Visible Emission Evaluations (VEE) in accordance with 40 CFR, Part 60, Appendix A, Method 9, shall also be conducted by the permittee on the Energy System. Each test shall consist of sixty (60) sets of twenty-four (24) consecutive observations (at fifteen (15) second intervals) to yield a six (6) minute average for each set. The details of the tests are to be arranged with the Lynchburg Satellite Office. The permittee shall submit a test protocol at least thirty (30) days prior to testing. The evaluation shall be performed within sixty (60) days of achieving maximum operation, but no later than 180 days after initial start up. Four (4) copies of the results of each shall be submitted to the Lynchburg Satellite Office within 45 days after test completion and shall conform to the test report format enclosed with this permit.
(9 VAC 5-170-160 and 9 VAC 5-50-30)
30. Concurrently with the stack tests, Visible Emission Evaluations (VEE) in accordance with 40 CFR, Part 60, Appendix A, Method 9, shall also be conducted on the Energy System. The details of the tests are to be arranged with the Lynchburg Satellite Office.
(9 VAC 5-170-160 and 9 VAC 5-50-30)
31. A continuous emission monitor shall be installed on the Energy System stack to measure and record opacity. The continuous emissions monitoring system shall conform to the design specifications stipulated in 40 CFR 60, Appendix B, Performance Specification 1. The monitoring system shall be installed, maintained, evaluated, calibrated and operated in accordance with 40 CFR 60.13, 40 CFR

60 Subpart Db and 40 CFR 60, Appendix B. During all periods of facility operation, the monitoring system shall be in continuous operation except for system breakdowns, repairs, calibration checks, and zero and span adjustments.

After the initial performance evaluation, the permittee shall conduct opacity monitoring system audits, on a regularly scheduled basis, to demonstrate compliance with the calibration error specification (40 CFR 60, Appendix B, Performance Specification 1). In no case shall the length of time between audits exceed twelve months. Prior to the first scheduled audit the permittee shall submit, for approval, to the Lynchburg Satellite Office, the proposed audit procedures for the opacity monitoring system. A 30-day notification prior to the initial performance evaluation and each scheduled audit shall be submitted to the Lynchburg Satellite Office.

The permittee shall submit a report of monitored excess emissions and monitor performance for every calendar quarter commencing at the time of completion of the performance evaluation. The reports are to be submitted, postmarked no later than 30 calendar days after the end of the quarter, to the Lynchburg Satellite Office. The details and format of the report are to be arranged with the Lynchburg Satellite Office prior to the submission of the first report.

(9 VAC 5-170-160 and 9 VAC 5-50-40 F)

32. The continuous monitoring system shall be installed and operational prior to conducting performance tests. Performance evaluations of the continuous monitoring system must take place during the performance tests under 9 VAC 5-50-30 or within thirty (30) days thereafter. Two (2) copies of the performance evaluations report shall be submitted to the Lynchburg Satellite Office within forty-five (45) days of said evaluation. Verification of operational status shall, as a minimum, include completion of the manufacturer's written requirements or recommendations for installation, operation and calibration of the device.

(9 VAC 5-50-40)

33. A continuous opacity monitoring system (COMS) may be used to satisfy visible emission initial performance compliance in lieu of Test Method 9 if the permittee fulfills the requirements of 40 CFR 60.11(e)(5). Reported test data is to include averages of all six (6) minute continuous periods.

(9 VAC 5-170-160 and 9 VAC 5-50-410)

34. Emissions from the operation of the Energy System shall not exceed the limits specified below:

lbs/10⁶ Btu

lbs/hr

tons/yr

Total Suspended Particulate	0.07	---	71.3
PM-10	0.07	---	71.3
Sulfur Dioxide	---	5.33	22.6
Nitrogen Oxides (as NO ₂)	0.20	---	203.7
	(3 hr rolling average)		
Carbon Monoxide	0.20	---	203.7
Volatile Organic Compounds	---	5.89	25.0
Formaldehyde	---	0.56	2.4
(9 VAC 5-50-260 and 9 VAC 5-50-180)			

35. NOT USED

36. Emissions from the operation of the press shall not exceed the limits specified below:

	<u>lbs/hr</u>	<u>tons/yr</u>
Total Suspended Particulate	3.53	15.0
PM-10	3.53	15.0
Nitrogen Oxides (as NO ₂)	4.53	18.5
Carbon Monoxide	7.19	30.5
Volatile Organic Compounds as Carbon	2.09	8.9
Formaldehyde	0.47	2.0
Phenol (9 VAC 5-80-10 H)	0.17	0.7

37. Emissions from the operation of the low pressure material handling systems shall not exceed the limits specified below:

	<u>gr/dscf</u>	<u>tons/yr</u>
SYSTEM 6800		

Total Suspended Particulate	0.01	10.7
PM-10	0.01	10.7
SYSTEM 6900		
Total Suspended Particulate	0.01	4.9
PM-10	0.01	4.9
SYSTEM 8900		
Total Suspended Particulate	0.01	8.2
PM-10	0.01	8.2
SYSTEM 9500		
Total Suspended Particulate	0.01	8.6
PM-10	0.01	8.6

(9 VAC 5-50-260 and 9 VAC 5-50-180)

38. Emissions from the operation of the high pressure material handling systems shall not exceed the limits specified below:

	<u>gr/dscf</u>	<u>tons/yr</u>
SYSTEM 8950		
Total Suspended Particulate	0.01	1.8
PM-10	0.01	1.8
SYSTEM 9600		
Total Suspended Particulate	0.01	1.3
PM-10	0.01	1.3

(9 VAC 5-50-260 and 9 VAC 5-50-180)

39. Emissions from the operation of the spray booth shall not exceed the limits specified below:

	<u>lbs/hr</u>	<u>tons/yr</u>
Total Suspended Particulate	0.20	0.9
PM-10	0.20	0.9

(9 VAC 5-50-260 and 9 VAC 5-50-180)

40. Emissions from the facility roads shall not exceed the limits specified below:

	<u>lbs/hr</u>	<u>tons/yr</u>
Total Suspended Particulate	7.80	34.2
PM-10	7.80	34.2

These emissions are derived from the estimated overall emission contribution. Compliance shall be determined as stated in condition 43.

(9 VAC 5-50-260 and 9 VAC 5-50-180)

410 Visible emissions from the Energy System and the press shall not exceed 10 percent opacity as determined by EPA Method 9 (reference 40 CFR 60, Appendix A). This condition applies at all times except during startup, shutdown and malfunction.

(9 VAC 5-170-160 and 9 VAC 5-50-20)

420 Visible emissions from the low pressure material handling systems's fabric filters, and from the high pressure material handling systems's cyclones shall not exceed 5 percent opacity as determined by EPA Method 9 (reference 40 CFR 60, Appendix A). This condition applies at all times except during startup, shutdown and malfunction.

(9 VAC 5-170-160 and 9 VAC 5-50-20)

430 Visible emissions from other fugitive emission points shall not exceed ten percent (10%) opacity.

(9 VAC 5-170-160 and 9 VAC 5-50-20)

440 The permittee shall furnish written notification to the Lynchburg Satellite Office of:

a The actual date on which construction of the Oriented Strandboard Plant commenced within thirty (30) days after such date.

b The anticipated start-up date of the Oriented Strandboard Plant postmarked not more than sixty (60) days nor less than thirty (30) days prior to such date.

c The actual start-up date of the Oriented Strandboard Plant within fifteen (15) days after such date.

d The anticipated date of performance tests of the Oriented Strandboard Plant postmarked at least thirty (30) days prior to such date.

e The anticipated date upon which demonstration of the continuous monitoring system performance commences postmarked at least thirty (30) days prior to such date.

f The intention to use the continuous opacity monitoring system to satisfy visible emission initial performance compliance in lieu of Test Method 9 at least (30) days prior to the performance test.

- g The actual start-up date of the RTO/TCO within fifteen (15) days after such date.
- h The actual start-up date of the RTO/TCO as a TCO within fifteen (15) days after such date.
- i The anticipated date of performance tests of the RTO postmarked at least thirty (30) days prior to such date.
- j The anticipated date of performance tests of the TCO postmarked at least thirty (30) days prior to such date.
- k The actual date of any change in RTO/TCO operating mode (that is, from RTO to TCO or from TCO to RTO) within fifteen (15) days after such date.

Copies of written notifications referenced in items a, b, c, e and f above to be sent to:

Chief Air Enforcement Branch (3AT20)
U. S. Environmental Protection Agency
Region III
841 Chestnut Street
Philadelphia, PA 19107

(9 VAC 5-170-160 and 9 VAC 5-50-50)

- 450 The permittee shall maintain records of all emission data and operating parameters necessary to demonstrate compliance with this permit. The content of and format of such records shall be arranged with the Lynchburg Satellite Office. These records shall include, but are not limited to:
- a The daily and yearly consumption by the Energy System of wood in units of tons, press vent cleanup wastes in units of tons, spray booth solids in units of tons, waste resin and wax in units of tons, oily water in units of gallons, paper products in units of tons, and hydraulic oil wastes in units of tons. Each yearly consumption rate shall be calculated monthly as the sum of each consecutive 12 month period.
 - b NOT USED
 - c The yearly throughput of powdered resin, in units of tons per year, calculated monthly as the sum of each consecutive 12 month period.
 - d The yearly production of finished Oriented Strandboard, in units of square feet per year, calculated monthly as the sum of each consecutive 12 month period. The square footage shall be based on a panel thickness of 3/8 inches.
 - e Records of the occurrence and duration of any startup, shutdown, or malfunction in the operation of the Energy System; any malfunction of the air pollution control equipment; and any periods

during which a continuous monitoring system or monitoring device is inoperative.

- f Records of the output of the RTO/TCO combustion chamber temperature measuring device.
- g The permittee shall maintain records of the daily and yearly consumption by the Energy System's backup thermal oil heater of natural gas in units of cubic feet, and propane in units of gallons. Each yearly consumption rate shall be calculated monthly as the sum of each consecutive 12 month period.

These records shall be available for inspection by the DEQ and shall be current for the most recent five (5) years.

(9 VAC 5-50-50)

460 This permit may be modified or revoked in whole or in part for cause, including, but not limited to, the following:

- a Violation of any terms or conditions of this permit;
- b Obtaining this permit by misrepresentation or failure to disclose fully all relevant facts;
- c A change in any condition that requires either a temporary or permanent reduction or elimination of a permitted discharge; or
- d Information that the permitted discharge of any pollutant poses a threat to human health, welfare, or the environment.

(9 VAC 5-170-160 and 9 VAC 5-80-10)

470 The permittee shall allow authorized local, state and federal representatives, upon the presentation of credentials:

- a To enter upon the permittee's premises on which the facility is located or in which any records are required to be kept under the terms and conditions of this permit;
- b To have access to and copy at reasonable times any records required to be kept under the terms and conditions of this permit or the State Air Pollution Control Board Regulations;
- c To inspect at reasonable times any facility, equipment, or process subject to the terms and conditions of this permit or the State Air Pollution Control Board Regulations; and
- d To sample or test at reasonable times.

For purposes of this condition, the time for inspection shall be deemed reasonable during regular business hours or whenever the facility is in operation. Nothing contained herein shall make an

- inspection time unreasonable during an emergency.
(9 VAC 5-170-130)
- 480 If, for any reason, the permitted facility or related air pollution control equipment fails or malfunctions and may cause excess emissions for more than one hour, the owner shall notify the Lynchburg Satellite Office within four (4) business hours of the occurrence. The portion of the facility which is subject to the provision of Rule 5-3 (toxics) shall shut down immediately upon request of the DEQ. In addition, the owner shall provide a written statement, within fourteen (14) days, explaining the problem, corrective action taken, and the estimated duration of the breakdown/shut down.
(9 VAC 5-20-180)
- 490 In order to minimize the duration and frequency of excess emissions due to malfunctions of process equipment or air pollution control equipment, the permittee shall:
- a Develop a maintenance schedule and maintain records of all scheduled and non-scheduled maintenance. These records shall be maintained on site for a period of five (5) years and shall be made available to DEQ personnel upon request.
 - b Maintain an inventory of spare parts that are needed to minimize durations of air pollution control equipment breakdowns.
(9 VAC 5-50-20 E)
- 500 The permittee shall have available written operating procedures for the air pollution control and monitoring equipment. Operators shall be trained in the proper operation of all such equipment and shall be familiar with the written operating procedures. These procedures shall be based on the manufacturer's recommendations, at a minimum. Training shall consist of a review and familiarization of the manufacturer's operating instructions, at a minimum. The permittee shall maintain records of training provided including names of trainees, date of training and nature of training. All records required by this condition shall be kept on site and made available for inspection by the DEQ.
(9 VAC 5-50-20 E)
- 510 This permit shall become invalid if construction of the proposed Oriented Strandboard Plant is not commenced within eighteen (18) months of the date of this permit or if it is discontinued for a period of eighteen (18) months.
(9 VAC 5-80-10 K)
- 520 In the event of any change in control of ownership of the permitted source, the permittee shall notify the succeeding owner of the existence of this permit by letter and send a copy of that letter to the Lynchburg Satellite Office.
(9 VAC 5-80-10 O)
- 530 Annual requirements to fulfill legal obligations to maintain current stationary source emissions data will necessitate your prompt response to requests for information to include, as appropriate: process and production data; changes in control equipment, and operating schedules. Such requests for information from the DEQ will either be in writing or by personal contact. The availability of

information submitted to the DEQ or the Board will be governed by applicable provisions of the Freedom of Information Act, §§ 2.1-340 through 2.1-348 of the Code of Virginia, § 10.1-1314 (addressing information provided to the Board), and 9 VAC 5-20-150)of the State Air Pollution Control Board Regulations. Information provided to federal officials is subject to appropriate federal law and regulations governing confidentiality of such information.

(9 VAC 5-20-160)

540 A copy of this permit shall be maintained on the premises of the facility to which it applies.

(9 VAC 5-170-160)

SOURCE TESTING REPORT FORMAT

Cover

1. Plant name and location
2. Units tested at source (indicate Ref. No. used by source in permit or registration)
3. Tester; name, address and report date

Certification

1. Signed by team leader / certified observer (include certification date)
- * 2. Signed by reviewer

Introduction

1. Test purpose
2. Test location, type of process
3. Test dates
- * 4. Pollutants tested
5. Test methods used
6. Observers' names (industry and agency)
7. Any other important background information

Summary of Results

1. Pollutant emission results / visible emissions summary
2. Input during test vs. rated capacity
3. Allowable emissions
- * 4. Description of collected samples, to include audits when applicable
5. Discussion of errors, both real and apparent

Source Operation

1. Description of process and control devices
2. Process and control equipment flow diagram
3. Process and control equipment data

* Sampling and Analysis Procedures

1. Sampling port location and dimensioned cross section
2. Sampling point description
3. Sampling train description
4. Brief description of sampling procedures with discussion of deviations from standard methods
5. Brief description of analytical procedures with discussion of deviation from standard methods

Appendix

- * 1. Process data and emission results example calculations
2. Raw field data
- * 3. Laboratory reports
4. Raw production data
- * 5. Calibration procedures and results
6. Project participants and titles
7. Related correspondence
8. Standard procedures

* Not applicable to visible emission evaluations.

ATTACHMENT 5
PSD Permit/Determination and Title V Permit – Louisiana-Pacific, Hanceville, AL

PRELIMINARY DETERMINATION

Louisiana-Pacific Corporation
702-0027

INTRODUCTION

On October 12, 1993, Louisiana-Pacific Corporation (Louisiana Pacific) submitted a complete Air Permit application to modify and operate an Oriented Strand Board (OSB) mill in Hanceville, AL. The complete application consists of a Team Environmental Sciences, Inc. August 5, 1993, Prevention of Significant Deterioration (PSD) Permit Application; with supplemental information dated October 8, 1993, that addresses dispersion modeling and Best Available Control Technology (BACT) revisions.

The proposed construction would be a PSD modification to a major source. The major source is currently under construction. A "major" source is one whose allowed emission rate for certain pollutants is greater than 100 tons per year. The proposed project is subject to ADEM Admin. Code R. 335-3-14-.04 which was adopted pursuant to the federal requirements for Prevention of Significant Deterioration (PSD) (see Appendix A).

PSD regulations were designed to limit pollutant increases in areas that are cleaner than the National Ambient Air Quality Standards (NAAQS). The regulations provided for pollution increments that set ceilings on the amount of increased pollutant concentrations that will be allowed in a PSD area. Sources subject to PSD regulations must comply with specific preconstruction review requirements.

A major source or major modification (one subject to PSD) must be constructed with Best Available Control Technology (BACT) and must have its effect on soils, vegetation, visibility, and ambient air quality addressed for each applicable pollutant. Applicability is determined by comparing each pollutant's potential emission increase to its significant increase value (see Table I).

LP obtained an Air Permit to construct and operate an OSB mill on November 1, 1991. The source that was permitted would take logs, slice them into pieces, mix the pieces with glue, dry the mixture, form mats from the mixture, activate the glue; then cut, finish and coat the manufactured boards. BACT for the drying process was determined to be wet electrostatic precipitators or equivalent. BACT for the board press system was determined to be no add on control. In this application, LP has proposed to increase the design capacity of the source and install a control technique called Regenerative Thermal Oxidation (RTO) for both the dryers and board press system. This technique is described in the application and in the BACT section of this document. The wet ESP technology proposed in the original application would not be installed.

Louisiana Pacific calculated their maximum pollutant emissions that could result due to operation of the source in the new configuration. Since the RTO controls volatile organic compounds (VOC) and particulate emissions (PM_{10}) by combustion, nitrogen oxide (NO_x) and carbon monoxide (CO) emission rates would be significantly greater than those from a wet ESP controlled system. To comply with the requirements of PSD for the dryers and presses, Louisiana Pacific had to address BACT for CO and NO_x . Allowed VOC emissions

would drop significantly (about 582 tons per year), while allowed PM₁₀ emissions would drop about 5 tons per year. VOC and PM₁₀ emission limits would be reduced appropriately.

The potential emissions of sulfur dioxide, the only other regulated pollutant they would expect to emit; formaldehyde, methylenediphenyl diisocyanate (MDI) and phenol have been reassessed and the proposed allowables adjusted as required. No other pollutants would be expected to occur in sufficient concentrations to cause concern.

TABLE I
Regulated Pollutants'
Significant Emissions (Tons/Year)

Carbon Monoxide	100
Nitrogen Oxides	40
Sulfur Dioxide	40
Particulate Matter	25
Inhalable Particulate Matter	15
Ozone	40 (of VOC)
Lead	0.6
Asbestos	0.007
Beryllium	0.0004
Mercury	0.1
Vinyl Chloride	1
Fluorides	3
Sulfuric Acid Mist	7
Hydrogen Sulfide	10
Total Reduced Sulfur	10
Reduced Sulfur Compounds (including H ₂ S)	10

BACT

BACT is an emission limitation based on maximum pollutant reduction achievable when, on a case-by-case basis, energy environmental and economic impacts and other costs are considered. Louisiana Pacific assessed BACT for the applicable pollutants on a case-by-case basis using test data from a similar Louisiana Pacific installation, vendor supplied information and economic analyses to propose a "top" level of demonstrated emission control.

1-5 ROTARY DRUM WOOD WAFER DRYERS

This would be five rotary drum wood wafer dryers with 2 RTOs. LP proposed to install the RTOs as BACT after deciding to install them at other existing facilities. The RTOs incinerate the dryer off-gases, reducing VOC and to some degree particulate emissions. This process combusts natural gas and therefore produces NO_x and CO emissions in addition to those emissions produced by the dryers. LP based their BACT proposal on manufacturer's guarantees. The NO_x BACT includes the use of RTO low NO_x burners.

The No. 1 and No. 2 Rotary Drum Wood Wafer Dryers would have an additional source of heat and emissions ducted to them. Hot oil would be indirectly used to cure wafer boards in the press. That oil would be indirectly heated by a 36 million Btu per hour wood burner. Burner emissions would be split and sent to the No. 1 and No. 2 Dryers. The Department agrees that the proposed emission limits represent BACT.

PRESS VENT

The press applies pressure and heat to the product (boards) to cure the glue. This generates VOC emissions. In this application LP proposes to collect those emissions and incinerate them in an RTO to control the VOC's. This would generate some NO_x emissions that would be controlled by low NO_x burners. CO emissions would be controlled by design. The Department agrees that the proposed emission limits represent BACT.

AMBIENT AIR QUALITY ANALYSIS

A review of the proposed project's impact on air quality can be found in Appendix B. Modeling results indicated no projected violation of either the PSD increments or the NAAQS.

IMPACT ON SOILS, VEGETATION, AND VISIBILITY

The proposed mill is located less than 100 km from the Sipsey Wilderness Class I Area. Pollutant concentrations would be expected to be so small that further review is not required.

The ambient air quality analysis estimates pollutant concentrations to be so small that soils, vegetation, and visibility in the mill's vicinity would not be measurably impaired.

SUMMARY

The PSD application for Air Permits to modify and operate Louisiana Pacific's Hanceville, Alabama oriented strand board mill would meet the following criteria:

1. BACT has been determined for each emission unit for all applicable pollutants. The emission limits are found in the proposed permit provisos (see Appendix C).
2. As a component of BACT, the potential for non-regulated pollutant emissions was addressed.
3. Pollutant concentrations from the proposed modification would not exceed either the NAAQS or the PSD increments.

RECOMMENDATION

It is recommended that Louisiana Pacific be issued Air Permits to modify and operate the proposed emission units at the Hanceville site in Cullman County.

Glen Golson

Glen Golson
Industrial Section
Engineering Branch
Air Division

12/21/93

Date



Jim Folsom
Governor

James W. Warr, Director

November 8, 1993

Mailing Address:
PO BOX 301463
MONTGOMERY AL
36130-1463

MEMORANDUM

Physical Address:
1751 Cong. W. L.
Dickinson Drive
Montgomery, AL
36109-2608

(205) 271-7700
FAX 270-5612

FROM: Christopher M. Howard *CMH*
Control Strategies Section
Planning Branch
Air Division

TO: Glen Golson *GG*
Industrial Section
Engineering Branch
Air Division

Field Offices:

110 Vulcan Road
Birmingham, AL
35209-4702
(205) 942-6168
FAX 941-1603

400 Weh Street
P.O. Box 953
Decatur, AL
35602-0953
(205) 353-1713
FAX 340-9359

2204 Perimeter Road
Mobile, AL
36615-1131
(205) 450-3400
FAX 479-2593

SUBJECT: Ambient Air Quality Analysis for Louisiana Pacific, Inc.

ADEM has completed a review of the ambient air quality analysis performed by Team Environmental on behalf of Louisiana Pacific in Hanceville, Alabama for their proposed oriented strand board facility. ADEM previously reviewed an ambient air quality analysis performed by Team Environmental (then Source Environmental Sciences) for this facility in September 1991. In that analysis emissions of nitrogen oxides (NO_x), particulate matter (PM₁₀) carbon monoxide (CO), volatile organic compounds (VOCs) and three toxic pollutants were analyzed. However, since that time, there has been a change in the method of control for emissions of PM and VOCs from wet electrostatic precipitators to regenerative thermal oxidizers which will result in significant increases in emissions of CO and NO_x. The ambient air quality analysis most recently submitted by Team Environmental serves to re-assess the impacts of these two pollutants.

PM and VOC emissions from six sources are controlled by the RTOs including five dryers and one press. The five dryers are served by two RTOs and the press is served by one RTO. Stack parameters and emission rates for the three RTOs are shown below:

Source Name	CO Emission Rate (g/s)	NO _x Emission Rate (g/s)	Stack Height. (m.)	Exit Temp. (k)	Exit Velocity (m/s)	Dia. (m)
RTO 1	9.85	4.17	27.43	422	17.7	2.4
RTO 2	9.85	4.17	27.43	422	17.7	2.4
Press	2.66	1.62	27.43	361	17.7	2.4

The CO emission rates represent maximum short term values while the NOx emission rates represent annual average values.

Screening Modeling

Because any effects of aerodynamic building downwash must be included in screening modeling, a Good Engineering Practice (GEP) stack height analysis was performed to determine if building wake effects should be considered in the modeling. Based on the downwash influence areas (5L distances) around each structure at the facility, the manufacturing building was determined to be the controlling building for all stacks at the facility. The controlling building is the building with the greatest GEP stack height. Utilizing the GEP formula ($H_g = H_b + 1.5L$), the manufacturing building was determined to have a GEP stack height of 61.3 meters. Because all three RTOs have stack heights less than this, building downwash effects were considered in the screening modeling. ADEM utilized the Bowman Environmental Engineering (BEE) GEP program to verify direction specific building dimensions utilized by Team Environmental in screening modeling.

Surface meteorological data from the National Weather Service (NWS) in Birmingham and mixing height data from the NWS in Centreville for the years 1985 through 1989 (inclusive) were utilized in all modeling.

The ISCST2 Model was used in all modeling. Team Environmental utilized a Cartesian receptor grid with 100 meter receptor spacing extending 2 kilometers in all directions from the facility. Receptor terrain elevations were included in this modeling even though it was not required by ADEM. Results of this modeling are shown in the table below:

Pollutant	Averaging Period	Max. Conc. ($\mu\text{g}/\text{m}^3$)	Location	Sign. Level ($\mu\text{g}/\text{m}^3$)	Met. Data Year
CO	1 Hour	720	100 m North	2000	1986
CO	8 Hour	310	100 m North	500	1987
NO ₂	Annual	3.79	100 m North	1	1986

As can be seen in the table above, concentrations of NO₂ were predicted to be significant. However, the significant impact area extended less than 1 kilometer downwind. Because no other sources of NOx exist in or near this small significant impact area and because terrain elevations were included in the screening modeling, no further refined modeling is required for NO₂. Concentrations of CO were predicted to be well below respective significance levels. Verification modeling performed by ADEM substantiated these results.

Because the facility is located within 100 kilometers of the Sipsey Wilderness area, screening modeling was performed to assess the significance of NO₂ impacts at the Sipsey. This modeling was performed utilizing the ISCST2 model and the same

meteorological data set utilized in screening modeling.. Results of this exercise indicated a predicted maximum annual NO₂ concentration of .0004 µg/m³ which is well below the ADEM significance level of .1 µg/m³. Verification modeling performed by ADEM yielded a somewhat higher annual NO₂ concentration of .015 µg/m³ which is also well below the significance level.

Because emissions of VOCs (and subsequently toxic pollutants) will decrease considerably from the change of control devices, toxic pollutant emissions were not re-addressed in this analysis.

In conclusion, increased emissions of CO and NO_x resulting from a change in the method of control of VOCs and PM are not expected to cause or contribute to a violation of a PSD increment or a NAAQS.

ALABAMA
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

AIR PERMIT

PERMITEE: Louisiana-Pacific Corporation

LOCATION: Hanceville, AL

PERMIT NUMBER

702-0027-X006

DESCRIPTION OF EQUIPMENT, ARTICLE
OR DEVICE

Three Material Blenders with Aspiration
Baghouse

In accordance with and subject to the provisions of the Alabama Air Pollution Control Act of 1971, as amended, **Code of Alabama 1975**, §§22-28-1 to 22-28-23 (the "AAPCA") and the Alabama Environmental Management Act, as amended, **Code of Alabama 1975**, §§22-22A-1 to 22-22A-15, and rules and regulations adopted thereunder, and subject further to the conditions set forth in this permit, the Permittee is hereby authorized to construct, install and use the equipment, device or other article described above.

ISSUANCE DATE: March 5, 1999



Alabama Department of Environmental Management

Louisiana-Pacific Corporation
Three Material Blenders with Aspiration Baghouse

Permit No. 702-0027-X006

1. This permit is issued on the basis of Rules and Regulations existing on the date of issuance. In the event additional Rules and Regulations are adopted, it shall be the permit holder's responsibility to comply with such rules.
2. This permit is not transferable. Upon sale or legal transfer, the new owner or operator must apply for a permit within 30 days.
3. A new permit application must be made for new sources, replacements, alterations or design changes which may result in the issuance of, or an increase in the issuance of, air contaminants, or the use of which may eliminate or reduce or control the issuance of air contaminants.
4. Each point of emission will be provided with sampling ports, ladders, platforms, and other safety equipment to facilitate testing performed in accordance with procedures established by Part 60 of Title 40 of the Code of Federal Regulations, as the same may be amended or revised.
5. In case of shutdown of air pollution control equipment for scheduled maintenance for a period greater than 12 hours, the intent to shut down shall be reported to the Air Division at least 24 hours prior to the planned shutdown, unless such shutdown is accompanied by the shutdown of the source which such equipment is intended to control. The Air Division shall be notified when maintenance on the air pollution control equipment is complete and the equipment is operating.
6. In the event there is a breakdown of equipment or upset of the process in such a manner as to cause, or is expected to cause, increased emission of air contaminants for a period greater than 12 hours, the person responsible for such equipment shall notify the Air Division within an additional 24 hours or the next working day and provide a statement giving all pertinent facts, including the duration of the breakdown. The Air Division shall be notified when the breakdown has been corrected.
7. All air pollution control devices and capture systems for which this permit is issued shall be maintained and operated at all times in a manner so as to minimize the emissions of air contaminants. Procedures for ensuring that the above equipment is properly operated and maintained so as to minimize the emission of air contaminants shall be established.
8. Submission of other reports regarding monitoring records, fuel analyses, operating rates, and equipment malfunctions may be required as authorized in the Department's air pollution control rules and regulations. The Department may require stack emission testing at any time.

9. Additions and revisions to the conditions of this Permit will be made, if necessary, to ensure that the Department's air pollution control rules and regulations are not violated.
10. Nothing in this permit or conditions thereto shall negate any authority granted to the Department pursuant to the Alabama Environmental Management Act or regulations issued thereunder.
11. Precautions to prevent fugitive dust shall be taken so that provisions of the Department's rules and regulations shall not be violated.
12. The Air Division must be notified in writing at least 10 working days in advance of all emission tests to be conducted and submitted as proof of compliance with the Department's air pollution control rules and regulations.

To avoid problems concerning testing methods and procedures, the following shall be included with the notification letter:

- (1) The date the test crew is expected to arrive, the date and time anticipated of the start of the first run, how many and which sources are to be tested, and the names of the persons and/or testing company that will conduct the tests.
- (2) A complete description of each sampling train to be used, including type of media used in determining gas stream components, type of probe lining, type of filter media, and probe cleaning method and solvent to be used (if test procedure requires probe cleaning).
- (3) A description of the process(es) to be tested, including the feed rate, any operating parameter used to control or influence the operations, and the rated capacity.
- (4) A sketch or sketches showing sampling point locations and their relative positions to the nearest upstream and downstream gas flow disturbances.

A pretest meeting may be held at the request of the source owner or the Department. The necessity for such a meeting and the required attendees will be determined on a case-by-case basis.

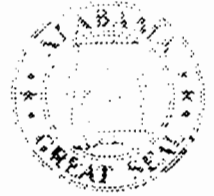
All test reports must be submitted to the Air Division within 15 days of the actual completion of the test, unless an extension of time is specifically approved by the Department.

13. A properly maintained and operated device will be utilized to measure the pressure differential across the baghouse.

Permit No. 702-0027-X006

14. Visible emissions shall not be greater than 20% opacity as measured in accordance with the 40 CFR (7-1-92 Edition) Part 60, Appendix A, Method 9.
15. The particulate emission rate shall exceed neither 0.21 lb/hr and/or 0.005 gr/dscf, as measured in accordance with the 40 CFR (7-1-95 Edition) Part 60, Appendix A, Method 5.
16. The volatile organic compound emission rate shall exceed neither 5.32 lb/hr and/or 572 parts per million (as carbon), as measured in accordance with the 40 CFR (7-1-92 Edition) Part 60, Appendix A, Method 25, 25A, or 25B.

ADEM



**ALABAMA
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT**

AIR PERMIT

PERMITTEE: Louisiana Pacific Corporation

LOCATION: Hanceville, Alabama

PERMIT NUMBER

702-0027-X006

DESCRIPTION OF EQUIPMENT,
ARTICLE OR DEVICE

Material Blenders (Aspiration Bag House)

In accordance with and subject to the provisions of the Alabama Air Pollution Control Act of 1971, as amended, Code of Alabama 1975, §§22-28-1 to 22-28-23 (the 'AAPCA') and the Alabama Environmental Management Act, as amended, Code of Alabama 1975, §§22-22A-1 to 22-22A-15, and rules and regulations adopted thereunder, and subject further to the conditions set forth in this permit, the Permittee is hereby authorized to construct, install and use the equipment, device or other article described above.

ISSUANCE DATE: October 16, 1997

A handwritten signature in cursive script, reading "Ronald W. Gou".

Alabama Department of Environmental Management

Louisiana-Pacific Corporation
Material Blenders (Aspiration Bag House)

Permit No. 702-0027-X006

1. This permit is issued on the basis of Rules and Regulations existing on the date of issuance. In the event additional Rules and Regulations are adopted, it shall be the permit holder's responsibility to comply with such rules.
2. This permit is not transferable. Upon sale or legal transfer, the new owner or operator must apply for a permit within 30 days.
3. A new permit application must be made for new sources, replacements, alterations or design changes which may result in the issuance of, or an increase in the issuance of, air contaminants, or the use of which may eliminate or reduce or control the issuance of air contaminants.
4. Each point of emission will be provided with sampling ports, ladders, platforms, and other safety equipment to facilitate testing performed in accordance with procedures established by Part 60 of Title 40 of the Code of Federal Regulations, as the same may be amended or revised if emission testing is required.
5. In case of shutdown of air pollution control equipment for scheduled maintenance for a period greater than 12 hours, the intent to shut down shall be reported to the Department at least 24 hours prior to the planned shutdown.
6. In the event there is a breakdown of equipment in such a manner as to cause increased emission of air contaminants for a period greater than 12 hours, the person responsible for such equipment shall notify the Department within an additional 24 hours and provide a statement giving all pertinent facts, including the duration of the breakdown. The Department shall be notified when the breakdown has been corrected.
7. All air pollution control devices and capture systems for which this permit is issued shall be maintained and operated at all times in a manner so as to minimize the emissions of air contaminants. Procedures for ensuring that the above equipment is properly operated and maintained so as to minimize the emission of air contaminants shall be established.
8. Submission of other reports regarding monitoring records, fuel analyses, operating rates, and equipment malfunctions may be required as authorized in the Department's air pollution control rules and regulations. The Department may require stack emission testing at any time.
9. Additions and revisions to the conditions of this Permit will be made, if necessary, to ensure that the Department's air pollution control rules and regulations are not violated.
10. Nothing in this permit or conditions thereto shall negate any authority granted to the Department pursuant to the Alabama Environmental Management Act or regulations issued thereunder.
11. Precautions to prevent fugitive dust shall be taken so that provisions of the Department's rules and regulations shall not be violated.
12. Visible emissions shall not be greater than 20% opacity as measured in accordance with the 40 CFR (7-1-92 Edition) Part 60, Appendix A, Method 9.
13. The particulate emission rate shall exceed neither 0.21 pounds per hour and/or 0.005 grains per standard dry cubic foot of air, as measured in accordance with the 40 CFR (7-1-95 Edition) Part 60, Appendix A, Method 5.

Louisiana-Pacific Corporation
Material Blenders (Aspiration Bag House)

Permit No. 702-0027-X006

14. The volatile organic compound emission rate shall exceed neither 5.32 pounds per hour and/or 572 parts per million (as carbon), as measured in accordance with 40 CFR (7-1-92 Edition) Part 60, Appendix A, Method 25, 25A, or 25B.



ALABAMA
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

AIR PERMIT

PERMITTEE: Louisiana Pacific Corporation

LOCATION: Hanceville, Alabama

PERMIT NUMBER

702-0027-X007

DESCRIPTION OF EQUIPMENT,
ARTICLE OR DEVICE

Forming Sheet Rejects System with Baghouse

In accordance with and subject to the provisions of the Alabama Air Pollution Control Act of 1971, as amended, Code of Alabama 1975, §§22-28-1 to 22-28-23 (the 'AAPCA') and the Alabama Environmental Management Act, as amended, Code of Alabama 1975, §§22-22A-1 to 22-22A-15, and rules and regulations adopted thereunder, and subject further to the conditions set forth in this permit, the Permittee is hereby authorized to construct, install and use the equipment, device or other article described above.

ISSUANCE DATE: October 16, 1997

A handwritten signature in cursive script, reading "Ronald W. Coa", is written over a horizontal line.

Alabama Department of Environmental Management

Louisiana-Pacific Corporation
Forming Sheet Rejects System with Baghouse

Permit No. 702-0027-X007

1. This permit is issued on the basis of Rules and Regulations existing on the date of issuance. In the event additional Rules and Regulations are adopted, it shall be the permit holder's responsibility to comply with such rules.
2. This permit is not transferable. Upon sale or legal transfer, the new owner or operator must apply for a permit within 30 days.
3. A new permit application must be made for new sources, replacements, alterations or design changes which may result in the issuance of, or an increase in the issuance of, air contaminants, or the use of which may eliminate or reduce or control the issuance of air contaminants.
4. Each point of emission will be provided with sampling ports, ladders, platforms, and other safety equipment to facilitate testing performed in accordance with procedures established by Part 60 of Title 40 of the Code of Federal Regulations, as the same may be amended or revised if emission testing is required.
5. In case of shutdown of air pollution control equipment for scheduled maintenance for a period greater than 12 hours, the intent to shut down shall be reported to the Department at least 24 hours prior to the planned shutdown.
6. In the event there is a breakdown of equipment in such a manner as to cause increased emission of air contaminants for a period greater than 12 hours, the person responsible for such equipment shall notify the Department within an additional 24 hours and provide a statement giving all pertinent facts, including the duration of the breakdown. The Department shall be notified when the breakdown has been corrected.
7. All air pollution control devices and capture systems for which this permit is issued shall be maintained and operated at all times in a manner so as to minimize the emissions of air contaminants. Procedures for ensuring that the above equipment is properly operated and maintained so as to minimize the emission of air contaminants shall be established.
8. Submission of other reports regarding monitoring records, fuel analyses, operating rates, and equipment malfunctions may be required as authorized in the Department's air pollution control rules and regulations. The Department may require stack emission testing at any time.
9. Additions and revisions to the conditions of this Permit will be made, if necessary, to ensure that the Department's air pollution control rules and regulations are not violated.
10. Nothing in this permit or conditions thereto shall negate any authority granted to the Department pursuant to the Alabama Environmental Management Act or regulations issued thereunder.
11. Precautions to prevent fugitive dust shall be taken so that provisions of the Department's rules and regulations shall not be violated.
12. Visible emissions shall not be greater than 20% opacity as measured in accordance with the 40 CFR (7-1-92 Edition) Part 60, Appendix A, Method 9.
13. The particulate emission rate shall exceed neither 1.25 pounds per hour and/or 0.005 grains per standard dry cubic foot of air, as measured in accordance with the 40 CFR (7-1-95 Edition) Part 60, Appendix A, Method 5.

Louisiana-Pacific Corporation
Forming Sheet Rejects System with Baghouse

Permit No. 702-0027-X007

14. The volatile organic compound emission rate shall exceed neither 1.49 pounds per hour and/or 27 parts per million (as carbon), as measured in accordance with 40 CFR (7-1-92 Edition) Part 60, Appendix A, Method 25, 25A, or 25B.

ADEM



**ALABAMA
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT**

AIR PERMIT

PERMITTEE: Louisiana Pacific Corporation

LOCATION: Hanceville, Alabama

PERMIT NUMBER

702-0027-X008

DESCRIPTION OF EQUIPMENT,
ARTICLE OR DEVICE

Board Press System with Regenerative Thermal
Oxidation and Low NO_x Burners

In accordance with and subject to the provisions of the Alabama Air Pollution Control Act of 1971, as amended, Code of Alabama 1975, §§22-28-1 to 22-28-23 (the 'AAPCA') and the Alabama Environmental Management Act, as amended, Code of Alabama 1975, §§22-22A-1 to 22-22A-15, and rules and regulations adopted thereunder, and subject further to the conditions set forth in this permit, the Permittee is hereby authorized to construct, install and use the equipment, device or other article described above.

ISSUANCE DATE: October 16, 1997

A handwritten signature in cursive script, appearing to read "Ronald W. Gru", is written over a horizontal line.

Alabama Department of Environmental Management

Louisiana-Pacific Corporation
Board Press System with Regenerative Thermal Oxidation and Low NO_x Burners

Permit No. 702-0027-X008

1. This permit is issued on the basis of Rules and Regulations existing on the date of issuance. In the event additional Rules and Regulations are adopted, it shall be the permit holder's responsibility to comply with such rules.
2. This permit is not transferable. Upon sale or legal transfer, the new owner or operator must apply for a permit within 30 days.
3. A new permit application must be made for new sources, replacements, alterations or design changes which may result in the issuance of, or an increase in the issuance of, air contaminants, or the use of which may eliminate or reduce or control the issuance of air contaminants.
4. Each point of emission will be provided with sampling ports, ladders, platforms, and other safety equipment to facilitate testing performed in accordance with procedures established by Part 60 of Title 40 of the Code of Federal Regulations, as the same may be amended or revised if emission testing is required.
5. In case of shutdown of air-pollution control equipment for scheduled maintenance for a period greater than 12 hours, the intent to shut down shall be reported to the Department at least 24 hours prior to the planned shutdown.
6. In the event there is a breakdown of equipment in such a manner as to cause increased emission of air contaminants for a period greater than 12 hours, the person responsible for such equipment shall notify the Department within an additional 24 hours and provide a statement giving all pertinent facts, including the duration of the breakdown. The Department shall be notified when the breakdown has been corrected.
7. All air pollution control devices and capture systems for which this permit is issued shall be maintained and operated at all times in a manner so as to minimize the emissions of air contaminants. Procedures for ensuring that the above equipment is properly operated and maintained so as to minimize the emission of air contaminants shall be established.
8. Submission of other reports regarding monitoring records, fuel analyses, operating rates, and equipment malfunctions may be required as authorized in the Department's air pollution control rules and regulations. The Department may require stack emission testing at any time.
9. Prior to a date to be specified by the Chief of the Air Division in the authorization to operate, emission tests are to be conducted for the following pollutants. Written tests results are to be reported to the Department within 15 working days of completion of testing, unless an extension of time is specifically approved by the Department.

Particulates	(X)	Carbon Monoxide	()
Sulfur Dioxide	()	Nitrogen Oxides	()
Volatile Organic Compounds	()		
10. Additions and revisions to the conditions of this Permit will be made, if necessary, to ensure that the Department's air pollution control rules and regulations are not violated.
11. Nothing in this permit or conditions thereto shall negate any authority granted to the Department pursuant to the Alabama Environmental Management Act or regulations issued thereunder.

Louisiana-Pacific Corporation
Board Press System with Regenerative Thermal Oxidation and Low NO_x Burners

Permit No. 702-0027-X008

12. Precautions to prevent fugitive dust shall be taken so that provisions of the Department's rules and regulations shall not be violated.
13. Visible emissions shall not be greater than 20% opacity as measured in accordance with the 40 CFR (7-1-92 Edition) Part 60, Appendix A, Method 9.
14. The particulate emission rate from the RTO shall exceed neither 9.86 pounds per hour and/or 0.010 grains per standard dry cubic foot of air, as measured in accordance with the 40 CFR (7-1-95 Edition) Part 60, Appendix A, Method 5. The system shall not employ excess air flow for dilution.
15. The nitrogen oxide emission rate shall not exceed 12.84 pounds per hour, as measured in accordance with the 40 CFR (7-1-92 Edition) Part 60, Appendix A, Method 7, 7A, 7B, 7C, 7D or 7E.
16. The carbon monoxide emission rate shall not exceed 20.84 pounds per hour, as measured in accordance with the 40 CFR (7-1-92 Edition) Part 60, Appendix A, Method 10.
17. The volatile organic compound emission rate shall exceed neither 4.74 pounds per hour and/or 0.087 pounds per thousand square feet of board, as measured in accordance with 40 CFR (7-1-92 Edition) Part 60, Appendix A, Method 18, 25, 25A, or 25B.
18. The volatile organic compound collection efficiency across the RTO shall be at least 95 percent.
19. The regenerative thermal oxidizer combustion chamber operating temperature shall not fall below 1400 degrees Fahrenheit.
20. The regenerative thermal oxidizer formaldehyde emission rate shall not exceed 0.41 pounds per hour, as measured in accordance with EPA Method 0011.
21. The regenerative thermal oxidizer diphenylmethane diisocyanate (MDI) emission rate shall not exceed 0.0071 pounds per hour, as measured in accordance with NIOSH Method 5521 or subsequently EPA methods approved by the Director.
22. The regenerative thermal oxidizer phenol emission rate shall not exceed 0.16 pounds per hour, as measured in accordance with "NIOSH Manual of Analytical Methods", Publication No. 77-157-A, P&CAM 125 (1977).

ADEM



**ALABAMA
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT**

AIR PERMIT

PERMITTEE: Louisiana Pacific Corporation

LOCATION: Hanceville, Alabama

PERMIT NUMBER

702-0027-X009

DESCRIPTION OF EQUIPMENT,
ARTICLE OR DEVICE

Trim Saws with Baghouse

In accordance with and subject to the provisions of the Alabama Air Pollution Control Act of 1971, as amended, Code of Alabama 1975, §§22-28-1 to 22-28-23 (the 'AAPCA') and the Alabama Environmental Management Act, as amended, Code of Alabama 1975, §§22-22A-1 to 22-22A-15, and rules and regulations adopted thereunder, and subject further to the conditions set forth in this permit, the Permittee is hereby authorized to construct, install and use the equipment, device or other article described above.

ISSUANCE DATE: October 16, 1997

A handwritten signature in cursive script, reading "Ronald W. Gore", is written over a horizontal line.

Alabama Department of Environmental Management

Louisiana-Pacific Corporation
Trim Saws with Baghouse

Permit No. 702-0027-X009

1. This permit is issued on the basis of Rules and Regulations existing on the date of issuance. In the event additional Rules and Regulations are adopted, it shall be the permit holder's responsibility to comply with such rules.
2. This permit is not transferable. Upon sale or legal transfer, the new owner or operator must apply for a permit within 30 days.
3. A new permit application must be made for new sources, replacements, alterations or design changes which may result in the issuance of, or an increase in the issuance of, air contaminants, or the use of which may eliminate or reduce or control the issuance of air contaminants.
4. Each point of emission will be provided with sampling ports, ladders, platforms, and other safety equipment to facilitate testing performed in accordance with procedures established by Part 60 of Title 40 of the Code of Federal Regulations, as the same may be amended or revised if emission testing is required.
5. In case of shutdown of air pollution control equipment for scheduled maintenance for a period greater than 12 hours, the intent to shut down shall be reported to the Department at least 24 hours prior to the planned shutdown.
6. In the event there is a breakdown of equipment in such a manner as to cause increased emission of air contaminants for a period greater than 12 hours, the person responsible for such equipment shall notify the Department within an additional 24 hours and provide a statement giving all pertinent facts, including the duration of the breakdown. The Department shall be notified when the breakdown has been corrected.
7. All air pollution control devices and capture systems for which this permit is issued shall be maintained and operated at all times in a manner so as to minimize the emissions of air contaminants. Procedures for ensuring that the above equipment is properly operated and maintained so as to minimize the emission of air contaminants shall be established.
8. Submission of other reports regarding monitoring records, fuel analyses, operating rates, and equipment malfunctions may be required as authorized in the Department's air pollution control rules and regulations. The Department may require stack emission testing at any time.
9. Additions and revisions to the conditions of this Permit will be made, if necessary, to ensure that the Department's air pollution control rules and regulations are not violated.
10. Nothing in this permit or conditions thereto shall negate any authority granted to the Department pursuant to the Alabama Environmental Management Act or regulations issued thereunder.
11. Precautions to prevent fugitive dust shall be taken so that provisions of the Department's rules and regulations shall not be violated.
12. Visible emissions shall not be greater than 20% opacity as measured in accordance with the 40 CFR (7-1-92 Edition) Part 60, Appendix A, Method 9.
13. The particulate emission rate shall exceed neither 0.94 pounds per hour and/or 0.005 grains per standard dry cubic foot of air, as measured in accordance with the 40 CFR (7-1-95 Edition) Part 60, Appendix A, Method 5.

Louisiana-Pacific Corporation
Trim Saws with Baghouse

Permit No. 702-0027-X009

14. The volatile organic compound emission rate shall exceed neither 1.82 pounds per hour and/or 44 parts per million (as carbon), as measured in accordance with 40 CFR (7-1-92 Edition) Part 60, Appendix A, Method 25, 25A, or 25B.

ADEM



**ALABAMA
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT**

AIR PERMIT

PERMITTEE: Louisiana Pacific Corporation

LOCATION: Hanceville, Alabama

PERMIT NUMBER

702-0027-X010

DESCRIPTION OF EQUIPMENT,
ARTICLE OR DEVICE

Board Sander/T&G with Baghouse

In accordance with and subject to the provisions of the Alabama Air Pollution Control Act of 1971, as amended, Code of Alabama 1975, §§22-28-1 to 22-28-23 (the 'AAPCA') and the Alabama Environmental Management Act, as amended, Code of Alabama 1975, §§22-22A-1 to 22-22A-15, and rules and regulations adopted thereunder, and subject further to the conditions set forth in this permit, the Permittee is hereby authorized to construct, install and use the equipment, device or other article described above.

ISSUANCE DATE: October 16, 1997

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A handwritten signature in cursive script that reads "Ronald W. Core".

Alabama Department of Environmental Management

Louisiana-Pacific Corporation
Board Sander/T&G with Baghouse

Permit No. 702-0027-X010

1. This permit is issued on the basis of Rules and Regulations existing on the date of issuance. In the event additional Rules and Regulations are adopted, it shall be the permit holder's responsibility to comply with such rules.
2. This permit is not transferable. Upon sale or legal transfer, the new owner or operator must apply for a permit within 30 days.
3. A new permit application must be made for new sources, replacements, alterations or design changes which may result in the issuance of, or an increase in the issuance of, air contaminants, or the use of which may eliminate or reduce or control the issuance of air contaminants.
4. Each point of emission will be provided with sampling ports, ladders, platforms, and other safety equipment to facilitate testing performed in accordance with procedures established by Part 60 of Title 40 of the Code of Federal Regulations, as the same may be amended or revised if emission testing is required.
5. In case of shutdown of air pollution control equipment for scheduled maintenance for a period greater than 12 hours, the intent to shut down shall be reported to the Department at least 24 hours prior to the planned shutdown.
6. In the event there is a breakdown of equipment in such a manner as to cause increased emission of air contaminants for a period greater than 12 hours, the person responsible for such equipment shall notify the Department within an additional 24 hours and provide a statement giving all pertinent facts, including the duration of the breakdown. The Department shall be notified when the breakdown has been corrected.
7. All air pollution control devices and capture systems for which this permit is issued shall be maintained and operated at all times in a manner so as to minimize the emissions of air contaminants. Procedures for ensuring that the above equipment is properly operated and maintained so as to minimize the emission of air contaminants shall be established.
8. Submission of other reports regarding monitoring records, fuel analyses, operating rates, and equipment malfunctions may be required as authorized in the Department's air pollution control rules and regulations. The Department may require stack emission testing at any time.
9. Additions and revisions to the conditions of this Permit will be made, if necessary, to ensure that the Department's air pollution control rules and regulations are not violated.
10. Nothing in this permit or conditions thereto shall negate any authority granted to the Department pursuant to the Alabama Environmental Management Act or regulations issued thereunder.
11. Precautions to prevent fugitive dust shall be taken so that provisions of the Department's rules and regulations shall not be violated.
12. Visible emissions shall not be greater than 20% opacity as measured in accordance with the 40 CFR (7-1-92 Edition) Part 60, Appendix A, Method 9.
13. The particulate emission rate shall exceed neither 0.58 pounds per hour and/or 0.005 grains per standard dry cubic foot of air, as measured in accordance with the 40 CFR (7-1-95 Edition) Part 60, Appendix A, Method 5.

Louisiana-Pacific Corporation
Board Sander/T&G with Baghouse

Permit No. 702-0027-X010

14. The volatile organic compound emission rate shall exceed neither 0.85 pounds per hour and/or 34 parts per million (as carbon), as measured in accordance with 40 CFR (7-1-92 Edition) Part 60, Appendix A, Method 25, 25A, or 25B.

ADEM



**ALABAMA
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT**

AIR PERMIT

PERMITTEE: Louisiana Pacific Corporation

LOCATION: Hanceville, Alabama

PERMIT NUMBER

702-0027-X011

DESCRIPTION OF EQUIPMENT,
ARTICLE OR DEVICE

Fuel Grinder with Baghouse

In accordance with and subject to the provisions of the Alabama Air Pollution Control Act of 1971, as amended, Code of Alabama 1975, §§22-28-1 to 22-28-23 (the 'AAPCA') and the Alabama Environmental Management Act, as amended, Code of Alabama 1975, §§22-22A-1 to 22-22A-15, and rules and regulations adopted thereunder, and subject further to the conditions set forth in this permit, the Permittee is hereby authorized to construct, install and use the equipment, device or other article described above.

ISSUANCE DATE: October 16, 1997

✓

Ronald W. Gore

Alabama Department of Environmental Management

Louisiana-Pacific Corporation
Fuel Grinder with Baghouse

Permit No. 702-0027-X011

1. This permit is issued on the basis of Rules and Regulations existing on the date of issuance. In the event additional Rules and Regulations are adopted, it shall be the permit holder's responsibility to comply with such rules.
2. This permit is not transferable. Upon sale or legal transfer, the new owner or operator must apply for a permit within 30 days.
3. A new permit application must be made for new sources, replacements, alterations or design changes which may result in the issuance of, or an increase in the issuance of, air contaminants, or the use of which may eliminate or reduce or control the issuance of air contaminants.
4. Each point of emission will be provided with sampling ports, ladders, platforms, and other safety equipment to facilitate testing performed in accordance with procedures established by Part 60 of Title 40 of the Code of Federal Regulations, as the same may be amended or revised if emission testing is required.
5. In case of shutdown of air pollution control equipment for scheduled maintenance for a period greater than 12 hours, the intent to shut down shall be reported to the Department at least 24 hours prior to the planned shutdown.
6. In the event there is a breakdown of equipment in such a manner as to cause increased emission of air contaminants for a period greater than 12 hours, the person responsible for such equipment shall notify the Department within an additional 24 hours and provide a statement giving all pertinent facts, including the duration of the breakdown. The Department shall be notified when the breakdown has been corrected.
7. All air pollution control devices and capture systems for which this permit is issued shall be maintained and operated at all times in a manner so as to minimize the emissions of air contaminants. Procedures for ensuring that the above equipment is properly operated and maintained so as to minimize the emission of air contaminants shall be established.
8. Submission of other reports regarding monitoring records, fuel analyses, operating rates, and equipment malfunctions may be required as authorized in the Department's air pollution control rules and regulations. The Department may require stack emission testing at any time.
9. Additions and revisions to the conditions of this Permit will be made, if necessary, to ensure that the Department's air pollution control rules and regulations are not violated.
10. Nothing in this permit or conditions thereto shall negate any authority granted to the Department pursuant to the Alabama Environmental Management Act or regulations issued thereunder.
11. Precautions to prevent fugitive dust shall be taken so that provisions of the Department's rules and regulations shall not be violated.
12. Visible emissions shall not be greater than 20% opacity as measured in accordance with the 40 CFR (7-1-92 Edition) Part 60, Appendix A, Method 9.
13. The particulate emission rate shall exceed neither 0.58 pounds per hour and/or 0.005 grains per standard dry cubic foot of air, as measured in accordance with the 40 CFR (7-1-95 Edition) Part 60, Appendix A, Method 5.

Permit No. 702-0027-X011

14. The volatile organic compound emission rate shall exceed neither 3.45 pounds per hour and/or 136 parts per million (as carbon), as measured in accordance with 40 CFR (7-1-92 Edition) Part 60, Appendix A, Method 25, 25A, or 25B.

ADEM



ALABAMA
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

AIR PERMIT

PERMITTEE: Louisiana Pacific Corporation

LOCATION: Hanceville, Alabama

PERMIT NUMBER

702-0027-X012

DESCRIPTION OF EQUIPMENT,
ARTICLE OR DEVICE

Dry fuel system (Raw fuel Bin) with Baghouse

In accordance with and subject to the provisions of the Alabama Air Pollution Control Act of 1971, as amended, Code of Alabama 1975, §§22-28-1 to 22-28-23 (the 'AAPCA') and the Alabama Environmental Management Act, as amended, Code of Alabama 1975, §§22-22A-1 to 22-22A-15, and rules and regulations adopted thereunder, and subject further to the conditions set forth in this permit, the Permittee is hereby authorized to construct, install and use the equipment, device or other article described above.

ISSUANCE DATE: October 16, 1997

A handwritten signature in cursive script, reading "Ronald W. Gore", is positioned above a horizontal line.

Alabama Department of Environmental Management

Permit No. 702-0027-X012

1. This permit is issued on the basis of Rules and Regulations existing on the date of issuance. In the event additional Rules and Regulations are adopted, it shall be the permit holder's responsibility to comply with such rules.
2. This permit is not transferable. Upon sale or legal transfer, the new owner or operator must apply for a permit within 30 days.
3. A new permit application must be made for new sources, replacements, alterations or design changes which may result in the issuance of, or an increase in the issuance of, air contaminants, or the use of which may eliminate or reduce or control the issuance of air contaminants.
4. Each point of emission will be provided with sampling ports, ladders, platforms, and other safety equipment to facilitate testing performed in accordance with procedures established by Part 60 of Title 40 of the Code of Federal Regulations, as the same may be amended or revised if emission testing is required.
5. In case of shutdown of air pollution control equipment for scheduled maintenance for a period greater than 12 hours, the intent to shut down shall be reported to the Department at least 24 hours prior to the planned shutdown.
6. In the event there is a breakdown of equipment in such a manner as to cause increased emission of air contaminants for a period greater than 12 hours, the person responsible for such equipment shall notify the Department within an additional 24 hours and provide a statement giving all pertinent facts, including the duration of the breakdown. The Department shall be notified when the breakdown has been corrected.
7. All air pollution control devices and capture systems for which this permit is issued shall be maintained and operated at all times in a manner so as to minimize the emissions of air contaminants. Procedures for ensuring that the above equipment is properly operated and maintained so as to minimize the emission of air contaminants shall be established.
8. Submission of other reports regarding monitoring records, fuel analyses, operating rates, and equipment malfunctions may be required as authorized in the Department's air pollution control rules and regulations. The Department may require stack emission testing at any time.
9. Additions and revisions to the conditions of this Permit will be made, if necessary, to ensure that the Department's air pollution control rules and regulations are not violated.
10. Nothing in this permit or conditions thereto shall negate any authority granted to the Department pursuant to the Alabama Environmental Management Act or regulations issued thereunder.
11. Precautions to prevent fugitive dust shall be taken so that provisions of the Department's rules and regulations shall not be violated.
12. Visible emissions shall not be greater than 20% opacity as measured in accordance with the 40 CFR (7-1-92 Edition) Part 60, Appendix A, Method 9.
13. The particulate emission rate shall exceed neither 0.57 pounds per hour and/or 0.005 grains per standard dry cubic foot of air, as measured in accordance with the 40 CFR (7-1-95 Edition) Part 60, Appendix A, Method 5.

Louisiana-Pacific Corporation
Dry fuel system (Raw fuel Bin) with Baghouse

Permit No. 702-0027-X012

14. The volatile organic compound emission rate shall exceed neither 4.74 pounds per hour and/or 191 parts per million (as carbon), as measured in accordance with 40 CFR (7-1-92 Edition) Part 60, Appendix A, Method 25, 25A, or 25B.

ADEM



ALABAMA
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

AIR PERMIT

PERMITTEE: Louisiana Pacific Corporation

LOCATION: Hanceville, Alabama

PERMIT NUMBER

702-0027-X014

DESCRIPTION OF EQUIPMENT,
ARTICLE OR DEVICE

No. 1-5 Rotary Drum Wood Wafer Dryers
with Two Regenerative Thermal Oxidation Systems and
Low NO_x Burners

In accordance with and subject to the provisions of the Alabama Air Pollution Control Act of 1971, as amended, Code of Alabama 1975, §§22-28-1 to 22-28-23 (the 'AAPCA') and the Alabama Environmental Management Act, as amended, Code of Alabama 1975, §§22-22A-1 to 22-22A-15, and rules and regulations adopted thereunder, and subject further to the conditions set forth in this permit, the Permittee is hereby authorized to construct, install and use the equipment, device or other article described above.

ISSUANCE DATE: October 16, 1997

A handwritten signature in cursive script, reading "Ronald W. Gore", is written over a horizontal line.

Alabama Department of Environmental Management

Louisiana-Pacific Corporation
No. 1-5 Rotary Drum Wood Wafer Dryers
with Two Regenerative Thermal Oxidation Systems and Low NO_x Burners

Permit No. 702-0027-X014

1. This permit is issued on the basis of Rules and Regulations existing on the date of issuance. In the event additional Rules and Regulations are adopted, it shall be the permit holder's responsibility to comply with such rules.
2. This permit is not transferable. Upon sale or legal transfer, the new owner or operator must apply for a permit within 30 days.
3. A new permit application must be made for new sources, replacements, alterations or design changes which may result in the issuance of, or an increase in the issuance of, air contaminants, or the use of which may eliminate or reduce or control the issuance of air contaminants.
4. Each point of emission will be provided with sampling ports, ladders, platforms, and other safety equipment to facilitate testing performed in accordance with procedures established by Part 60 of Title 40 of the Code of Federal Regulations, as the same may be amended or revised if emission testing is required.
5. In case of shutdown of air pollution control equipment for scheduled maintenance for a period greater than 12 hours, the intent to shut down shall be reported to the Department at least 24 hours prior to the planned shutdown.
6. In the event there is a breakdown of equipment in such a manner as to cause increased emission of air contaminants for a period greater than 12 hours, the person responsible for such equipment shall notify the Department within an additional 24 hours and provide a statement giving all pertinent facts, including the duration of the breakdown. The Department shall be notified when the breakdown has been corrected.
7. All air pollution control devices and capture systems for which this permit is issued shall be maintained and operated at all times in a manner so as to minimize the emissions of air contaminants. Procedures for ensuring that the above equipment is properly operated and maintained so as to minimize the emission of air contaminants shall be established.
8. Prior to a date to be specified by the Chief of the Air Division in the authorization to operate, emission tests are to be conducted for the following pollutants. Written tests results are to be reported to the Department within 15 working days of completion of testing, unless an extension of time is specifically approved by the Department.

Particulates	(X)	Carbon Monoxide	()
Sulfur Dioxide	()	Nitrogen Oxides	()
Volatile Organic Compounds	()		
9. Submission of other reports regarding monitoring records, fuel analyses, operating rates, and equipment malfunctions may be required as authorized in the Department's air pollution control rules and regulations. The Department may require stack emission testing at any time.
10. Additions and revisions to the conditions of this Permit will be made, if necessary, to ensure that the Department's air pollution control rules and regulations are not violated.
11. Nothing in this permit or conditions thereto shall negate any authority granted to the Department pursuant to the Alabama Environmental Management Act or regulations issued thereunder.
12. Precautions to prevent fugitive dust shall be taken so that provisions of the Department's rules and regulations shall not be violated.
13. The Department must be notified in writing at least 10 working days in advance of all emission tests to be conducted and submitted as proof of compliance with the Department's air pollution control rules and regulations.

Louisiana-Pacific Corporation
No. 1-5 Rotary Drum Wood Wafer Dryers
with Two Regenerative Thermal Oxidation Systems and Low NO_x Burners

Permit No. 702-0027-X014

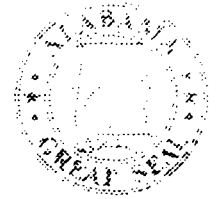
14. To avoid problems concerning testing methods and procedures, the following shall be included with the notification letter:
 - a) The date the test crew is expected to arrive, the date and time anticipated of the start of the first run, how many and which sources are to be tested, and the names of the persons and/or testing company that will conduct the tests.
 - b) A complete description of each sampling train to be used, including type of media used in determining gas stream components, type of probe lining, type of filter media, and probe cleaning method and solvent to be used (if test procedure requires probe cleaning).
 - c) A description of the process(es) to be tested, including the feed rate, any operating parameter used to control or influence the operations, and the rated capacity.
 - d) A sketch or sketches showing sampling point locations and their relative positions to the nearest upstream and downstream gas flow disturbances.
15. A pretest meeting may be held at the request of the source owner or the Department. The necessity for such a meeting and the required attendees will be determined on a case-by-case basis.
16. All test reports must be submitted to the Department within 15 days of the actual completion of the test, unless an extension of time is specifically approved by the Department.
17. Any performance tests required shall be conducted and data reduced in accordance with the test methods and procedures contained in each specific permit condition unless the Director (1) specifies or approves, in specific cases, the use of a reference method with minor changes in methodology, (2) approves the use of an equivalent method, or (3) approves the use of an alternative method, the results of which he has determined to be adequate for indicating whether a specific source is in compliance.
- ✓ 18. The particulate emission rate from either of the two RTO's shall exceed neither 9.64 pounds per hour and/or 0.015 grains per standard dry cubic foot of air, as measured in accordance with the 40 CFR (7-1-95 Edition) Part 60, Appendix A, Method 5. The system shall not employ excess air flow for dilution.
19. ✓ The nitrogen oxide emission rate shall not exceed 40.18 pounds per hour when up to three dryers are operating, as measured in accordance with the 40 CFR (7-1-92 Edition) Part 60, Appendix A, Method 7, 7A, 7B, 7C, 7D or 7E.
- ✓ 20. The nitrogen oxide emission rate shall not exceed 67.74 pounds per hour when four or five dryers are operating (oxidizer exhausts to be sampled simultaneously), as measured in accordance with the 40 CFR (7-1-92 Edition) Part 60, Appendix A, Method 7, 7A, 7B, 7C, 7D or 7E.
21. ✓ The carbon monoxide emission rate shall not exceed 78.14 pounds per hour when up to three dryers are operating, as measured in accordance with the 40 CFR (7-1-92 Edition) Part 60, Appendix A, Method 10.
- ✓ 22. The carbon monoxide emission rate shall not exceed 156.28 pounds per hour when four or five dryers are operating (oxidizer exhausts to be sampled simultaneously), as measured in accordance with the 40 CFR (7-1-92 Edition) Part 60, Appendix A, Method 10.
23. ✓ The volatile organic compound emission rate shall exceed neither 24.89 pounds per hour and/or 0.553 pounds per ton of dry wafers when up to three dryers are operating, as measured in accordance with 40 CFR (7-1-92 Edition) Part 60, Appendix A, Method 18, 25, 25A, or 25B.
- ✓ 24. The volatile organic compound emission rate shall exceed neither 38.29 pounds per hour and/or 0.511 pounds per ton of dry wafers when four or five dryers are operating (oxidizer exhausts to be sampled

Louisiana-Pacific Corporation
No. 1-5 Rotary Drum Wood Wafer Dryers
with Two Regenerative Thermal Oxidation Systems and Low NO_x Burners

Permit No. 702-0027-X014

- simultaneously), as measured in accordance with 40 CFR (7-1-92 Edition) Part 60, Appendix A, Method 18, 25, 25A, or 25B.
25. The volatile organic compound collection efficiency after the primary furnish cyclone, across the multicyclone and RTO shall be at least 95 percent.
26. Neither regenerative thermal oxidizers' combustion chamber operating temperature shall fall below 1400 degrees Fahrenheit.
- ✓ 27. ✓ The formaldehyde emission rate shall not exceed 0.35 pounds per hour, as measured in accordance with EPA Method 0011.
28. Visible emissions shall not be greater than 20% opacity, as measured in accordance with the 40 CFR (7-1-92 Edition) Part 60, Appendix A, Method 9.
29. A continuous opacity monitor shall be installed, calibrated, maintained and operated.
30. A written report of the excess opacity emissions, as defined below, will be submitted to the Department for each calendar quarter within the month following the end of the quarter. The reports will include the following information:
- a) The magnitude of excess emissions 20% and over computed from six-minute averages (data recorded during periods of opacity monitoring system breakdowns, repairs, calibration checks and zero and span adjustments shall not be included in the data averages).
 - b) The date and time of commencement and completion of each time period of excess emissions.
 - c) The nature and cause of the excess emissions (if known) and the corrective action taken or preventative measures adopted.
 - d) The date and time identifying each period during which the opacity monitoring system was inoperative (except for zero and span checks) and the nature of the system repairs or adjustments.
 - e) When no excess emissions have occurred and the opacity monitoring system was not inoperative or did not require repairs or adjustments, such information will be stated in the report.
31. When more than three dryers are operating, both regenerative thermal oxidizers shall operate.
32. During any dryer startup, when no wafers are in the dryers, natural gas may be fired for no more than one hour to preheat the dryers. Exhaust gases may be vented through the dryer bypass stack during those periods. Records of the amount of time natural gas is fired and emissions vent through the bypass stack shall be made. Those records shall be maintained available for review for at least two years.
33. The thermal oil heater may operate no more than 800 hours per year firing natural gas and venting through the dryer bypass stack. Records of the amount of time the thermal oil heater vents through the bypass stack shall be made. Those records shall be maintained available for review for at least two years.

ADEM



**ALABAMA
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT**

AIR PERMIT

PERMITTEE: Louisiana Pacific Corporation

LOCATION: Hanceville, Alabama

PERMIT NUMBER

702-0027-X015

DESCRIPTION OF EQUIPMENT,
ARTICLE OR DEVICE

Sanderdust Bin with Baghouse

In accordance with and subject to the provisions of the Alabama Air Pollution Control Act of 1971, as amended, Code of Alabama 1975, §§22-28-1 to 22-28-23 (the 'AAPCA') and the Alabama Environmental Management Act, as amended, Code of Alabama 1975, §§22-22A-1 to 22-22A-15, and rules and regulations adopted thereunder, and subject further to the conditions set forth in this permit, the Permittee is hereby authorized to construct, install and use the equipment, device or other article described above.

ISSUANCE DATE: October 16, 1997

A handwritten signature in cursive script, reading "Ronald W. Gore", is written over a horizontal line.

Alabama Department of Environmental Management

Permit No. 702-0027-X015

1. This permit is issued on the basis of Rules and Regulations existing on the date of issuance. In the event additional Rules and Regulations are adopted, it shall be the permit holder's responsibility to comply with such rules.
2. This permit is not transferable. Upon sale or legal transfer, the new owner or operator must apply for a permit within 30 days.
3. A new permit application must be made for new sources, replacements, alterations or design changes which may result in the issuance of, or an increase in the issuance of, air contaminants, or the use of which may eliminate or reduce or control the issuance of air contaminants.
4. Each point of emission will be provided with sampling ports, ladders, platforms, and other safety equipment to facilitate testing performed in accordance with procedures established by Part 60 of Title 40 of the Code of Federal Regulations, as the same may be amended or revised if emission testing is required.
5. In case of shutdown of air-pollution control equipment for scheduled maintenance for a period greater than 12 hours, the intent to shut down shall be reported to the Department at least 24 hours prior to the planned shutdown.
6. In the event there is a breakdown of equipment in such a manner as to cause increased emission of air contaminants for a period greater than 12 hours, the person responsible for such equipment shall notify the Department within an additional 24 hours and provide a statement giving all pertinent facts, including the duration of the breakdown. The Department shall be notified when the breakdown has been corrected.
7. All air pollution control devices and capture systems for which this permit is issued shall be maintained and operated at all times in a manner so as to minimize the emissions of air contaminants. Procedures for ensuring that the above equipment is properly operated and maintained so as to minimize the emission of air contaminants shall be established.
8. Submission of other reports regarding monitoring records, fuel analyses, operating rates, and equipment malfunctions may be required as authorized in the Department's air pollution control rules and regulations. The Department may require stack emission testing at any time.
9. Additions and revisions to the conditions of this Permit will be made, if necessary, to ensure that the Department's air pollution control rules and regulations are not violated.
10. Nothing in this permit or conditions thereto shall negate any authority granted to the Department pursuant to the Alabama Environmental Management Act or regulations issued thereunder.
11. Precautions to prevent fugitive dust shall be taken so that provisions of the Department's rules and regulations shall not be violated.
12. Visible emissions shall not be greater than 20% opacity as measured in accordance with the 40 CFR (7-1-92 Edition) Part 60, Appendix A, Method 9.
13. The particulate emission rate shall exceed neither 0.025 pounds per hour and/or 0.005 grains per standard dry cubic foot of air, as measured in accordance with the 40 CFR (7-1-95 Edition) Part 60, Appendix A, Method 5.

ADEM

ALABAMA
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

AIR PERMIT

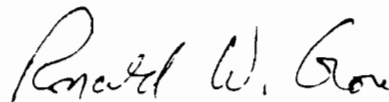
PERMITEE: Louisiana-Pacific Corporation

LOCATION: Hanceville, Alabama

<u>PERMIT NUMBER</u>	<u>DESCRIPTION OF EQUIPMENT, ARTICLE OR DEVICE</u>
702-0027-X010	Board Sander and/or Tongue and Groove Machine with Bagfilter

In accordance with and subject to the provisions of the Alabama Air Pollution Control Act of 1971, as amended, Code of Alabama 1975, §§22-28-1 to 22-28-23 (the "AAPCA") and the Alabama Environmental Management Act, as amended, Code of Alabama 1975, §§22-22A-1 to 22-22A-15, and rules and regulations adopted thereunder, and subject further to the conditions set forth in this permit, the Permittee is hereby authorized to construct, install and use the equipment, device or other article described above.

ISSUANCE DATE: April 3, 1997



Alabama Department of Environmental Management

Louisiana-Pacific Corporation

Permit No. 702-0027-X010

1. This permit is issued on the basis of Rules and Regulations existing on the date of issuance. In the event additional Rules and Regulations are adopted, it shall be the permit holder's responsibility to comply with such rules.
2. This permit is not transferable. Upon sale or legal transfer, the new owner or operator must apply for a permit within 30 days.
3. A new permit application must be made for new sources, replacements, alterations or design changes which may result in the issuance of, or an increase in the issuance of, air contaminants, or the use of which may eliminate or reduce or control the issuance of air contaminants.
4. Each point of emission will be provided with sampling ports, ladders, platforms, and other safety equipment to facilitate testing performed in accordance with procedures established by Part 60 of Title 40 of the Code of Federal Regulations, as the same may be amended or revised.
5. In case of shutdown of air pollution control equipment for scheduled maintenance for a period greater than one hour, the intent to shut down shall be reported to the Air Division at least 24 hours prior to the planned shutdown.
6. In the event there is a breakdown of equipment in such a manner as to cause increased emission of air contaminants for a period greater than one hour, the person responsible for such equipment shall notify the Department within an additional 24 hours and provide a statement giving all pertinent facts, including the duration of the breakdown. The Department shall be notified when the breakdown has been corrected.
7. All air pollution control devices and capture systems for which this permit is issued shall be maintained and operated at all times in a manner so as to minimize the emissions of air contaminants. Procedures for ensuring that the above equipment is properly operated and maintained so as to minimize the emission of air contaminants shall be established.

Permit No. 702-0027-X010

8. This permit expires and the application is canceled if construction has not begun within 24 months of the date of issuance of the permit.
9. On completion of construction of the device for which this permit is issued, notification of the fact is to be given to the Chief of the Air Division at least 10 days in advance of planned operation of the unit. Authorization to operate the unit must be received from the Chief of the Air Division.
10. Submission of other reports regarding monitoring records, fuel analyses, operating rates, and equipment malfunctions may be required as authorized in the Department's air pollution control rules and regulations. The Department may require stack emission testing at any time.
11. Additions and revisions to the conditions of this Permit will be made, if necessary, to ensure that the Department's air pollution control rules and regulations are not violated.
12. Nothing in this permit or conditions thereto shall negate any authority granted to the Department pursuant to the Alabama Environmental Management Act or regulations issued thereunder.
13. This permit is issued with the condition that, should obnoxious odors arising from the plant operations be verified by Air Division inspectors, measures to abate the odorous emissions shall be taken upon a determination by the Alabama Department of Environmental Management that these measures are technically and economically feasible.
14. The Department must be notified in writing at least 10 working days in advance of all emission tests to be conducted and submitted as proof of compliance with the Department's air pollution control rules and regulations.

To avoid problems concerning testing methods and procedures, the following shall be included with the notification letter:

- (1) The date the test crew is expected to arrive, the date and time anticipated of the start of the first run, how many and which sources are to

Permit No. 702-0027-X010

be tested, and the names of the persons and/or testing company that will conduct the tests.

(2) A complete description of each sampling train to be used, including type of media used in determining gas stream components, type of probe lining, type of filter media, and probe cleaning method and solvent to be used (if test procedure requires probe cleaning).

(3) A description of the process(es) to be tested, including the feed rate, any operating parameter used to control or influence the operations, and the rated capacity.

(4) A sketch or sketches showing sampling point locations and their relative positions to the nearest upstream and downstream gas flow disturbances.

A pretest meeting may be held at the request of the source owner or the Department. The necessity for such a meeting and the required attendees will be determined on a case-by-case basis.

All test reports must be submitted to the Department within 15 days of the actual completion of the test, unless an extension of time is specifically approved by the Department.

15. Precautions shall be taken to prevent fugitive dust emanating from plant roads, grounds, stock piles, screens, dryers, hoppers, ductwork, etc.
16. Plant or haul roads and grounds will be maintained in the following manner so that dust will not become airborne:
 - (a) by the application of water any time the surface of the road is sufficiently dry to allow the creation of dust emissions by the act of wind or vehicular traffic;
 - (b) by reducing the speed of vehicular traffic to a point below that at which dust emissions are created;

Permit No. 702-0027-X010

(c) by paving;

(d) by the application of binders to the road surface at any time the road surface is found to allow the creation of dust emissions; or

(e) by any combination of the above methods which results in the prevention of dust becoming airborne from the road surface.

17. Any performance tests required shall be conducted and data reduced in accordance with the test methods and procedures contained in each specific permit condition unless the Director (1) specifies or approves, in specific cases, the use of a reference method with minor changes in methodology, (2) approves the use of an equivalent method, or (3) approves the use of an alternative method, the results of which he has determined to be adequate for indicating whether a specific source is in compliance.
18. This source shall not exhibit greater than 20% opacity measured in accordance with the CFR (7-1-95 Edition) Part 60, Appendix A, Method 9.
19. The particulate emission rate shall not exceed 0.0050 grains per dry standard cubic foot of air and 0.58 pounds per hour measured in accordance with the 40 CFR (7-1-96 Edition) Part 60, Appendix A, Method 5 or Method 17.

April 3, 1997

Date

Alabama
Department of Environmental Management

AIR PERMIT

PERMITTEE: Louisiana-Pacific Corporation
Hanceville Gasoline Storage Tanks

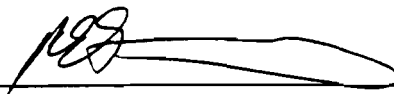
LOCATION: Hanceville, AL

PERMIT NUMBER
702-G042-X001

DESCRIPTION OF EQUIPMENT,
ARTICLE OR DEVICE
Dispensing Facility with 2
Gasoline Storage Tanks Equipped
with Conservation Vents, Submerged
Fill Pipes and Vapor Balance
Systems (Stage 1 Controls)

In accordance with and subject to the provisions of the Alabama Air Pollution Control Act of 1971, as amended, Code of Alabama 1975, §§22-28-1 to 22-28-23 (the "AAPCA") and the Alabama Environmental Management Act, as amended, Code of Alabama 1975, §§22-22A-1 to 22-22A-15, and rules and regulations adopted thereunder, and subject further to the conditions set forth in this permit, the Permittee is hereby authorized to construct, install and use the equipment, device or other article described above.

ISSUANCE DATE: July 11, 1996



Alabama Department of Environmental Management

Louisiana-Pacific Corporation

Permit No. 702-G042-X001

1. This permit is issued on the basis of Rules and Regulations existing on the date of issuance. In the event additional Rules and Regulations are adopted, it shall be the permit holder's responsibility to comply with such rules.
2. Nothing in this permit or conditions thereto shall negate any authority granted to the Department pursuant to the Alabama Environmental Management Act or regulations issued thereunder.
3. This Air Permit shall be kept on display (posted) at all times at the site where the Stage 1 equipment is located and will be made readily available for inspection.
4. The owner or operator shall not bypass the vapor control system (Stage 1 controls) for the gasoline storage tanks located at the gasoline dispensing facility (hereinafter "facility") permitted herein. The owner or operator shall not remove or disconnect any part of the vapor control system unless the use of the gasoline storage tanks is terminated.
5. This Air Permit is not transferable. Upon sale or legal transfer, the new owner or operator must apply for an Air Permit within thirty days.
6. The owner or operator shall make all source equipment and vapor collection systems located at the facility permitted herein readily accessible to personnel of this Department during all periods of inspections.
7. The owner or operator shall receive an Air Permit prior to construction of any new source or prior to any modification, replacement, or alteration of an existing source that might cause or allow an increase or decrease of, or an issuance of, air contaminants.
8. The owner or operator shall not cause or allow gasoline to be spilled, discarded in sewers, stored in open containers or handled in any other manner that would result in unnecessary evaporation of gasoline to the atmosphere.
9. After the date that the facility permitted herein is initially brought into compliance with Part 335-3-6-.07 of the Rules and Regulations, the owner or operator shall not cause or allow the transfer of gasoline from a gasoline transport vessel (hereinafter "tank truck") into the gasoline storage tank at the permitted facility herein unless each storage tank is equipped with a submerged fill pipe and the gasoline vapors displaced from the storage tanks during filling are processed by a vapor control system that complies with Section 335-3-6-.07(4) of the Rules and Regulations.

10. The owner or operator shall not cause or allow a tank truck to transfer gasoline into any gasoline storage tank located at the facility permitted herein unless said tank truck has a valid Department (ADEM) or Jefferson County Department of Health Air Sticker attached.
11. The owner or operator shall maintain a vapor control system required by Section 335-3-6-.07(3) of the Rules and Regulations in a vapor tight (leak-free) condition at all times. All vapor leaks shall be expeditiously repaired.
12. The owner or operator shall maintain a monthly record of the quantity of gallons of each petroleum distillate dispensed at the facility permitted herein.
13. If the owner or operator of the facility permitted herein changes, notification of this change shall be made to this Department in writing within 30 days.
14. In case of shutdown of air pollution control equipment for scheduled maintenance for a period greater than 24 hours, the intent to shut down shall be reported to the Department at least 24 hours prior to the planned shutdown.
15. In the event there is a breakdown of equipment in such a manner as to cause increased emission of air contaminants for a period greater than 24 hours, the person responsible for such equipment shall notify the Department within an additional 24 hours and provide a statement giving all pertinent facts, including the duration of the breakdown. The Department shall be notified when the breakdown has been corrected.

July 11, 1996

Date

ADEM

Alabama
Department of Environmental Management

AIR PERMIT

PERMITTEE: Louisiana-Pacific Corporation

LOCATION: Hanceville, Alabama


<u>PERMIT NUMBER</u>	<u>DESCRIPTION OF EQUIPMENT, ARTICLE OR DEVICE</u>
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702-0027-X015

Sanderdust Receiving Bin with
Baghouse

In accordance with and subject to the provisions of the Alabama Air Pollution Control Act of 1971, as amended, Code of Alabama 1975, §§22-28-1 to 22-28-23 (the 'AAPCA') and the Alabama Environmental Management Act, as amended, Code of Alabama 1975, §§22-22A-1 to 22-22A-15, and rules and regulations adopted thereunder, and subject further to the conditions set forth in this permit, the Permittee is hereby authorized to construct, install and use the equipment, device or other article described above.

ISSUANCE DATE: May 22, 1996



Alabama Department of Environmental Management

1. This permit is issued on the basis of Rules and Regulations existing on the date of issuance. In the event additional Rules and Regulations are adopted, it shall be the permit holder's responsibility to comply with such rules.
2. This permit is not transferable. Upon sale or legal transfer, the new owner or operator must apply for a permit within 30 days.
3. A new permit application must be made for new sources, replacements, alterations or design changes which may result in the issuance of, or an increase in the issuance of, air contaminants, or the use of which may eliminate or reduce or control the issuance of air contaminants.
4. In case of shutdown of air pollution control equipment for scheduled maintenance for a period greater than 12 hours, the intent to shut down shall be reported to the Department at least 24 hours prior to the planned shutdown.
5. In the event there is a breakdown of equipment in such a manner as to cause increased emission of air contaminants for a period greater than 12 hours, the person responsible for such equipment shall notify the Department within an additional 24 hours and provide a statement giving all pertinent facts, including the duration of the breakdown. The Department shall be notified when the breakdown has been corrected.
6. All air pollution control devices and capture systems for which this permit is issued shall be maintained and operated at all times in a manner so as to minimize the emissions of air contaminants. Procedures for ensuring that the above equipment is properly operated and maintained so as to minimize the emission of air contaminants shall be established.
7. Submission of other reports regarding monitoring records, fuel analyses, operating rates, and equipment malfunctions may be required as authorized in the Department's air pollution control rules and regulations. The Department may require stack emission testing at any time.
8. Additions and revisions to the conditions of this Permit will be made, if necessary, to ensure that the Department's air pollution control rules and regulations are not violated.
9. Nothing in this permit or conditions thereto shall negate any authority granted to the Department pursuant to the Alabama Environmental Management Act or regulations issued thereunder.
10. The total particulate emission rate shall not exceed 0.1 pounds per hour, measured in accordance with the 40 CFR (7-1-94 Edition) Part 60, Appendix A, Method 5.
11. Visible emissions shall not be greater than 20% opacity as measured in accordance with the 40 CFR (7-1-94 Edition) Part 60, Appendix A, Method 9.

ADEM

ALABAMA
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

AIR PERMIT

PERMITEE: Louisiana Pacific Corporation

LOCATION: Hanceville, Alabama

<u>PERMIT NUMBER</u>	<u>DESCRIPTION OF EQUIPMENT, ARTICLE OR DEVICE</u>
702-0027-X014	No. 1-5 Rotary Drum Wood Wafer Dryers with Two Regenerative Thermal Oxidation Systems and Low NO _x Burners

In accordance with and subject to the provisions of the Alabama Air Pollution Control Act of 1971, as amended, Code of Alabama 1975, §§22-28-1 to 22-28-23 (the "AAPCA") and the Alabama Environmental Management Act, as amended, Code of Alabama 1975, §§22-22A-1 to 22-22A-15, and rules and regulations adopted thereunder, and subject further to the conditions set forth in this permit, the Permittee is hereby authorized to construct, install and use the equipment, device or other article described above.

ISSUANCE DATE: February 8, 1994


Alabama Department of Environmental Management

No. 1-5 Rotary Drum Wood Wafer Dryers
with Two Regenerative Thermal Oxidation Systems and Low NO_x Burners

Permit No. 702-0027-X014

1. This permit is issued on the basis of Rules and Regulations existing on the date of issuance. In the event additional Rules and Regulations are adopted, it shall be the permit holder's responsibility to comply with such rules.
2. This permit is not transferable. Upon sale or legal transfer, the new owner or operator must apply for a permit within 30 days.
3. A new permit application must be made for new sources, replacements, alterations or design changes which may result in the issuance of, or an increase in the issuance of, air contaminants, or the use of which may eliminate or reduce or control the issuance of air contaminants.
4. Each point of emission will be provided with sampling ports, ladders, platforms, and other safety equipment to facilitate testing performed in accordance with procedures established by Part 60 of Title 40 of the Code of Federal Regulations, as the same may be amended or revised.
5. In case of shutdown of air pollution control equipment for scheduled maintenance for a period greater than 12 hours, the intent to shut down shall be reported to the Department at least 24 hours prior to the planned shutdown.
6. In the event there is a breakdown of equipment in such a manner as to cause increased emission of air contaminants for a period greater than 12 hours, the person responsible for such equipment shall notify the Department within an additional 24 hours and provide a statement giving all pertinent facts, including the duration of the breakdown. The Department shall be notified when the breakdown has been corrected.
7. All air pollution control devices and capture systems for which this permit is issued shall be maintained and operated at all times in a manner so as to minimize the emissions of air contaminants. Procedures for ensuring that the above equipment is properly operated and maintained so as to minimize the emission of air contaminants shall be established.
8. This permit expires and the application is canceled if construction has not begun within 24 months of the date of issuance of the permit.
9. On completion of construction of the device for which this permit is issued, notification of the fact is to be given to the Chief of the Air Division at least 10 days in advance of planned operation of the unit. Authorization to operate the unit must be received from the Chief of the Air Division. Failure to notify the Chief of the Air Division of completion of construction and/or operation without authorization could result in revocation of this permit.

BEST AVAILABLE COPY

Permit No. 702-0027-X014

10. Prior to a date to be specified by the Chief of the Air Division in the authorization to operate, emission tests are to be conducted for the following pollutants. Written tests results are to be reported to the Department within 15 working days of completion of testing.

Particulates	(X)	Carbon Monoxide	(X)
Sulfur Dioxide	()	Nitrogen Oxides	(X)
Volatile Organic Compounds	(X)		

11. Submission of other reports regarding monitoring records, fuel analyses, operating rates, and equipment malfunctions may be required as authorized in the Department's air pollution control rules and regulations. The Department may require stack emission testing at any time.
12. Additions and revisions to the conditions of this Permit will be made, if necessary, to ensure that the Department's air pollution control rules and regulations are not violated.
13. Nothing in this permit or conditions thereto shall negate any authority granted to the Department pursuant to the Alabama Environmental Management Act or regulations issued thereunder.
14. Precautions to prevent fugitive dust shall be taken so that provisions of the Department's rules and regulations shall not be violated.
15. The Department must be notified in writing at least 10 working days in advance of all emission tests to be conducted and submitted as proof of compliance with the Department's air pollution control rules and regulations.

To avoid problems concerning testing methods and procedures, the following shall be included with the notification letter:

- (1) The date the test crew is expected to arrive, the date and time anticipated of the start of the first run, how many and which sources are to be tested, and the names of the persons and/or testing company that will conduct the tests.
- (2) A complete description of each sampling train to be used, including type of media used in determining gas stream components, type of probe lining, type of filter media, and probe cleaning method and solvent to be used (if test procedure requires probe cleaning).
- (3) A description of the process(es) to be tested, including the feed rate, any operating parameter used to control or influence the operations, or the rated capacity.
- (4) A sketch or sketches showing sampling point locations and their positions to the nearest upstream and downstream gas flow direction.

A pretest meeting may be held at the request of the source owner or the Department. The necessity for such a meeting and the required attendees will be determined on a case-by-case basis.

All test reports must be submitted to the Department within 15 days of the actual completion of the test, unless an extension of time is specifically approved by the Department.

16. Any performance tests required shall be conducted and data reduced in accordance with the test methods and procedures contained in each specific permit condition unless the Director (1) specifies or approves, in specific cases, the use of a reference method with minor changes in methodology, (2) approves the use of an equivalent method, or (3) approves the use of an alternative method, the results of which he has determined to be adequate for indicating whether a specific source is in compliance.
17. The particulate emission rate shall exceed neither 10.82 pounds per hour and/or 0.240 pounds per ton of dry wafers when up to three dryers are operating, as measured in accordance with the 40 CFR (7-1-92 Edition) Part 60, Appendix A, Method 5.
18. The particulate emission rate shall exceed neither 16.65 pounds per hour and/or 0.222 pounds per ton of dry wafers when four or five dryers are operating (oxidizer exhausts to be sampled simultaneously), as measured in accordance with the 40 CFR (7-1-92 Edition) Part 60, Appendix A, Method 5.
19. The particulate matter removal efficiency after the primary furnish cyclone, across the multicyclone and RTO shall be at least 95 percent.
20. The nitrogen oxide emission rate shall not exceed 40.18 pounds per hour when up to three dryers are operating, as measured in accordance with the 40 CFR (7-1-92 Edition) Part 60, Appendix A, Method 7, 7A, 7B, 7C, 7D or 7E.
21. The nitrogen oxide emission rate shall not exceed 67.74 pounds per hour when four or five dryers are operating (oxidizer exhausts to be sampled simultaneously), as measured in accordance with the 40 CFR (7-1-92 Edition) Part 60, Appendix A, Method 7, 7A, 7B, 7C, 7D or 7E.
22. The carbon monoxide emission rate shall not exceed 78.14 pounds per hour when up to three dryers are operating, as measured in accordance with the 40 CFR (7-1-92 Edition) Part 60, Appendix A, Method 10.

23. The carbon monoxide emission rate shall not exceed 156.28 pounds per hour when four or five dryers are operating (oxidizer exhausts to be sampled simultaneously), as measured in accordance with the 40 CFR (7-1-92 Edition) Part 60, Appendix A, Method 10.
24. The volatile organic compound emission rate shall exceed neither 24.89 pounds per hour and/or 0.553 pounds per ton of dry wafers when up to three dryers are operating, as measured in accordance with 40 CFR (7-1-92 Edition) Part 60, Appendix A, Method 18, 25, 25A, or 25B.
25. The volatile organic compound emission rate shall exceed neither 38.29 pounds per hour and/or 0.511 pounds per ton of dry wafers when four or five dryers are operating (oxidizer exhausts to be sampled simultaneously), as measured in accordance with 40 CFR (7-1-92 Edition) Part 60, Appendix A, Method 18, 25, 25A, or 25B.
26. The volatile organic compound collection efficiency after the primary furnish cyclone, across the multicyclone and RTO shall be at least 95 percent.
27. Neither regenerative thermal oxidizers' combustion chamber operating temperature shall fall below 1400 degrees Fahrenheit.
28. The formaldehyde emission rate shall not exceed 0.35 pounds per hour, as measured in accordance with EPA Method 0011.
29. Visible emissions shall not be greater than 20% opacity, as measured in accordance with the 40 CFR (7-1-92 Edition) Part 60, Appendix A, Method 9.
30. A continuous opacity monitor shall be installed, calibrated, maintained and operated.
31. A written report of the excess opacity emissions, as defined below, will be submitted to the Department for each calendar quarter within the month following the end of the quarter. The reports will include the following information:
 - a. The magnitude of excess emissions 20% and over computed from six-minute averages (data recorded during periods of opacity monitoring system breakdowns, repairs, calibration checks and zero and span adjustments shall not be included in the data averages).
 - b. The date and time of commencement and completion of each time period of excess emissions.

- c. The nature and cause of the excess emissions (if known) and the corrective action taken or preventative measures adopted.
 - d. The date and time identifying each period during which the opacity monitoring system was inoperative (except for zero and span checks) and the nature of the system repairs or adjustments.
 - e. When no excess emissions have occurred and the opacity monitoring system was not inoperative or did not require repairs or adjustments, such information will be stated in the report.
32. When more than three dryers are operating, both regenerative thermal oxidizers shall operate.

ADEM

ALABAMA
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

AIR PERMIT

PERMITEE: Louisiana Pacific Corporation

LOCATION: Hanceville, Alabama

PERMIT NUMBER

702-0027-X008

DESCRIPTION OF EQUIPMENT,
ARTICLE OR DEVICE

Board Press System with Regenerative
Thermal Oxidation and Low NO_x Burners

In accordance with and subject to the provisions of the Alabama Air Pollution Control Act of 1971, as amended, Code of Alabama 1975, §§22-28-1 to 22-28-23 (the 'AAPCA') and the Alabama Environmental Management Act, as amended, Code of Alabama 1975, §§22-22A-1 to 22-22A-15, and rules and regulations adopted thereunder, and subject further to the conditions set forth in this permit, the Permittee is hereby authorized to construct, install and use the equipment, device or other article described above.

ISSUANCE DATE: February 8, 1994



Alabama Department of Environmental Management

Louisiana-Pacific Corporation
Board Press System with Regenerative Thermal Oxidation and Low NO_x Burners

Permit No. 702-0027-X008

1. This permit is issued on the basis of Rules and Regulations existing on the date of issuance. In the event additional Rules and Regulations are adopted, it shall be the permit holder's responsibility to comply with such rules.
2. This permit is not transferable. Upon sale or legal transfer, the new owner or operator must apply for a permit within 30 days.
3. A new permit application must be made for new sources, replacements, alterations or design changes which may result in the issuance of, or an increase in the issuance of, air contaminants, or the use of which may eliminate or reduce or control the issuance of air contaminants.
4. In case of shutdown of air pollution control equipment for scheduled maintenance for a period greater than 12 hours, the intent to shut down shall be reported to the Department at least 24 hours prior to the planned shutdown.
5. In the event there is a breakdown of equipment in such a manner as to cause increased emission of air contaminants for a period greater than 12 hours, the person responsible for such equipment shall notify the Department within an additional 24 hours and provide a statement giving all pertinent facts, including the duration of the breakdown. The Department shall be notified when the breakdown has been corrected.
6. All air pollution control devices and capture systems for which this permit is issued shall be maintained and operated at all times in a manner so as to minimize the emissions of air contaminants. Procedures for ensuring that the above equipment is properly operated and maintained so as to minimize the emission of air contaminants shall be established.
7. This permit expires and the application is canceled if construction has not begun within 24 months of the date of issuance of the permit.
8. On completion of construction of the device for which this permit is issued, notification of the fact is to be given to the Chief of the Air Division at least 10 days in advance of planned operation of the unit. Authorization to operate the unit must be received from the Chief of the Air Division. Failure to notify the Chief of the Air Division of completion of construction and/or operation without authorization could result in revocation of this permit.
9. Submission of other reports regarding monitoring records, fuel analyses, operating rates, and equipment malfunctions may be required as authorized in the Department's air pollution control rules and regulations. The Department may require stack emission testing at any time.

10. Prior to a date to be specified by the Chief of the Air Division in the authorization to operate, emission tests are to be conducted for the following pollutants. Written tests results are to be reported to the Department within 15 working days of completion of testing.

Particulates	(X)	Carbon Monoxide	(X)
Sulfur Dioxide	()	Nitrogen Oxides	(X)
Volatile Organic Compounds	(X)		

11. Additions and revisions to the conditions of this Permit will be made, if necessary, to ensure that the Department's air pollution control rules and regulations are not violated.
12. Nothing in this permit or conditions thereto shall negate any authority granted to the Department pursuant to the Alabama Environmental Management Act or regulations issued thereunder.
13. Precautions to prevent fugitive dust shall be taken so that provisions of the Department's rules and regulations shall not be violated.
14. Visible emissions shall not be greater than 20% opacity as measured in accordance with the 40 CFR (7-1-92 Edition) Part 60, Appendix A, Method 9.
15. A continuous opacity monitor shall be installed, calibrated, maintained and operated.
16. A written report of the excess opacity emissions, as defined below, will be submitted to the Department for each calendar quarter within the month following the end of the quarter. The reports will include the following information:
- The magnitude of excess emissions 20% and over computed from six-minute averages (data recorded during periods of opacity monitoring system breakdowns, repairs, calibration checks and zero and span adjustments shall not be included in the data averages).
 - The date and time of commencement and completion of each time period of excess emissions.
 - The nature and cause of the excess emissions (if known) and the corrective action taken or preventative measures adopted.
 - The date and time identifying each period during which the opacity monitoring system was inoperative (except for zero and span checks) and the nature of the system repairs or adjustments.
 - When no excess emissions have occurred and the opacity monitoring system was not inoperative or did not require repairs or adjustments, such information will be stated in the report.

Permit No. 702-0027-X008

17. The particulate emission rate shall exceed neither 0.44 pounds per hour and/or 0.008 pounds per thousand square feet of board, as measured in accordance with the 40 CFR (7-1-92 Edition) Part 60, Appendix A, Method 5.
18. The particulate matter collection efficiency across the RTO shall be at least 95 percent.
19. The nitrogen oxide emission rate shall not exceed 12.84 pounds per hour, as measured in accordance with the 40 CFR (7-1-92 Edition) Part 60, Appendix A, Method 7, 7A, 7B, 7C, 7D or 7E.
20. The carbon monoxide emission rate shall not exceed 20.84 pounds per hour, as measured in accordance with the 40 CFR (7-1-92 Edition) Part 60, Appendix A, Method 10.
21. The volatile organic compound emission rate shall exceed neither 4.74 pounds per hour and/or 0.087 pounds per thousand square feet of board, as measured in accordance with 40 CFR (7-1-92 Edition) Part 60, Appendix A, Method 18, 25, 25A, or 25B.
22. The volatile organic compound collection efficiency across the RTO shall be at least 95 percent.
23. The regenerative thermal oxidizer combustion chamber operating temperature shall not fall below 1400 degrees Fahrenheit.
24. The regenerative thermal oxidizer formaldehyde emission rate shall not exceed 0.41 pounds per hour, as measured in accordance with EPA Method 0011.
25. The regenerative thermal oxidizer diphenylmethane diisocyanate (MDI) emission rate shall not exceed 0.0071 pounds per hour, as measured in accordance with NIOSH Method 5521 or subsequently EPA methods approved by the Director.
26. The regenerative thermal oxidizer phenol emission rate shall not exceed 0.16 pounds per hour, as measured in accordance with "NIOSH Manual of Analytical Methods", Publication No. 77-157-A, P&CAM 125 (1977).



MAJOR SOURCE OPERATING PERMIT

Permittee: Louisiana-Pacific Corporation
Facility Name: Louisiana-Pacific Corporation
Facility No.: 702-0027
Location: Hanceville, AL

In accordance with and subject to the provisions of the Alabama Air Pollution Control Act of 1971, as amended, Code of Alabama 1975, §§22-28-1 to 22-28-23 (the "AAPCA") and the Alabama Environmental Management Act, as amended, Code of Alabama 1975, §§22-22A-1 to 22-22A-15, and rules and regulations adopted thereunder, and subject further to the conditions set forth in this permit, the Permittee is hereby authorized to construct, install and use the equipment, device or other article described above.

Pursuant to the Clean Air Act of 1990, all conditions of this permit are federally enforceable by EPA, the Alabama Department of Environmental Management, and citizens in general. Those provisions which are not required under the Clean Air Act of 1990 are considered to be state permit provisions and are not federally enforceable by EPA and citizens in general. Those provisions are contained in separate sections of this permit.

Issuance Date: November 9, 1999

Expiration Date: November 9, 2004

A handwritten signature in cursive script, reading "Ronald W. Coe".

Alabama Department of Environmental Management

TABLE OF CONTENTS

GENERAL PERMIT PROVISOS 6

SUMMARY PAGE FOR TRIM SAWS W/BAGHOUSE 16

PROVISOS FOR TRIM SAWS W/BAGHOUSE 17

Applicability..... 17

Emission Standards 17

Compliance and Performance Test Methods and Procedures..... 17

Emission Monitoring 17

Recordkeeping and Reporting Requirements 18

SUMMARY PAGE FOR BOARD SANDER/TONGUE AND GROOVE MACHINE
W/BAGHOUSE 19

PROVISOS FOR BOARD SANDER/TONGUE AND GROOVE MACHINE
W/BAGHOUSE 20

Applicability..... 20

Emission Standards 20

Compliance and Performance Test Methods and Procedures..... 20

Emission Monitoring 20

Recordkeeping and Reporting Requirements 21

SUMMARY PAGE FOR FORMING SHEET MATERIAL REJECT SYSTEM
W/BAGHOUSE 22

PROVISOS FOR FORMING SHEET MATERIAL REJECT SYSTEM W/BAGHOUSE 23

Applicability..... 23

Emission Standards 23

Compliance and Performance Test Methods and Procedures..... 23

Emission Monitoring 23

Recordkeeping and Reporting Requirements 24

SUMMARY PAGE FOR FUEL GRINDER W/BAGHOUSE 25

PROVISOS FOR FUEL GRINDER W/BAGHOUSE..... 26

Applicability..... 26

<i>Emission Standards</i>	26
<i>Compliance and Performance Test Methods and Procedures</i>	26
<i>Emission Monitoring</i>	26
<i>Recordkeeping and Reporting Requirements</i>	27
SUMMARY PAGE FOR THREE MATERIAL BLENDERS W/ASPIRATION BAGHOUSE	28
PROVISOS FOR THREE MATERIAL BLENDERS W/ASPIRATION BAGHOUSE	29
<i>Applicability</i>	29
<i>Emission Standards</i>	29
<i>Compliance and Performance Test Methods and Procedures</i>	29
<i>Emission Monitoring</i>	29
<i>Recordkeeping and Reporting Requirements</i>	30
SUMMARY PAGE FOR DRY FUEL SYSTEM W/BAGHOUSE	31
PROVISOS FOR DRY FUEL SYSTEM W/BAGHOUSE	32
<i>Applicability</i>	32
<i>Emission Standards</i>	32
<i>Compliance and Performance Test Methods and Procedures</i>	32
<i>Emission Monitoring</i>	32
<i>Recordkeeping and Reporting Requirements</i>	33
SUMMARY PAGE FOR SANDERDUST RECEIVING BIN W/BAGHOUSE	34
PROVISOS FOR SANDERDUST RECEIVING BIN W/BAGHOUSE	35
<i>Applicability</i>	35
<i>Emission Standards</i>	35
<i>Compliance and Performance Test Methods and Procedures</i>	35
<i>Emission Monitoring</i>	35
<i>Recordkeeping and Reporting Requirements</i>	36
SUMMARY PAGE FOR RAW FUEL BIN OVERFLOW SYSTEM W/BAGHOUSE	37
PROVISOS FOR RAW FUEL BIN OVERFLOW SYSTEM W/BAGHOUSE	38

<i>Emission Standards</i>	38
<i>Compliance and Performance Test Methods and Procedures</i>	38
<i>Emission Monitoring</i>	38
<i>Recordkeeping and Reporting Requirements</i>	38
SUMMARY PAGE FOR NO. 1-5 ROTARY DRUM WOOD WAFER DRYERS W/TWO REGENERATIVE THERMAL OXIDATION SYSTEMS AND LOW NOX BURNERS	40
PROVISOS FOR NO. 1-5 ROTARY DRUM WOOD WAFER DRYERS W/TWO REGENERATIVE THERMAL OXIDATION SYSTEMS AND LOW NOX BURNERS	41
<i>Applicability</i>	41
<i>Emission Standards</i>	41
<i>Compliance and Performance Test Methods and Procedures</i>	42
<i>Emission Monitoring</i>	42
<i>Recordkeeping and Reporting Requirements</i>	42
SUMMARY PAGE FOR BOARD PRESS SYSTEM W/REGENERATIVE THERMAL OXIDATION SYSTEM AND LOW NOX BURNERS.....	44
PROVISOS FOR BOARD PRESS SYSTEM W/REGENERATIVE THERMAL OXIDATION SYSTEM AND LOW NOX BURNERS.....	45
<i>Applicability</i>	45
<i>Emission Standards</i>	45
<i>Compliance and Performance Test Methods and Procedures</i>	45
<i>Emission Monitoring</i>	46
<i>Recordkeeping and Reporting Requirements</i>	46
SUMMARY PAGE FOR 40 MMBTU/HR HOT OIL HEATER	48
PROVISOS FOR 40 MMBTU/HR HOT OIL HEATER.....	49
<i>Applicability</i>	49
<i>Emission Standards</i>	49
<i>Compliance and Performance Test Methods and Procedures</i>	49
<i>Emission Monitoring</i>	49
<i>Recordkeeping and Reporting Requirements</i>	49
SUMMARY PAGE FOR SIX RESIN STORAGE TANKS (T-20 WAX, T-22 WAX, T-19	

PROVISOS FOR SIX RESIN STORAGE TANKS (T-20 WAX, T-22 WAX, T-19 MDI, T-21 MDI, PF-1 PHENOL-FORMALDEHYDE, PF-2 PHENOL-FORMALDEHYDE)..... 52

Applicability..... 52

Emission Standards 52

Compliance and Performance Test Methods and Procedures..... 52

Emission Monitoring 52

Recordkeeping and Reporting Requirements 52

General Permit Provisos

Federally Enforceable Provisos	Regulations	
<p>1. <u>Transfer</u></p> <p>This permit is not transferable, whether by operation of law or otherwise, either from one location to another, from one piece of equipment to another, or from one person to another, except as provided in Rule 335-3-16-.13(1)(a)5.</p>	Rule 335-3-16-.02(6)	
<p>2. <u>Renewals</u></p> <p>An application for permit renewal shall be submitted at least six (6) months, but not more than eighteen (18) months, before the date of expiration of this permit.</p> <p>The source for which this permit is issued shall lose its right to operate upon the expiration of this permit unless a timely and complete renewal application has been submitted within the time constraints listed in the previous paragraph.</p>	Rule 335-3-16-.12(2)	
<p>3. <u>Severability Clause</u></p> <p>The provisions of this permit are declared to be severable and if any section, paragraph, subparagraph, subdivision, clause, or phrase of this permit shall be adjudged to be invalid or unconstitutional by any court of competent jurisdiction, the judgment shall not affect, impair, or invalidate the remainder of this permit, but shall be confined in its operation to the section, paragraph, subparagraph, subdivisions, clause, or phrase of this permit that shall be directly involved in the controversy in which such judgment shall have been rendered.</p>	Rule 335-3-16-.05(5)	
<p>4. <u>Compliance</u></p> <p>(a) The permittee shall comply with all conditions of ADEM Admin. Code 335-3. Noncompliance with this permit will constitute a violation of the Clean Air Act of 1990 and ADEM Admin. Code 335-3 and may result in an enforcement action; including but not limited to, permit termination, revocation and reissuance, or modification; or denial of a permit renewal application by the permittee.</p> <p>(b) The permittee shall not use as a defense in an enforcement action that maintaining compliance with conditions of this permit would have required halting or reducing the permitted activity.</p>	Rule 335-3-16-.05(6)	Rule 335-3-16-.05(7)

5. Termination for Cause

This permit may be modified, revoked, reopened, and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or of a notification of planned changes or anticipated noncompliance will not stay any permit condition.

Rule 335-3-16-.05(8)

6. Property Rights

The issuance of this permit does not convey any property rights of any sort, or any exclusive privilege.

Rule 335-3-16-.05(9)

7. Submission of Information

The permittee must submit to the Department, within 30 days or for such other reasonable time as the Department may set, any information that the Department may request in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit or to determine compliance with this permit. Upon receiving a specific request, the permittee shall also furnish to the Department copies of records required to be kept by this permit.

Rule 335-3-16-.05(10)

8. Economic Incentives, Marketable Permits, and Emissions Trading

No permit revision shall be required, under any approved economic incentives, marketable permits, emissions trading and other similar programs or processes for changes that are provided for in this permit.

Rule 335-3-16-.05(11)

9. Certification of Truth, Accuracy, and Completeness:

Any application form, report, test data, monitoring data, or compliance certification submitted pursuant to this permit shall contain certification by a responsible official of truth, accuracy, and completeness except as provided in Rule 335-3-16-.04(9)(b). This certification shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate and complete.

Rule 335-3-16-.07(1)

10. Inspection and Entry

Upon presentation of credentials and other documents as may be required by law, the permittee shall allow authorized representatives of the Alabama Department of Environmental Management and EPA to conduct the following:

Rule 335-3-16-.07(2)

- (a) Enter upon the permittee's premises where a source is located or emissions-related activity is conducted, or where records must be kept pursuant to the conditions of this permit;
- (b) Review and/or copy, at reasonable times, any records that must be kept pursuant to the conditions of this permit;
- (c) Inspect, at reasonable times, this facility's equipment (including monitoring equipment and air pollution control equipment), practices, or operations regulated or required pursuant to this permit;
- (d) Sample or monitor, at reasonable times, substances or parameters for the purpose of assuring compliance with this permit or other applicable requirements.

11. Compliance Provisions

- (a) The permittee shall continue to comply with the applicable requirements with which the company has certified that it is already in compliance.
- (b) The permittee shall comply in a timely manner with applicable requirements that become effective during the term of this permit.

Rule 335-3-16-.07(3)

12. Compliance Certification

A compliance certification shall be submitted at least annually unless more frequent periods are specified according to the specific rule governing the source or required by the Department.

Rule 335-3-16-.07(5)

- (a) The compliance certification shall include the following:
 - (1) The identification of each term or condition of this permit that is the basis of the certification;
 - (2) The compliance status;
 - (3) The method(s) used for determining the compliance status of the source, currently and over the reporting period consistent with Rule 335-3-16-.05(3) (Monitoring and Recording Keeping Requirements);
 - (4) Whether the method(s) or other means used to assure compliance provided continuous or intermittent data;

- (5) Such other facts as the Department may require to determine the compliance status of the source:
- (b) The compliance certification shall be submitted to :

Alabama Department of Environmental Management
Air Division
P.O. Box 301463
Montgomery, AL 36130-1463

and to:

Air and EPCRA Enforcement Branch
EPA Region IV
61 Forsyth Street, SW
Atlanta, GA 30303

13. Reopening for Cause

Under any of the following circumstances, this permit will be reopened prior to the expiration of the permit:

Rule 335-3-16-.13(5)

- (a) Additional applicable requirements under the Clean Air Act of 1990 become applicable to the permittee with a remaining permit term of three (3) or more years. Such a reopening shall be completed not later than eighteen (18) months after promulgation of the applicable requirement. No such reopening is required if the effective date of the requirement is later than the date on which this permit is due to expire.
- (b) Additional requirements (including excess emissions requirements) become applicable to an affected source under the acid rain program. Upon approval by the Administrator, excess emissions offset plans shall be deemed to be incorporated into this permit.
- (c) The Department or EPA determines that this permit contains a material mistake or that inaccurate statements were made in establishing the emissions standards or other terms or conditions of this permit.
- (d) The Administrator or the Department determines that this permit must be revised or revoked to assure compliance with the applicable requirements.

14. Additional Rules and Regulations

This permit is issued on the basis of Rules and Regulations existing on the date of issuance. In the event additional Rules and Regulations are adopted, it shall be the permit holder's responsibility to comply with such rules.

§22-28-16(d), Code of Alabama 1975, as amended

15. Equipment Maintenance or Breakdown

(a) In case of shutdown of air pollution control equipment for scheduled maintenance, the intent to shut down shall be reported to the Department at least 24 hours prior to the planned shutdown, unless such shutdown is accompanied by the shutdown of the source which such equipment is intended to control. The Department shall be notified when maintenance on the air pollution control equipment is complete and the equipment is operating.

Rule 335-3-1-.07(1),(2)

(b) In the event that there is a breakdown of equipment or upset of process in such a manner as to cause, or is expected to cause, increased emissions of air contaminants which are above an applicable standard, the person responsible for such equipment shall notify the Director within 24 hours or the next working day and provide a statement giving all pertinent facts, including the estimated duration of the breakdown. The Director will be notified when the breakdown has been corrected.

16. Operation of Capture and Control Devices

All air pollution control devices and capture systems for which this permit is issued shall be maintained and operated at all times in a manner so as to minimize the emissions of air contaminants. Procedures for ensuring that the above equipment is properly operated and maintained so as to minimize the emission of air contaminants shall be established.

§22-28-16(d), Code of Alabama 1975, as amended

17. Obnoxious Odors

This permit is issued with the condition that, should obnoxious odors arising from the plant operations be verified by Air Division inspectors, measures to abate the odorous emissions shall be taken upon a determination by the Alabama Department of Environmental Management that these measures are technically and economically feasible.

Rule 335-3-1-.08

18. Fugitive Dust

- (a) Precautions shall be taken to prevent fugitive dust emanating from plant roads, grounds, stockpiles, screens, dryers, hoppers, ductwork, etc.
- (b) Plant or haul roads and grounds will be maintained in the following manner so that dust will not become airborne:
 - (1) By the application of water any time the surface of the road is sufficiently dry to allow the creation of dust emissions by the act of wind or vehicular traffic;
 - (2) By reducing the speed of vehicular traffic to a point below that at which dust emissions are created;
 - (3) By paving;
 - (4) By the application of binders to the road surface at any time the road surface is found to allow the creation of dust emissions; or
 - (5) By any combination of the above methods which results in the prevention of dust becoming airborne from the road surface.

Rule 335-3-4-.02

19. Additions and Revisions

Any modifications to this source shall comply with the modification procedures in Rules 335-3-16-.13 or 335-3-16-.14.

Rule 335-3-16-.13 and .14

20. Recordkeeping Requirements

- (a) Records of required monitoring information of the source shall include the following:
 - (1) The date, place, and time of all sampling or measurements;
 - (2) The date analyses were performed;
 - (3) The company or entity that performed the analyses;

Rule 335-3-16-.05(3)(b)

- (4) The analytical techniques or methods used;
- (5) The results of all analyses; and
- (6) The operating conditions that existed at the time of sampling or measurement.

(b) Retention of records of all required monitoring data and support information of the source for a period of at least 5 years from the date of the monitoring sample, measurement, report, or application. Support information includes all calibration and maintenance records and all original strip-chart recordings for continuous monitoring instrumentation and copies of all reports required by the permit

21. Reporting Requirements

(a) Reports to the Department of any required monitoring shall be submitted at least every 6 months. All instances of deviations from permit requirements must be clearly identified in said reports. All required reports must be certified by a responsible official consistent with Rule 335-3-16-.04(9).

Rule 335-3-16-.05(3)(c)

(b) Deviations from permit requirements shall be reported within 24 hours or 1 working day of such deviations, including those attributable to upset conditions as defined in the permit. The report will include the probable cause of said deviations, and any corrective actions or preventive measures that were taken.

22. Emission Testing Requirements

Each point of emission which requires testing will be provided with sampling ports, ladders, platforms, and other safety equipment to facilitate testing performed in accordance with procedures established by Part 60 of Title 40 of the Code of Federal Regulations, as the same may be amended or revised.

Rule 335-3-1-.05(3)
and Rule 335-3-1-.04(1)

The Air Division must be notified in writing at least 10 days in advance of all emission tests to be conducted and submitted as proof of compliance with the Department's air pollution control rules and regulations.

To avoid problems concerning testing methods and procedures, the following shall be included with the notification letter:

1. The date the test crew is expected to arrive, the date and time anticipated of the start of the first run, how many and which sources are to be tested, and the names of the persons and/or testing company that will conduct the tests.
2. A complete description of each sampling train to be used, including type of media used in determining gas stream components, type of probe lining, type of filter media, and probe cleaning method and solvent to be used (if test procedures requires probe cleaning).
3. A description of the process(es) to be tested including the feed rate, any operating parameters used to control or influence the operations, and the rated capacity.
4. A sketch or sketches showing sampling point locations and their relative positions to the nearest upstream and downstream gas flow disturbances.

Rule 335-3-1-.04

A pretest meeting may be held at the request of the source owner or the Air Division. The necessity for such a meeting and the required attendees will be determined on a case-by-case basis.

All test reports must be submitted to the Air Division within 30 days of the actual completion of the test unless the Air Division specifically approves an extension of time.

23. Payment of Emission Fees

Annual emission fees shall be remitted each year according to the fee schedule in ADEM Admin. Code R. 335-1-7-.04.

Rule 335-1-7-.04

24. Other Reporting and Testing Requirements

Submission of other reports regarding monitoring records, fuel analyses, operating rates, and equipment malfunctions may be required as authorized in the Department's air pollution control rules and regulations. The Department may require emission testing at any time.

Rule 335-3-1-.04(1)

25. Title VI Requirements (Refrigerants)

Any facility having appliances or refrigeration equipment, including air conditioning equipment, which use Class I or Class II ozone-depleting substances as listed in 40 CFR Part 82, Subpart A, Appendices A and B, shall service, repair, and maintain such equipment according to the work practices, personnel certification requirements, and certified recycling and recovery equipment specified in 40 CFR Part 82, Subpart F.

No person shall knowingly vent or otherwise release any Class I or Class II substance into the environment during the repair, servicing, maintenance, or disposal of any device except as provided in 40 CFR Part 82, Subpart F.

The responsible official shall comply with all reporting and recordkeeping requirements of 40 CFR 82.166. Reports shall be submitted to the US EPA and the Department as required.

26. Chemical Accidental Prevention Provisions

If a chemical listed in Table 1 of 40 CFR Part 68.130 is present in a process in quantities greater than the threshold quantity listed in Table 1, then:

40 CFR Part 68

- (a) The owner or operator shall comply with the provisions in 40 CFR Part 68.
- (b) The owner or operator shall submit one of the following:
 - (1) A compliance schedule for meeting the requirements of 40 CFR Part 68 by the date provided in 40 CFR Part 68 § 68.10(a) or,
 - (2) A certification statement that the source is in compliance with all requirements of 40 CFR Part 68, including the registration and submission of the Risk Management Plan.

27. Display of Permit

This permit shall be kept under file or on display at all times at the site where the facility for which the permit is issued is located and will make the permit readily available for inspection by any or all persons who may request to see it.

Rule 335-3-14-.01(1)(d)

28. Circumvention

No person shall cause or permit the installation or use of any device or any means which, without resulting in the total amount of air contaminant emitted, conceals or dilutes any emission of air contaminant which would otherwise violate the Division 3 rules and regulations.

Rule 335-3-1-.10

29. Visible Emissions

Unless otherwise specified in the Unit Specific provisos of this permit, any source of particulate emissions shall not discharge more than one 6-minute average opacity greater than 20% in any 60-minute period. At no time shall any source discharge a 6-minute average opacity of particulate emissions greater than 40%. Opacity will be determined by 40 CFR Part 60, Appendix A, Method 9, unless otherwise specified in the Unit Specific provisos of this permit.

Rule 335-3-4-.01(1)

30. Fuel-Burning Equipment

Unless otherwise specified in the Unit Specific provisos of this permit, no fuel-burning equipment may discharge particulate emissions in excess of the emissions specified in Part 335-3-4-.03.

Rule 335-3-4-.03

Unless otherwise specified in the Unit Specific provisos of this permit, no fuel-burning equipment may discharge sulfur dioxide emissions in excess of the emissions specified in Part 335-3-5-.01.

Rule 335-3-5-.01

31. Process Industries - General

Unless otherwise specified in the Unit Specific provisos of this permit, no process may discharge particulate emissions in excess of the emissions specified in Part 335-3-4-.04.

Rule 335-3-4-.04

32. Open Burning

Precautions will be taken to ensure that no person shall ignite, cause to be ignited, permit to be ignited, or maintain any open fire so that the Department's rules and regulations applicable to open burning are not violated.

Rule 335-3-3-.01

Summary Page for Trim Saws w/Baghouse

Permitted

Operating Schedule: 24 Hrs/day x 7 Days/week x 52 Weeks/yr = 8,760 Hrs/yr

Emission limitations:

Emission Point #	Description	Pollutant	Emission limit	Regulation
S-6	Baghouse Exhaust	PM	0.94 lb/hr and/or 0.005 gr/dscf	SIP/PSD
S-6	Baghouse Exhaust	VOC	1.82 lb/hr and/or .44 PPM (as carbon)	SIP/PSD

Provisos for Trim Saws w/Baghouse

Federally Enforceable Provisos	Regulations
<u>Applicability</u>	
1. This source is subject to the applicable requirements of ADEM Admin. Code R. 335-3-16-.03, "Major Source Operating Permits."	Rule 335-3-16-.03
2. This source is subject to the applicable requirements of ADEM Admin. Code R. 335-3-14-.04, "Air Permits Authorizing Construction in Clean Air Areas (Prevention of Significance Deterioration Permitting (PSD))."	Rule 335-3-14-.04
<u>Emission Standards</u>	
1. The particulate emission rate for this process shall not exceed 0.94 pounds per hour and/or 0.005 grains per dry standard cubic foot of air.	Rule 335-3-14-.04(l)
2. The volatile organic compound emission rate for this process shall not exceed 1.82 pounds per hour and/or 44 parts per million.	Rule 335-3-14-.04(l)
<u>Compliance and Performance Test Methods and Procedures</u>	
1. The particulate emission rate for this process shall be measured in accordance with 40 CFR (7-1-95 Edition) Part 60, Appendix A, Method 5.	Rule 335-3-1-.05
2. The volatile organic compound rate for this process shall be measured in accordance with 40 CFR (7-1-92 Edition) Part 60, Appendix A, Method 25, 25A, or 25B.	Rule 335-3-1-.05
<u>Emission Monitoring</u>	
1. A properly maintained and operated device shall be utilized to measure the pressure differential across the baghouse.	Rule 335-3-16-.05
2. The baghouse will be inspected daily for visible emissions. If visible emissions are observed, the baghouse will be inspected and cleaned within 24 hours.	Rule 335-3-16-.05
3. Pressure differentials across the baghouse will be observed and recorded daily. If the pressure differential is outside the manufactures recommended operating range of (+0.1 - +3.0 inches of water), personnel will inspect the bags, expansion joints and turning vanes, internal and external structure for leakage, pneumatic transfer system, and fan operation within 24 hours.	Rule 335-3-16-.05

- | | |
|---|-------------------|
| 4. The baghouse shall be inspected and cleaned at least annually but more frequently if visible emissions are observed or if the pressure change across the baghouse falls outside the manufacturers recommended operating range. | Rule 335-3-16-.05 |
| 5. VOC emissions from this process are based on limiting the OSB production rate to 68,023 ft ² on a 3/8-inch basis using a 24-hour averaging period and a board density of 43 lb/ft ³ . | Rule 335-3-16-.05 |

Recordkeeping and Reporting Requirements

- | | |
|--|--------------------------|
| 1. The permittee will maintain records of daily visible emissions observations, pressure differential across the baghouse, and all inspections and maintenance performed. Records will be maintained for a period of five years. | Rule 335-3-16-.05(3) |
| 2. The permittee will maintain a record of the average hourly throughput of OSB in square feet on a 3/8-inch basis produced through this process using a 24-hour averaging period. Records will be maintained and available for inspection for a period of five (5) years. | Rule 335-3-16-.05(3) |
| 3. Not later than the 30 th of the month following the end of each calendar quarter the permittee will submit to the Air Division the results of the required inspections and all maintenance accomplished on this unit. | Rule 335-3-16-.05(3)(c)1 |

Summary Page for Board Sander/Tongue and Groove Machine
w/Baghouse

Permitted

Operating Schedule: 24 Hrs/day x 7 Days/week x 52 Weeks/yr = 8,760 Hrs/yr

Emission limitations:

Emission Point #	Description	Pollutant	Emission limit	Regulation
S-7	Baghouse Exhaust	PM	0.58 lb/hr and/or 0.005 gr/dscf	SIP/PSD
S-7	Baghouse Exhaust	VOC	0.85 lb/hr and/or 34 PPM (as carbon)	SIP/PSD

Provisos for Board Sander/Tongue and Groove Machine
w/Baghouse

Federally Enforceable Provisos	Regulations
<u>Applicability</u>	
1. This source is subject to the applicable requirements of ADEM Admin. Code R. 335-3-16-.03, "Major Source Operating Permits."	Rule 335-3-16-.03
2. This source is subject to the applicable requirements of ADEM Admin. Code R. 335-3-14-.04, "Air Permits Authorizing Construction in Clean Air Areas (Prevention of Significance Deterioration Permitting (PSD))."	Rule 335-3-14-.04
<u>Emission Standards</u>	
1. The particulate emission rate for this process shall not exceed 0.58 pounds per hour and/or 0.005 grains per dry standard cubic foot of air.	Rule 335-3-14-.04(l)
2. The volatile organic compound emission rate for this process shall not exceed 0.85 pounds per hour and/or 34 parts per million.	Rule 335-3-14-.04(l)
<u>Compliance and Performance Test Methods and Procedures</u>	
1. The particulate emission rate for this process shall be measured in accordance with 40 CFR (7-1-95 Edition) Part 60, Appendix A, Method 5.	Rule 335-3-1-.05
2. The volatile organic compound rate for this process shall be measured in accordance with 40 CFR (7-1-92 Edition) Part 60, Appendix A, Method 25, 25A, or 25B.	Rule 335-3-1-.05
<u>Emission Monitoring</u>	
1. A properly maintained and operated device shall be utilized to measure the pressure differential across the baghouse.	Rule 335-3-16-.05
2. The baghouse will be inspected daily for visible emissions. If visible emissions are observed, the baghouse will be inspected and cleaned within 24 hours.	Rule 335-3-16-.05

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| 3. Pressure differentials across the baghouse will be observed and recorded daily. If the pressure differential is outside the manufacturer's recommended operating range of (+0.1 - +3.0), personnel will inspect the bags, expansion joints and turning vanes, internal and external structure for leakage, pneumatic transfer system, and fan operation within 24 hours. | Rule 335-3-16-.05 |
| 4. The baghouse shall be inspected and cleaned at least annually but more frequently if visible emissions are observed or if the pressure change across the baghouse falls outside the manufacturer's recommended operating range. | Rule 335-3-16-.05 |
| 5. VOC emissions from this process are based on limiting the OSB production rate to 68,023 ft ² on a 3/8-inch basis using a 24-hour averaging period and a board density of 43 lb/ft ³ . | Rule 335-3-16-.05 |

Recordkeeping and Reporting Requirements

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| 1. The permittee will maintain records of daily visible emissions observations, pressure differential across the baghouse, and all inspections and maintenance performed. Records will be maintained for a period of five years. | Rule 335-3-16-.05(3) |
| 2. The permittee will maintain a record of the average hourly throughput of OSB in square feet on a 3/8-inch basis produced through this process using a 24-hour averaging period. Records will be maintained and available for inspection for a period of five (5) years. | Rule 335-3-16-.05(3) |
| 3. Not later than the 30 th of the month following the end of each calendar quarter the permittee will submit to the Air Division the results of the required inspections and all maintenance accomplished on this unit. | Rule 335-3-16-.05(3)(c)1 |

Summary Page for Forming Sheet Material Reject System
w/Baghouse

Permitted

Operating Schedule: 24 Hrs/day x 7 Days/week x 52 Weeks/yr = 8,760 Hrs/yr

Emission limitations:

Emission Point #	Description	Pollutant	Emission limit	Regulation
S-8	Baghouse Exhaust	PM	1.25 lb/hr and/or 0.005 gr/dscf	SIP/PSD
S-8	Baghouse Exhaust	VOC	1.49 lb/hr and/or 27 PPM (as carbon)	SIP/PSD

Provisos for Forming Sheet Material Reject System w/Baghouse

Federally Enforceable Provisos	Regulations
<u>Applicability</u>	
1. This source is subject to the applicable requirements of ADEM Admin. Code R. 335-3-16-.03, "Major Source Operating Permits."	Rule 335-3-16-.03
2. This source is subject to the applicable requirements of ADEM Admin. Code R. 335-3-14-.04, "Air Permits Authorizing Construction in Clean Air Areas (Prevention of Significance Deterioration Permitting (PSD))."	Rule 335-3-14-.04
<u>Emission Standards</u>	
1. The particulate emission rate for this process shall not exceed 1.25 pounds per hour and/or 0.005 grains per dry standard cubic foot of air.	Rule 335-3-14-.04(l)
2. The volatile organic compound emission rate for this process shall not exceed 1.49 pounds per hour and/or 27 parts per million.	Rule 335-3-14-.04(l)
<u>Compliance and Performance Test Methods and Procedures</u>	
1. The particulate emission rate for this process shall be measured in accordance with 40 CFR (7-1-95 Edition) Part 60, Appendix A, Method 5.	Rule 335-3-1-.05
2. The volatile organic compound rate for this process shall be measured in accordance with 40 CFR (7-1-92 Edition) Part 60, Appendix A, Method 25, 25A, or 25B.	Rule 335-3-1-.05
<u>Emission Monitoring</u>	
1. A properly maintained and operated device shall be utilized to measure the pressure differential across the baghouse.	Rule 335-3-16-.05
2. The baghouse will be inspected daily for visible emissions. If visible emissions are observed, the baghouse will be inspected and cleaned within 24 hours.	Rule 335-3-16-.05
3. Pressure differentials across the baghouse will be observed and recorded daily. If the pressure differential is outside the manufactures recommended operating range of (+0.1 - +3.0), personnel will inspect the bags, expansion joints and turning vanes, internal and external structure for leakage, pneumatic transfer system, and fan operation within 24 hours.	Rule 335-3-16-.05

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| 4. The baghouse shall be inspected and cleaned at least annually but more frequently if visible emissions are observed or if the pressure change across the baghouse falls outside the manufacturers recommended operating range. | Rule 335-3-16-.05 |
| 5. VOC emissions from this process are based on limiting the OSB production rate to 68.023 ft ² on a 3/8-inch basis using a 24-hour averaging period and a board density of 43 lb/ft ³ . | Rule 335-3-16-.05 |

Recordkeeping and Reporting Requirements

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| 1. The permittee will maintain records of daily visible emissions observations, pressure differential across the baghouse, and all inspections and maintenance performed. Records will be maintained for a period of five years. | Rule 335-3-16-.05(3) |
| 2. The permittee will maintain a record of the average hourly throughput of OSB in square feet on a 3/8-inch basis produced through this process using a 24-hour averaging period. Records will be maintained and available for inspection for a period of five (5) years. | Rule 335-3-16-.05(3) |
| 3. Not later than the 30 th of the month following the end of each calendar quarter the permittee will submit to the Air Division the results of the required inspections and all maintenance accomplished on this unit. | Rule 335-3-16-.05(3)(c)1 |

Summary Page for Fuel Grinder w/Baghouse

Permitted

Operating Schedule: 24 Hrs/day x 7 Days/week x 52 Weeks/yr = 8.760 Hrs/yr

Emission limitations:

Emission Point #	Description	Pollutant	Emission limit	Regulation
S-9	Baghouse Exhaust	PM	0.58 lb/hr and/or 0.005 gr/dscf	SIP/PSD
S-9	Baghouse Exhaust	VOC	3.45 lb/hr and/or 136 PPM (as carbon)	SIP/PSD

Provisos for Fuel Grinder w/Baghouse

Federally Enforceable Provisos	Regulations
<u>Applicability</u>	
1. This source is subject to the applicable requirements of ADEM Admin. Code R. 335-3-16-.03, "Major Source Operating Permits."	Rule 335-3-16-.03
2. This source is subject to the applicable requirements of ADEM Admin. Code R. 335-3-14-.04, "Air Permits Authorizing Construction in Clean Air Areas (Prevention of Significance Deterioration Permitting (PSD))."	Rule 335-3-14-.04
<u>Emission Standards</u>	
1. The particulate emission rate for this process shall not exceed 0.58 pounds per hour and/or 0.005 grains per dry standard cubic foot of air.	Rule 335-3-14-.04(l)
2. The volatile organic compound emission rate for this process shall not exceed 3.45 pounds per hour and/or 136 parts per million.	Rule 335-3-14-.04(l)
<u>Compliance and Performance Test Methods and Procedures</u>	
1. The particulate emission rate for this process shall be measured in accordance with 40 CFR (7-1-95 Edition) Part 60, Appendix A, Method 5.	Rule 335-3-1-.05
2. The volatile organic compound rate for this process shall be measured in accordance with 40 CFR (7-1-92 Edition) Part 60, Appendix A, Method 25, 25A, or 25B.	Rule 335-3-1-.05
<u>Emission Monitoring</u>	
1. A properly maintained and operated device shall be utilized to measure the pressure differential across the baghouse.	Rule 335-3-16-.05
2. The baghouse will be inspected daily for visible emissions. If visible emissions are observed, the baghouse will be inspected and cleaned within 24 hours.	Rule 335-3-16-.05
3. Pressure differentials across the baghouse will be observed and recorded daily. If the pressure differential is outside the manufactures recommended operating range of (+0.1 - +3.0), personnel will inspect the bags, expansion joints and turning vanes, internal and external structure for leakage, pneumatic transfer system, and fan operation within 24 hours.	Rule 335-3-16-.05

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| 4. The baghouse shall be inspected and cleaned at least annually but more frequently if visible emissions are observed or if the pressure change across the baghouse falls outside the manufacturers recommended operating range. | Rule 335-3-16-.05 |
| 5. VOC emissions from this process are based on limiting the OSB production rate to 68.023 ft ² on a 3/8-inch basis using a 24-hour averaging period and a board density of 43 lb/ft ³ . | Rule 335-3-16-.05 |

Recordkeeping and Reporting Requirements

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| 1. The permittee will maintain records of daily visible emissions observations, pressure differential across the baghouse, and all inspections and maintenance performed. Records will be maintained for a period of five years. | Rule 335-3-16-.05(3) |
| 2. The permittee will maintain a record of the average hourly throughput of OSB in square feet on a 3/8-inch basis produced through this process using a 24-hour averaging period. Records will be maintained and available for inspection for a period of five (5) years. | Rule 335-3-16-.05(3) |
| 3. Not later than the 30 th of the month following the end of each calendar quarter the permittee will submit to the Air Division the results of the required inspections and all maintenance accomplished on this unit. | Rule 335-3-16-.05(3)(c)1 |

Summary Page for Three Material Blenders w/Aspiration
Baghouse

Permitted

Operating Schedule: 24 Hrs/day x 7 Days/week x 52 Weeks/yr = 8,760 Hrs/yr

Emission limitations:

Emission Point #	Description	Pollutant	Emission limit	Regulation
S-10	Baghouse Exhaust	PM	0.21 lb/hr and/or 0.005 gr/dscf	SIP/PSD
S-10	Baghouse Exhaust	VOC	5.32 lb/hr and/or 572 PPM (as carbon)	SIP/PSD

Provisos for Three Material Blenders w/Aspiration Baghouse

Federally Enforceable Provisos	Regulations
<u>Applicability</u>	
1. This source is subject to the applicable requirements of ADEM Admin. Code R. 335-3-16-.03, "Major Source Operating Permits."	Rule 335-3-16-.03
2. This source is subject to the applicable requirements of ADEM Admin. Code R. 335-3-14-.04, "Air Permits Authorizing Construction in Clean Air Areas (Prevention of Significance Deterioration Permitting (PSD))."	Rule 335-3-14-.04
<u>Emission Standards</u>	
1. The particulate emission rate for this process shall not exceed 0.21 pounds per hour and/or 0.005 grains per dry standard cubic foot of air.	Rule 335-3-14-.04(l)
2. The volatile organic compound emission rate for this process shall not exceed 5.32 pounds per hour and/or 572 parts per million.	Rule 335-3-14-.04(l)
<u>Compliance and Performance Test Methods and Procedures</u>	
1. The particulate emission rate for this process shall be measured in accordance with 40 CFR (7-1-95 Edition) Part 60, Appendix A, Method 5.	Rule 335-3-1-.05
2. The volatile organic compound rate for this process shall be measured in accordance with 40 CFR (7-1-92 Edition) Part 60, Appendix A, Method 25, 25A, or 25B.	Rule 335-3-1-.05
<u>Emission Monitoring</u>	
1. A properly maintained and operated device shall be utilized to measure the pressure differential across the baghouse.	Rule 335-3-16-.05
2. The baghouse will be inspected daily for visible emissions. If visible emissions are observed, the baghouse will be inspected and cleaned within 24 hours.	Rule 335-3-16-.05
3. Pressure differentials across the baghouse will be observed and recorded daily. If the pressure differential is outside the manufactures recommended operating range of (+0.1 - +3.0), personnel will inspect the bags, expansion joints and turning vanes, internal and external structure for leakage, pneumatic transfer system, and fan operation within 24 hours.	Rule 335-3-16-.05

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| 4. The baghouse shall be inspected and cleaned at least annually but more frequently if visible emissions are observed or if the pressure change across the baghouse falls outside the manufacturers recommended operating range. | Rule 335-3-16-.05 |
| 5. VOC emissions from this process are based on limiting the OSB production rate to 68,023 ft ² on a 3/8-inch basis using a 24-hour averaging period and a board density of 43 lb/ft ³ . | Rule 335-3-16-.05 |

Recordkeeping and Reporting Requirements

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| 1. The permittee will maintain records of daily visible emissions observations, pressure differential across the baghouse, and all inspections and maintenance performed. Records will be maintained for a period of five years. | Rule 335-3-16-.05(3) |
| 2. The permittee will maintain a record of the average hourly throughput of OSB in square feet on a 3/8-inch basis produced through this process using a 24-hour averaging period. Records will be maintained and available for inspection for a period of five (5) years. | Rule 335-3-16-.05(3) |
| 3. Not later than the 30 th of the month following the end of each calendar quarter the permittee will submit to the Air Division the results of the required inspections and all maintenance accomplished on this unit. | Rule 335-3-16-.05(3)(c)1 |

Summary Page for Dry Fuel System w/Baghouse

Permitted

Operating Schedule: 24 Hrs/day x 7 Days/week x 52 Weeks/yr = 8,760 Hrs/yr

Emission limitations:

Emission Point #	Description	Pollutant	Emission limit	Regulation
S-11	Baghouse Exhaust	PM	0.57 lb/hr and/or 0.005 gr/dscf	SIP/PSD
S-11	Baghouse Exhaust	VOC	4.74 lb/hr and or 191 PPM (as carbon)	SIP/PSD

Provisos for Dry Fuel System w/Baghouse

Federally Enforceable Provisos	Regulations
<u>Applicability</u>	
1. This source is subject to the applicable requirements of ADEM Admin. Code R. 335-3-16-.03, "Major Source Operating Permits."	Rule 335-3-16-.03
2. This source is subject to the applicable requirements of ADEM Admin. Code R. 335-3-14-.04, "Air Permits Authorizing Construction in Clean Air Areas (Prevention of Significance Deterioration Permitting (PSD))."	Rule 335-3-14-.04
<u>Emission Standards</u>	
1. The particulate emission rate for this process shall not exceed 0.57 pounds per hour and/or 0.005 grains per dry standard cubic foot of air.	Rule 335-3-14-.04(l)
2. The volatile organic compound emission rate for this process shall not exceed 4.74 pounds per hour and/or 191 parts per million.	Rule 335-3-14-.04(l)
<u>Compliance and Performance Test Methods and Procedures</u>	
1. The particulate emission rate for this process shall be measured in accordance with 40 CFR (7-1-95 Edition) Part 60, Appendix A, Method 5.	Rule 335-3-1-.05
2. The volatile organic compound rate for this process shall be measured in accordance with 40 CFR (7-1-92 Edition) Part 60, Appendix A, Method 25, 25A, or 25B.	Rule 335-3-1-.05
<u>Emission Monitoring</u>	
1. A properly maintained and operated device shall be utilized to measure the pressure differential across the baghouse.	Rule 335-3-16-.05
2. The baghouse will be inspected daily for visible emissions. If visible emissions are observed, the baghouse will be inspected and cleaned within 24 hours.	Rule 335-3-16-.05
3. Pressure differentials across the baghouse will be observed and recorded daily. If the pressure differential is outside the manufactures recommended operating range of (+0.1 - +3.0), personnel will inspect the bags, expansion joints and turning vanes, internal and external structure for leakage, pneumatic transfer system, and fan operation within 24 hours.	Rule 335-3-16-.05

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| 4. The baghouse shall be inspected and cleaned at least annually but more frequently if visible emissions are observed or if the pressure change across the baghouse falls outside the manufacturers recommended operating range. | Rule 335-3-16-.05 |
| 5. VOC emissions from this process are based on limiting the OSB production rate to 68,023 ft ² on a 3/8-inch basis using a 24-hour averaging period and a board density of 43 lb/ft ³ . | Rule 335-3-16-.05 |

Recordkeeping and Reporting Requirements

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| 1. The permittee will maintain records of daily visible emissions observations, pressure differential across the baghouse, and all inspections and maintenance performed. Records will be maintained for a period of five years. | Rule 335-3-16-.05(3) |
| 2. The permittee will maintain a record of the average hourly throughput of OSB in square feet on a 3/8 inch basis produced through this process using a 24-hour averaging period. Records will be maintained and available for inspection for a period of five (5) years. | Rule 335-3-16-.05(3) |
| 3. Not later than the 30 th of the month following the end of each calendar quarter the permittee will submit to the Air Division the results of the required inspections and all maintenance accomplished on this unit. | Rule 335-3-16-.05(3)(c) 1 |

Summary Page for Sanderdust Receiving Bin w/Baghouse

Permitted

Operating Schedule: 24 Hrs/day x 7 Days/week x 52 Weeks/yr = 8,760 Hrs/yr

Emission limitations:

Emission Point #	Description	Pollutant	Emission limit	Regulation
S-12	Baghouse Exhaust	PM	0.025 lb/hr and/or 0.005 gr/dscf	SIP/PSD

Provisos for Sanderdust Receiving Bin w/Baghouse

Federally Enforceable Provisos	Regulations
<u>Applicability</u>	
1. This source is subject to the applicable requirements of ADEM Admin. Code R. 335-3-16-.03. "Major Source Operating Permits."	RULE 335-3-16-.03
2. This source is subject to the applicable requirements of ADEM Admin. Code R. 335-3-14-.04. "Air Permits Authorizing Construction in Clean Air Areas (Prevention of Significance Deterioration Permitting (PSD))."	Rule 335-3-14-.04
<u>Emission Standards</u>	
1. The particulate emission rate for this process shall not exceed 0.025 pounds per hour and/or 0.005 grains per dry standard cubic foot of air.	Rule 335-3-14-.04(l)
<u>Compliance and Performance Test Methods and Procedures</u>	
1. The particulate emission rate for this process shall be measured in accordance with 40 CFR (7-1-95 Edition) Part 60, Appendix A, Method 5.	Rule 335-3-1-.05
<u>Emission Monitoring</u>	
1. A properly maintained and operated device shall be utilized to measure the pressure differential across the baghouse.	Rule 335-3-16-.05
2. The baghouse will be inspected daily for visible emissions. If visible emissions are observed, the baghouse will be inspected and cleaned within 24 hours.	Rule 335-3-16-.05
3. Pressure differentials across the baghouse will be observed and recorded daily. If the pressure differential is outside the manufactures recommended operating range of (+0.1 - +3.0), personnel will inspect the bags, expansion joints and turning vanes, internal and external structure for leakage, pneumatic transfer system, and fan operation within 24 hours.	Rule 335-3-16-.05
4. The baghouse shall be inspected and cleaned at least annually but more frequently if visible emissions are observed or if the pressure change across the baghouse falls outside the manufacturers recommended operating range.	Rule 335-3-16-.05

Recordkeeping and Reporting Requirements

1. The permittee will maintain records of daily visible emissions observations, pressure differential across the baghouse, and all inspections and maintenance performed. Records will be maintained for a period of five years.
2. Not later than the 30th of the month following the end of each calendar quarter the permittee will submit to the Air Division the results of the required inspections and all maintenance accomplished on this unit.

Rule 335-3-16-.05(3)

Rule 335-3-16-.05(3)(c)1

Summary Page for Raw Fuel Bin Overflow System w/Baghouse

Permitted

Operating Schedule: 24 Hrs/day x 7 Days/week x 52 Weeks/yr = 8,760 Hrs/yr

Emission limitations:

Emission Point #	Description	Pollutant	Emission limit	Regulation
S-13	Baghouse Exhaust	PM	0.37 lb/hr	SIP

2. Not later than the 30th of the month following the end of each calendar quarter the permittee will submit to the Air Division the results of the required inspections and all maintenance accomplished on this unit.

Rule 335-3-16-
.05(3)(c)1

Summary Page for No. 1-5 Rotary Drum Wood Wafer Dryers
w/Two Regenerative Thermal Oxidation Systems and Low NOx
Burners

Permitted

Operating Schedule: 24 Hrs/day x 7 Days/week x 52 Weeks/yr = 8,760 Hrs/yr

Emission limitations:

Emission Point #	Description	Pollutant	Emission limit	Regulation
RTO1 or RTO2	RTO 1 and RTO 2 Stack Exhaust	PM	9.64 lb/hr and/or 0.015 gr/dscf.	SIP/PSD
RTO1 and RTO2	RTO 1 and RTO 2 Stack Exhaust	NOx	40.18 lb/hr with up to three dryers operating	SIP/PSD
RTO1 and RTO2	RTO1 and RTO2 Stack Exhaust	NOx	67.74 lb/hr with four or five dryers operating	SIP/PSD
RTO1 and RTO2	RTO1 and RTO2 Stack Exhaust	CO	78.14 lb/hr with up to three dryers operating	SIP/PSD
RTO1 and RTO2	RTO1 and RTO2 Stack Exhaust	CO	156.28 lb/hr with four or five dryers operating	SIP/PSD
RTO1 and RTO2	RTO1 and RTO2 Stack Exhaust	VOC	24.89 lb/hr and/or 0.553 lb/T of dry wafers with up to three dryers operating	SIP/PSD
RTO1 and RTO2	RTO1 and RTO2 Stack Exhaust	VOC	38.29 lb/hr and/or 0.511 lb/T of dry wafers with four or five dryers operating	SIP/PSD
RTO1 and RTO2	RTO1 and RTO2 Stack Exhaust	Formaldehyde	0.35 lb/hr	SIP/PSD

Provisos for No. 1-5 Rotary Drum Wood Wafer Dryers w/Two Regenerative Thermal Oxidation Systems and Low NOx Burners

Federally Enforceable Provisos	Regulations
<u>Applicability</u>	
1. This source is subject to the applicable requirements of ADEM Admin. Code R. 335-3-16-.03, "Major Source Operating Permits."	Rule 335-3-16-.03
2. This source is subject to the applicable requirements of ADEM Admin. Code R. 335-3-14-.04, "Air Permits Authorizing Construction in Clean Air Areas (Prevention of Significance Deterioration Permitting (PSD))."	Rule 335-3-14-.04
<u>Emission Standards</u>	
1. The particulate emission rate from either of the two RTOs shall exceed neither 9.64 pounds per hour and/or 0.015 grains per dry standard cubic foot of air. The system shall not employ excess air for dilution.	Rule 335-3-14-.04(l)
2. The nitrogen oxide emission rate shall not exceed 40.18 pounds per hour when up to three dryers are operating (oxidizer exhaust to be sampled simultaneously).	Rule 335-3-14-.04(l)
3. The nitrogen oxide emission rate shall not exceed 67.74 pounds per hour when four or five dryers are operating (oxidizer exhaust to be sampled simultaneously).	Rule 335-3-14-.04(l)
4. The carbon monoxide emission rate shall not exceed 78.14 pounds per hour when up to three dryers are operating (oxidizer exhaust to be sampled simultaneously).	Rule 335-3-14-.04(l)
5. The carbon monoxide emission rate shall not exceed 156.28 pounds per hour when four or five dryers are operating (oxidizer exhaust to be sampled simultaneously).	Rule 335-3-14-.04(l)
6. The volatile organic compound emission rate shall exceed neither 24.89 pounds per hour and/or 0.553 pounds per ton of dry wafers when up to three dryers are operating (oxidizer exhaust to be sampled simultaneously).	Rule 335-3-14-.04(l)
7. The volatile organic compound emission rate shall exceed neither 38.29 pounds per hour and/or 0.511 pounds per ton of dry wafers when four or five are operating (oxidizer exhaust to be sampled simultaneously).	Rule 335-3-14-.04(l)
8. The formaldehyde emission rate shall not exceed 0.35 pounds per hour.	Rule 335-3-14-.04(l)
9. The volatile organic compound collection efficiency after the primary cyclone, across the multicyclone, and RTO shall be at least 95%.	Rule 335-3-14-.04(l)

Compliance and Performance Test Methods and Procedures

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| 1. The particulate emission rate for this process shall be measured in accordance with 40 CFR (7-1-95 Edition) Part 60, Appendix A, Method 5. | Rule 335-3-1-.05 |
| 2. The nitrogen oxide emission rate from this process shall be measured in accordance with 40 CFR (7-1-95 Edition) Part 60, Appendix A, Method 7, 7A, 7B, 7C, 7D, or 7E. | Rule 335-3-1-.05 |
| 3. The carbon monoxide emission rate from this process shall be measured in accordance with 40 CFR (7-1-95 Edition) Part 60, Appendix A, Method 10. | Rule 335-3-1-.05 |
| 4. The volatile organic compound rate for this process shall be measured in accordance with 40 CFR (7-1-92 Edition) Part 60, Appendix A, Method 25, 25A, or 25B. | Rule 335-3-1-.05 |
| 5. The formaldehyde emission rate for this process shall be measured in accordance with EPA Method 0011. | Rule 335-3-1-.05 |

Emission Monitoring

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| 1. A continuous recording device shall be used to monitor combustion chamber operating temperature. The regenerative thermal oxidizer's combustion chamber operating temperature shall not fall below 1400 degrees Fahrenheit. If the combustion chamber temperature falls below 1500 degrees Fahrenheit, corrective action will be taken to determine why the temperature dropped below the normal operating set point and corrective action will be taken to correct the problem within 24 hours. | Rule 335-3-16-.05 |
| 2. A continuous opacity monitor shall be installed, calibrated, maintained, and operated whenever the regenerative thermal oxidizers are operating. | Rule 335-3-16-.05 |
| 3. The RTO shall be inspected daily to ensure proper operation and to ensure the RTO ID fans are not being over loaded. The pressure differential across the RTO beds will be monitored daily and a negative RTO inlet pressure will be maintained. If a negative RTO vault pressure cannot be maintained, action will be taken to correct the problem within 24 hours. | Rule 335-3-16-.05 |
| 4. When more than three dryers are operating, both regenerative thermal oxidizer's shall operate. | Rule 335-3-16-.05 |
| 5. The thermal oil heater may operate no more than 800 hours per year firing natural gas and venting through the thermal oil heater by-pass. | Rule 335-3-16-.05 |

Recordkeeping and Reporting Requirements

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| 1. Records will be maintained and available for inspection of the amount of time natural gas is fired in the thermal oil heater and emissions vent through the bypass stack. Records shall be maintained for a period of at least five years. | Rule 335-3-16-.05(3) |
| 2. Records from the continuous combustion chamber temperature recorder will be maintained and available for inspection. Records shall be maintained for a period of at least five years. | Rule 335-3-16-.05(3) |
| 3. The pressure differential across the RTOs and the RTO inlet vault will be recorded at least once daily and documented in a logbook. Records shall be maintained for a period of at least five years and available for inspection. | Rule 335-3-16-.05(3) |
| 4. A written report of the excess opacity emissions, as defined below, amount of time emissions from the thermal oil heater are vented through the bypass stack, and violations of the minimum combustion temperature will be submitted to the Air Division within 30 days of the end of each calendar quarter. The reports will include the following information: <ul style="list-style-type: none">a) The magnitude of excess emissions 20% and over computed from six minute averages (data recorded during periods of opacity monitoring system breakdowns, repairs, calibration checks, and zero and span adjustments shall not be included in the data averages).b) The date and time of commencement and completion of each time period of excess emissions.c) The nature and cause of the excessive visible emissions and the corrective action taken or preventive measures adopted.d) The date and time identifying each period during which the opacity monitoring system was inoperative (except for zero and span checks) and the nature of the system repairs or adjustments.e) When no excess emissions have occurred and the opacity monitoring system was not inoperative or did not require repairs or adjustment, such information will be stated in the report.f) The date and time period that the combustion chamber operating temperature decreased below 1500 °F.g) The number of hours during the past consecutive twelve months that emissions from the hot oil heater was vented to the atmosphere through the by-pass. Hours should be broken down to show when the burner was fired with gas.h) The date and time period that the RTO inlet vault pressure was either 0 or positive and the action taken to correct the problem. | Rule 335-3-16-.05(3)(c)1 |

Summary Page for Board Press System w/Regenerative Thermal Oxidation System and Low NOx Burners

Permitted

Operating Schedule: 24 Hrs/day x 7 Days/week x 52 Weeks/yr = 8,760 Hrs/yr

Emission limitations:

Emission Point #	Description	Pollutant	Emission limit	Regulation
RTO 3	RTO 3 Stack Exhaust	PM ₁₀	9.86 lb/hr and/or 0.010 gr/dscf	SIP/PSD
RTO 3	RTO 3 Stack Exhaust	CO	20.84 lb/hr	SIP/PSD
RTO 3	RTO 3 Stack Exhaust	NO _x	12.84 lb/hr	SIP/PSD
RTO 3	RTO 3 Stack Exhaust	VOC (as Carbon)	4.74 lb/hr and/or 0.087 lb/MFT ²	SIP/PSD
RTO 3	RTO 3 Stack Exhaust	Formaldehyde	0.41 lb/hr	SIP/PSD
RTO 3	RTO 3 Stack Exhaust	Phenol	0.16 lb/hr	SIP/PSD
RTO 3	RTO 3 Stack Exhaust	MDI	0.0071 lb/hr	SIP/PSD

Provisos for Board Press System w/Regenerative Thermal Oxidation System and Low NOx Burners

Federally Enforceable Provisos	Regulations
<u>Applicability</u>	
1. This source is subject to the applicable requirements of ADEM Admin. Code R. 335-3-16-.03, "Major Source Operating Permits."	Rule 335-3-16-.03
2. This source is subject to the applicable requirements of ADEM Admin. Code R. 335-3-14-.04, "Air Permits Authorizing Construction in Clean Air Areas (Prevention of Significance Deterioration Permitting (PSD))."	Rule 335-3-14-.04
<u>Emission Standards</u>	
1. The particulate emission rate from the RTOs shall exceed neither 9.86 pounds per hour and/or 0.010 grains per dry standard cubic foot of air. The system shall not employ excess air for dilution.	Rule 335-3-14-.04(l)
2. The nitrogen oxide emission rate from the RTO shall not exceed 12.84 pounds per hour.	Rule 335-3-14-.04(l)
3. The carbon monoxide emission rate from the RTO shall not exceed 20.84 pounds per hour.	Rule 335-3-14-.04(l)
4. The volatile organic emission rate from the RTO shall exceed neither 4.74 pounds per hour and/or 0.087 pounds per thousand square feet of board.	Rule 335-3-14-.04(l)
5. The formaldehyde emission rate from the RTO shall not exceed 0.41 pounds per hour.	Rule 335-3-14-.04(l)
6. The diphenylmethane diisocyanate emission rate from the RTO shall not exceed 0.0071 pounds per hour.	Rule 335-3-14-.04(l)
7. The phenol emission rate from the RTO shall not exceed 0.16 pounds per hour.	Rule 335-3-14-.04(l)
8. The volatile organic compound collection efficiency across the RTO shall be at least 95 percent.	Rule 335-3-14-.04(l)
<u>Compliance and Performance Test Methods and Procedures</u>	
1. The particulate emission rate for this process shall be measured in accordance with 40 CFR (7-1-95 Edition) Part 60, Appendix A, Method 5.	Rule 335-3-1-.05

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| 2. The nitrogen oxide emission rate from this process shall be measured in accordance with 40 CFR (7-1-95 Edition) Part 60, Appendix A, Method 7, 7A, 7B, 7C, 7D, or 7E. | Rule 335-3-1-.05 |
| 3. The carbon monoxide emission rate from this process shall be measured in accordance with 40 CFR (7-195 Edition) Part 60, Appendix A, Method 10. | Rule 335-3-1-.05 |
| 4. The volatile organic compound rate for this process shall be measured in accordance with 40 CFR (7-1-92 Edition) Part 60, Appendix A, Method 25, 25A, or 25B. | Rule 335-3-1-.05 |
| 5. The formaldehyde emission rate for this process shall be measured in accordance with the NCASI Chilled Impinger Method. | Rule 335-3-1-.05 |
| 6. The diphenylmethane diisocyanate (MDI) rate for this process shall be measured in accordance with NIOSH Method 5521 or subsequently EPA methods approved by the director. | Rule 335-3-1-.05 |
| 7. The phenol rate for this process shall be measured in accordance with NIOSH "Manual of Analytical Methods", Publication No. 77-157-A, P&CAM 125 (1977). | Rule 335-3-1-.05 |

Emission Monitoring

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| 1. A continuous recording device shall be used to monitor combustion chamber operating temperature. The regenerative thermal oxidizer's combustion chamber operating temperature shall not fall below 1400 degrees Fahrenheit. If the combustion chamber temperature falls below 1500 degrees Fahrenheit, corrective action will be taken to determine why the temperature dropped below the normal operating set point and corrective action will taken to correct the problem within 24 hours. | Rule 335-3-16-.05 |
| 2. The RTO shall be inspected daily to ensure proper operation and to ensure the RTO ID fans are not being over loaded. The pressure differential across the RTO beds will be monitored daily and a negative RTO inlet pressure will be maintained. If a negative RTO vault pressure cannot be maintained, action will be taken to correct the problem within 24 hours. | Rule 335-3-16-.05 |
| 3. This process is limited to 68,023 ft ² of OSB produced using a 24-hour averaging period and based on a 3/8-inch board density of 43 lb/ft ³ , which is equivalent to 91,406 pounds per hour of resinated oven-dried wafers per hour. | Rule 335-3-16-.05 |

Recordkeeping and Reporting Requirements

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|---|----------------------|
| 1. Records will be maintained and available for inspection of the amount of time natural gas is fired in the thermal oil heater and emissions vent through the bypass stack. Records shall be maintained for a period of at least five years. | Rule 335-3-16-.05(3) |
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| 2. Records from the continuous combustion chamber temperature recorder will be maintained and available for inspection. Records shall be maintained for a period of at least five years | Rule 335-3-16-.05(3) |
| 3. The pressure differential across the RTOs and the RTO inlet vault will be recorded at least once daily and documented in a logbook. Records shall be maintained for a period of at least five years and available for inspection. | Rule 335-3-16-.05(3) |
| 4. A written report, as defined below will be submitted to the Air Division within 30 days of the end of each calendar quarter. The reports will include the following information:
a) The date and time period that the combustion chamber operating temperature decreased below 1500 °F.
b) The date and time period that the RTO inlet vault pressure was either 0 or positive and the action taken to correct the problem. | Rule 335-3-16-.05(3)(c)1 |

Summary Page for 40 MMBTU/hr Hot Oil Heater

Permitted

Operating Schedule: 24 Hrs/day x 7 Days/week x 52 Weeks/yr = 8,760 Hrs/yr

Emission limitations:

Emission Point #	Description	Pollutant	Emission limit	Regulation
RTO1 or RTO2	RTO 1 and RTO 2 Stack Exhaust	PM ₁₀	0.10 lb/million BTU heat input or 4 lb/hr	NSPS
RTO1 and RTO2	RTO 1 and RTO 2 Stack Exhaust	NO _x	None	SIP
RTO1 and RTO2	RTO1 and RTO2 Stack Exhaust	CO	None	SIP
RTO1 and RTO2	RTO1 and RTO2 Stack Exhaust	VOC	None	SIP
RTO1 and RTO2	RTO1 and RTO2 Stack Exhaust	SO ₂	None	SIP

Provisos for 40 MMBTU/hr Hot Oil Heater

Federally Enforceable Provisos	Regulations
<u>Applicability</u>	
1. This source is subject to the applicable requirements of ADEM Admin. Code R. 335-3-16-.03, "Major Source Operating Permits."	Rule 335-3-16-.03
2. This source is subject to the applicable requirements of ADEM Admin. Code R. 335-3-14-.04, "Air Permits Authorizing Construction in Clean Air Areas (Prevention of Significance Deterioration Permitting (PSD))."	Rule 335-3-14-.04
3. This hot oil heater is subject to the Standards of Performance for New Stationary Sources; Small Industrial-Commercial-Institutional Steam generating Units, 40 CFR 60, Subpart D.	Rule 40 CFR 60, Appendix A, Subpart D.
<u>Emission Standards</u>	
1. The particulate emission for this unit is limited to 43 ng/J (0.10 lb/million BTU) heat in put or 4.0 pounds per hour.	40 CFR Part 60, Appendix A, Subpart D.
<u>Compliance and Performance Test Methods and Procedures</u>	
1. The particulate emission rate for this process shall be measured in accordance with 40 CFR (7-1-95 Edition) Part 60, Appendix A, Method 5.	Rule 335-3-1-.05
<u>Emission Monitoring</u>	
1. A continuous opacity monitor shall be installed, calibrated, maintained, and operated whenever the hot oil heater is operating.	Rule 335-3-16-.05
2. The thermal oil heater may operate no more than 800 hours per year firing natural gas and venting through the thermal oil heater by-pass stack.	Rule 335-3-16-.05
<u>Recordkeeping and Reporting Requirements</u>	
1. Records will be maintained and available for inspection of the amount of time natural gas is fired in the thermal oil heater and emissions vented through the bypass stack. Records shall be maintained for a period of at least five years.	Rule 335-3-16-.05(3)

2. Records of daily fuel usage for each type of fuel burned will be maintained in a permanent form suitable for inspection. The records shall be retained for a period of at least five years from the date of generation and available upon request.

40 CFR part 60.
Subpart D.

3. A written report of the excess opacity emissions, as defined below, amount of time emissions from the thermal oil heater are vented through the bypass stack, and the daily fuel usage will be submitted to the Air Division for each calendar quarter within one month following the end of the quarter. The reports will include the following information:

Rule 335-3-16-
.05(3)(c)1

(a) The magnitude of excess emissions 20% and over computed from six minute averages (data recorded during periods of opacity monitoring system breakdowns, repairs, calibration checks, and zero and span adjustments shall not be included in the data averages).

(b) The date and time of commencement and completion of each time period of excess emissions.

(c) The nature and cause of the excessive visible emissions and the corrective action taken or preventive measures adopted.

(d) The date and time identifying each period during which the opacity monitoring system was inoperative (except for zero and span checks) and the nature of the system repairs or adjustments.

(e) When no excess emissions have occurred and the opacity monitoring system was not inoperative or did not require repairs or adjustment, such information will be stated in the report.

(f) The number of hours during the past consecutive twelve months that emissions from the hot oil heater was vented to the atmosphere through the by-pass. Hours should be broken down to show when the burner was fired with gas.

Summary Page for Six Resin Storage Tanks (T-20 Wax, T-22 Wax, T-19 MDI, T-21 MDI, PF-1 Phenol-Formaldehyde, PF-2 Phenol-Formaldehyde)

Permitted

Operating Schedule: 24 Hrs/day x 7 Days/week x 52 Weeks/yr = 8,760 Hrs/yr

Emission limitations:

Emission Point #	Description	Pollutant	Emission limit	Regulation
T-20	13,900 Gallon Wax Storage Tank	VOC	None	NSPS
T-22	13,900 Gallon Wax Storage Tank	VOC	None	NSPS
T-19	27,600 MDI Storage Tank	VOC	None	NSPS
T-21	27,600 MDI Storage Tank	VOC	None	NSPS
PF-1	14,000 Gallon Phenol-Formaldehyde Storage Tank	VOC	None	NSPS
PF-2	14,000 Gallon Phenol-Formaldehyde Storage Tank	VOC	None	NSPS

Provisos for Six Resin Storage Tanks (T-20 Wax, T-22 Wax, T-19 MDI, T-21 MDI, PF-1 Phenol-Formaldehyde, PF-2 Phenol-Formaldehyde)

Federally Enforceable Provisos	Regulations
<u>Applicability</u>	
1. This source is subject to the applicable requirements of ADEM Admin. Code R. 335-3-16-.03, "Major Source Operating Permits."	Rule 335-3-16-.03
2. These tanks are subject to the Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced after July 23, 1984, 40 CFR 60, Subpart Kb.	40 CFR 60, Subpart Kb, paragraph 60.116b(b)
<u>Emission Standards</u>	
1. None.	
<u>Compliance and Performance Test Methods and Procedures</u>	
1. None	
<u>Emission Monitoring</u>	
1. None	
<u>Recordkeeping and Reporting Requirements</u>	
1. The permittee of each storage vessel as specified in 40 CFR 60, Subpart Kb, paragraph 60.110B(a) shall keep readily accessible records showing the dimension of the storage tank and an analysis showing the capacity of each storage vessel. Each storage vessel with a design capacity less than 20,000 gallons is subject to no provision of this subpart other than those required by this paragraph.	40 CFR 60, Subpart Kb, paragraph 60.116b(b)
2. Not later than the 30 th of the month following the end of each calendar quarter the permittee will submit to the Air Division a letter verifying that the number, size, and contents of the storage tanks is as stated in the permit application.	Rule 335-3-16-.05(3)(c)1

ATTACHMENT 6
Louisiana-Pacific, Hanceville, AL – Source Test Summary

ENVIRONMENTAL MONITORING LABORATORIES, INC

P.O. Box 433 • 6048 Highway 31 North

PRINTED

Phone: 601/836-3000

Madison, Mississippi 39158

Fax: 601/833-3111

July 30, 1994

Subject: Louisiana Pacific Corporation
Hanceville, Alabama

On June 14 through 17, 1994, Environmental Monitoring Laboratories performed air emissions testing for Louisiana Pacific Corporation's oriented strand board (OSB) facility in Hanceville, Alabama. Testing was performed to determine emissions of particulate matter (PM), volatile organic compounds (VOC), formaldehyde (HCHO), nitrogen oxides (NOx), and carbon monoxide (CO) from the regenerative thermal oxidizer (RTO) system controlling emissions from five OSB dryers and from the RTO controlling emissions from the press vent. Testing was also simultaneously performed at the RTO inlets to determine removal efficiency.

DRYER/RTO	PM		VOC		HCHO		CO		NOx	
	#/hr	ug/hr	#/hr	ppm	#/hr	ppm	#/hr	ppm	#/hr	ppm
WEST RTO	4.88	0.009	1.25	9.1	0.118	0.34	5.84	20	14.86	32
EAST RTO	5.60	0.011	0.62	5.1	0.133	0.43	4.20	16	12.87	29
RTO INLET	103.7	—	263.6	—	5.52	—	24.12	—	16.54	—
REMOVAL EFFICIENCY	90.4		99.3		95.4		58.4		-67.7	

PRESS VENT/RTO	PM		VOC		HCHO		CO		NOx	
	#/hr	ug/hr	#/hr	ppm	#/hr	ppm	#/hr	ppm	#/hr	ppm
RTO OUTLET	2.08	0.002	0.34	1.6	0.030	0.06	5.33	11	7.89	10
RTO INLET	4.13	—	147.4	—	1.81	—	ND	ND	ND	ND
REMOVAL EFFICIENCY	74.8		99.8		98.3		—		—	

The testing project was coordinated by Dr. James T. Boswell of Louisiana Pacific Corporation. Mr. Scott Roberts of ADEM was present to witness portions of the testing. Danny Russell of Environmental Monitoring Laboratories coordinated sample collection and analysis and report preparation. Armstrong Environmental performed testing at the RTO inlets. All formaldehyde samples were shipped to Oxford Laboratories in Wilmington, North Carolina for analysis. Otherwise sample custody was limited to Mr. Moore and Mr. Russell. Mr. David Chiles and Mr. Russ Karon of Smith Engineering Company were also present.

Following is a report of the test.

ATTACHMENT 7
Revised Emission Rate Calculations – EP-4 and EP-5

Revised Calculations for EP-4 and EP-5

EP-4 (Sawtrim/Finishing Line Pneumatics)

$$30,733 \text{ dscfm} \times 0.005 \text{ gr/dscf} \times 60 \text{ mins/hour} \times \text{pound}/7000 \text{ gr} = 1.32 \text{ lbs/hour (5.77 tpy)}$$

EP-5 (Mat Reject/Flying Saw Pneumatics)

$$45,720 \text{ dscfm} \times 0.005 \text{ gr/dscf} \times 60 \text{ mins/hour} \times \text{pound}/7000 \text{ gr} = 1.95 \text{ lbs/hour (8.59 tpy)}$$

ATTACHMENT 8
Response to U.S. Fish and Wildlife Service and EPA Region IV BACT Questions

Responses to EPA Comments Regarding BACT

Question 1:

In the Best Available Control Technology (BACT) analysis section of the permit application (Section G.5.2 of Attachment G), several control options have been eliminated on the basis of being too “costly” without any justification. For example, dryer exhaust recycle was eliminated as a potential control of organic emissions (i.e., VOC) in part because “the high temperature heat exchanger ... requires costly material of construction”. Also, “sacrificial bed” pre-filters were eliminated in part because “the required maintenance is costly” for a similar application at another Georgia-Pacific facility located in Monticello, Georgia. For a control option to be eliminated on the basis of being cost prohibitive, there must be accompanying cost analyses (including average cost effectiveness) which justify such a claim.

Response:

Section G.5.2 of the application presents the second step of BACT determination for the dryers. G-P eliminated control technologies through the technical feasibility analysis. G-P reduced a set of technologies with similar levels of control by following EPA guidance for technical feasibility analyses. Section IV.B of the New Source Review Workshop Manual (EPA, 1990) provides detailed guidance for technical feasibility analyses. This EPA guidance states:

“..if two or more control techniques result in control levels that are essentially identical considering the uncertainties of emission factors and other parameters pertinent to estimating performance, [then] the source may wish to point this out and make a case for [technical feasibility] evaluation of only the less costly of these options.”

The following provides additional information to clarify this claim for the oxidation control options and pre-filters.

Oxidation Control

Section G.5.1 of the application discussed three types of oxidation controls for the dryers:

- Regenerative Thermal Oxidation (RTO) with particulate matter control
- Regenerative Catalytic Oxidation (RCO) with particulate matter control
- [Exhaust] Recycle system with indirect heat exchange and particulate matter control

G-P has constructed and is currently operating two oriented strandboard (OSB) facilities with the exhaust recycle feature integrated into the original plant design. These two G-P OSB facilities are the Brookneal, VA and Skippers, VA plants. Our air permits for these plants and operating experience indicates that the actual performance of the dryer exhaust recycle system results in the same level of control as thermal oxidation using an RTO/RCO.

As constructed, neither of these plants was subject to federal New Source Review. As such, the corresponding entries in the RACT/BACT/LAER Clearinghouse reflect a selection of controls only necessary to maintain emission levels below the NSR major source thresholds.

Attachment 4 (of the July 11, 2000 letter from G-P to Mr. Joe Kahn) presents air permits for the Brookneal, VA facility.

Our substantial operating experience at these plants has revealed that dryer exhaust recycle systems have four significant disadvantages:

- Increased operating costs associated with the implementation of additional safety systems due an increased likelihood of unsafe working/operating conditions (*e.g.*, explosions)
- Increased operating costs associated with maintenance efforts
- Increased capital costs associated with the construction of the heat exchanger
- Decreased reliability and increased downtime related to the performance of the heat exchangers and recuperators

Thus, as G-P developed the plant design for Hosford, the RTO/RCO control option (as a thermal oxidation technology) was selected, as it can provide essentially identical control efficiencies at a lower cost (capital and operating costs) and with a reduced likelihood of plant malfunctions and safety problems.

Pre-filters

The use of any oxidation system (*e.g.*, exhaust recycle, RTO) requires the use of a device to protect the system equipment. For example, the purpose of the particulate matter control with an RTO is to protect the bed of the RTO by removing solid particulates. The solid particulates may, depending on size, plug up the heat exchange media in the RTO. As the heat exchange media becomes plugged, the performance of the RTO will diminish. Two types of available, and demonstrated, particulate matter control systems for use with RTOs include sacrificial pre-filter beds and multicycle cyclones (multiclones).

G-P has experience with the use of both pre-filters and multiclones upstream of an RTO. Both pre-filters and multiclones are essentially identical in control efficiency. Both remove at least 30% of the particulate matter. Our substantial operating experience at other plants has revealed that the multiclones have three significant advantages:

- Decreased operating costs since there are essentially no moving parts in a multiclone; maintenance effort are greatly simplified and malfunctions are minimized
- Multiclones are significantly less expensive to construct and install
- With a reduced risk of malfunction, the operation of the associated oxidation system (*e.g.*, RTO) is also more reliable.

Thus, as G-P developed the plant design for Hosford, the multiclones were selected since they can provide essentially identical control efficiencies at significantly reduced costs.

To enhance the effectiveness of the multiclone/RTO combination, G-P selected an RTO design with an “on-line bakeout” feature. This design feature will further reduce the risk of pluggage in the heat exchange media bed, that might occur as a result of any particulate matter not captured by the particulate matter control device.

Conclusions

G-P applied EPA guidance to simplify the technical feasibility analysis for dryer control options. Once the technical feasibility analysis reduced the three oxidation and two corresponding particulate matter systems to an RTO with multiclones, these remaining control technologies were analyzed through the third step of the BACT assessment: Ranking of the technically feasible alternatives in a top-down manner. Section G.5.3 of the application presents the third step of the BACT determination. Because the top candidate technology was acceptable, G-P did not conduct a cost analysis or energy analysis to consider an alternative with a reduced level of control.

Question 2:

It appears that the “top-down” approach was not used with regard to the selection of BACT for the control of NOx emissions from the press. The BACT analysis (Section G.6.4 of Attachment G) simply states that low-NOx burner design in combinations with fuel enhancement will comprise BACT for the press without any discussions or rankings of other potential control options [e.g. selective catalytic reduction (SCR) and selective non-catalytic reduction (SNCR)]. Do the design/layouts of the press and thermal oil heater create the same problems as those detailed for the dryers (Section G.5.2 of Attachment G) with respect to SCR or SNCR?

Response:

The following information reviews the BACT procedure for the press and potential nitrogen oxides (NOx) emissions. While the section G.6 of the application presented information on NOx control options, the following also provides additional data on the appropriateness of SCR and SNCR controls for press systems and thermal oil systems.

Press BACT

G-P applied a “top-down” approach for the selection of BACT for all pollutants from the press. The individual press platens are heated indirectly with hot oil being supplied by the thermal oil system and the uncontrolled press exhaust, therefore, contains no combustion gases. The press is completely enclosed and does not emit NOx. The Hosford plant will be using phenol-formaldehyde (PF) resin. G-P believes that the source of NOx during source tests applied in AP-42 that indicate “all resin types” is limited to resins with some nitrogen content (e.g., urea-formaldehyde and MDI resins).

Thus, the press system only emits particulate matter, volatile organic compounds (VOCs), and carbon monoxide (CO). As discussed below, the NOx emissions are generated as a result of operating the RTO, and do not originate as a direct result of the operation of the press. Therefore, the BACT analysis for the press begins with listing control options for PM, VOC, and CO only.

Section G.6.1 of the application listed the following control options for PM, VOC and CO control:

- Regenerative Thermal Oxidation (RTO)
- Regenerative Catalytic Oxidation (RCO)
- Biofiltration
- Wet ESP

G-P selected these control options by reviewing the RACT/BACT/LAER Clearinghouse. The Clearinghouse lists BACT determinations for PM, VOC, CO and NO_x. The technical feasibility analysis presented in the application did not eliminate any of the control options. Therefore, G-P ranked the options for PM, VOC, and CO control and then selected the best or "top" control.

Section 10.6.1 of AP-42 (Table 10.6.1-6) lists press nitrogen oxides emission rates at 0.038 and 0.28 lb./msf for uncontrolled and RTO-controlled presses, respectively. Thus, by proposing an RTO to control emissions of volatile organic compounds, carbon monoxide, and particulate matter from the press, additional nitrogen oxides are actually being generated as a result of supplemental natural gas firing in the RTO itself. To minimize NO_x emissions, G-P selected an RTO burner design (low-NO_x burner with fuel enhancement) to minimize the generation of NO_x.

Use of SCR/SNCR

Press

We are unaware of any operational RTOs in our industry on which SCR or SNCR is operating on a press or thermal oil heater. We understand that a Clearinghouse entry indicates the use of SCR on an RCO for a press at a Weyerhaeuser facility in North Carolina. However, Weyerhaeuser personnel have informed us (in July 2000) that the permit requirement for SCR has been removed from their permit. The installation of SCR at the Weyerhaeuser facility was not completed due to the technical feasibility issues.

The feasibility issues are airstream temperature and chemical compatibility. SCR/SNCR is not feasible as an end of the pipe control because the RTO outlet temperature is less than 500 degrees Fahrenheit (°F), which is significantly below the desirable temperature for ammonia or urea to react with NO_x. The other, potential location for ammonia or urea injection is within the RTO combustion chamber. However, injection into the RTO combustion chamber is not technically feasible as chemical attack to the heat exchange media can be intensified, thus adversely affecting its structural integrity, physical and mechanical properties.

To reduce NO_x emissions, the RTO design includes low-NO_x burners, fuel enhancement, and bed design. These features offer benefits similar to SCR or SNCR. Fuel enhancement is the injection of natural gas in the RTO inlet pipe. The use of natural gas prevents the formation of thermal nitrous oxides, thus reducing the emission of NO_x. The proposed TCO/RTO features the use of catalytic media on top of the heat exchange media. This feature will oxidize VOC and HAPs at lower temperatures. These lower temperatures reduce the formation of thermal NO_x and CO. The catalytic media is the same media (precious metal) used for SCR systems.

Thermal Oil Heater

The Thermal Oil System will:

1. combust dry wood fines (sanderdust) in suspension
2. pass the combustion gas across a thermal oil heat exchanger and then
3. pass the combustion gas through a dry electrostatic precipitator (ESP).

We are unaware of any operational Thermal Oil Heaters in our industry on which SCR or SNCR is operating. For this reason, G-P did not list the use of SCR/SNCR as a control alternative for NO_x. However, to address the question, G-P has determined that SCR/SNCR would be technically infeasible for use on a Thermal Oil Heater. Inlet gas temperatures to the heat exchanger are variable (based on energy demand) and are projected to range from 1100 F. to 1450 F, with an average around 1300 F. SNCR requires a minimum temperature of 1600 F. for effective NO_x removal. As such SNCR will be technically infeasible for this application due to insufficient temperature. SCR requires operating temperatures in the range of 600 F. to 750 F. for conventional (vanadium, titanium) catalyst and 470 F. to 510 F. for platinum-based catalyst. Operational experience with a similar unit at G-P's Grenada, MS OSB plant indicate ESP outlet temperatures in the 550 F. to 600 F. range making platinum catalyst infeasible and conventional catalyst marginal at best. The temperature mismatch coupled with load-related temperature swings will also result in excessive ammonia slip making SCR technically infeasible for this application.

Conclusions

NO_x emissions are created by the top candidate control option (thermal oxidation) for PM, VOC, and CO. G-P designed the RTO with several features to reduce potential NO_x emissions. These features have been demonstrated and are consistent with the Clearinghouse entries and industry experience. Because industry experience has not demonstrated SCR/SNCR technologies as feasible, these features were not included in the design for the RTO or Thermal Oil Heater.

Question 3:

In the portion of the permit application which details the methodologies used to quantify emissions (Section 4, Emission Rates), it is stated that combustion emissions were estimated using AP-42 emission factors for wood firing....Section 1.6, Wood Waste Combustion.. a revised draft version of this section dated 9/99.. shows [a higher] NO_x emission factor... EPA strongly recommends that all emissions be re-evaluated using the latest emission factors available, particularly those related to wood combustion.

Response:

G-P has updated the emission calculations using the 9/99 proposed emission factors for wood combustion. The only sources which combust wood are the dryers and thermal oil system, which normally vents through the dryers.. Emission estimates in the application for the dryers are estimated based on engineering calculations from the dryer manufacturer, including a safety factor. G-P is only using the wood-combustion AP-42 emission factors for the thermal oil system. As stated above, these emissions, under normal operations, exhaust through the dryers. As such, we have used the updated factors to estimate hourly emissions that would occur during bypass events. These revised emission rates are presented below.

Summary of Emissions from Hot Oil Heater, G-P Hosford OSB (revised July 2000)

Substance	Uncontrolled (b) Emission Factor			Emission Rates (a)		
				Uncontrolled (lb/hr)	Controlled	
					(lb/hr) (c)	(tpy)
Particulate Matter (PM/PM10)	1.0E-01	lb/MMBtu	(1)	--	8.0	(included in Dryer RTO calcs)
Nitrogen Oxides	2.0E-01	lb/MMBtu	(2)	16.0	16.0	(included in Dryer RTO calcs)
Sulfur Dioxide	2.4E-02	lb/MMBtu	(2)	1.9	1.9	8.4
Carbon Monoxide	1.6E-01	lb/MMBtu	(2)	12.44	12.4	(included in Dryer RTO calcs)
<u>HAPs</u>						
2,3,7,8-Tetrachlorodibenzo-p-dioxins	7.9E-12	lb/MMBtu	(2)	6.32E-10	6.32E-11	2.77E-10
2,3,7,8-Tetrachlorodibenzo-p-furans	1.1E-10	lb/MMBtu	(2)	8.80E-09	8.80E-10	3.85E-09
2,4,6-Trichlorophenol	2.2E-07	lb/MMBtu	(2)	1.76E-05	1.76E-06	7.71E-06
2,4-Dinitrotoluene	9.4E-07	lb/MMBtu	(2)	7.52E-05	7.52E-06	3.29E-05
2,4-Dinitrophenol	4.8E-07	lb/MMBtu	(2)	3.84E-05	3.84E-06	1.68E-05
2-Butanone (MEK)	1.3E-05	lb/MMBtu	(2)	1.04E-03	1.04E-04	4.56E-04
4-Nitrophenol	3.3E-07	lb/MMBtu	(2)	2.64E-05	2.64E-06	1.16E-05
Acetaldehyde	8.5E-03	lb/MMBtu	(2)	6.80E-01	6.80E-02	2.98E-01
Acetophenone	3.2E-09	lb/MMBtu	(2)	2.56E-07	2.56E-08	1.12E-07
Acrolein	3.0E-03	lb/MMBtu	(2)	2.40E-01	2.40E-02	1.05E-01
Arsenic	2.0E-05	lb/MMBtu	(2)	1.60E-03	2.40E-04	1.05E-03
Benzene	3.9E-03	lb/MMBtu	(2)	3.12E-01	3.12E-02	1.37E-01
Beryllium	1.5E-06	lb/MMBtu	(2)	1.20E-04	1.80E-05	7.88E-05
Cadmium	3.7E-06	lb/MMBtu	(2)	2.96E-04	4.44E-05	1.94E-04
Carbon tetrachloride	2.8E-05	lb/MMBtu	(2)	2.24E-03	2.24E-04	9.81E-04
Chlorine	6.0E-04	lb/MMBtu	(2)	4.80E-02	4.80E-03	2.10E-02
Chlorobenzene	1.7E-05	lb/MMBtu	(2)	1.36E-03	1.36E-04	5.96E-04
Chloroform	2.7E-05	lb/MMBtu	(2)	2.16E-03	2.16E-04	9.46E-04
Chromium, hexavalent	9.3E-04	lb/MMBtu	(2)	7.44E-02	1.12E-02	4.89E-02
Chromium, total	2.1E-05	lb/MMBtu	(2)	1.68E-03	2.52E-04	1.10E-03
Cobalt	6.6E-06	lb/MMBtu	(2)	5.28E-04	7.92E-05	3.47E-04
Dichlorobenzene	3.4E-07	lb/MMBtu	(2)	2.72E-05	2.72E-06	1.19E-05
Dichloromethane	2.9E-04	lb/MMBtu	(2)	2.32E-02	2.32E-03	1.02E-02
Ethylbenzene	3.1E-05	lb/MMBtu	(2)	2.48E-03	2.48E-04	1.09E-03
Formaldehyde	9.6E-03	lb/MMBtu	(2)	7.68E-01	7.68E-02	(included in Dryer RTO calcs)
Hexachlorobenzene	5.2E-07	lb/MMBtu	(2)	4.16E-05	4.16E-06	1.82E-05
Hydrogen chloride	2.0E-02	lb/MMBtu	(2)	1.60E+00	1.60E-01	7.01E-01
Lead	4.8E-05	lb/MMBtu	(2)	3.84E-03	5.76E-04	2.52E-03
Manganese	1.4E-03	lb/MMBtu	(2)	1.12E-01	1.68E-02	7.36E-02
Mercury	4.5E-06	lb/MMBtu	(2)	3.60E-04	5.40E-05	2.37E-04
Naphthalene	1.3E-04	lb/MMBtu	(2)	1.04E-02	1.04E-03	4.56E-03
Nickel	3.0E-05	lb/MMBtu	(2)	2.40E-03	3.60E-04	1.58E-03
Pentachlorophenol	2.4E-07	lb/MMBtu	(2)	1.92E-05	1.92E-06	8.41E-06
Phenol	2.8E-04	lb/MMBtu	(2)	2.24E-02	2.24E-03	9.81E-03

Summary of Emissions from Hot Oil Heater, G-P Hosford OSB (revised July 2000)						
Substance	Uncontrolled (b) Emission Factor			Emission Rates (a)		
				Uncontrolled	Controlled	
				(lb/hr)	(lb/hr) (c)	(tpy)
Phosphorus	2.7E-05	lb/MMBtu	(2)	2.16E-03	3.24E-04	1.42E-03
Selenium	5.4E-06	lb/MMBtu	(2)	4.32E-04	6.48E-05	2.84E-04
Styrene	1.9E-03	lb/MMBtu	(2)	1.52E-01	1.52E-02	6.66E-02
Tetrachlorodibenzo-p-dioxins	3.5E-10	lb/MMBtu	(2)	2.80E-08	2.80E-09	1.23E-08
Toluene	6.5E-04	lb/MMBtu	(2)	5.20E-02	5.20E-03	2.28E-02
Trichlorobenzene	3.2E-07	lb/MMBtu	(2)	2.56E-05	2.56E-06	1.12E-05
Trichloroethene	3.2E-05	lb/MMBtu	(2)	2.56E-03	2.56E-04	1.12E-03
Trichlorophenols	2.7E-07	lb/MMBtu	(2)	2.16E-05	2.16E-06	9.46E-06
Vinyl Chloride	1.3E-05	lb/MMBtu	(2)	1.04E-03	1.04E-04	4.56E-04
o-Xylene	2.2E-05	lb/MMBtu	(2)	1.76E-03	1.76E-04	7.71E-04
m,p-Xylene	1.8E-05	lb/MMBtu	(2)	1.44E-03	1.44E-04	6.31E-04
Total HAPs				1.39	0.42	1.51

Notes

- (a) Short Term Emission rates reflect maximum hourly design on 80 MMBtu/hr on bark
Annual Emissions reflect hourly bark rates for 8,760 hours / yr.
- (b) Emission Factors do not reflect the use of the ESP, or RTO.
- (c) Controlled emissions reflect a 90% control on volatile organic compounds from RTO, and 85% control on particulates from RTO or ESP. The calculation for SO2 assumes no control.

References:

- (1) ESP Manufacturer guarantee
- (2) 1999 **Draft** Compilation of Emission Factors, AP-42 (EPA, 1999). Section 1.6

The February 2, 2000 letter from the FSW concludes:

“The overall selection of BACT technology is acceptable in this situation, but the emission limits in some cases are higher than BACT. The Georgia-Pacific facility should be able to meet the emission limits provided above.”

The FSW letter discusses emissions and levels on controls for the dryers, press, and material handling. The following information addresses each of these source types.

Dryers

G-P requests that the proposed emissions from the dryers remain as stated in the application. The FSW requested lower rates for PM10, VOC, and NOx. The FSW request essentially believes that the proposed Hosford Plant should be required to meet the same emission limits as our Brookneal, VA facility, on a heat-input basis. G-P believes that the comparison is improper based substantial differences in both plant design and production capacity. Attachment 4 presents the construction and operating permit for the G-P Brookneal facility. Both the efficiency and design of heat demand between these two plants are quite different. Comparisons of two parameters are:

- Hosford 200 MMBtu/hr; 62.8 dry tons flakes/hr; an additional 64 MMBtu/hr for two RTOs
- Brookneal: 240 MMBtu/hr; 36.3 dry tons flakes/hr

First, as shown above, the Brookneal Plant uses 240 MMBtu/hr to dry the wood flakes and control VOC emissions at a thermal efficiency of 0.15 tons/MMBtu. The Hosford Plant will use a total of 232 MMBtu/hr to process 73% more material at a thermal efficiency of 0.24 tons/MMBtu.

Second, the ducting of the Brookneal Plant dryer design exhaust is subject to federal New Source Performance Standards (NSPS), and the Hosford plant is not. NSPS control technology must meet a minimum mass per unit heat input limit as specified in the NSPS. BACT control equipment is selected by ranking the control technologies by emission reduction potential. The emissions attributed to the Hosford dryer system are a result of two combustion sources: the dryer and the RTO. Thus, it is improper to strictly compare emission limits between these two plants on a lbs/MMBtu basis for the purposes of determining BACT.

Source testing conducted in 1999 forms the basis for the Brookneal emission limits on the dryers. Thus, the FSW comparison between the plants is between predicted emissions for Hosford and actual observed emissions for Brookneal. Comparing source tests with predicted emissions neglects the additional engineering safety factors included in the Hosford calculations. For instance, the dryer vendor calculations assume the wettest possible wood to maximize potential emissions. The calculations in the permit application reflect a wet strand moisture content of 120%, on an oven-dried basis. The dryer vendor has determined that predicted emissions would be 62% less for PM and 54% less for VOC if safety factors were eliminated and a wet strand moisture content of 99.6% (Hanceville source test) was used.

Unfortunately, the Brookneal emission limits, based on testing, are not complemented with actual wet strand moistures. Thus, while G-P believes the level of control between an RTO and recycle energy system is very similar, G-P believes that it is prudent to request hourly emission limits based on source-specific engineering calculations with safety factors and a worst-case wet strand moisture content.

Press

G-P requests that the proposed emissions from the press remain as stated in the application. The FSW requested lower rates for PM10 and VOC. In contrast to the dryers, G-P did not use engineering calculations to predict potential emissions for the press. The press vendor provided source test data for a similar press at the L-P Hanceville, AL plant. The application methodology for calculating the emission rates for Hosford assumes the RTO inlet is the same between Hosford and Hanceville on a lb VOC/MSF basis. A copy of the source test is presented in Attachment 6 of this document. The application calculated the controlled emission rate for Hosford by multiplying the Hanceville uncontrolled emission rate by the ratio of production rates (Hosford/Hanceville), and then assuming a 75 and 90% reduction in emissions by the RTO for PM10 and VOC, respectively. These control efficiencies are based on the RTO vendor guarantees, not on Hanceville source test data.

G-P believes that until source testing for Hosford can be performed, that the methodology is the most accurate and conservative.

Material Handling

The air permit for the Brookneal Plant presents a BACT for its material handling source at 0.01 grain per cubic foot (gr/acf). G-P presented the same grain loading rates for its material handling sources at Hosford based on the top candidate technology. After further review, G-P believes that systems which handle sanderdust cannot achieve lower emission rates. However, Units 004 and 005 do not handle purely fine material. For these two units, Georgia-Pacific is comfortable accepting reduced particulate matter emission rates, based on a loading of 0.005 grain per cubic foot. Revised emission calculations are provided for these two sources in Attachment 7 to this document. For all other material handling sources, G-P believes that a grain loading of 0.01 gr/dscf represents BACT.