

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32301-8241



BOB GRAHAM
GOVERNOR

VICTORIA J. TSCHINKEL
SECRETARY

January 19, 1983

Mr. James T. Wilburn, Chief
Air Management Branch
Air & Waste Management Division
U.S. EPA, Region IV
345 Courtland Street, N.E.
Atlanta, Georgia 30365

Dear Mr. Wilburn:

RE: Preliminary Determination - Georgia-Pacific Corporation
Federal PSD-FL-079

Enclosed for your review and comment are the Public Notice and Preliminary Determination for Georgia-Pacific Corporation's Federal PSD permit application for the construction of a combination boiler (No. 5), a recovery boiler with two associated smelt tanks (No. 5), a lime kiln (No. 5), and associated pollution control equipment at their existing kraft mill in Palatka, Putnam County, Florida.

Please inform my office if you have comments or questions regarding this determination, at (904) 488-1344.

Sincerely,

C. H. Fancy, P.E.
Deputy Chief
Bureau of Air Quality
Management

CHF/pa

Enclosure

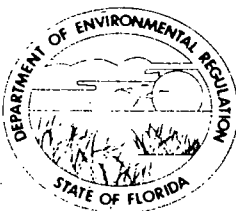
cc: Mr. Roger Sherwood, Georgia-Pacific Corporation
Mr. David Buff, Environmental Science and Engineering, Inc.
Mr. John Ketteringham, DER Northeast District
Mr. Greg DeMuth, DER Northeast District Branch Office

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BOB GRAHAM
GOVERNOR

VICTORIA J. TSCHINKEL
SECRETARY

January 20, 1983

Mr. R. Daniel Castle
Northeast Florida Regional
Planning Council
8641 Baypine Road, Suite 9
Jacksonville, Florida 32216

Dear Mr Castle:

RE: Preliminary Determination - Georgia-Pacific Corporation
Federal PSD-FL-079

I wish to bring to your attention that Georgia-Pacific Corporation proposes to modify its existing facility in Palatka, Putnam County, Florida, and that emissions of air pollutants will thereby be increased. The Florida Department of Environmental Regulation, under the authority delegated by the U.S. Environmental Protection Agency, has reviewed the proposed construction under Federal Prevention of Significant Deterioration Regulations (40 CFR 52.21) and reached a preliminary determination of approval, with conditions, for this construction. This approval applies only to Federal regulatory requirements and has no bearing on other State or local functions.

Please also be aware that the attached Public Notice announcing the preliminary determination, the availability of pertinent information for public scrutiny and the opportunity for public comment will be published in a local newspaper in the near future. This notice has been mailed to you for your information and in accordance with regulatory requirements. You need take no action unless you wish to comment on the proposed construction. If you have any questions, please feel free to call Mr. Bill Thomas or myself at (904) 488-1344.

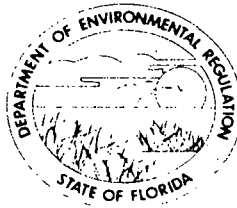
Sincerely,

for C. H. Fancy, P.E.
Deputy Chief
Bureau of Air Quality
Management

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BOB GRAHAM
GOVERNOR

VICTORIA J. TSCHINKEL
SECRETARY

January 20, 1983

Honorable E. L. Walker
Mayor, City of Palatka
Post Office Drawer 1100
Palatka, Florida 32077

Dear Mayor Walker:

RE: Preliminary Determination - Georgia-Pacific Corporation
Federal PSD-FL-079

I wish to bring to your attention that Georgia-Pacific Corporation proposes to modify its existing facility in Palatka, Putnam County, Florida, and that emissions of air pollutants will thereby be increased. The Florida Department of Environmental Regulation, under the authority delegated by the U.S. Environmental Protection Agency, has reviewed the proposed construction under Federal Prevention of Significant Deterioration Regulations (40 CFR 52.21) and reached a preliminary determination of approval, with conditions, for this construction. This approval applies only to Federal regulatory requirements and has no bearing on other State or local functions.

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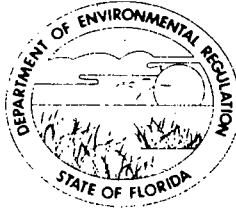
Sincerely,

for C. H. Fancy, P.E.
Deputy Chief
Bureau of Air Quality
Management

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DEPARTMENT OF ENVIRONMENTAL REGULATION

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TALLAHASSEE, FLORIDA 32301-8241



BOB GRAHAM
GOVERNOR

VICTORIA J. TSCHINKEL
SECRETARY

January 20, 1983

Putnam County Commissioners
Post Office Box 758
Palatka, Florida 32077

Dear Commissioners:

RE: Preliminary Determination - Georgia-Pacific Corporation
Federal PSD-FL-079

I wish to bring to your attention that Georgia-Pacific Corporation proposes to modify its existing facility in Palatka, Putnam County, Florida, and that emissions of air pollutants will thereby be increased. The Florida Department of Environmental Regulation, under the authority delegated by the U.S. Environmental Protection Agency, has reviewed the proposed construction under Federal Prevention of Significant Deterioration Regulations (40 CFR 52.21) and reached a preliminary determination of approval, with conditions, for this construction. This approval applies only to Federal regulatory requirements and has no bearing on other State or local functions.

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Sincerely,

C. H. Fancy, P.E.
Deputy Chief
Bureau of Air Quality
Management

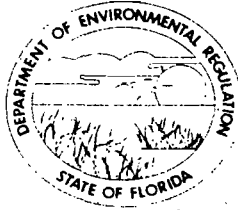
CHF/pa

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TWIN TOWERS OFFICE BUILDING
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TALLAHASSEE, FLORIDA 32301-8241



BOB GRAHAM
GOVERNOR

VICTORIA J. TSCHINKEL
SECRETARY

January 20, 1983

Mr. Ron Fahs
State A-95 Coordinator
Florida State Planning and
Development Clearinghouse
Office of Planning and Budget
The Capitol
Tallahassee, Florida 32301

Dear Mr. Fahs:

RE: Preliminary Determination - Georgia-Pacific Corporation
Federal PSD-FL-079

I wish to bring to your attention that Georgia-Pacific Corporation proposes to modify its existing facility in Palatka, Putnam County, Florida, and that emissions of air pollutants will thereby be increased. The Florida Department of Environmental Regulation, under the authority delegated by the U.S. Environmental Protection Agency, has reviewed the proposed construction under Federal Prevention of Significant Deterioration Regulations (40 CFR 52.21) and reached a preliminary determination of approval, with conditions, for this construction. This approval applies only to Federal regulatory requirements and has no bearing on other State or local functions.

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Sincerely,

C. H. Fancy
C. H. Fancy, P.E.

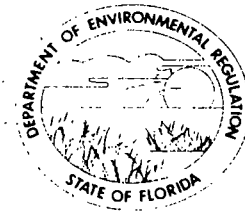
Deputy Chief

Bureau of Air Quality Management

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DEPARTMENT OF ENVIRONMENTAL REGULATION

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BOB GRAHAM
GOVERNOR

VICTORIA J. TSCHINKEL
SECRETARY

January 20, 1983

Mrs. Jo Waterhouse
Assistant Director
Palatka Public Library
216 Reid
Palatka, Florida 32077

Dear Mrs. Waterhouse:

RE: Proposed Air Pollution Source, Georgia-Pacific Corporation
Federal PSD-FL-079

The Florida Department of Environmental Regulation, under the authority delegated by the U.S. Environmental Protection Agency, has need to display certain information regarding the subject source pursuant to Federal Prevention of Significant Deterioration Regulations (40 CFR 52.21, Paragraph (q)). You will find this information enclosed. We appreciate your offer to make this information available to the interested public. A notice directing people to the library will be published in the local newspaper in the near future.

The information must be available upon request for a period of at least 30 days from the notice date. At the end of the period, we will forward to you a Final Determination on the permit application which must be available for an additional 30-day period.

We appreciate your help in providing this valuable public service. Should you have any questions, please call Mr. Bill Thomas at (904)488-1344.

Sincerely,

C. H. Fancy
C. H. Fancy, P.E.
Deputy Chief
Bureau of Air Quality
Management

CHF/pa

Enclosure

Technical Evaluation
and
Preliminary Determination

Georgia-Pacific Corporation
Putnam County
Palatka, Florida

Federal Permit Number:

PSD-FL-079

Florida Department of Environmental Regulation
Bureau of Air Quality Management
Central Air Permitting

PUBLIC NOTICE

PSD-FL-079

Georgia-Pacific Corporation proposes to modify its existing kraft pulp mill located in Palatka, Florida. The modification will double production to 2,400 tons per day of unbleached pulp. The new facilities to be constructed include a recovery boiler and associated smelt tanks (2), a lime kiln, and a combination boiler fired by bark and peat. Each new facility will have associated pollution control equipment installed.

The United States Environmental Protection Agency (EPA) has promulgated regulations concerning the Prevention of Significant Deterioration (PSD), 40 CFR 52.21. The proposed action is subject to federal PSD regulations by virtue of an increase over specified emission levels for sulfur dioxide (SO₂), nitrogen oxides (NO_x), carbon monoxide (CO), and volatile organic compounds (VOC).

The net projected emission increase of air pollutants from the affected facilities in tons per year will be:

<u>SO₂</u>	<u>NO_x</u>	<u>CO</u>	<u>VOC</u>
3,567	1,728	1,975	511

By authority of the EPA, the Florida Department of Environmental Regulation (FDER) has reviewed the proposed

construction project under federal regulation 40 CFR 52.21, PSD. The FDER has made a preliminary determination that the construction can be approved provided certain conditions are met. A summary of the basis for this determination and the application for a PSD permit submitted by Georgia-Pacific Corporation are available for public review at the following places:

<p>FDER Northeast District 3426 Bills Road Jacksonville, Florida 32207</p>	<p>FDER Northeast District Branch Office 825 N. W. 23rd Ave., Suite G Gainesville, Florida 32601</p>
<p>FDER Bureau of Air Quality Management 2600 Blair Stone Road Tallahassee, Florida 32301</p>	<p>Palatka Public Library 216 Reid Palatka, Florida 32077</p>

The maximum percentage of allowable PSD increment consumed by the proposed project will be:

Class II Increment			
<u>Pollutant</u>	<u>Annual</u>	<u>24-Hour</u>	<u>3-Hour</u>
PM	0	0	--
SO ₂	30	16	19

Any person may submit written comments to FDER regarding the proposed construction/modification. All comments postmarked not later than 30 days from the date of this notice will be considered by FDER in making a final determination regarding approval of this project. These comments will be made available for public review at the above locations. All comments should be addressed to:

Mr. C. H. Fancy
Central Air Permitting Section
Bureau of Air Quality Management
Florida Department of Environmental Regulation
2600 Blair Stone Road
Tallahassee, Florida 32301

Furthermore, a public hearing can be requested by any person. Such requests should be submitted in writing within 14 days of the date of this notice. Letters should be addressed to:

Ms. Martha Harrell Hall
Office of General Counsel
Florida Department of Environmental Regulation
2600 Blair Stone Road
Tallahassee, Florida 32301

Technical Evaluation
and
Preliminary Determination
(PSD-FL-079)

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I. APPLICANT AND SITE LOCATION

Georgia-Pacific Corporation
P.O. Box 919
Palatka, Florida 32077

The existing kraft pulp mill to be modified is located on the north-northwest side of S. R. 216 between S. R. 100 and U. S. 17 in Palatka, Putnam County, Florida. The UTM coordinates are Zone 17-434.0 km East and 3283.4 km North.

II. PROJECT AND PROCESS DESCRIPTION

The applicant proposes to modify the existing kraft pulp mill by constructing a recovery boiler (No. 5) and two associated smelt dissolving tanks (No. 5), a combination boiler (No. 5), and a lime kiln (No. 5). Currently, there are two power boilers, a combination boiler, a recovery boiler and two associated smelt dissolving tanks, and a lime kiln operating at the mill. The proposed action will enable the mill to double the unbleached pulp production from the current rate of 1200 tons per day (TPD) to 2,400 TPD. The permitted operating time will be 8760 hours per year.

The proposed combination boiler will fire peat and wood for steam production while the recovery boiler will burn black liquor solids. No. 6 Fuel Oil will be burned in these boilers only for startup, shutdown, emergencies, and system checking. The lime kiln uses lime mud (CaCO_3) in the process and also fires No. 6 Fuel Oil.

Air pollution control equipment will be installed for each proposed new facility.

III. EMISSIONS AND CONTROLS

The five proposed facilities (listed below) will be evaluated for their control(s) of the various pollutant (6) emissions:

- (1) No. 5 Combination Boiler (CB)
- (2) No. 5 Black Liquor Recovery Boiler (RB)
- (3) No. 5 Smelt Dissolving Tanks x 2 (SDTs)
- (4) No. 5 Lime Kiln (LK)

A. Particulate Matter (PM) Emissions Control for the CB, RB, SDTs, and LK

The maximum PM emissions expected from the CB will be from the firing of bark. The projected allowable emissions are 108.36 lbs/hr and 474.62 TPY. To maintain the allowable emission limits, the CB flue gas will be controlled with an electrostatic precipitator (ESP), with an expected efficiency of 99%+ and without a mechanical collector precleaner. The visible emissions (VE) of 20% maximum opacity from the CB is in accordance with the NSPS, Subpart D.

The maximum PM emissions expected from the RB are 75.40 lbs/hr and 330.25 TPY. The projected allowable emission limits will be maintained by the use of an ESP, with an expected efficiency of 99%. The VE limit from the RB, not to exhibit 35% opacity or greater, is in accordance with the NSPS, Subpart BB.

The two associated SDTs to the RB will have maximum total projected PM emissions of 15.00 lbs/hr and 65.70 TPY. The projected allowable emission limits will be maintained by the use of a scrubber (each unit will have its own scrubber), with an expected removal efficiency of 98%.

The maximum PM emissions expected from the LK are 29.31 lbs/hr and 128.38 TPY. The projected allowable emission limits will be maintained by the use of a scrubber, with an expected efficiency of 99.7%. The VE of 20% maximum opacity from the LK is in accordance with the EPA declared BACT for this type of unit.

B. Sulfur Dioxide (SO₂) Emissions Control for the CB and RB

The maximum SO₂ emissions expected from the CB will be from the firing of No. 6 Fuel Oil in emergency conditions only. The projected emissions are 704.34 lbs/hr, based on a maximum of 2.5% sulfur content by weight and the permitted maximum allowable BTU heat input from the firing of bark. While firing the permitted fuels, bark and peat, the maximum SO₂ emissions will be emitted from bark. At 100% firing of bark, estimated emissions are 704.34 lbs/hr and 3085.01 TPY. Under normal operations, firing 70% peat and 30% bark, the maximum projected SO₂ emissions are 503.56 lbs/hr and 2205.60 TPY.

For the CB, there will not be any mechanical controls for SO₂ while firing the permitted fuels, peat and bark. The fuels contain a very low sulfur content by weight.

The maximum SO₂ emissions projected from the RB are 243.88 lbs/hr and 1287.19 TPY while firing black liquor (65% solids), based on EPA declared BACT of 150 ppm by volume on a dry basis of SO₂. No controls for SO₂ emissions will be imposed on this facility unless there is a failure to meet the BACT and allowable emission limit imposed.

C. Nitrogen Oxides (NO₂), Carbon Monoxide (CO), and Volatile Organic Compounds (VOC) Emissions Control for the CB, RB, and LK

The maximum NO_x emissions from the CB of 0.30 lb/10⁶ Btu heat input (NSPS) can be achieved through good boiler design and proper operation. No emission limits will be imposed for CO and VOC except good boiler design and proper operation.

Since there are no emission limiting standards for the RB and LK in the NSPS for the pollutants NO_x, CO and VOC, there will be no emission limits imposed, only proper operation.

D. Total Reduced Sulfur (TRS) Emissions Control for the RB, SDT's and LK

The maximum allowable emissions from the RB are 5.20 lbs/hr and 22.78 TPY, and are in accordance with the NSPS, Subpart BB. The same NSPS was imposed on the SDTs and LK with maximum allowable emissions of 1.26 lbs/hr, 5.52 TPY and 1.09 lbs/hr, 4.77 TPY, respectively.

E. Net Emissions of the Proposed Project

Table 1 summarizes the net emissions of all the pollutants regulated under the CAA which will be emitted by the proposed construction. The post-1974 shut-down of lime kilns 1-3 and recovery boilers 1-3 at the existing mill will provide sufficient contemporaneous emission reductions for PM and TRS such that the effect on emissions is a net decrease for both of the pollutants.

As shown by the table, the mill will be a major emitter (>100 TPY) of SO₂, NO_x, CO, and VOC as defined in the PSD regulations. The net emissions of PM and TRS will be below the significant levels and, therefore, these pollutants are not subject to PSD review. Annual permitted hours of operation are 8760.

Table 1
Net Emissions of the Proposed Project

	Emissions(TPY)					
	PM	SO ₂	NO _x	CO	VOC	TRS
<u>Proposed Facilities</u>						
No. 5 Combination Boiler	475	3085	1424	981	282	---
No. 5 Recovery Boiler	330	1287	382	3732	206	23
No. 5 Smelt Tanks(2)	66	--	--	--	--	6
No. 5 Lime Kiln	128	--	402	2142	103	5
Total	999	4372	2208	6855	591	34
<u>Contemporaneous Reduction Facilities</u>						
No. 1 Recovery Boiler	331	207	126	1282	21	537
No. 2 Recovery Boiler	423	296	180	1832	30	768
No. 3 Recovery Boiler	458	286	174	1766	29	745
No. 1 Smelt Tanks	10	4	---	---	--	19
No. 2 Smelt Tanks	15	6	---	---	--	26
No. 3 Smelt Tanks	14	6	---	---	--	25
Total	1251	805	480	4880	80	2120
Difference*	-252	+3567	+1728	+1975	+511	-2086

* Positive sign (+) indicates a net increase; negative sign (-) indicates a net decrease.

F. Maximum Allowable Emissions

Based on the BACT determination for the proposed facilities, the pollutant emissions from each unit shall not exceed the allowable emission limits listed in Table 2. Annual permitted hours of operation are 8760.

Table 2

Maximum Allowable Emissions

Source	Pollutant	Emission Limitation	Emissions (lbs/hr)	
			<u>Bark</u>	<u>Peat</u>
Combination Boiler No. 5 ¹	SO ₂	0.65 lb/10 ⁶ Btu heat input (BACT)	704.34	653.84
	NO _x	0.30 lb/10 ⁶ Btu heat input (NSPS)	325.08	301.77
	VE	20% maximum Opacity, except for one 6-minute period per hour of not more than 27% Opacity (NSPS)		
Recovery Boiler No. 5 ²	SO ₂	150 ppm by volume on a dry basis (BACT)	293.88	
	TRS	5 ppm by volume on a dry basis, corrected to 8% oxygen (NSPS)	5.20	
	VE	Not to exhibit 35% Opacity or greater (NSPS)		
Smelt Tanks No. 5 ³	TRS	0.0168 lb/ton black liquor solids, dry weight (NSPS)	1.26(Total)	

Maximum Allowable Emissions

Source	Pollutant	Emission Limitation	Emissions (lbs/hr)
Lime Kiln No. 5 ⁴	TRS	8 ppm by volume on a dry basis, corrected to 10% oxygen (NSPS)	1.09
	VE	20% maximum Opacity (BACT)	

1. Emissions are based on a maximum heat input of 1083.6×10^6 Btu/hr.
2. Emissions are based on a maximum heat input of 990.0×10^6 Btu/hr, 63,000 lbs/hr of smelt, and 230,769 lbs/hr black liquor solids (BLS, 65%).
3. Emissions are based on 150,000 lbs/hr BLS (dry).
4. Emissions are based on 26,300 dscfm.

The maximum allowable emissions are in compliance with all applicable requirements of the New Source Performance Standards (NSPS), Subparts D and BB, and what has been determined to be BACT.

IV. RULE APPLICABILITY

The proposed project (new construction) is subject to preconstruction review under federal Prevention of Significant Deterioration (PSD) regulations, Section 52.21 of Title 40 of the Code of Federal Regulations (40 CFR 52.21) as amended in the Federal Register of August 7, 1980 (45 FR 52676). Specifically,

Georgia-Pacific Corporation's kraft pulp mill is a major existing stationary source (40 CFR 52.21(b)) located in an area currently designated as attainment in accordance with 40 CFR 81.310 for all criteria pollutants regulated under the Clean Air Act (CAA).

The proposed source will be a major modification (40 CFR 52.21(b)(2)) for sulfur dioxide (SO₂), nitrogen oxides (NO_x), volatile organic compounds (VOC), and carbon monoxide (CO). Emissions of SO₂, NO_x, VOC, and CO will increase above the significant criteria set in the PSD regulations. Therefore, the proposed project is subject to PSD review for these pollutants.

This review consists of a determination of Best Available Control Technology (BACT) and, unless otherwise exempted, an analysis of the air quality impact of the increased emissions. The review also includes an analysis of the project's impacts on soils, vegetation and visibility, along with air quality impacts resulting from associated commercial, residential and industrial growth.

The proposed project is also subject to the provisions of the federal New Source Performance Standards (NSPS) for kraft pulp mills and fossil-fuel fired steam generators, 40 CFR 60, Subpart BB and Subpart D, respectively.

V. CONTROL TECHNOLOGY REVIEW

For each facility and each CAA pollutant subject to PSD review, a Best Available Control Technology (BACT) emission standard (See Table 2) is required as a PSD permit condition.

A. No. 5 Combination Boiler

The pollutant emission limits determined as BACT for the combination steam generator for SO₂, NO_x and percent opacity are equal to, or more stringent than the New Source Performance Standards (NSPS), Subpart D. Carbon monoxide does not lend itself to exhaust gas removal techniques. The control of its formation by following the boiler design firing parameters is determined as BACT. The reference methods as provided under subsection 60.46 of the NSPS, Subpart D, shall be used to determine compliance.

B. No. 5 Recovery Boiler

The pollutant emission limits determined as BACT for the recovery boiler for total reduced sulfur (TRS) and percent opacity are equal to NSPS, Subpart BB. The moisture content of the black liquor and the reducing atmosphere above the smelt bed tend to inhibit both flame temperature and oxygen levels in the combustion zone. This normally limits the concentration of NO_x emitted. BACT for the control of NO_x and CO is to maintain furnace operation within range of the design parameters. The SO₂ emission limit has been determined to be BACT by EPA.

C. No. 5 Smelt Tanks (2)

The pollutant emission limit determined as BACT for the Smelt Tanks for TRS is equal to NSPS, Subpart BB.

D. No. 5 Lime Kiln

The pollutant emission limits determined as BACT for the Lime Kiln for the pollutant TRS is equal to NSPS, Subpart BB.

The SO₂ emissions are normally minimized because the CaO can act as an efficient adsorption and reaction medium to convert SO₂ to CaSO₄. Consequently, emission limits for SO₂ were not included in this determination. The percent opacity has been determined to be BACT by the EPA.

The reference methods as provided under subsection 60.285 of the NSPS, Subpart BB, shall be used to determine compliance for the recovery furnace, smelt tanks, and lime kiln.

The Department has reasonable assurance that, at the levels determined as BACT, emissions from the proposed modification would not cause or contribute to a violation of any ambient air quality standard or PSD increment.

VI. Air Quality Impact Analysis

The air quality impact analysis required for SO₂, NO_x, VOC and CO consists of:

- ° An analysis of existing air quality;
- ° A PSD increment analysis (for SO₂ only);
- ° A National Ambient Air Quality Standards (NAAQS) analysis;
- ° An analysis of impacts on soils, vegetation and visibility and of growth-related air quality impacts; and
- ° A "good engineering practice (GEP)" stack height evaluation.

The analysis of existing air quality generally relies on preconstruction ambient air monitoring data collected in accordance with EPA-approved methods. The PSD increment and NAAQS analyses depend on air quality modeling carried out in

accordance with EPA guidelines. Though not required, a particulate matter (PM) air quality impact analysis was performed and has been evaluated by FDER.

Based on these analyses, FDER has reasonable assurance that the proposed Georgia-Pacific kraft pulp mill expansion, as described in this permit and subject to the conditions of approval proposed herein, will not cause or contribute to a violation of any PSD increment or ambient air quality standard. A discussion of the modeling methodology and required analyses follows.

A. Modeling Methodology

Two EPA-approved dispersion models were used to predict ground-level pollutant concentrations. The Industrial Source Complex Long Term (ISCLT) model was used to predict annual concentrations, and the Industrial Source Complex Short Term (ISCST) model was used to predict concentration values for shorter averaging periods.

In the ISCLT, sources within a 50 km radius of the mill were modeled. The receptors were placed at 0.3 km intervals along 10-degree radials beginning at 0.6 km for SO₂ and 0.3 km for PM to identify the periods of worst-case meteorological conditions. The receptor interval was reduced to 0.1 km to refine the predictions of ground-level concentrations for the worst-case periods.

The surface meteorological data used in the models were National Weather Service (NWS) data collected at the Jacksonville International Airport during the period 1970-74. Upper-air

meteorological data used in the ISCST were collected during the same time period by the NWS at Waycross, Georgia.

Stack parameters and emission rates used in evaluating the proposed Georgia-Pacific plant expansion are given in Tables 3 and 4 for the baseline and proposed cases, respectively.

B. Analysis of Existing Air Quality

Four months (from June 12, 1981, through December 12, 1981) of preconstruction ambient air monitoring data were collected by Georgia-Pacific in the vicinity of the existing mill. Three PM monitoring sites, each operated every third day, and one SO₂ continuous monitor, located at the same site as one of the PM samplers, were used. The instruments, all EPA-reference or the equivalent, were sited in accordance with the recommendations given in Ambient Monitoring Guidelines for Prevention of Significant Deterioration (EPA 450/2-78-019) and operated in accordance with the quality assurance procedures of 40 CFR 58, Appendix B. The results of the monitoring program are summarized in the following table.

<u>Pollutant and Time Average</u>	<u>Maximum Concentration (ug/m³)</u>		
	<u>Site 1</u>	<u>Site 2</u>	<u>Site 3*</u>
SO ₂			
Three-hour	332	---	---
24-hour	188	---	---
Four-month**	10	---	---
PM			
24-hour	105	92	70
Four-month***	33	29	29

- * Background site
- ** Arithmetic mean
- *** Geometric mean

Table 3: Stack Parameters for Georgia-Pacific - Baseline Case

Emissions Unit	Stack Height (m)	Stack Diameter (m)	Exit Velocity (m/s)	Exit Temp. (K)	PM Emission Rate		SO ₂ Emission Rate	
					Annual (g/s)	Short-Term (g/s)	Annual (g/s)	Short-Term (g/s)
Rcvry. Blr. 1	76.20	3.66	3.41	360.0	9.93	9.93	6.21	6.21
Rcvry. Blr. 2	76.20	3.66	5.40	372.0	12.69	12.69	8.88	8.88
Rcvry. Blr. 3	40.53	3.41	7.28	372.0	13.73	13.73	8.58	8.58
Rcvry. Blr. 4	70.10	3.66	16.86	474.0	20.98	20.98	34.97	34.97
Smelt Tank 1	30.48	0.76	7.53	366.0	0.30	0.30	0.13	0.13
Smelt Tank 2	30.48	0.91	9.51	375.0	0.45	0.45	0.18	0.18
Smelt Tank 3	33.22	0.76	3.57	369.0	0.42	0.42	0.18	0.18
Smelt Tank 4	67.70	1.52	8.26	346.0	3.81	3.81	0.71	0.71
Lime Kiln 1	15.24	1.28	5.24	401.0	22.68	22.68	0.24	0.24
Lime Kiln 2	15.85	1.71	10.67	341.0	11.97	11.97	0.24	0.24
Lime Kiln 3	15.85	1.71	8.47	342.0	11.72	11.72	0.48	0.48
Lime Kiln 4	45.42	1.31	16.46	351.0	1.57	3.98	1.40	1.40
Power Blr. 4	37.19	1.22	14.54	477.0	1.69	1.69	34.29	45.22
Power Blr. 5	76.20	2.74	15.97	520.0	5.35	5.85	134.00	161.15
Combo. Blr. 4	76.20	3.05	10.52	477.0	73.67	89.69	29.00	121.28

Table 4: Stack Parameters for Georgia-Pacific - Proposed Case

Emissions Unit	Stack Height (m)	Stack Diameter (m)	Exit Velocity (m/s)	Exit Temp. (K)	PM Emission Rate (g/s)	SO ₂ Emission Rate (g/s)
Rcvry. Blr. 4	70.10	3.66	16.86	474.0	20.98	34.97
Rcvry. Blr. 5	76.20	4.02	13.93	474.0	9.50	37.03
Smelt Tank 4	67.70	1.52	8.26	346.0	3.81	0.71
Smelt Tank 5	76.20	1.52	8.26	346.0	1.89	0.66
Lime Kiln 4	45.42	1.31	16.46	351.0	3.98	1.40
Lime Kiln 5	45.42	1.31	16.46	351.0	3.69	1.32
Power Blr. 4	37.19	1.22	14.54	477.0	1.69	45.22
Power Blr. 5	76.20	2.74	15.97	520.0	5.85	161.15
Combo. Blr. 4	76.20	3.05	10.52	477.0	14.74	121.28
Combo. Blr. 5	76.20	3.66	15.39	450.0	13.65	88.75

C. PSD Increment Analysis

The Georgia-Pacific mill is located in an area where the Class II PSD increments apply. The nearest Class I area is more than 100 km from the site; therefore, no analysis of Class I area impacts was performed.

Increment availability in the area is affected by increased SO₂ emissions at Florida Power and Light (FPL) Company's Putnam plant, increased PM emissions at FPL's Palatka plant, increased SO₂ and PM emissions projected to result from construction of the Seminole Electric Cooperative coal-fired plant, and decreased SO₂ and PM emissions resulting from the post-1974 shutdown of lime kilns 1-3 and recovery boilers 1-3 at the Georgia-Pacific mill. As shown in the following table, modeling results predict no violation of any applicable PSD increment in the vicinity of the mill as a result of the proposed plant expansion in combination with the other increment-affecting emission changes in the area.

<u>Pollutant and Time Average</u>	<u>Class II Increment (ug/m³)</u>	<u>Predicted Increase (ug/m³)</u>	<u>Percent Increment Consumed</u>
SO ₂			
Three-hour*	512	104	20
24-hour*	91	16	18
Annual	20	6	30
PM			
24-hour*	37	<0	0
Annual	19	<0	0

* Not to be exceeded more than once per year.

In addition, modeling results predict no violation of any increment in the vicinities of the Seminole Electric Cooperative and FPL plants as a result of the proposed plant expansion at Georgia-Pacific.

D. NAAQS Analysis

Given background pollutant concentrations in the area due to distant and natural sources, modeling results predict that the Georgia-Pacific mill, as proposed to be modified, will not cause or contribute to a violation of any ambient air quality standard. Background concentrations considered typical of remote areas were used in the NAAQS analysis. The PM background values used in the analysis were slightly higher than those observed at the background site during the four-month ambient monitoring program conducted by Georgia-Pacific.

Results of the NAAQS analysis are summarized in the following table.

<u>Pollutant, Units, and Time Average</u>	<u>Estimated Background Concentration</u>	<u>Predicted Impact of Modified Mill</u>	<u>Total Impact</u>	<u>NAAQS</u>
SO ₂ (ug/m ³)				
Three-hour*	20	409	429	1300**
24-hour*	20	113	133	365
Annual	20	22	42	80
PM (ug/m ³)				
24-hour*	80	28	108	150***
Annual	40	4	44	75
NO ₂ (ug/m ³)				
Annual	20	19	39	100
CO (mg/m ³)				
One-hour*	1	<1	1	40
Eight-hour*	1	<1	1	10

* Not to be exceeded more than once per year.

** Secondary standard.

*** Secondary standard; primary standard is 260 ug/m³.

Modeling techniques are not available to predict the impact of the increased VOC emissions on ground-level concentrations of ozone; however, VOC emissions from the modified mill are estimated to account for less than two percent of the total VOC emission burden in Putnam County and, therefore, are not expected to cause a violation of the ozone ambient standard.

E. Analysis of Impacts on Soils, Vegetation and Visibility and Growth-Related Air Quality Impacts

The maximum ground-level concentrations predicted to occur as a result of the proposed plant expansion at Georgia-Pacific are below all applicable NAAQS, including the secondary standards designed to protect public welfare-related values, and well below levels generally reported for damages to sensitive plant species. Therefore, no adverse impacts on soils and vegetation are expected. Since there are no Class I areas within 100 km of the mill, no adverse impacts on visibility in any such area are expected. Air quality impacts resulting from general commercial, residential, industrial and other growth associated with the plant expansion are expected to be minor since the existing mill is already an important element in the local economy and has been for many years.

F. GEP Stack Height Evaluation

Regulations published by EPA in the Federal Register of February 8, 1982, define GEP stack height as the highest of:

1. 65 meters; or
2. The maximum nearby building height plus 1.5 times the building height or width, whichever is less.

While the actual stack height employed can exceed this height, the stack height used in modeling to determine compliance with the NAAQS and PSD increments cannot. As shown in the following table, the stack heights used in modeling the proposed new emission units at the Georgia-Pacific mill do not exceed the GEP limits.

Emissions Unit	Building of Influence*		Stack Height	
	Height (m)	Width (m)	GEP (m)	Modeled (m)
No. 5 Recovery Boiler	65	27	105	76
No. 5 Smelt Tanks(2)	65	31	111	72
No. 5 Lime Kiln	25	14	65	45
No. 5 Combination Boiler	65	27	105	76

* All stacks except the lime kiln stacks will be most influenced by the recovery boiler building; the lime kiln stacks will be influenced by the lime kiln structure.

VII. CONCLUSIONS

FDER proposes approval of the preliminary determination, with conditions for the construction of the No. 5 Combination Boiler, No. 5 Recovery Boiler, No. 5 Smelt Tanks (2), No. 5 Lime Kiln and associated pollution control equipment at Georgia-Pacific's existing mill in Palatka, Florida. The determination is made on the basis of information contained in the applications dated June 2, 1981, responses to technical discrepancies dated June 30, 1981 July 31, 1981, August 25, 1981, October 1, 1981, October 9, 1981, October 19, 1981, October 20, 1981, October 27, 1981, and February 22, 1982. The determination of approval is contingent upon the specific and general conditions in the following next two sections.

VIII. SPECIFIC CONDITIONS

A. General

1. The applicant must comply with the provisions and the requirements of the attached General Conditions.
2. As a requirement of this Specific Condition, the applicant will comply with all emission limits and enforceable restrictions required by the State of Florida's Department of Environmental Regulation (FDER) which may equal or have more restrictive emissions limits and operating requirements than the following Specific Conditions.

B. No. 5 Combination Boiler

1. Annual hours of operation are 8760.
2. Maximum steam generation shall not exceed 700,000 pounds per hour (lbs/hr) at 900°F.
3. Maximum bark consumption will be 254,965 lbs/hr with a maximum heat input not to exceed 1083.6×10^6 Btu per hour.
4. Maximum peat consumption will be 217,869 lbs/hr with a maximum heat input not to exceed 1005.9×10^6 Btu per hour.
5. No. 6 Fuel Oil is to be fired only as an auxiliary fuel for startup, shutdown, system checking and emergency. Maximum sulfur content shall not exceed 2.5 percent (%) by weight. Maximum consumption will be 40.0 barrels per hour with a maximum heat input not to exceed 250×10^6 Btu per hour. Fuel sulfur analysis shall be required.

6. Maximum allowable particulate matter (PM) emissions shall be 0.10 lb/10⁶ Btu heat input, not to exceed 108.36 lbs/hr for bark and 100.59 lbs/hr for peat.
7. Maximum allowable sulfur dioxide (SO₂) emissions shall be 0.65 lb/10⁶ Btu heat input, not to exceed 704.34 lbs/hr for bark and 653.84 lbs/hr for peat. Fuel sulfur analysis shall be required in lieu of installing a SO₂ continuous monitor (40 CFR 60.45).
8. Maximum allowable nitrogen oxide (NO_x) emissions shall be 0.30 lb/10⁶ Btu heat input, not to exceed 325.08 lbs/hr for bark and 301.77 lbs/hr for peat. If, after the initial performance test, the NO_x emissions are less than 70% of the applicable standard, a NO_x continuous monitor will not be required. If the NO_x emissions are greater than 70% of the applicable standard, a NO_x continuous monitor shall be installed within one year after the initial performance test (40 CFR 60.45).
9. Visible emissions (VE) shall not exceed 20% opacity, except for one 6-minute period per hour of not more than 27% opacity. A continuous monitor shall be required (40 CFR 60.45).
10. PM, SO₂ and NO_x emissions shall be tested in accordance with the provisions of Paragraph 60.46 of 40 CFR 60, Subpart D.
11. Immediately after construction has been completed, initial performance tests for PM, SO₂, and NO_x shall be required. Test procedures will be EPA

reference methods 1, 3, 5, 6, and 7 as published in 40 CFR 60, Appendix A, dated July 1, 1978. Minimum sampling volume and time per run shall be as defined in 40CFR 60, Subpart D.

12. State construction permit No. AC 54-43773, expires December 31, 1983.

C. No. 5 Recovery Boiler

1. Annual hours of operation are 8760.
2. Maximum steam generation shall not exceed 607,500 lbs/hr of steam at 900°F.
3. Maximum black liquor, at 65% solids, consumption will be 230,679 lbs/hr (150,000 lbs/hr black liquor solids (BLS) dry, 50 tons air dried unbleached pulp (ADUP)) with a maximum heat input not to exceed 990×10^6 Btu per hour, yielding a total of 63,000 lbs/hr of smelt.
4. No. 6 Fuel Oil is to be fired only as an auxiliary fuel for startup, shutdown, system checking and emergency. Maximum sulfur content shall not exceed 2.5% by weight. Maximum consumption will be 23.80 barrels per hour with a maximum heat input not to exceed 146×10^6 Btu per hour. Fuel sulfur analysis shall be required.
5. Maximum allowable PM emissions shall be 0.044 grain per dry standard cubic foot (gr/DSCF), corrected to 8% oxygen, and not to exceed 75.40 lbs/hr.

6. Maximum allowable total reduced sulfur (TRS) emissions will be 5 parts per million (ppm) by volume on a dry basis, corrected to 8% oxygen, and not to exceed 5.20 lbs/hr. A continuous monitor shall be required (40 CFR 60.284).
7. A continuous oxygen monitor shall be required (40 CFR 60.284).
8. Maximum allowable SO₂ emissions will be 150 ppm by volume on a dry basis, corrected to 8% oxygen, and not to exceed 293.88 lbs/hr.
9. VE shall not exhibit 35% opacity or greater. A continuous monitor shall be required (40 CFR 60.284).
10. PM, SO₂, TRS, and visible emissions shall be tested in accordance with the provisions of Paragraph 60.285 of 40 CFR 60, Subpart BB.
11. Immediately after construction has been completed, initial performance tests for PM, SO₂, TRS and VE shall be required. Test procedures will be EPA reference methods 1, 2, 3, 5 or 17, 6, 9, and 16 as published in 40 CFR 60, Appendix A, dated July 1, 1978. Minimum sampling volume and time shall be as defined in 40 CFR 60, Subpart BB.
12. State construction permit, No. AC 54-43791, expires December 31, 1985.

D. No. 5 Smelt Tanks(2)

1. Annual hours of operation are 8760.
2. Maximum total smelt utilization in the smelt dissolving tanks is 63,000 lbs/hr.
3. Maximum allowable PM emissions will be 0.20 lb/ton BLS, dry weight, and shall not exceed 15.0 lbs/hr (total).
4. Maximum allowable TRS emissions will be 0.0168 lb/ton BLS, dry weight, and shall not exceed 1.26 lbs/hr (total).
5. A monitor shall be required for the continuous measurement of the pressure loss of the gas stream through the control equipment (40 CFR 60.284).
6. A monitor shall be required for the continuous measurement of the scrubbing liquid supply pressure to the control equipment (40 CFR 60.284).
7. PM and TRS emissions shall be tested in accordance with the provisions of Paragraph 60.285 of 40 CFR 60, Subpart BB.
8. Immediately after construction has been completed, initial performance tests for PM and TRS shall be required. Test procedures will be EPA reference methods 1, 2, 3, 5 or 17, and 16 as published in 40 CFR 60, Appendix A, dated July 1, 1978. Minimum sampling volume and time shall be as defined in 40 CFR 60, Subpart BB.

9. State construction permit, No. AC 54-43791, expires December 31, 1985.

E. No. 5 Lime Kiln

1. Annual hours of operation are 8760.
2. Maximum total process input rate shall not exceed 63,229 lbs/hr. Maximum product rate of 90% CaO shall not exceed 26,667 lbs/hr.
3. Maximum No. 6 Fuel Oil consumption will be 16.60 barrels per hour with a maximum heat input not to exceed 102×10^6 Btu per hour. Maximum sulfur content shall not exceed 2.5% by weight. Fuel sulfur analysis shall be required.
4. Maximum allowable PM emissions shall be 0.13 gr/DSCF, corrected to 10% oxygen, and not to exceed 29.31 lbs/hr.
5. Maximum allowable TRS emissions shall be 8 ppm by volume on a dry basis, corrected to 10% oxygen, and not to exceed 1.09 lbs/hr. A continuous monitor shall be required (40 CFR 60.284).
6. A continuous oxygen monitor shall be required (40 CFR 60.284).
7. VE shall not exceed 20% opacity.
8. A monitor shall be required for the continuous measurement of the pressure loss of the gas stream through the control equipment (40 CFR 60.284).

9. A monitor shall be required for the continuous measurement of the scrubbing liquid supply pressure to the control equipment (40 CFR 60.284).
10. PM, TRS, and visible emissions shall be tested in accordance with the provisions of Paragraph 60.285 of 40 CFR 60, Subpart BB.
11. Immediately after construction has been completed, initial performance tests for PM, TRS, and VE shall be required. Test procedures will be EPA reference methods 1, 2, 3, 5 or 17, 9, and 16 as published in 40 CFR 60, Appendix A, dated July 1, 1978. Minimum sampling volume and time shall be as defined in 40 CFR 60, subpart BB.
12. State construction permit, No. AC 54-43795, expires December 31, 1985.

IX. GENERAL CONDITIONS

1. The permittee shall notify the permitting authority in writing of the beginning of construction of the permitted source within 30 days of such action and the estimated date of start-up of operation.
2. The permittee shall notify the permitting authority in writing of the actual start-up of the permitted source within 30 days of such action and the estimated date of demonstration of compliance as required in the specific conditions.
3. Each emission point for which an emission test method is established 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 permitting authority of the scheduled date of compliance testing at least thirty (30) days in advance of such test. Compliance test results shall be submitted to the permitting authority within forty-five (45) days after the complete testing. The permittee shall provide (1) sampling ports adequate for test methods applicable to such facility, (2) safe sampling platforms, (3) safe access to sampling platforms, and (4) utilities for sampling and testing equipment.
4. The permittee shall retain records of all information resulting from monitoring activities and information indicating operating parameters as specified in the specific conditions of this permit for a minimum of two (2) years from the date of recording.
5. If, for any reason, the permittee does not comply with or will not be able to comply with the emission limitations specified in this permit, the permittee shall immediately notify the State District Manager by telephone and provide the District Office and the permitting authority with the following information in writing within four (4) days of such conditions:
 - (a) description for noncomplying emission(s),
 - (b) cause of noncompliance,
 - (c) anticipated time the noncompliance is expected to continue or, if corrected, the duration of the period of noncompliance,

(d) steps taken by the permittee to reduce and eliminate the noncomplying emission,

and

(e) steps taken by the permittee to prevent recurrence of the noncomplying emission.

Failure to provide the above information when appropriate shall constitute a violation of the terms and conditions of this permit. Submittal of this report does not constitute a waiver of the emission limitations contained within this permit.

6. Any change in the information submitted in the application regarding facility emissions or changes in the quantity or quality of materials processed that will result in new or increased emissions must be reported to the permitting authority. If appropriate, modifications to the permit may then be made by the permitting authority to reflect any necessary changes in the permit conditions. In no case are any new or increased emissions allowed that will cause violation of the emission limitations specified herein.
7. In the event of any change in control or ownership of the source described in the permit, the permittee shall notify the succeeding owner of the existence of this permit by letter and forward a copy of such letter to the permitting authority.
8. The permittee shall allow representatives of the State environmental control agency or representatives of the Environmental Protection Agency, upon the presentation of credentials:
 - (a) to enter upon the permittee's premises, or other premises under the control of the permittee, where an air pollutant source is located or in which any records are required to be kept under the terms and conditions of the permit;
 - (b) to have access to any copy at reasonable times any records required to be kept under the terms and conditions of this permit, or the Act;
 - (c) to inspect at reasonable times any monitoring equipment or monitoring method required in this permit;

(d) to sample at reasonable times any emission of pollutants;

and

(e) to perform at reasonable times an operation and maintenance inspection of the permitted source.

9. All correspondence required to be submitted to this permit to the permitting agency shall be mailed to:

Mr. James T. Wilburn
Chief, Air Management Branch
Air & Waste Management Division
U.S. EPA, Region IV
345 Courtland Street, NE
Atlanta, GA 30365

10. The conditions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

The emission of any pollutant more frequently or at a level in excess of that authorized by this permit shall constitute a violation of the terms and conditions of this permit.