Department of Environmental Protection

Lawton Chiles
Governor

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Virginia B. Wetherell
Secretary

State of Florida
Department of Environmental Protection
Notice of Permit

In the matter of an
Application for Permit by:

Mr. Henry Hirschman, General Manager
Georgia-Pacific Corporation
Post Office Box 919
Palatka, Florida 32178-0919

DEP File No. AC 54-266676
PSD-FL-226
Putnam County

Enclosed is Permit Number AC 54-266676/(PSD-FL-226) and a Best Available Control Technology (BACT) determination for the modification of your Kraft pulp mill located in Palatka, Putnam County, Florida. This permit is issued pursuant to Section 403, Florida Statutes.

Any party to this Order (permit) has the right to seek judicial review of the permit pursuant to Section 120.68, Florida Statutes, by filing of a Notice of Appeal pursuant to Rule 9.110, Florida Rules of Appellate Procedure, with the Clerk of the Department in the Office of General Counsel, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400; and by filing a copy of the Notice of Appeal accompanied by the applicable filing fees with the appropriate District Court of Appeal. The Notice of Appeal must be filed within 14 days from the date this Notice is filed with the Clerk of the Department.

Executed in Tallahassee, Florida.

STATE OF FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

C. H. Fancy, P.E., Chief
Bureau of Air Regulation
2600 Blair Stone Road
Tallahassee, Florida 32399-2400
904-488-1344

CERTIFICATE OF SERVICE

The undersigned duly designated deputy clerk hereby certifies that this **NOTICE OF PERMIT** and all copies were mailed by certified mail before the close of business on 9-21-95 to the listed persons.

Clerk Stamp

FILING AND ACKNOWLEDGMENT
FILED, on this date, pursuant to §120.52(11), Florida Statutes, with the designated Department Clerk, receipt of which is hereby acknowledged.

Kari Tober 9-21-95
Clerk Date

Copies furnished to:

Chris Kirts, NED
Jewell Harper, EPA
John Bunyak, NPS
David Buff, NPS

Best Available Copy

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- Complete [illegible]
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3. Article Addressed to:
Henry Hirschman, G.M.
GA-Pacific Corp
P O Box 919
Palatka, Fl
32178-0919

4a. Article Number
Z 127 632 520

4b. Service Type
☐ Registered ☐ Insured
☒ Certified ☐ COD
☐ Express Mail ☐ Return Receipt for Merchandise

7. Date of Delivery
9-27-95

5. Signature (Addressee)

8. Addressee's Address (Only if requested and fee is paid)

6. Signature (Agent)
[signature]

PS Form **3811**, December 1991

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AC54-266676
PSD-Fl-226

PS Form **3800**, March 1993

FINAL DETERMINATION

Georgia-Pacific Corporation
Putnam County
Palatka, Florida

Digester Replacement and Pulp Mill Efficiency Improvement Projects

Department Permit No. AC 54-266676
PSD-FL-226

Department of Environmental Protection
Division of Air Resources Management
Bureau of Air Regulation

September 14, 1995

FINAL DETERMINATION

Georgia-Pacific Corporation
AC 54-266676/PSD-FL-226

The Intent to Issue an air construction permit for Georgia-Pacific Corporation to modify its existing Kraft pulp mill in Palatka, Putnam County, Florida, was distributed on August 2, 1995. The Notice of Intent to Issue was published in The Daily News on August 8, 1995. Copies of the evaluation were available for public inspection at the Department's offices in Jacksonville and Tallahassee.

Written comments on the Department's Intent were submitted by Georgia-Pacific Corporation in a letter dated August 18, 1995. Their comments and the Department's response are discussed below.

The evaluation and proposed permit listed the production limit as 118 tons per hour (TPH) and 1,850 tons per day (TPD) of air dried unbleached pulp (ADUP). The applicant asked that the 1,850 TPD ADUP daily production limit be a monthly average. This request is acceptable to the Department and the project description and Specific Condition No. 10 of the permit have been amended to note that the daily production limit is a monthly average.

The applicant noted that the sulfuric acid emission limit for the TRS incinerator should be 82.2 TPY instead of 82.3 TPY as specified in the Technical Evaluation and proposed permit. The Department agrees with this statement and has changed the limit to 82.2 TPY in Specific Condition No. 5 of the permit.

The applicant noted that the emissions listed in Table 1 of the Technical Evaluation were those proposed by Georgia-Pacific Corporation. For some air pollutants, the allowable emissions established by the Department were lower. For those pollutants, the predicted ambient air impacts will be lower than what is described in the Air Quality Impact Analysis.

The applicant stated that TRS (total reduced sulfur) is not an air toxic. The Department agrees with this statement. TRS is a generic name for a family of chemical compounds containing sulfur. Some of the specific TRS compounds are on the list of hazardous air pollutants.

The applicant requested that the Department clarify whether the term particulate matter, as used in the Technical Evaluation and Preliminary Determination, includes both PM and PM_{10}. It is the Department intent to include all PM, both PM and PM_{10} which would be measured by EPA Method 5, as the PM limits for the units at this facility. Notes were added to the BACT and Specific Conditions Nos. 4 and 5 to clarify the Department's intent on the PM limits.

A typographical error (misspelled statutes) on the first page of the

permit was corrected.

The applicant asked that it be noted that the sulfur dioxide emission limit for the TRS incinerator in Specific Condition No. 5 is based on the new scrubber achieving 50 percent control efficiency. The basis of this limit was added to Specific Condition No. 5.

The final action of the Department will be to issue the permit as proposed except for the changes noted above.

Best Available Control Technology (BACT) Determination

Georgia-Pacific Corporation
Palatka, Putnam County, Florida
AC54-266676/PSD-FL-226

The applicant, Georgia-Pacific Corporation, located in Palatka, Putnam County, Florida, proposes to modify an existing Kraft pulp mill by replacing two batch digesters, installing a TRS scrubber, adding screen tubes to the recovery boiler, installing a new chip conditioner system, installing a white liquor heating system, and installing an automatic cleaning system on the lime mud filter. The modification has the potential to increase actual pulp production. The increase in emissions that could occur at the production rate requested by the applicant are 300 tons per year (TPY) particulate matter (total PM/PM_{10}), 36.1 TPY sulfur dioxide (SO_2), 626 TPY nitrogen oxides (NOx), 1,022.5 TPY carbon monoxide (CO), 322.2 TPY volatile organic compounds (VOC), 88.5 TPY total reduced sulfur (TRS), 0.04 TPY lead, 0.009 TPY mercury, and 0.0011 TPY beryllium (Be). Sulfuric acid mist emission is estimated to decrease by 12.4 TPY. The increase in the allowable emissions of PM/PM_{10}, NOx, CO, VOC, TRS, and Be are above the significant emission rates and subjects the proposed modification to the Prevention of Significant Deterioration (PSD) new source review regulations. The allowable emissions of these pollutants are set by a Best Available Control Technology (BACT) determination. Only the digester system and recovery boiler, which have physical changes as part of this modification, are subject to this BACT determination.

Date of Receipt of a BACT Application

March 15, 1995

BACT Requested by the Applicant

Air pollution control equipment proposed as BACT for the digester system is a new TRS scrubber and the existing TRS incinerator. For the recovery boiler, the applicant proposes the existing electrostatic precipitator as BACT. The proposed emissions from the digester system and recovery boiler are summarized in the following table:

Pollutant	Digester System** Emission Factor	lbs/hr	TPY	Recovery Boiler Emission Factor	lbs/hr	TPY
PM_{10}	Permit	5.5	24.1	0.033 gr/dscf @ 8% O_2	83.2	364.4
NOx	NG 100 lbs/mmft^3	0.76	3.33			
	M 14 lbs/1000 gal	1.74	7.60	100 ppmvd @ 8% O_2	210.6	922.4
CO	NG 20 lbs/mmft^3	0.15	0.66	800 (1 hr) + 400 (annual) ppmvd @ 8% O_2	1025.4(hr)	
	M 1.9 lbs/1000 gal	0.24	1.03		512.7 annual	2245.6
VOC	NG 8 lbs/mmft3	0.06	0.27			
	M 0.5 lbs/1000 gal	0.06	0.27	0.52 lb/ton BLS*	54.6	239.1
TRS	NG 5 ppmvd @ 10% O_2	0.12	0.53			
	M 5 ppmvd @ 10% O_2	0.12	0.53	11.4 ppmvd @ 8% O_2	17.8	78.0
Be				0.5 lb/E+12 Btu	6.4 E-4	2.8E-3

* Black Liquor Solids

** Factor for either Natural Gas (NG) or Methanol (M) Fuel

BACT Determination Procedure

In accordance with Rule 62-212.410, Florida Administrative Code, Best Available Control Technology Determination, Stationary Source-Preconstruction Review, this BACT determination is based on the maximum degree of reduction of each pollutant emitted which the Department of Environmental Protection (Department), on a case by case basis, taking into account energy, environmental and economic impacts, and other costs, determines is achievable through application of production processes and available methods, systems, and techniques. In addition, the regulations state that in making the BACT determination the Department shall give consideration to:

(a) Any Environmental Protection Agency determination of BACT pursuant to 40 CFR 52.21, and any emission limitation contained in 40 CFR Part 60 (Standards of Performance for New Stationary Sources) or 40 CFR Part 61 (National Emission Standards for Hazardous Air Pollutants).

(b) All scientific, engineering, and technical material and other information available to the Department.

(c) The emission limiting standards or BACT determinations of any other state.

(d) The social and economic impact of the application of such technology.

The EPA currently stresses that BACT should be determined using the "top-down" approach. The first step in this approach is to determine for the emission unit in question the most stringent control available for a similar or identical emission unit or emission unit category. If it is shown that this level of control is technically or economically infeasible for the emission unit in question, then the next most stringent level of control is determined and similarly evaluated. This process continues until the BACT level under consideration cannot be eliminated by any substantial or unique technical, environmental, or economic objections.

BACT Pollutant Analysis

DIGESTER SYSTEM

The digester system is a source of TRS. The new source performance standard (40 CFR 60, Subpart BB) allows the TRS gases to be combusted in an incinerator operating at 1200°F with a 0.5 second residence time. The applicant has been using an incinerator meeting these specifications to control the TRS emissions. The applicant is proposing to add a 50% efficient TRS scrubber ahead of the TRS incinerator as part of this modification. Recent BACT determinations have selected incinerators for the control of TRS emissions. The Department is setting BACT for the incinerator at 5 ppmvd @ 10% O_2 when either natural gas or methanol is being burned.

The emissions of the other air pollutants for the digester system that are subject to this BACT determination, primarily the products of combustion, are to be minimized through Good Combustion Practices.

RECOVERY BOILER

The recovery boiler is a source of PM/PM_{10}, NOx, CO, VOC, TRS, and Be. This unit is now controlled with a 20-year old high-efficiency electrostatic precipitator (ESP) that was rebuilt in 1991. The ESP will control PM/PM_{10} and Be. Recent BACT determinations have selected ESPs to control emissions from recovery boilers. The PM/PM_{10} standards in BACT determinations range from 0.021 to 0.033 gr/dscf @ 8% O_2. Test results show the PM/PM_{10} emissions from this boiler varied from 0.006 to 0.03 gr/dscf @ 8% O_2. The Department is setting the BACT standard at 0.030 gr/dscf @ 8% O_2 (total PM measured by EPA Method 5).

Recovery boilers have relatively low NOx emissions. Combustion controls technology is used to control NOx. This includes adjusting the furnace bed height and decreasing the primary air temperature. Furnace design affects actual NOx emissions. High particulate matter loading in the flue gas creates technical problems which prevent flue gas recirculation (FGR) from being used on a recovery furnace. Catalyst fouling prevent the application of selective catalytic reduction (SCR). Ammonia bisulfate would also cause plugging of the equipment downstream of a selective non-catalytic

reduction (SNCR) system. Neither system is reported to have been used on a recovery boiler. BACT/LAER Clearinghouse document shows BACT emission limits of 75 to 120 ppmvd @ 8% O_2. Actual test results on this furnace show NOx emissions varied from 45 to 65 ppmvd @ 8% O_2. The Department is setting the BACT standard for NOx at 80 ppmvd @ 8% O_2.

CO and VOC emissions are formed during the incomplete combustion of the black liquor which is about 25 percent carbon. Good Combustion Practice is used to control these pollutants. The BACT/LAER Clearinghouse document list BACT determinations for CO of 200-400 ppmvd @ 8% O_2. Test data on this furnace show CO emissions range from 102 to 756 ppmvd @ 8% O_2. BACT determinations for VOC range from 0.048 to 0.095 lbs/MMBtu. Test data on this furnace show VOC emissions range from 0.01 to 0.50 lbs ton black liquor solid (BLS). The Department is setting the BACT standard for CO at 800 ppmvd @ 8% O_2, 3-hour average, and 400 ppmvd @ 8% O_2, 24-hour average. The Department is setting the BACT standard for VOC at 0.30 lbs/ton BLS.

TRS is controlled by the distribution of the combustion air in the furnace. Continuous emissions monitoring data for this furnace shows TRS emissions of up to 11.2 ppmvd @ 8% O_2. The BACT/LAER Clearinghouse document listed limits at 5.0 ppmvd @ 8% O_2. These boilers were subject to the new source performance standard for Kraft pulp mills. The Department is setting the BACT standard for TRS at 11.2 ppmvd @ 8% O_2, 12-hour average, and 7.0 ppmvd @ 8% O_2, 12-month rolling average. The Department will revisit this BACT determination for the 12-month rolling average standard for TRS if it can be shown with a minimum of 6 months actual operation and emission data from the modified boiler that the standard is inappropriate.

Summary of the BACT Determination by the Department

DIGESTER SYSTEM

The Department has determined that the TRS scrubber in combinations with the TRS incinerator is BACT for the digester system. The addition of the scrubber will reduce the potential emissions of TRS to less than the current actual emissions. Considering the recent test data as the incinerator, the Department is setting the BACT determination standard at 5 ppmvd @ 8% O_2. Compliance will be based on scrubber and incinerator operation parameters and emission test by EPA Method 16 or 16A.

RECOVERY BOILER

The Department accepts the use of the existing ESP and Good Combustion Practice as BACT for the recovery boiler.

Based on the recent ESP test data, the Department is setting the PM/PM_{10} (total PM measured by EPA Method 5) BACT determination standard at 0.030 gr/dscf @ 8% O_2. Visible emissions shall not exceed 20 percent opacity. Compliance shall be determined by EPA

Methods 5 (assuming all PM is PM10) and EPA Method 9.

BACT for Be is set at 0.5 lbs/E+12 Btu. Compliance shall be based on an emission factor established for this unit by EPA Method 103 or 104 as described in 40 CFR 61, Appendix B.

BACT for NOx is 80 ppmvd @ 8% O_2. Compliance shall be determined by EPA Method 7 or 7E.

BACT for CO is 800 ppmvd @ 8% O_2, 3-hour average, and 400 ppmvd @ 8% O_2, 24-hour average. Compliance shall be determined using EPA Method 10.

BACT for VOC is 0.30 lbs/ton BLS. Compliance shall be determined using EPA Method 25 or 25A.

BACT for TRS is 11.2 ppmvd @ 8% O_2, 12-hour average, and 7.0 ppmvd @ 8% O_2, 12-month rolling average. Compliance with the 12-hour standard shall be based on EPA Method 16 or 16A. Compliance with the 12-month rolling average standard shall be based on the TRS continuous emission monitoring records. The Department will reconsider the 12-month rolling average standard if a minimum of 6 months actual operation and emission data from the modified boiler demonstrate it is inappropriate.

Test data shows these standards can be met with the existing ESP.

Details of the Analysis May be Obtained by Contacting:

A. A. Linero, P.E., Administrator, NSR Section
Willard Hanks, Review Engineer
Department of Environmental Protection
Bureau of Air Regulation
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Recommended by:

A. A. Linero, P.E. for

C. H. Fancy, P.E., Chief
Bureau of Air Regulation

September 13, 1995
Date

Approved by:

for Virginia B. Wetherell, Secretary
Dept. of Environmental Protection

18 September, 1995
Date

Department of Environmental Protection

Lawton Chiles
Governor

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Virginia B. Wetherell
Secretary

AIRS ID 1070005

Permittee:
Georgia-Pacific Corporation
P. O. Box 919
Palatka, FL 32178-0919

Permit Number: AC54-266676
(PSD-FL-226)
Expiration Date: 12/31/96
County: Putnam
Latitude/Longitude:
29°41'00"
81°40'45"
Project: Kraft Pulp Mill Modification

This permit is issued under the provision of Chapter 403, Florida Statutes (F.S.), and Chapters 62-4 and 62-212, Florida Administrative Code (F.A.C.). The above named permittee is hereby authorized to perform the work or operate the facility shown on the application and approved drawings, plans, and other documents attached hereto and specifically described as follows:

For modification of an existing Kraft pulp mill located north of County Road 216 and west of U.S. Highway 17 near Palatka, Putnam County, Florida. The UTM coordinates of the plant site are Zone 17, 424.0 km E and 3283.4 km N. The modification consists of the replacement of two digesters, adding additional screen tubes to the recovery boiler, installing a new total reduced sulfur (TRS) scrubber ahead of the TRS incinerator, installing a chip conditioner system, installing a white liquor heating system, and installing an automatic cleaning system on the lime mud filter. Allowable production for the facility remains at 118 tons per hour (TPH) air dried unbleached pulp (ADUP) and 1,850 tons per day (TPD) ADUP (monthly average).

Stack parameters for the major units at this facility are shown below:

Units	Height (ft)	Diameter (ft)	Temperature (°F)	Velocity (FPS)
Recovery Boiler No. 4	230	12.0	400	63.7
Lime Kiln No. 4	131	4.4	150	60.8
Smelt Dissolving Tank No. 4	206	5.0	160	21.2
TRS Incinerator	250	3.1	500	105.1
Tall Oil Plant	40	1.3	200	40.8

The emission units shall be constructed (modified) in accordance with the permit application, plans, documents, amendments and drawings, except as otherwise noted in the General and Specific Conditions.

Attachments are listed below:

1. Application received March 15, 1995.
2. KBN letter dated March 27, 1995.
3. DEP letter dated March 29, 1995.
4. KBN letter dated April 13, 1995.
5. KBN letter dated April 17, 1995.
6. Permit Nos. AC54-142282, AC54-142283, AC54-142288, and AC54-142291 with amendments to these permits dated July 18, 1988, July 28, 1989, December 6, 1989, and September 5, 1990.
7. Permit No. AC54-170420
8. Permit No. AC54-192550 (PSD-FL-171)
9. Permit No. AC54-192551 (PSD-FL-171)
10. Permit No. AC54-193841 (PSD-FL-171)
11. Permit No. AC54-108945
12. KBN letter dated July 5, 1995.
13. KBN letter dated July 26, 1995.
14. Georgia-Pacific Corporation's letter dated August 18, 1995.

GENERAL CONDITIONS:

1. The terms, conditions, requirements, limitations, and restrictions set forth in this permit are "Permit Conditions" and are binding and enforceable pursuant to Sections 403.161, 403.727, or 403.859 through 403.861, F.S. The permittee is placed on notice that the Department will review this permit periodically and may initiate enforcement action for any violation of these conditions.

2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the Department.

3. As provided in Subsections 403.087(6) and 403.722(5), F.S., the issuance of this permit does not convey any vested rights or any exclusive privileges. Neither does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit is not a waiver of or approval of any other Department

GENERAL CONDITIONS

permit that may be required for other aspects of the total project which are not addressed in the permit.

4. This permit conveys no title to land or water, does not constitute State recognition or acknowledgment of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the State. Only the Trustees of the Internal Improvement Trust Fund may express State opinion as to title.

5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, or plant life, or property caused by the construction or operation of this permitted source, or from penalties therefore; nor does it allow the permittee to cause pollution in contravention of F.S. and Department rules, unless specifically authorized by an order from the Department.

6. The permittee shall properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by Department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by Department rules.

7. The permittee, by accepting this permit, specifically agrees to allow authorized Department personnel, upon presentation of credentials or other documents as may be required by law and at a reasonable time, access to the premises, where the permitted activity is located or conducted to:

a. Have access to and copy any records that must be kept under the conditions of the permit;

b. Inspect the facility, equipment, practices, or operations regulated or required under this permit; and,

c. Sample or monitor any substances or parameters at any location reasonably necessary to assure compliance with this permit or Department rules.

Reasonable time may depend on the nature of the concern being investigated.

GENERAL CONDITIONS:

8. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately provide the Department with the following information:

   a. A description of and cause of non-compliance; and,

   b. The period of noncompliance, including dates and times; or, if not corrected, the anticipated time the non-compliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the non-compliance.

The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the Department for penalties or for revocation of this permit.

9. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source which are submitted to the Department may be used by the Department as evidence in any enforcement case involving the permitted source arising under the F.S. or Department rules, except where such use is prescribed by Sections 403.73 and 403.111, F.S. Such evidence shall only be used to the extent it is consistent with the Florida Rules of Civil Procedure and appropriate evidentiary rules.

10. The permittee agrees to comply with changes in Department rules and F.S. after a reasonable time for compliance, provided, however, the permittee does not waive any other rights granted by F. S. or Department rules.

11. This permit is transferable only upon Department approval in accordance with Rules 62-4.120 and 62-30.300, F.A.C., as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the Department.

12. This permit or a copy thereof shall be kept at the work site of the permitted activity.

13. This permit also constitutes:

   (x) Determination of Best Available Control Technology (BACT)
   (x) Determination of Prevention of Significant Deterioration (PSD)
   (x) Compliance with New Source Performance Standards (NSPS)

GENERAL CONDITIONS:

14. The permittee shall comply with the following:

    a. Upon request, the permittee shall furnish all records and plans required under Department rules. During enforcement actions, the retention period for all records will be extended automatically unless otherwise stipulated by the Department.

    b. The permittee shall hold at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation) required by the permit, copies of all reports required by this permit, and records of all data used to complete the application for this permit. These materials shall be retained at least three years from the date of the sample, measurement, report, or application unless otherwise specified by Department rule.

    c. Records of monitoring information shall include:

    - The date, exact place, and time of sampling or measurements;
    - The person responsible for performing the sampling or measurements;
    - The dates analyses were performed;
    - The person responsible for performing the analyses;
    - The analytical techniques or methods used; and,
    - The results of such analyses.

15. When requested by the Department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the Department, such facts or information shall be corrected promptly.

SPECIFIC CONDITIONS:

General

1. The provisions of the following air construction/operation permits and revisions to those permits, except for the changes noted, are incorporated by reference as conditions of this air construction permit.

SPECIFIC CONDITIONS:

Digester System, Multiple Effect Evaporator System, Condensate Stripper System, and TRS Incinerator (AO54-166018)

Permit Number	Issue Date	Amendment Date(s)	Changes by this Permit
AC54-142282	APR 26, 1988	JUL 18, 1988	Replace 2 batch digesters
AC54-142283		JUL 28, 1989	
AC54-142288		DEC 6, 1989	
AC54-142291		SEP 5, 1990	

Digester System

Permit Number	Issue Date	Amendment Date(s)	Changes by this Permit
AC54-170420	JAN 26, 1989	None	Replace 2 batch digesters Specific Condition (SC) 5- SO_2 emission standards

No. 4 Recovery Boiler (AO54-209650)

Permit Number	Issue Date	Amendment Date(s)	Changes by this Permit
AC54-192550 (PSD-FL-171)	JUN 12, 1991	None	SC 3- PM/PM_{10}, NO_x, CO, VOC, and visible emission standards SC 4- TRS emission standards SC 6- SAM emission standards

No. 4 Lime Kiln (AO54-209858)

Permit Number	Issue Date	Amendment Date(s)	Changes by this Permit
AC54-192551 (PSD-FL-171)	JUN 12, 1991	None	No Change

Smelt Dissolving Tanks (AO54-209650)

Permit Number	Issue Date	Amendment Date(s)	Changes by this Permit
AC54-193841 (PSD-FL-171)	JUN 12, 1991	None	No change

SPECIFIC CONDITIONS:

Tall Oil Plant (AO54-209098)

Permit Number	Issue Date	Amendment Date(s)	Changes by this Permit
AC54-108945	FEB 6, 1987	JUN 20, 1987 JAN 1, 1988	No change

Construction

2. The construction/modifications authorized by this permit are:

A. Replace two of the existing thirteen 4,000 ft^3 digesters with two 4,900 ft^3 digesters.
B. Install additional screen tube modules (bundles of 10 individual tubes) on 12 inch centers around the existing 15 screen tube modules in No. 4 Recovery Boiler.
C. Install a total reduced sulfur (TRS) packed tower scrubber ahead of the existing TRS incinerator that is designed to remove 50 percent of the TRS.
D. Install a new chip conditioner system consisting of two horizontal steel rolls that turn at a low rpm to crush or fissure the chips.
E. Installation of a white liquor heating system.
F. Install an automatic cleaning system on the lime mud filter.

Federal Requirements

3. The permittee shall comply with all applicable requirements for the digester system in 40 CFR 60, Subpart BB- Standards of Performance for Kraft Pulp Mills.

SPECIFIC CONDITIONS:

Emission Limitations

4. Maximum emissions from the No. 4 Recovery Boiler shall not exceed any of the following:

Pollutant	Emission Factor	lbs/hr	TPY
PM/PM_{10}[a]	0.030 gr/dscf @ 8% O_2	75.6	331.1
SO_2	75 ppmvd @ 8% O_2	109.9	481.4
NO_x	80 ppmvd @ 8% O_2	168.5	738.1
CO	800 ppmvd @ 8% O_2 (3-hr)	1025.4	
	400 ppmvd @ 8% O_2 (24-hr)	512.7	2245.6
VOC	0.30 lb/ton BLS	31.5	138.0
SAM	0.81 ppmvd	3.20	14.2
TRS*	7.0 ppmvd @ 8% O_2	10.9	47.7
Beryllium	0.5 lb/E+12 Btu	6.4E-4	2.8E-3

[a]Total PM measured by EPA Method 5
* 12-month rolling average. Maximum of 11.2 ppmvd @ 8 percent oxygen and 17.5 lbs/hr is maximum allowable TRS emissions during any 12 hour period.

Visible emissions shall not exceed 20 percent opacity (BACT).

5. Maximum emissions from the TRS incinerator controlling the emissions from the digester system, multi-effect evaporator systems, and condensate stripper system shall not exceed any of the following:

Natural Gas or Methanol Fuel

Pollutant	Emission Factor	lbs/hr	TPY
PM/PM_{10}[a]	permit	5.5	24.1
SO_2	5.085 lbs/ton ADUP	383 (24-hr)	1677.5
SAM	4% of SO_2 as SO_3	18.8	82.2
TRS	5 ppmvd @ 10% O_2	0.12	0.53

Note: [a]Total PM measured by EPA Method 5
[b]based on 50% TRS control efficiency of the scrubber

Visible emissions shall not exceed 5 percent opacity except 20 percent opacity is allowed for 3 minutes in any 1 hour period (Rule 62-296.401(1), F.A.C.).

SPECIFIC CONDITIONS:

Compliance Determination

6. Except for Beryllium (Be), TRS, and SAM, compliance tests for all emission standards for the No. 4 Recovery Boiler listed in Specific Condition No. 4 shall be conducted once each Federal fiscal year. Compliance with the emission standards shall be based on the EPA reference methods as described in 40 CFR 60, Appendix A, except as noted below. If all particulate matter is assumed to be PM_{10}, compliance may be based on EPA Method 5. The initial and annual compliance tests for sulfuric acid mist emissions shall be conducted using EPA Method 8 or NCASI Method 106 for two years from the date of issuance of this permit. At the end of this time, appropriate emission testing methodology and, if supported by test data, revised SAM emission limits shall be established by the Department Be tests shall be conducted initially and every 5 years thereafter. Compliance with the 12-hour TRS standard shall be determined annually using EPA Method 16 or 16A. Compliance with the 12-month rolling average TRS standard shall be based on the TRS continuous emissions monitor data.

7. Compliance tests for the PM/PM_{10} standard (total PM measured by EPA Method 5) for the TRS Incinerator listed in Specific Condition No. 5 shall be conducted prior to the expiration date of this permit and every 5 years thereafter. Compliance with the SO_2 and visible emissions standards shall be determined annually using EPA Methods 6C and 9 as described in 40 CFR 60, Appendix A. The unit will be assumed to be in compliance with the TRS standard provided the incinerator operates at a minimum temperature of 1,200 °F and has a minimum retention time of 0.5 seconds. The initial and annual compliance tests for sulfuric acid mist emissions shall be conducted using EPA Method 8 or NCASI Method 106 for two years from the date of issuance of this permit. At the end of this time, appropriate emission testing methodology and, if supported by test data, revised SAM emission limits shall be established by the Department

8. Particulate matter and visible emissions tests shall be conducted concurrently. The test report submitted to the Department's Northeast District office within 45 days of completion of the last test run.

SPECIFIC CONDITIONS:

Monitoring

9. The Department's Northeast District office shall be notified in writing at least 15 days in advance of any emission test

required by this permit. Testing of emissions shall be conducted with the emission unit operating at permitted capacity. Permitted capacity is defined as 90-100 percent of the maximum operating rate allowed by the permit. If it is impracticable to test at permitted capacity, then emission units may be tested at less than 90 percent of the maximum operating rate allowed by the permit. In this case, subsequent emission unit operation is limited to 110 percent of the test load until a new test is conducted. Once the emission unit is so limited, then operation at higher capacities is allowed for no more than 15 consecutive days for the purposes of additional compliance testing to regain the permitted capacity in the permit.

Operation Limitations

10. Pulp production capacity shall not exceed 118 TPH ADUP and 1,850 TPD ADUP (monthly average).

11. The total reduced sulfur (TRS) incinerator shall operate at a minimum temperature of 1,200°F with a minimum residence time of 0.5 seconds. Scrubber liquid flow and pressure of the TRS scrubber shall be maintained at or above the level documented to remove at least 50 percent of the TRS air pollutant to the scrubber.

12. Black liquor solids (BLS) input to No. 4 Recovery Boiler shall not exceed 210,000 lbs/hr and 5.04×10^6 lbs/day.

Record keeping and Reporting Requirements

13. An annual operation report shall be submitted to the Department's Northeast District office by March 1 of each year pursuant to Rule 62-210.370(2), F.A.C.

14. The permittee, for good cause, may request that this construction permit be extended. Such a request shall be submitted to the Department's Bureau of Air Regulation prior to 60 days before the expiration of the permit. (Rule 62-4.090, F.A.C.)

SPECIFIC CONDITIONS:

15. A timely application for a Title V permit to operate shall be submitted to the Northeast District office by the date specified in Chapter 62-213, F.A.C.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL PROTECTION

E.V. Virginia B. Wetherell, Secretary

Florida Department of
Environmental Protection

Memorandum

WILLARD

To: Virginia B. Wetherell

Thru: Kirby Green

From: Howard L. Rhodes

Date: September 13, 1995

Subject: Georgia-Pacific Corp. Modification
Permit No. AC 54-26676/PSD-FL-226

Attached for the Secretary's approval and signature is the air construction permit and the Best Available Control Technology (BACT) determination for the proposed modification to Georgia-Pacific Corp.'s Kraft pulp mill located in Palatka, Putnam County, Florida.

The modification involves replacement of digesters Nos. 11 and 12 with more modern and larger units, adding screen tubes to the No. 4 Recovery Boiler, and other minor plant alterations. The modifications and improvements result in a small increase in production and emissions. However, due to the federal Prevention of Significant Deterioration (PSD) rules, a review of Best Available Control Technology (BACT) was required. The control equipment consist of a scrubber and an incinerator to process digester off-gases and an electrostatic precipitator and good combustion practice on the recovery boiler. We determined that the BACT review for this facility conducted in 1991 (following another improvement) is still applicable except that some of the emission limits were adjusted consistent with the demonstrated capability of the control equipment.

The only comments received during the public notice period were from the applicant. They resulted in minor corrections to the proposed permit and BACT determination as discussed in the Final Determination. I recommend your approval of the permit and BACT determination.

Attachment

HLR/wh/t

Kirby - We'll have delegation letter for these permits done soon. Howard 9/14

Department of Environmental Protection

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Lawton Chiles
Governor

Virginia B. Wetherell
Secretary

August 9, 1996

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Ms. Myra Carpenter
Environmental Superintendent
Georgia-Pacific Corporation
Post Office Box 919
Palatka, Florida 32178-0919

Dear Ms. Carpenter:

RE: Georgia-Pacific Corporation
Palatka Mill

In response to your July 26 letter concerning the replacement of a blow tank at the Palatka Mill, the original application and resulting permit No. AC 54-266676/PSD-FL-226 were reviewed. Neither the application nor the permit specifically addressed the blow tanks at this Mill. According to correspondence in our files, all modifications authorized by this permit were completed by March, 1996.

If the existing blow tank is replaced by an equivalent, if not identical, unit (same size, capacity, fittings, etc.), the project is a replacement of a component during routine maintenance and a permit is not required.

A blowtank with larger diameter blow lines is not considered to be equivalent equipment if it allows actual processing of more wood chips by relieving a bottleneck. If this is the case, the proposed project is not routine maintenance.

Based on our conversation of August 9, it appears that the new unit is of equivalent capacity to the one it will replace and will not debottleneck the digesters. If the new blowtank arrangement is of higher capacity (and actually results in increased production), you can apply to amend Permit AC 54-266676/PSD-FL-226. Because actual emissions from replacement of the digesters have not yet been established, the Department can assume actual production and emissions are equal to the limits in this permit. A public notice is required for any amendment.

If you need further guidance on this issue, please contact Willard Hanks at (904)488-1344.

Sincerely,

A. A. Linero, Administrator
New Source Review Section

AAL/wh

cc: C. Kirts, NED

Is your RETURN ADDRESS completed on the reverse side?

SENDER:
- Complete items 1 and/or 2 for additional services.
- Complete items 3, and 4a & b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "Return Receipt Requested" on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

I also wish to receive the following services (for an extra fee):
1. ☐ Addressee's Address
2. ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:
Myra Carpenter, Env. Supt.
Ga-Pacific Corp.
PO Box 919
Palatka, Fl
32178-0919

4a. Article Number
P 339 251 138

4b. Service Type
☐ Registered ☐ Insured
☑ Certified ☐ COD
☐ Express Mail ☐ Return Receipt for Merchandise

7. Date of Delivery
8-14-96

5. Signature (Addressee)

6. Signature (Agent)

8. Addressee's Address (Only if requested and fee is paid)

Thank you for using Return Receipt Service.

PS Form **3811**, December 1991 ☆U.S. GPO: 1993—352-714 **DOMESTIC RETURN RECEIPT**

P 339 251 138

US Postal Service
Receipt for Certified Mail
No Insurance Coverage Provided.
Do not use for International Mail *(See reverse)*

Sent to Myra Carpenter	
Street & Number Ga-Pacific Corp.	
Post Office, State, & ZIP Code Palatka, Fl	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
TOTAL Postage & Fees	$
Postmark or Date Palatka Mill 8-9-96	

PS Form **3800**, April 1995

Georgia-Pacific Corporation

Palatka Operations
Packaged Products Division
P.O. Box 919
Palatka, Florida 32178-0919
Telephone (904) 325-2001

July 26, 1996

Mr. Al Linero, P.E.
Administrator, New Source Review
State of Florida
Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

RE: Georgia-Pacific Corporation, Palatka Mill
AC54-266676/PSD-FL-226

Dear Mr. Linero:

Georgia-Pacific Corporation (G-P) was issued the above-referenced construction permit in September, 1995, which allowed several changes at the Palatka Mill to be implemented. The replacement of two batch digesters was included in these approved changes. G-P would now like to notify the Department of some additional changes planned for the batch digester system in the near future. These changes include the replacement of the existing blow tank with a new blow tank. In addition, the blow lines connecting to the blow tank will be replaced with larger diameter lines.

These changes are being implemented for several reasons. The existing blow tank is in need of repair. However, it is not cost effective to repair the tank; therefore, G-P is planning on replacing the tank. By increasing the size of the lines and nozzles going to the blow tank, as well as increasing the diameter of blow tank dome, less fiber carryover to the non-condensable gas (NCG) system will result. These activities are planned to occur during the August-September, 1996 annual maintenance outage.

Since the batch digester system is currently under a construction permit and no increase in the permitted pulp production rate is requested, no additional permitting should be necessary to implement these additional changes. This letter is to serve as notification to the Department of these additional construction activities prior to implementation.

The engineer-of-record on the construction permit, David Buff, P.E., of KBN, has reviewed these construction plans. He has concluded that these activities will not result

in a modification under the Florida rules, and that the changes can be implemented under the current construction permit. His certification is attached.

Please call if you have any questions concerning this notification.

Sincerely,

Myra J. Carpenter

Myra J. Carpenter
Environmental Superintendent

kb

Attachment

cc: W. L. Baxter
B. T. Champion, GA030, G-09
Henry Hirschman
Robert Leetch, FDEP, Jacksonville
J. F. Parrish

Project:

Georgia-Pacific Corporation
Permit No. AC54-266676; PSD-FL-226
Replacement of Blow Tank and Blow Lines, Batch Digester System

Professional Engineer Statement:

I, the undersigned, hereby certify that:

(1) To the best of my knowledge, there is reasonable assurance (a) that the air pollutant emissions unit(s) and the air pollution control equipment described in this letter notification, when properly operated and maintained, will comply with all applicable standards for control of air pollutant emissions found in the Florida Statutes and rules of the Department of Environmental Protection; and

(2) To the best of my knowledge, any emission estimates reported or relied on in this letter notification are true, accurate, and complete and are either based upon reasonable techniques available for calculating emissions or, for emission estimates of hazardous air pollutants not regulated for an emissions unit addressed in this application, based solely upon the materials, information and calculations submitted with this application.

I further certify that the engineering features of each such emissions unit described in this letter notification have been designed or examined by me or individuals under my direct supervision and found to be in conformity with sound engineering principles applicable to the control of air emissions of the pollutants characterized in this application.

David A. Buff, P.E.

David A. Buff

Signature

July 22, 1996

Date

Florida P. E. #19011

(seal)

In the folder labeled as follows there are documents, listed below, which were not reproduced in this electronic file. That folder can be found in the supplementary documents file drawer. Folders in that drawer are arranged alphabetically, then by permit number.

Folder Name: Georgia Pacific Corporation

Permit(s) Numbered:

AC	54	266676
PSD	FL	226

Documents: Period during which document was received	Detailed Description
Application	1. COLOR PHOTOGRAPHS DATED JULY 1995

Georgia-Pacific Corporation

Palatka Operations
Packaged Products Division
P.O. Box 919
Palatka, Florida 32178-0919
Telephone (904) 325-2001

March 13, 1996

Mr. Willard Hanks
Permitting and Standards Section
Bureau of Air Regulation
State of Florida
Department of Environmental Protection
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

RE: Georgia-Pacific Corporation
Palatka Operations
Kraft Pulp Mill Modification
Permit No.: AC54-266676 (PSD-FL-226)

Dear Mr. Hanks:

This letter is to update the Department of the status of the Digester Replacement and Pulp Mill Efficiency Improvement Projects authorized by Permit No. AC54-266676 (PSD-FL-226)

The modification consists of the replacement of two digesters, adding additional screen tubes to the recovery boiler, installing a new total reduced sulfur scrubber ahead of the TRS Incinerator, installing a chip conditioner system, installing a white liquor heating system, and installing an automatic cleaning system on the lime mud filter. The current status is that the work authorized by the permit is now complete. Initial and annual compliance tests for the No. 4 Recovery Boiler and TRS Incinerator are scheduled for March 25 - April 5, 1996.

If you have any questions, please call me at 904-329-0918.

Sincerely,

Myra J. Carpenter

Myra J. Carpenter
Environmental Superintendent

kb

cc: W. L. Baxter
D. A. Buff, KBN
B. T. Champion, GA030, G-09
cc: R. Leetch, NED
EPA

Georgia-Pacific Corporation

Palatka Operations
Packaged Products Division
P.O. Box 919
Palatka, Florida 32178-0919
Telephone (904) 325-2001

January 25, 1996

Mr. Willard Hanks
Florida Department of Environmental Protection
Permitting and Standards Section
Bureau of Air Regulation
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

RE: Permit Number AC54-266676/PSD-FL-226

Dear Mr. Hanks:

This letter is to inform the Department of the status of the Digester Replacement and Pulp Mill Efficiency Improvement Projects authorized by Permit Number AC54-266676 (PSD-FL-226). The modification consists of the replacement of two digesters, adding additional screen tubes to the recovery boiler, installing a new total reduced sulfur scrubber ahead of the TRS incinerator, installing a chip conditioner system, installing a white liquor heating system, and installing an automatic cleaning system on the lime mud filter.

The digester replacement is behind schedule, but we expect to begin the project in the next month or so. However, the new TRS scrubber is already operational. (You may recall that the new scrubber and existing incinerator were determined to be BACT for the digester system.) The screen tube project is complete. The white liquor heater and automatic cleaning system on the lime mud filter have also been installed. Work has begun but is not complete on the chip conditioner system. We hope to have the chip conditioner system fully operational by late February.

Compliance testing of the recovery boiler is scheduled for March. Compliance testing of the incinerator will be scheduled after the new digesters are installed and operational.

If you have any questions, please call me at 904-329-0918.

Sincerely,

Myra J. Carpenter

Myra J. Carpenter
Environmental Superintendent

kb

cc: W. L. Baxter
M. Benjamin, FDEP, Jacksonville
B. T. Champion, GA030, G-09
J. E. Taylor

CC: C. Kirts

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IV
345 COURTLAND STREET, N.E.
ATLANTA, GEORGIA 30365

4APT-AEB

AUG 28 1995

Mr. Clair H. Fancy, P.E.
Chief
Bureau of Air Regulation
Florida Department of Environmental
Protection
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

SUBJ: Georgia-Pacific Corporation (G-P), Palatka, Putnam County, Florida (PSD-FL-226)

Dear Mr. Fancy:

This is to acknowledge receipt of your preliminary determination and draft Prevention of Significant Deterioration (PSD) permit for the proposed major modification to the above referenced kraft pulp mill facility by your letter dated August 1, 1995. Additional information regarding emissions netting calculations, proposed recovery boiler and total reduced sulfur (TRS) incinerator emission limits, electrostatic precipitator (ESP) upgrade viability, and black liquor solids content, was also received by your letters dated May 17, and July 5, 1995. The proposed major modification consists of the replacement of two existing digesters (Nos. 11 and 12) with two larger digesters. Sixteen screen tube banks will also be added to the existing No. 4 recovery boiler (RB4). Other physical changes at the facility include the addition of a new chip conditioner system, white liquor heater, and automatic lime mud filter cleaner. The existing brown stock washer system will not be physically modified.

G-P expects pulp production to increase approximately 40 tons per day (TPD) using the larger digesters. The pulp production capacity of the existing digester system is 1850 TPD. G-P also expects about a 4 percent increase in black liquor solids (BLS) throughput with the RB4 modification. The solids content of the black liquor will range from 66 to 68 percent. Current permitted RB4 capacity is 5.04 million pounds of BLS per day. Space limitations prohibit the installation of additional transformer-rectifier sets on the existing ESP system. As discussed between Mr. Willard Hanks of your staff and Mr. Stan Kukier of my staff on August 9, 1995, we have reviewed the package as submitted, including all additional information, and have no adverse comments.

We agree that a combination of a packed tower wet scrubber and an incinerator may be considered representative of Best Available Control Technology (BACT) for control of digester system TRS emissions. ESP technology and good combustion practices may also be considered representative of BACT for control of recovery boiler particulate and beryllium emissions. Good combustion practices can be considered representative of BACT for control of recovery boiler carbon monoxide (CO) and volatile organic compound (VOC) emissions. We also agree that combustion control may be considered representative of BACT for control of recovery boiler nitrogen oxides (NO_x) and TRS emissions. The recovery boiler NO_x emission limit of 80 parts per million on volume dry basis (ppmvd) corrected to 8 percent oxygen (O_2) indicated in the draft permit is lower than the 100 ppmvd corrected to 8 percent O_2 NO_x emission limit originally requested by the applicant. Permit conditions limit pulp production capacity to 1,850 TPD of air dried unbleached pulp (ADUP). The TRS incinerator is also required to operate at a minimum temperature of 1,200 degrees Fahrenheit (°F) with a minimum residence time of 0.5 seconds. Permit conditions limit the RB4 BLS feed rate to 210,000 pounds per hour (lbs/hr).

The new batch digester system will be subject to the requirements of 40 CFR Part 60, Subpart BB - Standards of Performance for Kraft Pulp Mills.

Thank you for the opportunity to comment on this package. If you have any questions, please contact Mr. Stan Kukier of my staff at (404) 347-3555, voice mail box extension 4143.

Sincerely yours,

Jewell A. Harper
Chief
Air Enforcement Branch
Air, Pesticides, and Toxics
Management Division

cc: W. Hanks
C. Holladay
NED

Georgia-Pacific Corporation

Palatka Operations
Packaged Products Division
P.O. Box 919
Palatka, Florida 32178-0919
Telephone (904) 325-2001

August 18, 1995

PSD-FL-177-1

RECEIVED
AUG 23 1995
Bureau of Air Regulation

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Al Linero, P.E., Administrator
New Source Review Section
Bureau of Air Regulation
Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Dear Mr. Linero:

We appreciate the considerable time and effort expended by the Department in reviewing the application for an air construction permit to modify our facility. The following are minor comments concerning the Technical Evaluation and Preliminary Determination, BACT Determination, and draft permit dated August 1, 1995.

Both the Technical Evaluation and draft permit state that the federally-enforceable pulping production limit is 118 tons per hour and 1,850 tons per day (TPD) of air-dried unbleached pulp (ADUP). For accounting reasons explained below, we verify the daily average pulp production at the end of the month. The daily pulp production is calculated throughout the month based on an estimated wood yield, which is somewhat dependent on season, weather, age of harvested wood, etc. At the end of the month, the wood yield is adjusted to reflect actual conditions. We request the Department clarify that the federally-enforceable daily production limit of 1,850 TPD ADUP is based on a monthly averaging time to accommodate our accounting constraints.

There is a typographical error on Page 6 of the Technical Evaluation. I believe the Department's proposed emission limit for SAM from the TRS Incinerator is 82.2 TPY.

The maximum emissions for all pollutants emitted by the project shown in Table 1 were proposed by G-P in the application, which of course does not reflect the emission limits proposed by the Department in the draft permit.

It is our understanding that TRS is not an air toxic, although some components of TRS are on the DEP air toxic list.

In the BACT Determination, the emissions from the digester system and recovery boiler were summarized in a table. Please clarify whether particulate matter includes both PM and PM_{10} in the table.

There is a typographical error on the first page of the draft permit where statutes is misspelled.

In Specific Condition No. 5, the emission factor for SO_2 should be 5.085 lbs. S/ton ADUP at 50% control efficiency. The typographical error for the SAM emission limit is repeated. I believe the limit should read 82.2 TPY.

Thank you for your consideration in this matter. If you have any questions, please call me at 904-329-0918.

Sincerely,

Myra J. Carpenter

Myra J. Carpenter
Environmental Superintendent

kb

cc: Willard Hanks, FDEP, BAR
B. T. Champion, GA030, G-09
W. L. Baxter
Henry Hirschman

CC: W. Hanks
C. Holladay
NED
EPA
NPS

PATSO3-26676 APPLICATION TRACKING SYSTEM STANDARD INFORMATION 09/21/95

APPL RECVD:03/09/95 **TYPE CODE:**AC **SUBCODE:**1A **LAST UPDATE:08/16/95**
DER OFFICE RECVD:BAQ **DER OFFICE TRANSFER TO:**___ **APPLICATION COMPLETE:**05/17/95
DER PROCESSOR:HANKS/HOLLADAY
APPL STATUS:IS **DATE:**07/27/95 **(ACTIVE/DENIED/WITHDRAWN/EXEMPT/ISSUE/GENERAL=GP)**
RELIEF:__ **(SSAC=SS/EXEMPTIONS=EX/VARIANCE=VA)**
(Y/N) N **MANUAL TRACKING** **DISTRICT:**31 **COUNTY:**54
(Y/N) N **OGC HEARING REQUESTED** **LAT/LONG:**29.41.00/81.40.45
(Y/N) Y **PUBLIC NOTICE REQD?** **BASIN-SEGMENT:**__.___
(Y/N) N **GOV BODY LOCAL APPROVAL REQD?** **COE #:**_____
(Y/N) Y **LETTER OF INTENT REQD?** _ **(I/ISSUE D/DENY)** **ALT#:**PSD-FL-226

PROJECT SOURCE NAME:DIGESTER SYSTEM/RECOVERY BOILER MOD
STREET:S.R. 216 **CITY:**PALATKA
STATE:FL **ZIP:**32178 **PHONE:**904-325-2001
APPLICATION NAME:GEORGIA-PACIFIC
STREET:POST OFFICE BOX 919 **CITY:**PALATKA
STATE:FL **ZIP:**32178 **PHONE:**904-325-2001
AGENT NAME:DAVID A. BUFF, P.E.
STREET:1034 NORTHWEST 57TH STREET **CITY:**GAINESVILLE
STATE:FL **ZIP:**32605 **PHONE:**904-331-9000
FEE #1 DATE PAID:03/09/95 **AMOUNT PAID:**07500 **RECEIPT NUMBER:**00224297

TAB TO HERE:_

APPLICATION NUMBER: 266676 **APPLICATION TYPE:** AC

A	DATE APPLICATION WAS RECEIVED	03/09/95
B	DATE APPLICANT INFORMED OF NEED FOR PUBLIC NOTICE	__/__/__
C	DATE DER SENT DNR APPLICATION/SENT DNR INTENT	__/__/__--__/__/__
E	DATE #1 ADDITIONAL INFO REQ--REC FROM APPLICANT	03/29/95--04/14/95
E	DATE #2 ADDITIONAL INFO REQ--REC FROM APPLICANT	03/29/95--04/18/95
E	DATE #3 ADDITIONAL INFO REQ--REC FROM APPLICANT	03/29/95--04/24/95
E	DATE #4 ADDITIONAL INFO REQ--REC FROM APPLICANT	03/29/95--05/17/95
E	DATE #5 ADDITIONAL INFO REQ--REC FROM APPLICANT	__/__/__--__/__/__
E	DATE #6 ADDITIONAL INFO REQ--REC FROM APPLICANT	__/__/__--__/__/__
F	DATE LAST 45 DAY LETTER WAS SENT	__/__/__
G	DATE FIELD REPORT WAS REQ--REC	__/__/__--__/__/__
H	DATE DNR REVIEW WAS COMPLETED	__/__/__
I	DATE APPLICATION WAS COMPLETE	05/17/95
K	DATE NOTICE OF INTENT WAS SENT--REC TO APPLICANT	08/02/95--08/04/95
L	DATE PUBLIC NOTICE WAS SENT TO APPLICANT	08/02/95
M	DATE PROOF OF PUBLICATION OF PUBLIC NOTICE RECEIVED	__/__/__
N	WAIVER BEGIN DATE--END DATE (DAY 90)	__/__/__--__/__/__

TAB TO HERE:_

Georgia-Pacific Corporation
Palatka Operations
Packaged Products Division
P.O. Box 919
Palatka, Florida 32178-0919
Telephone (904) 325-2001

August 14, 1995

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Al Linero, P.E.
Administrator, New Source Review
Florida Dept. of Environmental Protection
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

RE: Construction Permit AC 54-266676 (PSD-FL-226)
Modification of Kraft Pulp Mill
Georgia-Pacific Corporation, Palatka Mill
Putnam County

Dear Mr. Linero:

Enclosed is the notarized copy of the Notice of Intent to Issue Permit which was published on August 8, 1995 in our local newspaper. This public notice was for the issuance of construction permit AC 54-266676 (PSD-FL-226) for the modification of the pulping and recovery operations located at the Palatka mill.

If you have any questions, please call me at (904) 325-2001, Extension 5918.

Sincerely,

Myra Carpenter

Myra Carpenter
Environmental Superintendent

kp

w/o enclosure
cc: W. L. Baxter
B. T. Champion , GA030-09
H. Hirschman

cc: Willard Hanks ✓
Cleve Holladay ✓
David Buff ✓
EPA ✓
NPS ✓

NED ✓

OK

PUBLIC NOTICE

STATE OF FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION NOTICE OF INTENT TO ISSUE PERMIT

AC 54-266676
PSD-FL-226

The Department of Environmental Protection (Department) gives notice of its intent to issue a construction permit, No. AC 54-266676/PSD-FL-226, to Georgia-Pacific Corporation for a modification of its Kraft pulp mill located in Palatka, Putnam County, Florida. The project is primarily a continuation of modernization and efficiency improvements at the plant rather than a major expansion of capacity. The modification consists of replacement of the last two of thirteen digesters with modern, larger units; installation of furnace screen tubes in the recovery boiler to cool combustion gases; installation of a new wood chip conditioner system; replacement of the white liquor heater; and installation of an automatic cleaning system on the lime mud filter. Although this permit does not authorize an increase in the allowable production, the mill, if operated at its the permitted production rate, has the potential to increase actual emissions by 300.0 tons per year (TPY) Particulate matter (PM/PM10), 36.1 TPY sulfur dioxide (SO2), 626.0 TPY nitrogen oxides (NOx), 1022.5 TPY carbon monoxide (CO), 322.2 TPY volatile organic compounds (VOC), 88.5 TPY total reduced sulfur (TRS), 0.04 TPY lead, 0.009 TPY mercury, and 0.0011 TPY beryllium (Be). Sulfuric acid mist (SAM) emissions will decrease by 12.4 TPY. The increase in the allowable emissions of PM/PM10, NOx, CO, VOC, TRS, and Be are above the significant emission rates and subjects the proposed modification to the Prevention of Significant Deterioration (PSD) new source review regulations. The allowable emissions of these pollutants are set by a Best Available Control Technology (BACT) determination.

The maximum predicted increases in particulate matter less than 10 microns (PM10) concentrations and nitrogen dioxide (NO2) concentrations due to the project are less than the respective PSD Class I and Class II significant impact levels. Thus, no PSD PM10 or NO2 increment consumption was calculated for this project.

A person whose substantial interests are affected by the Department's proposed permitting decision may petition for an administrative proceeding (hearing) in accordance with Section 120.57, Florida Statutes (F.S.). The petition must contain the information set forth below and must be filed (recieved) in the Office of General Counsel of the Department at 2600 Blair Stone Road, Tallahassee, Florida 32399-2400, within 14 days

STATE OF FLORIDA \
: SS:
County of Putnam /

The undersigned personally appeared before me, a Notary Public for the State of Florida, and deposes that the Daily News is a daily newspaper of general circulation, printed in the English Language and published in the City of Palatka, in said County and State: and that the attached order, notice, publication and/or advertisement:

Legal No. 29361
PUBLICNOTICESTATE OF FLORIDADEPARTMENT O

was published in said newspaper 1 time(s), said publication being made on the following dates:
8/8/95

The Daily News has been continuously published as a daily newspaper, and has been entered as second class matter at the post office at the City of Palatka. Putnam County, Florida, each for a period of more than one year next preceding the date of the first publication of the above described order, notice, publication and/or advertisement.

Mary Kaye Wells

Sworn to and subscribed before me this 08/08/95 by Mary Kaye Wells, Classified Advertising Manager of the Daily News, a Florida corporation, on behalf of the corporation.

Judy C. Bailey

Judy C. Bailey, Notary Public,
State of Florida

NOTARY SEAL
SEAL OF OFFICE:

_x_ Personally known to me, or
___ Produced Identification:
_____
_x_ Did take an oath

OFFICIAL NOTARY SEAL
JUDY C BAILEY
NOTARY PUBLIC STATE OF FLORIDA
COMMISSION NO. CC455296
MY COMMISSION EXP. MAY 3,1999

Ga-Pacific Corp.
AC54-266676 -PSD-FL-226

Rec'd 8/18

of publication of this notice. Petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. Failure to file a petition within this time period shall constitute a waiver of any right such person may have to request an administrative determination (hearing) under Section 120.57, F.S.

The Petition shall contain the following information; (a) The name, address, and telephone number of each petitioner, the applicant's name snd address, the Department Permit File Number and the county in which the project is proposed; (b) A statement of how and when each petitioner received notice of the Department's action or proposed action; (c) A statement of how each petitioner's substantial interests are affected by the Department's action or proposed action; (d) A statement of the material facts disputed by Petitioner, if any; (e) A statement of facts which petitioner contends warrant reversal or modification of the Department's action or proposed action; (f) A statement of which rules or statutes petitioner contends require reversal or modification of the Department's action or proposed action; and, (g) A statement of the relief sought by petitioner, stating precisely the action petitioner wants the Department to take with respect to the Department's action or proposed action.

If a petition is filed, the administrative hearing process is designed to formulate agency action. Accordingly, the Department's final action may be different from the position taken by it in this Notice. Persons whose substantial interests will be affected by any decision of the Department with regard to the application have the right to petition to become a party to the proceeding. The petition must conform to the requirements specified above and be filed (received) within 14 days of publication of this notice in the Office of General Counsel at the above address of the Department. Failure to petition within the allowed time frame constitutes a waiver of any right such person has to request a hearing under Section 120.57, F.S., and to participate as a party to this proceeding. Any subsequent intervention will only be at the approval of the presiding officer upon motion filed pursuant to Rule 28-5.207, Florida Administrative Code.

The application is available for public inspection during normal business hours, 8:00 a.m. to 5:00 p.m., Monday through Friday, except legal holidays, at:

Department of
Environmental Protection
Bureau of Air Regulation
111 S. Magnolia Drive,
Suite 4
Tallahassee, Florida 32301.

Department of
Environmental Protection
Northeast District
7825 Baymeadows Way
Suite B200
Jacksonville, Florida
32256-7577

Any person may send written comments on the proposed action to Administrator, New Source Review, at the Department of Environmental Protection, Bureau of Air Regulation, Mail Station 5505, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400. All comments received within within 14 days of the publication of this notice will be considered in the Departments' final determination.

Further, a public hearing can be requested by any person(s). Such request must be submitted within 30 days of this notice.
8/8/95 Legal No. 29361

Department of Environmental Protection

Lawton Chiles
Governor

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Virginia B. Wetherell
Secretary

August 1, 1995

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Henry Hirschman, General Manager
Georgia - Pacific Corporation
P.O. Box 919
Palatka, FL 32178-0919

Dear Mr. Hirschman:

Enclosed is a copy of the Technical Evaluation and Preliminary Determination, proposed BACT determination, and draft permit to modify your Kraft pulp mill in Palatka, Putnam County, Florida. The modification includes replacing two batch digesters, installing a TRS scrubber, adding screen tubes to the recovery boiler, installing a new chip conditioner system, installing a white liquor heat exchanger, and installing an automatic cleaning system on the lime mud filter.

Submit any written comments you wish to have considered concerning the Department's proposed action to Mr. A. A. Linero of the Bureau of Air Regulation. If you have any questions regarding this matter, please call Willard Hanks at (904)488-1344.

Sincerely,

A. A. Linero, P.E. for

C. H. Fancy, P.E.
Chief
Bureau of Air Regulation

CHF/WH/t

Enclosure

cc: Chris Kirts, NED
Jewell Harper, EPA
John Bunyak, NPS
David Buff, P.E., KBN

Z 392 979 014

Receipt for Certified Mail
No Insurance Coverage Provided
Do not use for International Mail
(See Reverse)

PS Form **3800**, March 1993

Sent to	Henry Hirschman
Street and No.	GA-Pacific
P.O. State and ZIP Code	Palatka FL
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, and Addressee's Address	
TOTAL Postage & Fees	$
Postmark or Date	8-2-95

AC54-266676
PSD-FL-336

Is your RETURN ADDRESS completed on the reverse side?

SENDER:
- Complete items 1 and/or 2 for additional services.
- Complete items 3, and 4a & b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "Return Receipt Requested" on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

I also wish to receive the following services (for an extra fee):
1. ☐ Addressee's Address
2. ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:
Henry Hirschman, G.M.
GA-Pacific Corp.
PO BOX 919
Palatka, FL 32178-0919

4a. Article Number
Z 392 979 014

4b. Service Type
☐ Registered ☐ Insured
☒ Certified ☐ COD
☐ Express Mail ☐ Return Receipt for Merchandise

7. Date of Delivery

5. Signature (Addressee)

8. Addressee's Address (Only if requested and fee is paid)

6. Signature (Agent)

PS Form **3811**, December 1991 ☆U.S. GPO: 1993—352-714 **DOMESTIC RETURN RECEIPT**

Thank you for using Return Receipt Service.

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

CERTIFIED MAIL

In the Matter of an
Application for Permit
Amendment by:

DEP File No. AC 54-266676
PSD-FL-226
Putnam County

Mr. Henry Hirschman, General Manager
Georgia - Pacific Corporation
P.O. Box 919
Palatka, FL 32178-0919

_____/

INTENT TO ISSUE

The Department of Environmental Protection (Department) hereby gives notice of its intent to issue a construction permit (copy attached) for the proposed project, as detailed in the file specified above, for the reasons stated in the attached Technical Evaluation and Preliminary Determination.

The applicant, Georgia-Pacific Corporation, applied on March 15, 1995, for an air construction permit to modify its Kraft pulp mill located in Palatka, Putnam County, Florida. The modification involves replacing two batch digesters, installing a TRS scrubber, adding additional screen tubes in the recovery boiler, installing a new chip conditioner system, installing a white liquor heating system, and installing an automatic cleaning system on the lime mud filter. The modification has the potential to increase pulp production. Based on the current actual emissions and future potential emissions anticipated for the affected units within the facility, the project constitutes a major modification at a major stationary facility and is subject to a review for Prevention of Significant Deterioration (PSD) and a determination of Best Available Control Technology (BACT).

The Department has permitting jurisdiction under the provisions of Chapter 403, Florida Statutes (F.S.), and Chapters 62-212 and 62-4, Florida Administrative Code (F.A.C.). The project is not exempt from permitting procedures. The Department has determined that a permit amendment is required for the proposed action.

Pursuant to Section 403.815, Florida Statutes and DER Rule 17-103.150, F.A.C., you (the applicant) are required to publish at your own expense the enclosed Notice of Intent to Issue Permit. The notice shall be published one time only within 30 days in the

legal ad section of a newspaper of general circulation in the area affected. For the purpose of this rule, "publication in a newspaper of general circulation in the area affected" means publication in a newspaper meeting the requirements of Sections 50.011 and 50.031, F.S., in the county where the activity is to take place. Where there is more than one newspaper of general circulation in the county, the newspaper used must be one with significant circulation in the area that may be affected by the permit. If you are uncertain that a newspaper meets these requirements, please contact the department at the address or telephone number listed below. The applicant shall provide proof of publication to the Department, at [Department address] within seven days of publication. Failure to publish the notice and provide proof of publication within the allotted time may result in the denial of the permit.

The Department will issue the permit with the attached conditions unless a petition for an administrative proceeding (hearing) is filed pursuant to the provisions of Section 120.57, F.S.

A person whose substantial interests are affected by the Department's proposed permitting decision may petition for an administrative proceeding (hearing) in accordance with Section 120.57, F.S. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 2600 Blair Stone Road, Tallahassee, Florida 32399-2400. Petitions filed by the permit applicant and the parties listed below must be filed within 14 days of receipt of this intent. Petitions filed by other persons must be filed within 14 days of publication of the public notice or within 14 days of their receipt of this intent, whichever first occurs. Petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. Failure to file a petition within this time period shall constitute a waiver of any right such person may have to request an administrative determination (hearing) under Section 120.57, F.S.

The Petition shall contain the following information;

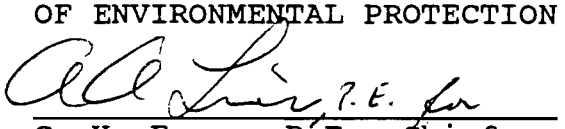
(a) The name, address, and telephone number of each petitioner, the applicant's name and address, the Department Permit File Number and the county in which the project is proposed;
(b) A statement of how and when each petitioner received notice of the Department's action or proposed action;
(c) A statement of how each petitioner's substantial interests are affected by the Department's action or proposed action;

(d) A statement of the material facts disputed by Petitioner, if any; (e) A statement of facts which petitioner contends warrant reversal or modification of the Department's action or proposed action;
(f) A statement of which rules or statutes petitioner contends require reversal or modification of the Department's action or proposed action; and,
(g) A statement of the relief sought by petitioner, stating precisely the action petitioner wants the Department to take with respect to the Department's action or proposed action.

If a petition is filed, the administrative hearing process is designed to formulate agency action. Accordingly, the Department's final action may be different from the position taken by it in this intent. Persons whose substantial interests will be affected by any decision of the Department with regard to the application have the right to petition to become a party to the proceeding. The petition must conform to the requirements specified above and be filed (received) within 14 days of receipt of this intent in the Office of General Counsel at the above address of the Department. Failure to petition within the allowed time frame constitutes a waiver of any right such person has to request a hearing under Section 120.57, F.S., and to participate as a party to this proceeding. Any subsequent intervention will only be at the approval of the presiding officer upon motion filed pursuant to Rule 28-5.207, F.A.C.

Executed in Tallahassee, Florida.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL PROTECTION



C. H. Fancy, P.E., Chief
Bureau of Air Regulation
2600 Blair Stone Road
Tallahassee, Florida 32399-2400
904-488-1344
Georgia-Pacific Corporation
AC54-266676/PSD-FL-226

Georgia-Pacific Corporation

AC 54-266676/PSD-FL-226

CERTIFICATE OF SERVICE

The undersigned duly designated deputy clerk hereby certifies that this INTENT TO ISSUE and all copies were mailed by certified mail before the close of business on 8-2-95 to the listed persons.

Clerk Stamp

FILING AND ACKNOWLEDGMENT
FILED, on this date, pursuant to §120.52(11), Florida Statutes, with the designated Department Clerk, receipt of which is hereby acknowledged.

Kris Tober 8-2-95
Clerk Date

Copies furnished to:

cc: Chris Kirts, NED
Jewell Harper, EPA
John Bunyak, NPS
David Buff, P.E., KBN

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
NOTICE OF INTENT TO ISSUE PERMIT

AC 54-266676
PSD-FL-226

The Department of Environmental Protection (Department) gives notice of its intent to issue a construction permit, No. AC 54-266676/PSD-FL-226, to Georgia-Pacific Corporation for a modification of its Kraft pulp mill located in Palatka, Putnam County, Florida. The project is primarily a continuation of modernization and efficiency improvements at the plant rather than a major expansion of capacity. The modification consists of replacement of the last two of thirteen digesters with modern, larger units; installation of furnace screen tubes in the recovery boiler to cool combustion gases; installation of a new wood chip conditioner system; replacement of the white liquor heater; and installation of an automatic cleaning system on the lime mud filter. Although this permit does not authorize an increase in the allowable production, the mill, if operated at its the permitted production rate, has the potential to increase actual emissions by 300.0 tons per year (TPY) particulate matter (PM/PM10), 36.1 TPY sulfur dioxide (SO_2), 626.0 TPY nitrogen oxides (NOx), 1022.5 TPY carbon monoxide (CO), 322.2 TPY volatile organic compounds (VOC), 88.5 TPY total reduced sulfur (TRS), 0.04 TPY lead, 0.009 TPY mercury, and 0.0011 TPY beryllium (Be). Sulfuric acid mist (SAM) emissions will decrease by 12.4 TPY. The increase in the allowable emissions of PM/PM10, NOx, CO, VOC, TRS, and Be are above the significant emission rates and subjects the proposed modification to the Prevention of Significant Deterioration (PSD) new source review regulations. The allowable emissions of these pollutants are set by a Best Available Control Technology (BACT) determination.

The maximum predicted increases in particulate matter less than 10 microns (PM10) concentrations and nitrogen dioxide (NO_2) concentrations due to the project are less than the respective PSD Class I and Class II significant impact levels. Thus,, no PSD PM10 or NO_2 increment consumption was calculated for this project.

A person whose substantial interests are affected by the Department's proposed permitting decision may petition for an administrative proceeding (hearing) in accordance with Section 120.57, Florida Statutes (F.S.). The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 2600 Blair Stone Road, Tallahassee, Florida 32399-2400, within 14 days of publication of this notice. Petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. Failure to file a petition within this time period shall constitute a waiver of any right such person may have to request an administrative determination (hearing) under Section 120.57, F.S.

The Petition shall contain the following information; (a) The name, address, and telephone number of each petitioner, the applicant's name and address, the Department Permit File Number and the county in which the project is proposed; (b) A statement of how and when each petitioner received notice of the Department's action or proposed action; (c) A statement of how each petitioner's substantial interests are affected by the Department's action or proposed action; (d) A statement of the material facts disputed by Petitioner, if any; (e) A statement of facts which petitioner contends warrant reversal or modification of the Department's action or proposed action; (f) A statement of which rules or statutes petitioner contends require reversal or modification of the Department's action or proposed action; and, (g) A statement of the relief sought by petitioner, stating precisely the action petitioner wants the Department to take with respect to the Department's action or proposed action.

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The application is available for public inspection during normal business hours, 8:00 a.m. to 5:00 p.m., Monday through Friday, except legal holidays, at:

Department of Environmental Protection
Bureau of Air Regulation
111 S. Magnolia Drive, Suite 4
Tallahassee, Florida 32301

Department of Environmental Protection
Northeast District
7825 Baymeadows Way
Suite B200
Jacksonville, Florida 32256-7577

Any person may send written comments on the proposed action to Administrator, New Source Review, at the Department of Environmental Protection, Bureau of Air Regulation, Mail Station 5505, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400. All comments received within 14 days of the publication of this notice will be considered in the Department's final determination.

Further, a public hearing can be requested by any person(s). Such request must be submitted within 30 days of this notice.

TECHNICAL EVALUATION
AND
PRELIMINARY DETERMINATION

Georgia-Pacific Corporation
Putnam County
Palatka, Florida

Digester Replacement and Pulp Mill Efficiency Improvement Projects

Department File No. AC 54-266676
PSD-FL-226

Department of Environmental Protection
Division of Air Resources Management
Bureau of Air Regulation

August 1, 1995

I. General Information

A. Applicant

Georgia-Pacific Corporation
P. O. Box 919
Palatka, Florida 32178-0919

B. Request

On March 15, 1995, Georgia-Pacific Corporation submitted an application for an air construction permit to modify its pulp and paper mill (SIC 2611) located near the intersection of County Road 216 and U.S. Highway 17, Palatka, Putnam County, Florida. The UTM coordinates of the facility are Zone 17, 434.0 km E and 3283.4 km N. The requested modification is to replace two of the existing thirteen digesters with larger units, add screen tubes to the recovery boiler, install a new TRS scrubber, install a new chip conditioning system, install a white liquor heating system, and install an automatic cleaning system on the lime mud filter. The application was complete on May 17, 1995.

C. Process

The Flow Diagram on the next page shows the main operations in the process used at this facility. Following is a brief description of how Kraft paper is manufactured. Bark is removed from the logs. The logs are reduced to chips. The chips are sent to the digester system where they are cooked with white liquor chemicals (sodium sulfide and caustic soda) that dissolve the wood lignins and hemicellulose. The digester charge is then sent to the brown stock washer system. The pulp fiber goes to the paper machines. The black liquor is decanted. The soap is sent to the Tall Oil Plant for treatment. The black liquor solution is sent to the multiple effect evaporators. The liquor containing the spent chemicals and lignins is concentrated in the evaporators and then burned in a recovery furnace. The smelt leaving the recovery furnace is discharged to the smelt dissolving tank to form green liquor. Lime, produced from recalcined mud by the lime kiln, is added to causticize the liquor which is then sent back to the digesters as white liquor to repeat the cycle.

D. Emissions

Replacing the two digesters with larger units can theoretically increase production by 40 tons per day (TPD) of air-dried unbleached pulp (ADUP). However, the present federally-enforcable plant production limits of 118 TPH and 1850 TPD ADUP will be maintained.

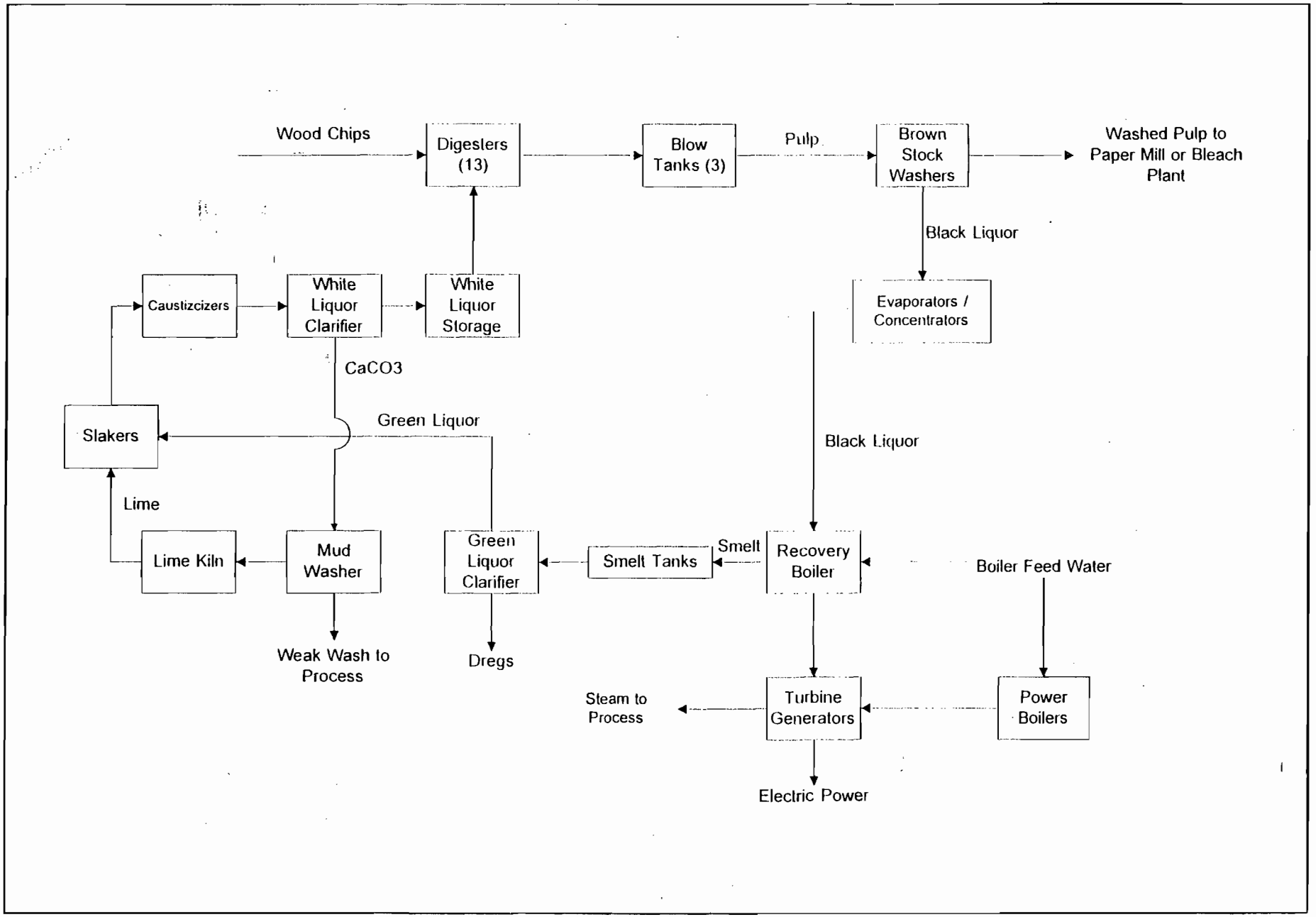

Figure 1. Facility Flow Diagram		*Emission Unit:* Overall Plant
		Process Area: Overall Plant
Georgia-Pacific Corporation	Palatka	*Filename:* GPPSD.VSD
		Latest Revision Date: 5/24/95 01:30 PM

KBN Engineering and Applied Sciences, Inc.

Adding the screen tubes to the recovery boiler will increase the capacity of the boiler by 4 percent. Because the recovery boiler is presently unable to utilize all of the black liquor produced, its actual production rate will likely increase. Thus emissions from operations related to utilization of black liquor will also likely increase. In any case, the future potential process and emission rates for the digester, boiler and other associated operations will be greater than past recent levels, which is why the plant is subject to this evaluation.

Table 2-1 in the application lists the current actual emissions from the affected units at this facility.

Table 2-2 lists the proposed emissions of the affected sources after the modification of this facility.

Table 3-3 shows the net emission increase of the regulated air pollutants resulting from the proposed modification that was requested by the applicant. The proposed increase in the emissions of the air pollutants --particulate matter (PM and PM_{10}), nitrogen oxides (NO_x), carbon monoxide (CO), volatile organic compounds (VOC), total reduced sulfur (TRS), and beryllium-- is above the significant emissions rates.

II. Rule Applicability

The proposed project, modification of a Kraft pulp and paper mill (SIC 2611), is subject to the preconstruction requirements under the provision of Chapter 403, Florida Statutes (F.S.), and Chapters 62-4 and 62-212, Florida Administrative Code (F.A.C.).

The existing facility is located in Putnam County. This air quality area is designated attainment for all criteria pollutants. (Rule 62-275.400, F.A.C.)

The Kraft pulp mill is a major facility. The proposed modification has the potential to increase actual production and emissions for this mill. The increase in emissions of PM/PM_{10}, NO_x, CO, VOC, TRS, and beryllium are above the significant emissions rates (Table 212.400-2, F.A.C.). The new digesters are subject to 40 CFR 60, Subpart BB, New Source Performance Standards (NSPS) for Kraft pulp mills. The recovery boiler is not subject to the NSPS because the modification is being accomplished without a significant capital expenditure as defined in these regulations.

This modification is subject to the New Source Review (NSR)/Prevention of Significant Deterioration (PSD) requirements pursuant to Rule 62-212.400(5), F.A.C., which require a Best Available Control Technology (BACT) determination for PM, PM_{10}, NO_x,

Table 2-1. Current Actual Emissions From Affected Sources, Georgia-Pacific Palatka Operations

Regulated Pollutant	Current Actual Emissions (TPY)					
	No. 4 LK	No. 4 RB	No. 4 SDT	TALL OIL	TRS INCIN.	TOTAL
Particulate matter (TSP)	80.0	125.8	28.6	--	23.2	257.6
Particulate matter (PM10)	80.0	125.8	28.6	--	23.2	257.6
Sulfur dioxide	3.20	58.8	27.8	--	2,115.2	2,205.0
Nitrogen oxides	125.5	410.3	55.7	--	1.76	593.3
Carbon monoxide	9.60	1,246.2	--	--	0.30	1,256.1
Volatile organic compounds	3.20	11.7	71.3	23.5	0.10	109.8
Sulfuric acid mist	0.16	7.66	1.36	--	103.6	112.8
Total reduced sulfur	4.40	13.3	4.84	0.32	0[a]	22.9
Lead	0.034	0.070	0.017	--	--	0.12
Mercury	0.00037	0.031	6.68E-05	--	--	0.031
Beryllium	0.0015	0.0022	5.20E-05	--	--	0.0038
Fluorides	--	--	--	--	--	--
Asbestos	--	--	--	--	--	--
Vinyl Chloride	--	--	--	--	--	--

[a] Stack tests indicated TRS levels were below detectable limits.

Table 2–2. Future Maximum Annual Emissions From Affected Sources, Georgia–Pacific Palatka Operations

Regulated Pollutant	Future Maximum Emissions (TPY)					
	No. 4 LK	No. 4 RB	No. 4 SDT	TALL OIL	TRS INCIN.	TOTAL
Particulate matter (TSP)	113.9	364.4	55.2	--	24.1	557.6
Particulate matter (PM10)	113.9	364.4	55.2	--	24.1	557.6
Sulfur dioxide	47.7	481.4	34.5	--	1,677.5	2,241.1
Nitrogen oxides	220.3	922.4	69.0	--	7.60	1,219.3
Carbon monoxide	32.0	2,245.6	--	--	1.03	2,278.6
Volatile organic compounds	75.3	239.1	88.3	29.0	0.27	432.0
Sulfuric acid mist	2.34	14.2	1.70	--	82.2	100.44
Total reduced sulfur	17.5	78.0	14.9	0.50	0.53	111.4
Lead	0.045	0.090	0.021	--	--	0.16
Mercury	0.00049	0.039	8.28E-05	--	--	0.040
Beryllium	0.0020	0.0028	6.44E-05	--	--	0.0049
Fluorides	--	--	--	--	--	--
Asbestos	--	--	--	--	--	--
Vinyl Chloride	--	--	--	--	--	--

Table 3–3. Net Emissions Increase Associated With Proposed Project, Georgia–Pacific Palatka Operations

Regulated Pollutant	Current Actual Emissions (TPY)	Future Maximum Emissions (TPY)	Net Increase In Emissions (TPY)	PSD Significant Emission Rate (TPY)	PSD Review Applies?
Particulate matter (TSP)	257.6	557.6	300.0	25	Yes
Particulate matter (PM10)	257.6	557.6	300.0	15	Yes
Sulfur dioxide	2,205.0	2,241.1	36.1	40	No
Nitrogen oxides	593.3	1,219.3	626.0	40	Yes
Carbon monoxide	1,256.1	2,278.6	1,022.5	100	Yes
Volatile organic compounds	109.8	432.0	322.2	40	Yes
Sulfuric acid mist	112.8	100.4	–12.4	7	No
Total reduced sulfur	22.9	111.4	88.5	10	Yes
Lead	0.12	0.16	0.04	0.6	No
Mercury	0.031	0.040	0.009	0.1	No
Beryllium	0.0038	0.0049	0.0011	0.0004	Yes
Fluorides	– –	– –	– –	3	No
Asbestos	– –	– –	– –	0.007	No
Vinyl Chloride	– –	– –	– –	1	No

CO, VOC, TRS, and beryllium pursuant to Rule 62-212.410, F.A.C.

III. Technical Evaluation

Two of the existing 13 digesters will be replaced with larger units. Existing digesters Nos. 11 and 12, which have a volume of 4,000 ft^3 each, will be replaced with new digesters that are 4,900 ft^3 each. The larger digesters will allow a 40 TPD increase in pulp production. However, the higher production rate is below the current permitted capacity of 118 TPH and 1,850 TPD ADUP.

Currently, the emissions from the digester system are controlled by the TRS incinerator which exposes the gases to 1,200 °F for a minimum of 0.5 seconds and converts the TRS to sulfur dioxide (SO_2). This complies with the NSPS for digesters. As part of this project, a TRS packed tower scrubber will be installed prior to the incinerator. The scrubber will be designed to remove 50 percent of the TRS. The potential SO_2 emissions from the incinerator will be reduced by the scrubber from 2,115.2 TPY to 1,677.5 TPY. The incinerator will also be allowed to emit 5 ppmvd @ 10 percent O_2 and 0.12 lbs/hr (12-hour average) TRS, 5.5 lbs/hr and 24.1 TPY PM/PM_{10} (total particulate matter), 1.74 lbs/hr and 7.60 TPY NO_x, 0.24 lbs/hr and 1.03 TPY CO, and 0.06 lbs/hr and 0.27 TPY VOC. NO_x and CO emissions are lower when natural gas is burned. Sulfuric acid mist (SAM) emissions (estimated to be 4 percent of the SO_2) are 18.8 lbs/hr (24-hr), and 82.2 TPY.

The additional screen tubes for the No. 4 Recovery Boiler will improve the boiler's performance and increase black liquor throughput by 4 percent. The higher production rate will still be below the previously permitted rate of 210,000 lbs/hr of black liquor solids (BLS) or 5.04E+6 lbs/day BLS. The electrostatic precipitator (ESP) used to control PM/PM_{10} (including beryllium) will meet an emission limit of 0.030 gr/dscf @ 8 percent O_2 and 75.6 lbs/hr.

Recovery furnaces inherently produce less NO_x emissions than fossil fuel furnaces. Good Combustion Practice will be used to further control NO_x emissions. An emission standard of 80 ppmvd @ 8 percent O_2 and 168.5 lbs/hr is set for NO_x by the Department.

Good Combustion Practice will be used to control CO and VOC emissions from the recovery boiler. The CO emission standard is set at 800 ppmvd @ 8 percent O_2 and 1,025.4 lbs/hr (3-hour average) and 400 ppmvd @ 8 percent O_2 and 512.7 lbs/hr (24-hour average). The VOC emission standard will be 0.30 lbs/ton BLS and 31.5 lbs/hr.

The TRS emission limit is set at 11.2 ppmvd @ 8 percent oxygen

and 17.5 lbs/hr, 12-hour maximum, and 7.0 ppmvd @ 8 percent O_2 and 10.9 lbs/hr, 12-month rolling average.

Several other changes that have the potential to increase efficiency or production are installing a new chip conditioner system, installing a white liquor heating system, and adding an automatic cleaning system to the lime mud filter. Unaffected by the proposed modifications are the No. 4 and No. 5 Power Boilers and the No. 4 Bark/Oil-fired Combination Boiler. Although there are no modifications being made to the other process equipment (multiple-effect evaporator system, condensate stripper system, No. 4 Smelt Dissolving Tanks, No. 4 Lime Kiln, and the Tall Oil Plant (TOP)), the production and actual emissions may increase because of the higher throughput of the rest of the plant. The allowable emissions from the current permits for these units are retained.

The Department accepts the existing air pollution control systems at this existing facility as meeting the BACT. However, the emissions limits need to reflect what this equipment is capable of achieving. The Department has reviewed the recent emission test data and has determined that lower allowable emission standards for some air pollutants can be met. See the BACT determination for additional information on the emission standards selected as BACT for this modification.

A summary of the Department's proposed emission limits for the affected sources is shown in the following table.

Summary of the Department's Proposed Emissions from the Affected Sources

Pollutant	Units[a]	No. 4 Recovery Boiler	No. 4 Smelt Tank[b]	No. 4 Lime Kiln	Tall Oil Plant	TRS Incinerator
PM/PM_{10}	lbs/hr	75.6	12.6	26.0		5.5
	TPY	331.1	55.2	113.9		24.1
SO_2	lbs/hr	109.9	7.9	10.9		383.0 (24 hour)
	TPY	481.4	34.5	47.7		1,677.5[c]
NO_x	lbs/hr	168.5	15.8	50.3		1.74
	TPY	738.1	69.0	220.3		7.60
CO	lbs/hr	1025.4[d]		7.3		0.24
	TPY	2245.6		32.0		1.03
VOC	lbs/hr	31.5	20.2	17.2	13.3 (12-hr)	0.06
	TPY	138.0	88.3	75.3	29.0	0.27
TRS	lbs/hr	17.5 (12-hr)	3.4	4.0	0.23	0.12
	TPY	47.7	14.9	17.5	0.50	0.53
SAM	lbs/hr	3.2	0.39	0.5		18.8
	TPY	14.2	1.7	2.34		82.3
Beryllium	lbs/hr	6.4E-4	1.5E-5	4.5E-4		
	TPY	2.8E-3	6.4E-5	2.0E-3		

Notes:

[a] Unless otherwise stated
[b] BLS = Black Liquor Solids
[c] Average 383 lbs/hr SO_2 emissions from TRS incinerator.
[d] 3-hour standard. 24-hour CO standard is 400 ppmvd @ 8% O_2, 512.7 lbs/hr, and 2,245.6 TPY.

IV. Air Quality Impact Analysis

A. Introduction

The proposed Georgia-Pacific Corporation project will emit seven pollutants in PSD significant amounts. These are the criteria pollutants: particulate matter (PM), particulate matter with an aerodynamic diameter of 10 microns or less (PM_{10}), nitrogen oxides (NOx), carbon monoxide (CO), volatile organic compounds (VOCs), and the non-criteria pollutants are: total reduced sulfur (TRS), and Beryllium(Be). Values for all pollutants emitted by the project are shown in Table 1.

The air quality impact analyses required by the PSD regulations for these pollutants includes:

- An analysis of existing air quality;
- A PSD increment analysis;
- An Ambient Air Quality Standards (AAQS) analysis;
- An analysis of impacts on soils, vegetation, and visibility and of growth-related air quality modeling impacts; and
- A "Good Engineering Practice" (GEP) stack height determination.

The analysis of existing air quality generally relies on pre-construction monitoring data collected with EPA-approved methods. The PSD and AAQS analyses depend on the air quality dispersion modeling carried out in accordance with EPA guidelines.

On the basis of the required analyses, the Department has reasonable assurance that the proposed project, as described in this report and subject to the approval proposed herein, will not cause or contribute to a violation of any AAQS or PSD increment. However, the following EPA-directed stack height language is included: "In approving this permit, the Florida Department of Environmental Protection has determined that the application complies with the applicable provisions of the stack height regulations as reviewed by EPA on July 8, 1985 (50 FR 27895). Portions of the regulations have been remanded by a panel of the U.S. Court of Appeals for the D.C. Circuit in NRDC v. Thomas, 838 F.2d 1224 (D.C. Cir.1988). Consequently, this permit may be subject to modification if and when EPA revises the regulation in response to the court decision. This may result in revised emission limitations or may affect other actions taken by the source owners or operators." A discussion of the modeling procedure and required analyses follow.

B. Analysis of Existing Air Quality

Pre-construction ambient air quality monitoring is required for all pollutants subject to PSD review. However, an exemption to the monitoring requirement can be obtained if the maximum air quality impact, as determined by air quality modeling, is less than a pollutant-specific "de minimis" concentration. Pollutants which do not have a specified de minimis level may also be exempt from pre-construction monitoring requirements. In addition, if an acceptable ambient monitoring method for the pollutant has not been established by EPA, monitoring is not required.

The maximum concentrations predicted for the proposed project compared to the PSD de minimis monitoring concentrations are presented in Table 2.

Table1. Significant and Net Emission Rates (Tons Per Year)

Pollutant	Existing Emissions (Actual)	Proposed Maximum Emissions	Net Emission Increases	Significant Emission Rate	Applicable Pollutant (Yes/No)
CO	1256.1	2278.6	1022.5	100	Yes
NO_X	593.3	1219.3	626.0	40	Yes
SO_2	2205.0	2241.1	36.1	40	No
PM	257.6	557.6	300	25	Yes
PM10	257.6	557.6	300	15	Yes
O_3 (VOC)	109.8	432.0	322.2	40	Yes
Lead	0.12	0.16	0.04	0.6	No
Beryllium	0.0038	0.0049	0.0011	0.0004	Yes
Mercury	0.031	0.040	0.009	0.1	No
H_2SO_4	112.8	100.4	-12.4	7	No
TRS	22.9	111.4	88.5	10	Yes

Table 2. Maximum Air Quality Impacts for Comparison to the De Minimus Ambient Levels.

Pollutant	Avg. Time	Maximum Predicted Impact (ug/m3)	De Minimus Level (ug/m3)
CO	8-hour	27	575.0
NO_2	Annual	0.6	14.0
PM10	24-hour	4.6	10.0
VOC	Annual	322.2 TPY	100 TPY
Beryllium	24-hour	0.00012	0.001
H_2S	1-hour	9.3	0.2

Table 2 shows that CO, NO_2, PM_{10} and Be impacts from the project are predicted to be less than the de minimis levels. Therefore, pre-construction ambient air quality monitoring is not required for these pollutants. Table 2 also shows that VOC and TRS (as H_2S) impacts from the project are predicted to be greater than de minimis levels.

Four previously existing ambient ozone monitoring stations are near Palatka. Two of these stations are located in Jacksonville, about 40 miles north of Palatka, and two are located in Daytona Beach, about 40 miles southeast of Palatka. The ozone data from these stations were used to fulfill the monitoring requirement for ozone.

For non-criteria pollutants, such as TRS, EPA's general position is to not require monitoring data, but to base impacts on the modeling analysis. Even though the maximum predicted impact of TRS is greater than the significant monitoring concentration, the Department is not requiring pre-construction monitoring for this project because there are no EPA-approved monitoring methods for TRS.

C. Modeling Method

1. Model Selection

The EPA-approved Industrial Source Complex (ISC2) dispersion model was used to evaluate pollutant emissions from the proposed project. The model determines ground-level concentrations of inert gases or small particles emitted into the atmosphere by point, area and volume sources. The model incorporates elements for plume rise, transport by the mean wind, Gaussian dispersion, and pollutant removal mechanisms such as deposition. This model allows for the separation of sources, building wake downwash, and various other input and output features. A series of specific model features, recommended by the EPA, are referred to as the regulatory options. The applicant has used the EPA recommended regulatory options in each modeling scenario. Direction-specific downwash parameters were used because the stacks were less then the good engineering practice (GEP) stack height.

2. Meteorological Data

Detailed meteorological data are needed for modeling with the ISCST2 models. ISCST2 (short-term) requires a preprocessed data file complied from hourly surface observations and concurrent twice-daily rawinsonde soundings.

Meteorological data used in the modeling consisted of five years (1983-1987) of hourly surface observations and twice-daily upper

air soundings from the National Weather Service (NWS) station at Jacksonville, Florida, and Waycross, GA. These NWS stations were selected for use in the study because they are the closest primary weather stations and are most representative of the plant site. The surface observations included wind direction, wind speed, temperature, cloud cover and cloud ceiling. The wind speed, cloud cover, and cloud ceiling values were used in the ISCST2 meteorological preprocessor program, RAMMET, to determine atmospheric stability using the Turner stability scheme. On the basis of the temperature measurements at morning and afternoon, mixing heights were calculated with the radiosonde data using the Holzworth approach. Hourly mixing heights were derived from the morning and afternoon mixing heights using the interpolation method developed by EPA. These hourly surface observations and mixing heights were used to develop a sequential series of hourly meteorological data which were then input into the ISCST2 model.

3. Receptors

Receptors were placed at locations considered to be ambient air; the nearest locations among them were at the property boundary. A total of 380 receptors were used in the significant impact analysis. These receptors were placed along 36 polar radials spaced 10 degrees apart and centered on the TRS incinerator at G-P. The first receptor was located at the plant property boundary with subsequent receptors located at off-site distances of 700, 1000, 1500, 2500, 3000, 3500, 4000, 4500, 5000, 10000, 15000, 20000, and 25000 meters.

The Okefenokee National Wilderness Area (OWNA) is approximately 111 km from the site and The Wolf Island National Wilderness Area (WINWA) is approximately 150 km from the site. Eleven receptors were used to predict maximum impacts in these Class I areas. These eleven receptors include ten receptors around the southern and eastern edges of the ONWA and 1 receptor the WINWA.

D. Significant Impact Analysis

1. Class II Area -

A summary of impacts from the significant impact modeling analysis is presented in Table 3 and compared to the significant impact levels. This summary shows that the impacts for these pollutants do not exceed the significant impact levels; therefore, further AAQS and PSD Class II increment consumption analyses are not required.

2. Class I Area

Maximum NO_2 and PM_{10} impacts predicted at the OWNA and the WINWA for comparison to the National Park Service (NPS)-recommended Class I significance levels are presented in Table 4. As shown in the table, the maximum predicted impacts are less than the respective significant impact levels. Therefore, no further Class I modeling analysis was conducted.

E. Air Toxics Analysis

Be and TRS will be emitted at levels exceeding PSD significant amounts as shown in Table 1. Since neither national AAQS nor PSD increments have been defined for these pollutants, their control is determined by the BACT analysis.

The maximum impacts of toxic air pollutants that will be emitted by the proposed project, including Be and TRS, are presented in Table 5. Each pollutant's maximum 8-hour, 24-hour, and annual impact is compared to the Department's draft Ambient Reference Concentrations (ARC). As shown in the table, all predicted impacts are less than their respective ARC.

V. Additional Impacts Analysis

A. Impacts on Soils and Vegetation

Because the predicted impacts for all pollutants considered in the analysis are less than the significant impacts, the facility is not expected to have a significant adverse effect on regional vegetation or soils.

B. Impact on Visibility

Visual Impact Screening and Analysis, known as VISCREEN, the EPA-approved Level I visibility computer model was used to estimate the impact of proposed project's stack emissions upon visibility in the OWNA area. The emissions of PM and NO_2 were input to the model. Results of the Level I visibility impairment analysis demonstrate that all contract parameters have values less than the threshold vales. Thus, emissions from the proposed facility will not have a significant impact on visibility in this area.

C. Growth-Related Air Quality Impacts

The proposed project will not require an increase in personnel to operate the plant. Therefore, no significant effect on the residential, commercial, and industrial growth in Putnam County is expected.

D. GEP stack height determination

Good Engineering Practice (GEP) stack height means the greater of: (1) 65 meters or (2) the maximum nearby building height plus the 1.5 times the building height or width, whichever is less. The stacks for this project are 25.9 meters, 33.5 meters, and 59.7 meters, respectively. They do not exceed the GEP stack height and will comply with GEP stack height regulations.

The potential for building downwash to occur was considered in the modeling analysis since the stacks are less than GEP height.

VI. Conclusion

The proposed project undertaken by Georgia-Pacific is primarily part of a modernization and efficiency improvement plan rather than new source construction or a significant plant capacity expansion.

On the basis of the information provided by Georgia-Pacific Corporation, the Department has reasonable assurance that the proposed modification of the Kraft pulp mill, as described in this evaluation and subject to the conditions proposed within, will not cause a violation of any air quality standard, PSD increment, or other technical provision of Chapter 62-212 of the Florida Administrative Code.

Table 3. Significant Impact Analysis for Class II Area

Pollutant	Avg. Time	Maximum Predicted Impact (ug/m3)	Significant Impact Level (ug/m3)
CO	1-hour	101	2000.0
	8-hour	27	500.0
NO_2	Annual	0.61	1.0
PM10	24-hour	4.61	5.0
	Annual	0.51	1.0

Table 4. Maximum Air Quality Impacts Analysis for Class I Area(s)

Pollutant	Avg. Time	Maximum Predicted Impact (ug/m3)	National Park Service (NPS) Significant Impact Levels (ug/m3)
NO_2	Annual	0.00031	0.025
PM10	24-hour	0.00444	0.27
	Annual	0.00015	0.08

Table 5. Air Toxic Reference Level Analysis

Pollutant	Avg. Time	Maximum Predicted Impact (ug/m3)	Ambient Reference Concentration (ug/m3)
beryllium	8-hour	0.00027	0.02
	24-hour	0.00012	0.0048
	Annual	0.00001	4.2e-04
TRS	8-hour	4.6	140
	24-hour	3.4	33.6
	Annual	0.34	0.9
1,1,1-trichloroethane	8-hour	0.025	38200
	24-hour	0.019	9168
	Annual	0.0018	-
1,1,2-trichloroethane	8-hour	0.39	550
	24-hour	0.25	132
	Annual	0.019	0.063
1,2-dichloroethane	8-hour	0.025	400
	24-hour	0.019	96
	Annual	0.0018	0.038
1,2,4-trichlorobenzene	8-hour	0.11	370
	24-hour	0.048	88.8
	Annual	0.0045	20
acetaldehyde	8-hour	0.36	1800
	24-hour	0.25	432
	Annual	0.022	4.5e-01
acrolein	8-hour	0.0098	2.3
	24-hour	0.0044	0.552
	Annual	0.00043	2.0e-02
arsenic	8-hour	0.0060	2
	24-hour	0.0025	0.48
	Annual	0.00023	2.3e-04
benzene	8-hour	0.089	30
	24-hour	0.060	7.2
	Annual	0.0049	1.2e-01
cadmium	8-hour	0.00077	0.5
	24-hour	0.00032	0.12
	Annual	0.00003	5.6e-04
carbon disulfide	8-hour	0.073	310
	24-hour	0.046	74.4
	Annual	0.00458	200

carbon tetrachloride	8-hour	0.12	310
	24-hour	0.087	74.4
	Annual	0.0083	6.7e-02
chlorobenzene	8-hour	0.075	3450
	24-hour	0.049	828
	Annual	0.0039	-
chloroform	8-hour	0.090	490
	24-hour	0.067	117.6
	Annual	0.0061	4.3e-02
chromium	8-hour	0.0072	5
	24-hour	0.0031	1.2
	Annual	0.0003	-
chormium VI	8-hour	0.0009	0.5
	24-hour	0.00042	0.12
	Annual	0.00004	8.3e-05
cumene	8-hour	1.96	2460
	24-hour	1.30	590.4
	Annual	0.10	1.00
ethyl benzene	8-hour	0.024	4340
	24-hour	0.015	1041.6
	Annual	0.0014	1000
formaldehyde	8-hour	0.43	12
	24-hour	0.27	2.88
	Annual	0.026	7.7e-02
lead	8-hour	0.0072	0.5
	24-hour	0.0032	0.12
	Annual	0.00032	9.0e-02
manganese	8-hour	0.0047	50
	24-hour	0.0026	12
	Annual	0.00032	4.0e-01
mercury	8-hour	0.00015	0.5
	24-hour	0.0001	0.12
	Annual	0	3.0e-01
methanol	8-hour	62.33	2620
	24-hour	46.67	628.8
	Annual	3.73	-
methyl ethyl ketone	8-hour	1.11	5900
	24-hour	0.71	1416
	Annual	0.056	80
methyl isobutyl ketone	8-hour	0.11	2050
	24-hour	0.084	492
	Annual	0.0066	-
methylene chloride	8-hour	0.048	1740

	24-hour	0.036	417.6
	Annual	0.0033	2.1
napthalene	8-hour	0.23	520
	24-hour	0.10	124.8
	Annual	0.010	-
n-hexane	8-hour	1.37	1760.0
	24-hour	0.84	422.4
	Annual	0.066	200
nickel	8-hour	0.0059	10
	24-hour	0.0025	2.4
	Annual	0.00023	4.2e-03
PAH	8-hour	0.055	2
	24-hour	0.023	0.48
	Annual	0.002	-
phosphorus	8-hour	0.0077	1
	24-hour	0.0049	0.24
	Annual	0.00045	-
selenium	8-hour	0.0060	2
	24-hour	0.0025	0.48
	Annual	0.00023	-
styrene	8-hour	0.13	2130
	24-hour	0.083	511.2
	Annual	0.0066	-
tetrachloroethylene	8-hour	0.55	3390
	24-hour	0.35	813.6
	Annual	0.028	-
tin	8-hour	0.0037	20
	24-hour	0.0016	4.8
	Annual	0.00015	-
toluene	8-hour	0.78	3770
	24-hour	0.48	904.8
	Annual	0.038	300
trichloroethylene	8-hour	0.095	2690
	24-hour	0.068	645.6
	Annual	0.0055	-
vinyl acetate	8-hour	0.0053	350
	24-hour	0.0033	84
	Annual	0.00031	200
xylenes	8-hour	0.16	4340
	24-hour	1.007	1041.6
	Annual	0.079	80

D. GEP stack height determination

Good Engineering Practice (GEP) stack height means the greater of: (1) 65 meters or (2) the maximum nearby building height plus the 1.5 times the building height or width, whichever is less. The stacks for this project are 25.9 meters, 33.5 meters, and 59.7 meters, respectively. They do not exceed the GEP stack height and will comply with GEP stack height regulations.

The potential for building downwash to occur was considered in the modeling analysis since the stacks are less than GEP height.

VI. Conclusion

The proposed project undertaken by Georgia-Pacific is primarily part of a modernization and efficiency improvement plan rather than new source construction or a significant plant capacity expansion.

On the basis of the information provided by Georgia-Pacific Corporation, the Department has reasonable assurance that the proposed modification of the Kraft pulp mill, as described in this evaluation and subject to the conditions proposed within, will not cause a violation of any air quality standard, PSD increment, or other technical provision of Chapter 62-212 of the Florida Administrative Code.

aaj 8/1

Best Available Control Technology (BACT) Determination

Georgia-Pacific Corporation
Palatka, Putnam County, Florida
AC54-266676/PSD-FL-226

The applicant, Georgia-Pacific Corporation, located in Palatka, Putnam County, Florida, proposes to modify an existing Kraft pulp mill by replacing two batch digesters, installing a TRS scrubber, adding screen tubes to the recovery boiler, installing a new chip conditioner system, installing a white liquor heating system, and installing an automatic cleaning system on the lime mud filter. The modification has the potential to increase actual pulp production. The increase in emissions that could occur at the production rate requested by the applicant are 300 tons per year (TPY) particulate matter (total PM/PM_{10}), 36.1 TPY sulfur dioxide (SO_2), 626 TPY nitrogen oxides (NOx), 1,022.5 TPY carbon monoxide (CO), 322.2 TPY volatile organic compounds (VOC), 88.5 TPY total reduced sulfur (TRS), 0.04 TPY lead, 0.009 TPY mercury, and 0.0011 TPY beryllium (Be). Sulfuric acid mist emission is estimated to decrease by 12.4 TPY. The increase in the allowable emissions of PM/PM_{10}, NOx, CO, VOC, TRS, and Be are above the significant emission rates and subjects the proposed modification to the Prevention of Significant Deterioration (PSD) new source review regulations. The allowable emissions of these pollutants are set by a Best Available Control Technology (BACT) determination. Only the digester system and recovery boiler, which have physical changes as part of this modification, are subject to this BACT determination.

Date of Receipt of a BACT Application

March 15, 1995

BACT Requested by the Applicant

Air pollution control equipment proposed as BACT for the digester system is a new TRS scrubber and the existing TRS incinerator. For the recovery boiler, the applicant proposes the existing electrostatic precipitator as BACT. The proposed emissions from the digester system and recovery boiler are summarized in the following table:

Pollutant	Digester System** Emission Factor	lbs/hr	TPY	Recovery Boiler Emission Factor	lbs/hr	TPY
PM_{10}	Permit	5.5	24.1	0.033 gr/dscf @ 8% O_2	83.2	364.4
NOx	NG 100 lbs/mmft^3	0.76	3.33			
	M 14 lbs/1000 gal	1.74	7.60	100 ppmvd @ 8% O_2	210.6	922.4
CO	NG 20 lbs/mmft^3	0.15	0.66	800 (1 hr) + 400 (annual) ppmvd @ 8% O_2	1025.4(hr)	
	M 1.9 lbs/1000 gal	0.24	1.03		512.7 annual	2245.6
VOC	NG 8 lbs/mmft3	0.06	0.27			
	M 0.5 lbs/1000 gal	0.06	0.27	0.52 lb/ton BLS*	54.6	239.1
TRS	NG 5 ppmvd @ 10% O_2	0.12	0.53			
	M 5 ppmvd @ 10% O_2	0.12	0.53	11.4 ppmvd @ 8% O_2	17.8	78.0
Be				0.5 lb/E+12 Btu	6.4 E-4	2.8E-3

* Black Liquor Solids

** Factor for either Natural Gas (NG) or Methanol (M) Fuel

BACT Determination Procedure

In accordance with Rule 62-212.410, Florida Administrative Code, Best Available Control Technology Determination, Stationary Source-Preconstruction Review, this BACT determination is based on the maximum degree of reduction of each pollutant emitted which the Department of Environmental Protection (Department), on a case by case basis, taking into account energy, environmental and economic impacts, and other costs, determines is achievable through application of production processes and available methods, systems, and techniques. In addition, the regulations state that in making the BACT determination the Department shall give consideration to:

(a) Any Environmental Protection Agency determination of BACT pursuant to 40 CFR 52.21, and any emission limitation contained in 40 CFR Part 60 (Standards of Performance for New Stationary Sources) or 40 CFR Part 61 (National Emission Standards for Hazardous Air Pollutants).

(b) All scientific, engineering, and technical material and other information available to the Department.

(c) The emission limiting standards or BACT determinations of any other state.

(d) The social and economic impact of the application of such technology.

The EPA currently stresses that BACT should be determined using the "top-down" approach. The first step in this approach is to determine for the emission unit in question the most stringent control available for a similar or identical emission unit or emission unit category. If it is shown that this level of control is technically or economically infeasible for the emission unit in question, then the next most stringent level of control is determined and similarly evaluated. This process continues until the BACT level under consideration cannot be eliminated by any substantial or unique technical, environmental, or economic objections.

BACT Pollutant Analysis

DIGESTER SYSTEM

The digester system is a source of TRS. The new source performance standard (40 CFR 60, Subpart BB) allows the TRS gases to be combusted in an incinerator operating at 1200°F with a 0.5 second residence time. The applicant has been using an incinerator meeting these specifications to control the TRS emissions. The applicant is proposing to add a 50% efficient TRS scrubber ahead of the TRS incinerator as part of this modification. Recent BACT determinations have selected incinerators for the control of TRS emissions. The Department is setting BACT for the incinerator at 5 ppmvd @ 10% O_2 when either natural gas or methanol is being burned.

The emissions of the other air pollutants for the digester system that are subject to this BACT determination, primarily the products of combustion, are to be minimized through Good Combustion Practices.

RECOVERY BOILER

The recovery boiler is a source of PM/PM_{10}, NOx, CO, VOC, TRS, and Be. This unit is now controlled with a 20-year old high-efficiency electrostatic precipitator (ESP) that was rebuilt in 1991. The ESP will control PM/PM_{10} and Be. Recent BACT determinations have selected ESPs to control emissions from recovery boilers. The PM/PM_{10} standards in BACT determinations range from 0.021 to 0.033 gr/dscf @ 8% O_2. Test results show the PM/PM_{10} emissions from this boiler varied from 0.006 to 0.03 gr/dscf @ 8% O_2. The Department is setting the BACT standard at 0.030 gr/dscf @ 8% O_2.

Recovery boilers have relatively low NOx emissions. Combustion controls technology is used to control NOx. This includes adjusting the furnace bed height and decreasing the primary air temperature. Furnace design affects actual NOx emissions. High particulate matter loading in the flue gas creates technical problems which prevent flue gas recirculation (FGR) from being used on a recovery furnace. Catalyst fouling prevent the application of selective catalytic reduction (SCR). Ammonia bisulfate would also cause plugging of the equipment downstream of a selective non-catalytic reduction (SNCR) system. Neither system is reported to have been

used on a recovery boiler. BACT/LAER Clearinghouse document shows BACT emission limits of 75 to 120 ppmvd @ 8% O_2. Actual test results on this furnace show NOx emissions varied from 45 to 65 ppmvd @ 8% O_2. The Department is setting the BACT standard for NOx at 80 ppmvd @ 8% O_2.

CO and VOC emissions are formed during the incomplete combustion of the black liquor which is about 25 percent carbon. Good Combustion Practice is used to control these pollutants. The BACT/LAER Clearinghouse document list BACT determinations for CO of 200-400 ppmvd @ 8% O_2. Test data on this furnace show CO emissions range from 102 to 756 ppmvd @ 8% O_2. BACT determinations for VOC range from 0.048 to 0.095 lbs/MMBtu. Test data on this furnace show VOC emissions range from 0.01 to 0.50 lbs ton black liquor solid (BLS). The Department is setting the BACT standard for CO at 800 ppmvd @ 8% O_2, 3-hour average, and 400 ppmvd @ 8% O_2, 24-hour average. The Department is setting the BACT standard for VOC at 0.30 lbs/ton BLS.

TRS is controlled by the distribution of the combustion air in the furnace. Continuous emissions monitoring data for this furnace shows TRS emissions of up to 11.2 ppmvd @ 8% O_2. The BACT/LAER Clearinghouse document listed limits at 5.0 ppmvd @ 8% O_2. These boilers were subject to the new source performance standard for Kraft pulp mills. The Department is setting the BACT standard for TRS at 11.2 ppmvd @ 8% O_2, 12-hour average, and 7.0 ppmvd @ 8% O_2, 12-month rolling average. The Department will revisit this BACT determination for the 12-month rolling average standard for TRS if it can be shown with a minimum of 6 months actual operation and emission data from the modified boiler that the standard is inappropriate.

Summary of the BACT Determination by the Department

DIGESTER SYSTEM

The Department has determined that the TRS scrubber in combinations with the TRS incinerator is BACT for the digester system. The addition of the scrubber will reduce the potential emissions of TRS to less than the current actual emissions. Considering the recent test data as the incinerator, the Department is setting the BACT determination standard at 5 ppmvd @ 8% O_2. Compliance will be based on scrubber and incinerator operation parameters and emission test by EPA Method 16 or 16A.

RECOVERY BOILER

The Department accepts the use of the existing ESP and Good Combustion Practice as BACT for the recovery boiler.

Based on the recent ESP test data, the Department is setting the PM/PM_{10} BACT determination standard at 0.030 gr/dscf @ 8% O_2. Visible emissions shall not exceed 20 percent opacity. Compliance shall be determined by EPA Methods 5 (assuming all PM is PM10) and EPA Method 9.

BACT for Be is set at 0.5 lbs/E+12 Btu. Compliance shall be based on an emission factor established for this unit by EPA Method 103 or 104 as described in 40 CFR 61, Appendix B.

BACT for NOx is 80 ppmvd @ 8% O_2. Compliance shall be determined by EPA Method 7 or 7E.

BACT for CO is 800 ppmvd @ 8% O_2, 3-hour average, and 400 ppmvd @ 8% O_2, 24-hour average. Compliance shall be determined using EPA Method 10.

BACT for VOC is 0.30 lbs/ton BLS. Compliance shall be determined using EPA Method 25 or 25A.

BACT for TRS is 11.2 ppmvd @ 8% O_2, 12-hour average, and 7.0 ppmvd @ 8% O_2, 12-month rolling average. Compliance with the 12-hour standard shall be based on EPA Method 16 or 16A. Compliance with the 12-month rolling average standard shall be based on the TRS continuous emission monitoring records. The Department will reconsider the 12-month rolling average standard if a minimum of 6 months actual operation and emission data from the modified boiler demonstrate it is inappropriate.

Test data shows these standards can be met with the existing ESP.

Details of the Analysis May be Obtained by Contacting:

A. A. Linero, P.E., Administrator, NSR Section
Willard Hanks, Review Engineer
Department of Environmental Protection
Bureau of Air Regulation
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Recommended by:

C. H. Fancy, P.E., Chief
Bureau of Air Regulation

_____, 1995
Date

Approved by:

Virginia B. Wetherell, Secretary
Dept. of Environmental Protection

_____, 1995
Date

Department of Environmental Protection

DRAFT

Lawton Chiles
Governor

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Virginia B. Wetherell
Secretary

Permittee:
Georgia-Pacific Corporation
P. O. Box 919
Palatka, FL 32178-0919

Permit Number: AC54-266676
(PSD-FL-226)
Expiration Date: 12/31/96
County: Putnam
Latitude/Longitude:
29°41'00"
81°40'45"
Project: Kraft Pulp Mill Modification

This permit is issued under the provision of Chapter 403, Florida Statues (F.S.), and Chapters 62-4 and 62-212, Florida Administrative Code (F.A.C.). The above named permittee is hereby authorized to perform the work or operate the facility shown on the application and approved drawings, plans, and other documents attached hereto and specifically described as follows:

For modification of an existing Kraft pulp mill located north of County Road 216 and west of U.S. Highway 17 near Palatka, Putnam County, Florida. The UTM coordinates of the plant site are Zone 17, 424.0 km E and 3283.4 km N. The modification consists of the replacement of two digesters, adding additional screen tubes to the recovery boiler, installing a new total reduced sulfur (TRS) scrubber ahead of the TRS incinerator, installing a chip conditioner system, installing a white liquor heating system, and installing an automatic cleaning system on the lime mud filter. Allowable production for the facility remains at 118 tons per hour (TPH) air dried unbleached pulp (ADUP) and 1,850 tons per day (TPD) ADUP.

Stack parameters for the major units at this facility are shown below:

Units	Height (ft)	Diameter (ft)	Temperature (°F)	Velocity (FPS)
Recovery Boiler No. 4	230	12.0	400	63.7
Lime Kiln No. 4	131	4.4	150	60.8
Smelt Dissolving Tank No. 4	206	5.0	160	21.2
TRS Incinerator	250	3.1	500	105.1
Tall Oil Plant	40	1.3	200	40.8

The emission units shall be constructed (modified) in accordance with the permit application, plans, documents, amendments and drawings, except as otherwise noted in the General and Specific Conditions.

Attachments are listed below:

1. Application received March 15, 1995.
2. KBN letter dated March 27, 1995.
3. DEP letter dated March 29, 1995.
4. KBN letter dated April 13, 1995.
5. KBN letter dated April 17, 1995.
6. Permit Nos. AC54-142282, AC54-142283, AC54-142288, and AC54-142291 with amendments to these permits dated July 18, 1988, July 28, 1989, December 6, 1989, and September 5, 1990.
7. Permit No. AC54-170420
8. Permit No. AC54-192550 (PSD-FL-171)
9. Permit No. AC54-192551 (PSD-FL-171)
10. Permit No. AC54-193841 (PSD-FL-171)
11. Permit No. AC54-108945
12. KBN letter dated July 5, 1995.
13. KBN letter dated July 26, 1995.

GENERAL CONDITIONS:

1. The terms, conditions, requirements, limitations, and restrictions set forth in this permit are "Permit Conditions" and are binding and enforceable pursuant to Sections 403.161, 403.727, or 403.859 through 403.861, F.S. The permittee is placed on notice that the Department will review this permit periodically and may initiate enforcement action for any violation of these conditions.

2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the Department.

3. As provided in Subsections 403.087(6) and 403.722(5), F.S., the issuance of this permit does not convey any vested rights or any exclusive privileges. Neither does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit is not a waiver of or approval of any other Department permit that may be required for other aspects of the total project which are not addressed in the permit.

GENERAL CONDITIONS:

4. This permit conveys no title to land or water, does not constitute State recognition or acknowledgment of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the State. Only the Trustees of the Internal Improvement Trust Fund may express State opinion as to title.

5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, or plant life, or property caused by the construction or operation of this permitted source, or from penalties therefore; nor does it allow the permittee to cause pollution in contravention of F.S. and Department rules, unless specifically authorized by an order from the Department.

6. The permittee shall properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by Department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by Department rules.

7. The permittee, by accepting this permit, specifically agrees to allow authorized Department personnel, upon presentation of credentials or other documents as may be required by law and at a reasonable time, access to the premises, where the permitted activity is located or conducted to:

a. Have access to and copy any records that must be kept under the conditions of the permit;

b. Inspect the facility, equipment, practices, or operations regulated or required under this permit; and,

c. Sample or monitor any substances or parameters at any location reasonably necessary to assure compliance with this permit or Department rules.

Reasonable time may depend on the nature of the concern being investigated.

8. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in

GENERAL CONDITIONS:

this permit, the permittee shall immediately provide the Department with the following information:

a. A description of and cause of non-compliance; and,

b. The period of noncompliance, including dates and times; or, if not corrected, the anticipated time the non-compliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the non-compliance.

The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the Department for penalties or for revocation of this permit.

9. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source which are submitted to the Department may be used by the Department as evidence in any enforcement case involving the permitted source arising under the F.S. or Department rules, except where such use is prescribed by Sections 403.73 and 403.111, F.S. Such evidence shall only be used to the extent it is consistent with the Florida Rules of Civil Procedure and appropriate evidentiary rules.

10. The permittee agrees to comply with changes in Department rules and F.S. after a reasonable time for compliance, provided, however, the permittee does not waive any other rights granted by F. S. or Department rules.

11. This permit is transferable only upon Department approval in accordance with Rules 62-4.120 and 62-30.300, F.A.C., as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the Department.

12. This permit or a copy thereof shall be kept at the work site of the permitted activity.

13. This permit also constitutes:

(x) Determination of Best Available Control Technology (BACT)
(x) Determination of Prevention of Significant Deterioration (PSD)
(x) Compliance with New Source Performance Standards (NSPS)

GENERAL CONDITIONS:

14. The permittee shall comply with the following:

a. Upon request, the permittee shall furnish all records and plans required under Department rules. During enforcement actions, the retention period for all records will be extended automatically unless otherwise stipulated by the Department.

b. The permittee shall hold at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation) required by the permit, copies of all reports required by this permit, and records of all data used to complete the application for this permit. These materials shall be retained at least three years from the date of the sample, measurement, report, or application unless otherwise specified by Department rule.

c. Records of monitoring information shall include:

- The date, exact place, and time of sampling or measurements;
- The person responsible for performing the sampling or measurements;
- The dates analyses were performed;
- The person responsible for performing the analyses;
- The analytical techniques or methods used; and,
- The results of such analyses.

15. When requested by the Department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the Department, such facts or information shall be corrected promptly.

SPECIFIC CONDITIONS:

General

1. The provisions of the following air construction/operation permits and revisions to those permits, except for the changes noted, are incorporated by reference as conditions of this air construction permit.

SPECIFIC CONDITIONS:

Digester System, Multiple Effect Evaporator System, Condensate Stripper System, and TRS Incinerator (AO54-166018)

Permit Number	Issue Date	Amendment Date(s)	Changes by this Permit
AC54-142282	APR 26, 1988	JUL 18, 1988	Replace 2 batch digesters
AC54-142283		JUL 28, 1989	
AC54-142288		DEC 6, 1989	
AC54-142291		SEP 5, 1990	

Digester System

Permit Number	Issue Date	Amendment Date(s)	Changes by this Permit
AC54-170420	JAN 26, 1989	None	Replace 2 batch digesters Specific Condition (SC) 5- SO_2 emission standards

No. 4 Recovery Boiler (AO54-209650)

Permit Number	Issue Date	Amendment Date(s)	Changes by this Permit
AC54-192550 (PSD-FL-171)	JUN 12, 1991	None	SC 3- PM/PM_{10}, NO_x, CO, VOC, and visible emission standards SC 4- TRS emission standards SC 6- SAM emission standards

No. 4 Lime Kiln (AO54-209858)

Permit Number	Issue Date	Amendment Date(s)	Changes by this Permit
AC54-192551 (PSD-FL-171)	JUN 12, 1991	None	No Change

Smelt Dissolving Tanks (AO54-209650)

Permit Number	Issue Date	Amendment Date(s)	Changes by this Permit
AC54-193841 (PSD-FL-171)	JUN 12, 1991	None	No change

SPECIFIC CONDITIONS:

Tall Oil Plant (AO54-209098)

Permit Number	Issue Date	Amendment Date(s)	Changes by this Permit
AC54-108945	FEB 6, 1987	JUN 20, 1987 JAN 1, 1988	No change

Construction

2. The construction/modifications authorized by this permit are:

A. Replace two of the existing thirteen 4,000 ft^3 digesters with two 4,900 ft^3 digesters.
B. Install additional screen tube modules (bundles of 10 individual tubes) on 12 inch centers around the existing 15 screen tube modules in No. 4 Recovery Boiler.
C. Install a total reduced sulfur (TRS) packed tower scrubber ahead of the existing TRS incinerator that is designed to remove 50 percent of the TRS.
D. Install a new chip conditioner system consisting of two horizontal steel rolls that turn at a low rpm to crush or fissure the chips.
E. Installation of a white liquor heating system.
F. Install an automatic cleaning system on the lime mud filter .

Federal Requirements

3. The permittee shall comply with all applicable requirements for the digester system in 40 CFR 60, Subpart BB- Standards of Performance for Kraft Pulp Mills.

SPECIFIC CONDITIONS:

Emission Limitations

4. Maximum emissions from the No. 4 Recovery Boiler shall not exceed any of the following:

Pollutant	Emission Factor	lbs/hr	TPY
PM/PM_{10}	0.030 gr/dscf @ 8% O_2	75.6	331.1
SO_2	75 ppmvd @ 8% O_2	109.9	481.4
NO_x	80 ppmvd @ 8% O_2	168.5	738.1
CO	800 ppmvd @ 8% O_2 (3-hr)	1025.4	
	400 ppmvd @ 8% O_2 (24-hr)	512.7	2245.6
VOC	0.30 lb/ton BLS	31.5	138.0
SAM	0.81 ppmvd	3.20	14.2
TRS*	7.0 ppmvd @ 8% O_2	10.9	47.7
Beryllium	0.5 lb/E+12 Btu	6.4E-4	2.8E-3

* 12-month rolling average. Maximum of 11.2 ppmvd @ 8 percent oxygen and 17.5 lbs/hr is maximum allowable TRS emissions during any 12 hour period.

Visible emissions shall not exceed 20 percent opacity (BACT).

5. Maximum emissions from the TRS incinerator controlling the emissions from the digester system, multi-effect evaporator systems, and condensate stripper system shall not exceed any of the following:

Natural Gas or Methanol Fuel

Pollutant	Emission Factor	lbs/hr	TPY
PM/PM_{10}[a]	permit	5.5	24.1
SO_2	5.085 lbs/ton ADUP	383 (24-hr)	1677.5
SAM	4% of SO_2 as SO_3	18.8	82.3
TRS	5 ppmvd @ 10% O_2	0.12	0.53

Note: [a] Total PM and PM_{10}

Visible emissions shall not exceed 5 percent opacity except 20 percent opacity is allowed for 3 minutes in any 1 hour period (Rule 62-296.401(1), F.A.C.).

SPECIFIC CONDITIONS:

Compliance Determination

6. Except for Beryllium (Be), TRS, and SAM, compliance tests for all emission standards for the No. 4 Recovery Boiler listed in Specific Condition No. 4 shall be conducted once each Federal fiscal year. Compliance with the emission standards shall be based on the EPA reference methods as described in 40 CFR 60, Appendix A, except as noted below. If all particulate matter is assumed to be PM_{10}, compliance may be based on EPA Method 5. The initial and annual compliance tests for sulfuric acid mist emissions shall be conducted using EPA Method 8 or NCASI Method 106 for two years from the date of issuance of this permit. At the end of this time, appropriate emission testing methodology and, if supported by test data, revised SAM emission limits shall be established by the Department Be tests shall be conducted initially and every 5 years thereafter. Compliance with the 12-hour TRS standard shall be determined annually using EPA Method 16 or 16A. Compliance with the 12-month rolling average TRS standard shall be based on the TRS continuous emissions monitor data.

7. Compliance tests for the PM/PM_{10} standard for the TRS Incinerator listed in Specific Condition No. 5 shall be conducted prior to the expiration date of this permit and every 5 years thereafter. Compliance with the SO_2 and visible emissions standards shall be determined annually using EPA Methods 6C and 9 as described in 40 CFR 60, Appendix A. The unit will be assumed to be in compliance with the TRS standard provided the incinerator operates at a minimum temperature of 1,200°F and has a minimum retention time of 0.5 seconds. The initial and annual compliance tests for sulfuric acid mist emissions shall be conducted using EPA Method 8 or NCASI Method 106 for two years from the date of issuance of this permit. At the end of this time, appropriate emission testing methodology and, if supported by test data, revised SAM emission limits shall be established by the Department

8. Particulate matter and visible emissions tests shall be conducted concurrently. The test report submitted to the Department's Northeast District office within 45 days of completion of the last test run.

Monitoring

9. The Department's Northeast District office shall be notified in writing at least 15 days in advance of any emission test required by this permit. Testing of emissions shall be conducted

SPECIFIC CONDITIONS:

with the emission unit operating at permitted capacity. Permitted capacity is defined as 90-100 percent of the maximum operating rate allowed by the permit. If it is impracticable to test at permitted capacity, then emission units may be tested at less than 90 percent of the maximum operating rate allowed by the permit. In this case, subsequent emission unit operation is limited to 110 percent of the test load until a new test is conducted. Once the emission unit is so limited, then operation at higher capacities is allowed for no more than 15 consecutive days for the purposes of additional compliance testing to regain the permitted capacity in the permit.

Operation Limitations

10. Pulp production capacity shall not exceed 118 TPH ADUP and 1,850 TPD ADUP.

11. The total reduced sulfur (TRS) incinerator shall operate at a minimum temperature of 1,200°F with a minimum residence time of 0.5 seconds. Scrubber liquid flow and pressure of the TRS scrubber shall be maintained at or above the level documented to remove at least 50 percent of the TRS air pollutant to the scrubber.

12. Black liquor solids (BLS) input to No. 4 Recovery Boiler shall not exceed 210,000 lbs/hr and 5.04 x 10^6 lbs/day.

Record keeping and Reporting Requirements

13. An annual operation report shall be submitted to the Department's Northeast District office by March 1 of each year pursuant to Rule 62-210.370(2), F.A.C.

14. The permittee, for good cause, may request that this construction permit be extended. Such a request shall be submitted to the Department's Bureau of Air Regulation prior to 60 days before the expiration of the permit. (Rule 62-4.090, F.A.C.)

15. A timely application for a Title V permit to operate shall be submitted to the Northeast District office by the date specified in Chapter 62-213, F.A.C.

STATE OF FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

_____

Virginia B. Wetherell,
Secretary, Department of
Environmental Protection

Florida Department of
Environmental Protection

Memorandum

To: A. A. Linero

From: Willard Hanks wmh

Date: August 1, 1995

Subject: Georgia-Pacific Corp. Modification
Permit No. AC 54-26676/PSD-FL-226

Attached for your approval and signature is the preliminary determination package for the proposed modification to Georgia-Pacific Corp.'s Kraft pulp mill located in Palatka, Putnam County, Florida.

The modification involves replacement of digesters Nos. 11 and 12 with more modern and larger units, adding screen tubes to the No. 4 Recovery Boiler, and other minor plant alternations. The new digesters will let the plant increase actual production by 40 TPD. The higher actual production rate does not exceed the current allowable production rate. The higher production rate will result in an increase in actual emissions. Except for the No. 4 Recovery Boiler and the TRS incinerator, allowable emissions are not increased. The draft permit authorizes a significant net emissions increase in emissions of PM, NOx, CO, VOC, TRS, and beryllium from the boiler and incinerator. The emissions limits for these pollutants are set by a BACT determination. The BACT concluded that the air pollution control equipment installed during the 1991 plant modification still met BACT but adjusted the emission limits on some pollutants to what tests showed the equipment was capable of meeting.

The 90th day for this application is August 15. I recommend your approval of this proposal.

Attachment

PSD PL-226
AC54-266076

Georgia-Pacific Corporation

Palatka Operations
Packaged Products Division
P.O. Box 919
Palatka, Florida 32178-0919
Telephone (904) 325-2001

May 5, 1995

RECEIVED

MAY 9 1995

Bureau of
Air Regulation

Mr. Willard Hanks
Permitting and Standards Section
Bureau of Air Regulation
State of Florida
Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Dear Mr. Hanks:

In the attached letter to Mr. Linero dated March 24, 1995, we described three small projects that were also included in our PSD permit application. This application was recently submitted for the installation of two digesters and modification of the Recovery Boiler.

It has come to my attention that we now have an opportunity to install the lime mud filter cleaner earlier than expected. You may recall that the automatic cleaner merely eliminates filter downtime for manual cleaning. It is my understanding from our phone conversation a couple of weeks ago (April 27, 1995) that we can proceed with installation of the cleaner since there is no potential to increase air emissions. Would you please send me a letter of approval for our files at your earliest convenience.

If you have any questions, please call me at 904-325-2001.

Sincerely,

Myra J. Carpenter

Myra J. Carpenter
Environmental Superintendent

kb

Attachment

cc: W. L. Baxter
David Buff, KBN
B. T. Champion, GA030, G-48
Henry Hirschman
J. E. McKinley
T. R. Wyles, GA030, G-48
W. R. Wilson
L. C. Yarbrough

cc Willard
Cleve
NE District
NPS
EPA

KBN

March 24, 1995

Mr. Al Linero, P.E.
Administrator, New Source Review
Florida Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Re: PSD Permit Application
Georgia-Pacific Corporation, Palatka Mill

Dear Mr. Linero:

Georgia-Pacific Corporation (G-P) recently submitted a PSD permit application for the Palatka mill. The permit application described proposed changes in certain emissions units at the Palatka mill: the addition of two new batch digesters and changes to the existing No. 4 Recovery Boiler. These proposed changes will also affect several other emission units: the Multiple Effect Evaporator (MEE) system, condensate stripper system, No. 4 Smelt Dissolving Tanks, No. 4 Lime Kiln, and the Tall Oil plant. These units will be affected by potential increased throughput rates due to the batch digester and recovery boiler changes.

G-P is now considering several other process changes and upgrades at the mill. Specifically, three separate projects are being considered, as described below:

1. Chip Conditioners

   The Palatka mill's existing chip conditioning system is used to condition wood chips before entering the digesters. The current system consists of primary chip thickness screens, high-density separators for removing foreign material, and slicers for reducing the thickness of oversize chips.

   G-P is contemplating replacing the separators and slicers with a new chip conditioner system. The new system will retain good fiber currently lost in the separators, increase wood yield by eliminating fines to the digesters and reduce maintenance costs. The chip conditioners consist of two horizontal steel rolls. The rolls turn at low rpm, and the chips fall between the rolls and are crushed or fissured.

   This process results in improved white liquor penetration into the wood in the digesters, resulting in improved yield. Therefore, a small increase in the pulp production capacity of the digesters is expected to result. However, the currently permitted capacity of the digesters, i.e., 118 TPH and 1,850 TPD, is adequate. This level of pulp production is reflected in the PSD permit application.

KBN ENGINEERING AND APPLIED SCIENCES, INC.

6241 Northwest 23rd Street, Suite 500, Gainesville, Florida 32653-1500, 904-336-5600 FAX 904-336-6603
5405 West Cypress Street, Suite 215, Tampa, Florida 33607, 813-287-1717 FAX 813-287-1716
1801 Clint Moore Road, Suite 105, Boca Raton, Florida 33487, 407-994-9910, FAX 407-994-9393
7785 Baymeadows Way, Suite 105, Jacksonville, Florida 32256, 904-739-5600 FAX 904-739-7777
1616 'P' Street N.W., Suite 450, Washington, D.C. 20036, 202-462-1100, FAX 202-462-2270

2. White Liquor Heater
In the current operations at G-P, white liquor is pumped to the digesters at a temperature of about 180°F. The ideal temperature for use in cooking is somewhat higher. Therefore, steam is used to raise the white liquor temperature. However, this is an inefficient use of steam, and a heat exchanger system is preferable. G-P is considering installing a white liquor heating system (heat exchanger) to replace the current steam system. An added benefit of this system is that digester cooks will increase slightly due to less time to raise the digester pressure. Pulp uniformity will also increase. Therefore, a small increase in the pulp production capacity of the digesters is expected to result. However, the currently permitted capacity of the digesters, i.e., 118 TPH and 1,850 TPD, is adequate. This level of pulp production is reflected in the PSD permit application.

3. Lime Mud Filter Cleaner
G-P currently operates a lime mud filter in the causticizing area. The lime mud filter increases the consistency of lime mud before it is conveyed to the lime kiln. In the current system, there is no mechanism for continuous cleaning of the filter. The filter must be taken out of service for cleaning about three times per day for a total of about 1 hour of downtime. The installation of an automatic cleaning system for the filter will eliminate this downtime, as well as provide for a slight reduction in fuel oil usage per ton of lime mud.

Since these changes will not result in production rates or emissions which exceed those stated in the PSD permit application, these projects can be included in the PSD permit application.

In regard to the PSD permit application submitted, an error has been discovered in the operating hours for the TRS incinerator used determine PSD baseline emissions. Operating hours of 8,760 hr/yr were used, when in reality the unit operated at somewhat fewer hours during the past 2 years. This error was corrected and revised pages of the permit application prepared. These revised pages were left with you during our meeting on March 23rd. Please replace the respective pages in Emission Unit 4 and in the PSD report with the revised pages.

If you have any questions concerning this information, please call.

Sincerely,

David A. Buff

David A. Buff, P.E.
Principal Engineer
Florida Registration 19011

SEAL

DAB/vjp
cc: Myra Carpenter
Traylor Champion
File (2)

14379C/1

July 26, 1995

Mr. Al Linero, P.E.
Administrator, New Source Review
Florida Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Re: PSD Permit Application
Georgia-Pacific Corporation, Palatka Mill
AC54-266676/PSD-FL-226

Dear Mr. Linero:

Based on my latest discussions with Willard Hanks, I am providing additional information concerning the pending draft permit for Georgia-Pacific Corporation (GP). Please consider this information in issuing the draft permit. The area of concern and our comments are presented below.

TRS Limit for No. 4 Recovery Boiler

The contemplated TRS limit for the No. 4 Recovery Boiler continues to be the most critical issue for GP. I am aware that the Department is considering a 12-month rolling average TRS limit of 5 ppmvd @ 8 percent oxygen for the No. 4 Recovery Boiler. The following additional technical information would support a higher TRS limit. Please consider this information in setting the BACT limit for the recovery boiler.

GP has great concern over the ability of RB4 to meet a 5 ppmvd limit on a 12-month rolling average. In GPs previous submittals, six months of continuous TRS data for the period October 1994 through March 1995 were presented. These data, which consist of 347 12-hour average TRS concentrations, reflect the current variability in boiler operation prior to increasing the boiler throughput. The average TRS concentration was 3.4 ppmvd, but the monthly averages ranged from 2.8 to 4.2 ppmvd (all at 8 percent oxygen). The data also show that while in general the TRS emissions are below 5 ppm, there are frequent periods with TRS levels above 5 ppm.

RB4 is over 20 years old and was never designed to meet a 5 ppmvd limit. It has undergone modifications over the years to improve the firing system, and these improvements have allowed it to reduce its TRS emissions to the current limit of 11.4 ppmvd. However, these improvements were not designed to meet a 5 ppmvd limit. The proposed increase in actual BLS throughput for the boiler is expected to result in an increase in TRS emissions. This is because TRS emissions are related to combustion conditions. As the boiler approaches it's maximum BLS firing capabilities, combustion conditions will change (i.e., air/fuel

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6241 Northwest 23rd Street, Suite 500, Gainesville, Florida 32653-1500, 904-336-5600 FAX 904-336-6603
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1616 'P' Street N.W., Suite 450, Washington, D.C. 20036, 202-462-1100, FAX 202-462-2270

ratio, degree of air/fuel mixing, retention time of flue gases, etc.). Additional factors which can effect combustion conditions and therefore TRS emissions at higher operating rates include the following:

1. The ability of the combustion air system to provide good bed control so that all of the char is burned on the bed.

2. Increased gas velocities in the boiler, leading to higher carryover rates (of partially unburned liquor char particles and small smelt drops), causes more rapid plugging of the gas passages. The plugging reduces the heat transfer through the steam tubes, leading to higher flue gas temperatures, decreased gas flow area and higher flue gas velocity. As this occurs, control of air/fuel ratio becomes more difficult, resulting in higher TRS emissions

Since GP must be in continuous compliance with the TRS emission limit, and the proposed change is expected to increase TRS emissions, GP requests a 12-month rolling average TRS limit of 8 ppmvd @ 8 percent oxygen. As shown by the previously submitted data, the 95 percent confidence level value for the 12-hour TRS data was 8.1 ppmvd. Based upon the TRS data, a 12-month rolling average TRS limit of 8 ppmvd @ 8 percent O_2 is proposed. This limit is significantly less than the current limit of 11.4 ppmvd (30 percent lower than the current limit).

TRS Compliance Test Method for No. 4 Recovery Boiler

In Specific Condition 6 of the draft permit, the Department is indicating that the method of determining compliance with the TRS limits (both 12-hour average and 12-month rolling average) will be based on the TRS continuous emissions monitor system (CEMS). It is emphasized that this represents a significant change from the current operating permit and previously issued PSD permit. These permits specified annual testing using EPA Method 16 or 16A as the method of determining compliance. It is also pointed out that Florida Administrative Code (F.A.C.) Rule 296.404(4)(a) specifies that EPA Method 16 or 16A shall be used for compliance testing. The previous permits were consistent with this rule, by specifying EPA Methods 16 and 16A as the compliance methods, and further specifying that the continuous monitoring requirements of the TRS rule be complied with.

According to Rule 296.404, the CEM for TRS is not used for compliance purposes, but is used as an indicator of proper operation and maintenance of the boiler. The rule allows excess emissions for up to one percent of the time to occur and not be in violation. By specifying that the CEM for TRS will now be used for compliance purposes, the proposed limits (11.4 ppmvd, 12-hour avg., and 8 ppmvd, 12-month rolling average) are much more stringent than indicated by their numerical values. Therefore, in

conformance with the previous permits and Rule 296.404, GP requests that the TRS compliance method be specified as EPA Method 16 or 16A.

Thank you for consideration of this information. Please call if you have any questions.

Sincerely,

David A. Buff

David A. Buff, P.E.
Principal Engineer
Florida P.E. #19011

DAB/arz

cc: Myra Carpenter
Traylor Champion
File (2)

Georgia-Pacific Corporation

Palatka Operations
Packaged Products Division
P.O. Box 919
Palatka, Florida 32178-0919
Telephone (904) 325-2001

July 17, 1995

Mr. Clair Fancy, P.E.
Bureau Chief
State of Florida
Department of Environmental Protection
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Dear Mr. Fancy:

Georgia-Pacific has made a Corporate commitment to close the black liquor pond in Palatka by the end of 1997. This pond is used to temporarily store black liquor until it is recirculated back into the recovery process. It is our intent to eventually replace the pond with an adequate amount of storage tank capacity. As you know, tank installation can be a lengthy process dependent upon the availability of contract labor and materials. In order to meet the Corporate goal of timely pond closure, it was necessary to begin installing the storage tanks as soon as possible. For this reason, we began construction several weeks ago (June 12, 1995) of the first of the series of black liquor tanks with a capacity of 4 million gallons per tank.

The New Source Review Section, who is reviewing our PSD permit application, called several days ago to let me know that we need to permit the black liquor storage tank currently under construction. It was also suggested that we could handle the permitting of this tank under the PSD application mentioned above. However, the Northeast District staff do not think we need a permit since they agree with us that there will actually be a reduction in air emissions by storing black liquor in a tank as compared to storage in a pond.

We would greatly appreciate you clarifying the applicability of permitting in this case. It is my understanding, both with recent guidance and internal drafts of proposed New Source Review reform, the EPA is contemplating relaxing permitting requirements for such environmentally beneficial projects as this.

Please let me know as soon as possible if permitting is required since the tank construction will be complete sometime in August. If you have any questions, please call me at 904-329-0918.

Sincerely,

Myra J. Carpenter

Myra J. Carpenter
Environmental Superintendent

kb

cc: W. L. Baxter
B. T. Champion, GA030, G-09
Henry Hirschman
A. F. Hodges, GA030, G-09
Bob Leetch, FDEP, Northeast District
WH

Georgia-Pacific Corporation

Palatka Operations
Packaged Products Division
P.O. Box 919
Palatka, Florida 32178-0919
Telephone (904) 325-2001

June 13, 1995

Mr. Al Linero
State of Florida
Department of Environmental Protection
Bureau of Air Regulation
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

RE: PSD Permit Application
Georgia-Pacific Corporation
Palatka Mill
DEP No. 548515762

Dear Mr. Linero:

As you know, Georgia-Pacific submitted a PSD Permit Application in March, 1995, in which proposed changes in certain emissions units were described: (1) the replacement of two batch digesters with bigger units; and (2) changes to the existing No. 4 Recovery Boiler. These two projects were linked in the application merely for administrative convenience and can be considered as totally separate projects. In fact, the digesters can be replaced while the mill continues to operate. However, the Recovery Boiler must be taken out of service in order to install the screen tubes. The only opportunity for tube installation would then be during the annual preventive maintenance outage scheduled for August of this year. These Recovery Boiler outages are planned well in advance because of the tremendous lead time required to stage equipment and manpower. They are very difficult to reschedule for this same reason.

With this in mind, we would like to move ahead with the tube project if at all possible. We would like to propose to the Department that we be allowed to install the screen tubes during the scheduled outage in August with the understanding that we will not increase black liquor throughput until after the PSD permit is issued. We would agree to maintain our liquor throughput to a maximum of 184,000 lbs/hour of BLS, which is our current average operating rate. This is well below the maximum rate allowed by our existing operating permit of 210,000 lbs/hr. We believe that

with this temporary restriction the screen tube project would not constitute a modification since there would be no increase in emissions. Therefore, the screen tube project could proceed in the interim without the necessity of obtaining a permit.

We would like to meet with you, Willard Hanks, and Clair Fancy to discuss the details of our proposal on the morning of Thursday, June 15, 1995.

If you have any questions, please do not hesitate to contact me at 904-329-0918.

Sincerely,

Myra J. Carpenter

Myra J. Carpenter
Environmental Superintendent

kb

cc: W. L. Baxter
B. T. Champion, GA030, G-48
Henry Hirschman
J. E. McKinley
T. R. Wyles, GA030, G-48
A. F. Hodges, GA030, G-11

Georgia-Pacific

Palatka Operations
P.O. Box 919
Palatka, Florida 32178-0919
Telephone: (904) 325-2001

FAX Number: (904) 328-0014

COVER SHEET FOR ALL FAX TRANSMITTALS

DATE: June 13, 1995

TO: Al Linero/Willard Hanks

3 **PAGES**

☒ FAX No. 904-922-6979 ☐ Speed No. _____

= **Total number of pages** (including this cover sheet)

FROM: Myra Carpenter

☐ FAX No. _____ (If different from (904) 328-0014) ☐ Phone No. _____ (If different from (904) 325-2001) ☐ Ext. _____

Comments:

_____

_____

_____

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MISSION

**Palatka Pride,
Dedicated People –
Delivering Quality:
On Time, Every Time!**

July 5, 1995

Mr. Al Linero, P.E.
Administrator, New Source Review
Florida Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Re: PSD Permit Application
Georgia-Pacific Corporation, Palatka Mill
AC54-266676/PSD-FL-226

Dear Mr. Linero:

In follow up to our meeting the week before last concerning the above referenced permit application, the following information is submitted on behalf of Georgia-Pacific Corporation (G-P). This information is related to the proposed emissions limits for the No. 4 Recovery Boiler (RB4) and the TRS Incinerator.

NO_x Limits

The Department is contemplating a NO_x limit of 70 ppmvd @ 8% O_2 for the No. 4 RB. In G-P's May 17, 1995, submittal to the Department, updated stack test results, including preliminary 1995 results, were presented (table attached for your convenience). The test data consists of a total of 12 test runs since the last rate increase received by the No. 4 RB in 1991. The limited test data showed NO_x levels ranging from 25 to 67 ppmvd @ 8% O_2. Compliance test averages have ranged from 45 to 65 ppmvd @ 8% O_2. The data are very limited (four compliance tests), and the proposed BACT limit leaves very little margin for compliance. Therefore, G-P requests that the Department consider a higher limit of 90 ppmvd @ 8% O_2. Of all BACT determinations for NO_x in the BACT Clearinghouse, only two were lower than 90 ppmvd; one was set at 75 ppmvd, and one was set at 80 ppmvd. These were for newer boilers designed for lower levels of emissions. All others were set at 90 ppmvd, with the majority set at 100 ppmvd or greater.

VOC Limits

The Department is considering setting a BACT limit for VOC of 0.10 lb/ton BLS. However, recent 1995 VOC test results on No. 4 RB have demonstrated the potential for higher VOC emissions than indicated by the previous testing. The recent test results were 34 lb/hr and approximately 0.50 lb/ton of BLS (presented in the May 17 submittal). This test should be considered as representative of daily operational variability, and not as an anomaly to be disregarded. Based on these recent tests, it is requested that the current VOC limit of 0.52 lb/ton BLS and 54.6 lb/hr be retained (equivalent to 0.043 lb/MMBtu and 0.71 lb/ton ADUP). This proposed limit is comparable to or lower than all previous BACT determinations for VOC listed in the BACT/LAER Clearinghouse.

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TRS Limits

TRS-- G-P has two concerns regarding the TRS limit for RB4. The first is the ability of RB4 to meet a 5 ppmvd limit. The limited compliance test data for RB4 (i.e., once per year stack testing) does not reflect the true variability in boiler operation. In G-P's previous submittals, continuous TRS data for the period October 1994 through March 1995 were presented (attached Table A for your convenience). These data, which consist of 347 12-hour average TRS concentrations, reflect the real variability in boiler operation. The data reflect a maximum 12-hour TRS concentration of 11.2 ppm, with an average level of 3.36 ppmvd. These data indicate that while in general the TRS emissions are below 5 ppm, there are frequent periods when the 5 ppm level is not achieved.

To better understand the variability in TRS emissions, a frequency distribution of the data was constructed. This is shown in the attached Figure 1. As shown, approximately 20% of the 12-hour concentrations are above the 5 ppmvd level. About 10% of the values are above 7 ppmvd, and 1 percent are above 9.6 ppmvd.

Since G-P must be in continuous compliance with the TRS limit, and the proposed increased throughput may affect TRS emissions, G-P requests the Department retain the current maximum 12-hour limit of 11.4 ppmvd. This is the limit which was judged to be BACT in 1991, and is demonstrated to be the level achievable by this boiler on a continuous basis. However, G-P would be willing to establish a lower limit based on a 12-month rolling average, also based on the actual emissions the boiler has been able to achieve in practice. As shown by the previously submitted data, the 95% confidence level value for the 12-hour TRS data was 8.1 ppmvd. Based upon the TRS data, a 12-month rolling average TRS limit of 8.1 ppmvd @ 8% O_2 is proposed. This limit is significantly less than the current limit of 11.4 ppmvd.

The second issue concerns the listing in the BACT Clearinghouse of several "modified" boilers which have been issued BACT limits of 5 ppmvd. The Clearinghouse listed four such boilers: Penntech Papers, Pennsylvania; Leaf River Forrest, Mississippi; Chesapeake Corp., Virginia; and International Paper, Louisiana. KBN has contacted the state agencies for each of these facilities, and has learned that each of these boilers was subject to the NSPS, 40 CFR 60, Subpart BB. Therefore, NSPS requires each of these boilers to meet a 5 ppmvd limit, and these boilers have been designed to meet the 5 ppmvd limit. The boilers were either NSPS boilers when they were originally constructed, or if modified, would have had to implement design changes in order to meet the NSPS limit.

In contrast, RB4 is over 20 years old and was never designed to meet a 5 ppmvd limit. It has undergone modifications over the years to improve the firing system, and these improvements have allowed it to reduce its TRS emissions to the current limit of 11.4 ppmvd. However, these improvements were not for the purpose of meeting a 5 ppmvd limit. No further reductions in TRS emissions are envisioned as a result of the screen tube project. Also, the proposed increase in actual BLS throughput may affect TRS emissions.

Beryllium Limits

Due to the extremely low emissions of beryllium (Be) projected for the No. 4 RB, as well as predicted low ambient impacts, it is requested that a mass emission standard not be set for Be. BACT has already been established as the ESP control device. PSD/BACT regulations allow the establishment of control technology/work practice standards in lieu of numerical emission limits were such limits are impractical or unnecessary. It is also requested that the stack testing frequency for beryllium be once every 5 years, provided the stack test demonstrates compliance.

Sulfuric Acid Mist

G-P is currently negotiating this issue with the Department.

TRS Incinerator

The current visible emissions (VE) limitation for the TRS incinerator allows up to 5% opacity, except up to 20% opacity for 3 minutes/hour. In addition, due to the very low emissions of PM and TRS form the incinerator, the current permit requires stack testing for PM and TRS emissions only once every five years. The surrogate parameter of combustion temperature is also continuously monitored in the incinerator. For these reasons, it is requested that the current VE limitation and stack testing requirements for PM and TRS be retained in the revised permit.

Thank you for consideration of this information. Please call if you have any questions.

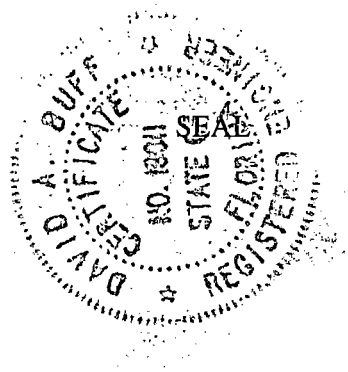
Sincerely,

David A. Buff

David A. Buff, P.E.
Principal Engineer
Florida P.E. #19011

DB/mk

cc: Myra Carpenter
Traylor Champion
File (2)



Willard

Post-it® Fax Note 7671	Date 7/5/95	# of pages ▶ 3
To AL LINERO	From DAVE BUFF	
Co./Dept. FDEP	Co. KBN	
Phone # 904-488-1344	Phone # 904-336-5600	
Fax # 904-922-6979	Fax # 904-336-6603	

July 5, 1995

Mr. Al Linero, P.E.
Administrator, New Source Review
Florida Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Re: PSD Permit Application
Georgia-Pacific Corporation, Palatka Mill
AC54-266676/PSD-FL-226

Dear Mr. Linero:

In follow up to our meeting the week before last concerning the above referenced permit application, the following information is submitted on behalf of Georgia-Pacific Corporation (G-P). This information is related to the proposed emissions limits for the No. 4 Recovery Boiler (RB4) and the TRS Incinerator.

NO$_x$ Limits

The Department is contemplating a NO$_x$ limit of 70 ppmvd @ 8% O$_2$ for the No. 4 RB. In G-P's May 17, 1995, submittal to the Department, updated stack test results, including preliminary 1995 results, were presented (table attached for your convenience). The test data consists of a total of 12 test runs since the last rate increase received by the No. 4 RB in 1991. The limited test data showed NO$_x$ levels ranging from 25 to 67 ppmvd @ 8% O$_2$. Compliance test averages have ranged from 45 to 65 ppmvd @ 8% O$_2$. The data are very limited (four compliance tests), and the proposed BACT limit leaves very little margin for compliance. Therefore, G-P requests that the Department consider a higher limit of 90 ppmvd @ 8% O$_2$. Of all BACT determinations for NO$_x$ in the BACT Clearinghouse, only two were lower than 90 ppmvd; one was set at 75 ppmvd, and one was set at 80 ppmvd. These were for newer boilers designed for lower levels of emissions. All others were set at 90 ppmvd, with the majority set at 100 ppmvd or greater.

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KBN

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JUN 2 1995
Bureau of
Air Regulation

May 31, 1995

FAXED 6/1/95

Mr. Al Linero, P.E.
Administrator, New Source Review
Florida Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Re: PSD Permit Application
Georgia-Pacific Corporation, Palatka Mill
AC54-266676/PSD-FL-226

Dear Mr. Linero:

In response to your request, attached is a revised overall facility process flow diagram for the G-P Palatka paper mill. If you have any questions concerning this information, please call.

Sincerely,

David A. Buff

David A. Buff, P.E.
Principal Engineer
Florida P.E. #19011

SEAL

cc: Myra Carpenter
Traylor Champion

KBN ENGINEERING AND APPLIED SCIENCES, INC.

6241 Northwest 23rd Street, Suite 500, Gainesville, Florida 32653-1500, 904-336-5600 FAX 904-336-6603
5405 West Cypress Street, Suite 215, Tampa, Florida 33607, 813-287-1717 FAX 813-287-1716
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To Al Linero	From D.A. Buff	
Co./Dept. FDEP, NSR Sec.	Co. KBN	
Phone #	Phone # 904-336-5600	
Fax # 904-922-6979	Fax # 904-336-6603	

May 31, 1995

Mr. Al Linero, P.E.
Administrator, New Source Review
Florida Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Re: PSD Permit Application
Georgia-Pacific Corporation, Palatka Mill
AC54-266676/PSD-FL-226

Dear Mr. Linero:

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Sincerely,

David A. Buff

David A. Buff, P.E.
Principal Engineer
Florida P.E. #19011

SEAL

cc: Myra Carpenter
Traylor Champion

KBN ENGINEERING AND APPLIED SCIENCES, INC.

6241 Northwest 23rd Street, Suite 500, Gainesville, Florida 32653-1500, 904-336-5600 FAX 904-336-6603
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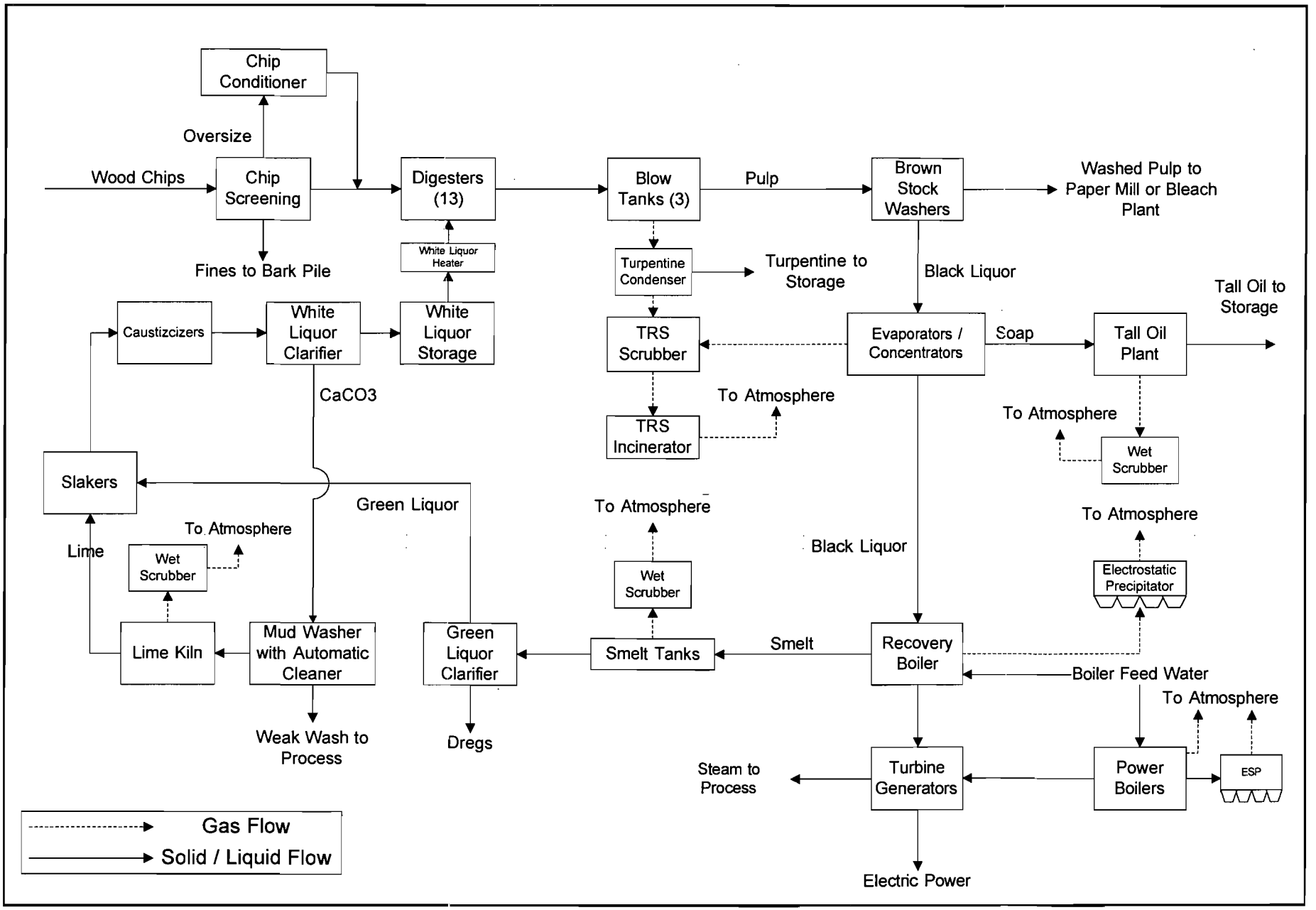

Figure 1. Facility Flow Diagram		*Emission Unit:* Overall Plant	KBN Engineering and Applied Sciences, Inc.
		Process Area: Overall Plant	
Georgia-Pacific Corporation	Palatka	*Filename:* GPPSD.VSD	
		Latest Revision Date: 5/31/95 05:39 PM	

Georgia-Pacific Corporation

Palatka Operations
Packaged Products Division
P.O. Box 919
Palatka, Florida 32178-0919
Telephone (904) 325-2001

May 25, 1995

RECEIVED
JUN 27 1995
Bureau of
Air Regulation

Mr. Willard Hanks
State of Florida
Department of Environmental Protection
Permitting and Standards Section
Bureau of Air Regulation
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Re: Pending PSD Permit Application

Dear Mr. Hanks:

At our recent meeting with you and Mike Harley's group, we agreed that Georgia-Pacific would propose language that the Department would consider using in the PSD permit on which we are all working so hard. The following is the suggested language:

Specific Conditions:

Option 1:

Sulfuric acid mist emissions shall not exceed 3.24 lbs/hr (14.2 TPY); based on 0.81 ppm in the stack gases (NCASI Technical Bulletin No. 106) and 427,560 acfm.

a. The initial and annual compliance tests for sulfuric acid mist shall be conducted using NCASI Method 106 for two years from the date of issuance of the permit. At the end of this time, appropriate limits will be established based upon emission testing methodology evaluations approved by the Department and conducted by Georgia-Pacific.

Option 2:

Sulfuric acid emissions shall be monitored annually for two years following permit issuance. At the end of which time, appropriate limits will be established based upon

emission testing methodology evaluations approved by the Department and conducted by Georgia-Pacific.

a. The sulfuric acid mist emissions will be monitored only for two years following the date of permit issuance in accordance with a testing methodology evaluation program approved by the Department.

Sincerely,

Myra J. Carpenter
Environmental Superintendent

kb

cc: W. L. Baxter
D. A. Buff, KBN
B. T. Champion, GA030, G-48
J. E. Taylor, Jr.

File

May 24, 1995

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MAY 25 1995
Bureau of
Air Regulation

Mr. Al Linero, P.E.
Administrator, New Source Review
Florida Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Re: PSD Permit Application
Georgia-Pacific Corporation, Palatka Mill
AC54-266676/PSD-FL-226

Dear Mr. Linero:

In response to Willard Hanks recent request, attached is an overall facility process flow diagram for the Georgia Pacific Palatka paper mill. Since this information was not requested by the Department in its original completeness letter, this submittal should not affect the date the application was deemed complete. The application should be deemed complete as of May 17, 1995, when the last submittal was received by the Department. If you have any questions concerning this information, please call.

Sincerely,

David A. Buff

David A. Buff, P.E.
Principal Engineer
Florida P.E. #19011

DAVID A. BUFF P.E. A&L
CERTIFICATE NO. 19011
STATE OF FLORIDA
REGISTERED ENGINEER

Attachment

DABuff/ehj

cc: Myra Carpenter
Traylor Champion
File (2)

KBN ENGINEERING AND APPLIED SCIENCES, INC.

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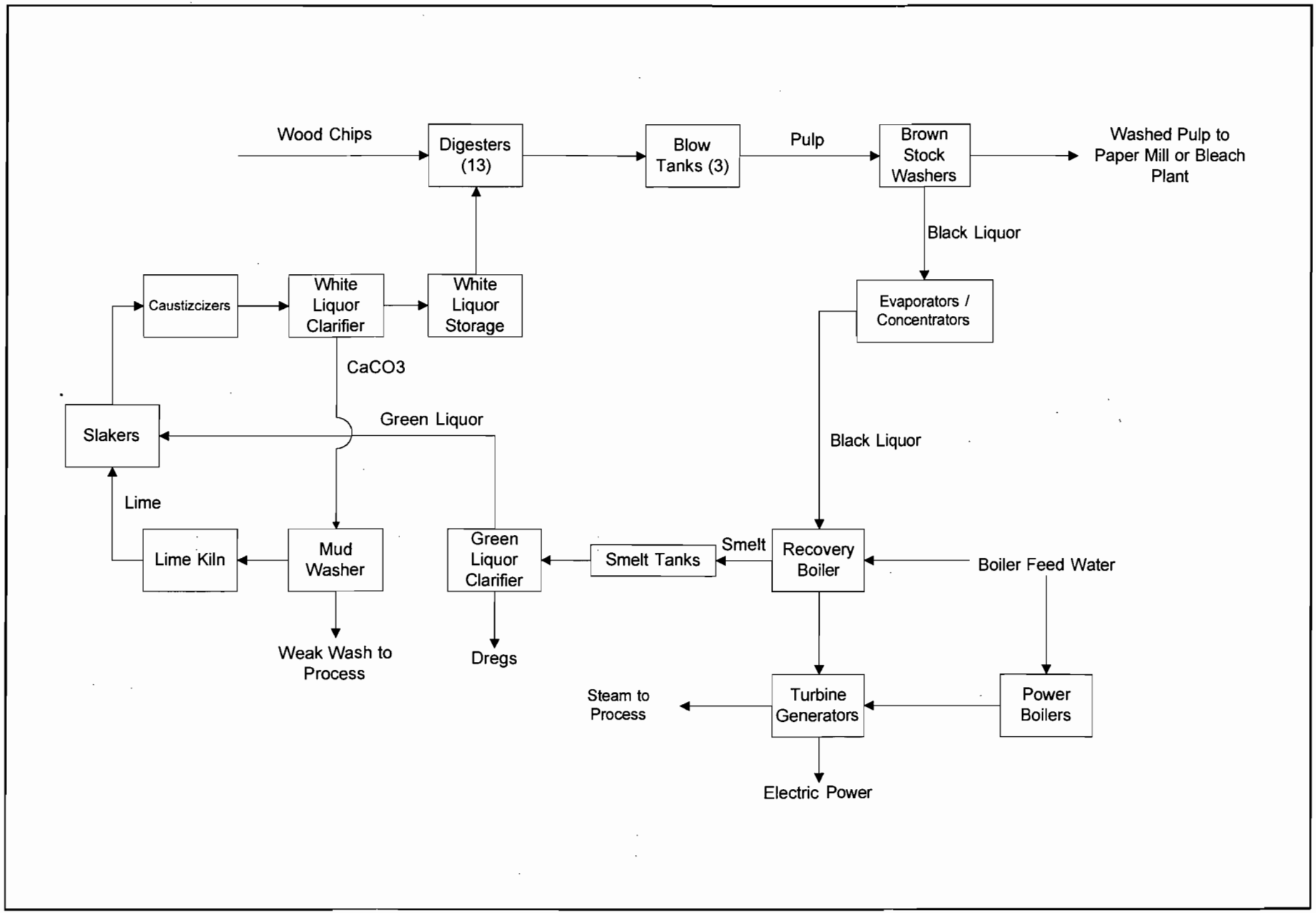

Figure 1. Facility Flow Diagram		*Emission Unit:* Overall Plant
		Process Area: Overall Plant
Georgia-Pacific Corporation	Palatka	*Filename:* GPPSD.VSD
		Latest Revision Date: 5/24/95 01:30 PM

KBN Engineering and Applied Sciences, Inc.

FACSIMILE COVER SHEET

DATE: May 24, 1995

TO: Mr. Willard Hanks

ORGANIZATION: Florida Department of Environmental Protection

FAX NUMBER: (904) 922-6979 TELEPHONE NUMBER: (904) 488-1344

FROM: David A. Buff

OFFICE: ☒ Gainesville ☐ Tampa ☐ Boca Raton
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6241 NW 23rd Street
Gainesville, Florida, 32653-1500
(904) 336-5600/FAX (904) 336-6603

5405 West Cypress Street, Suite 215
Tampa, FL 33607
(813) 287-1717/FAX (813) 287-1716

1616 "P" Street N.W., Suite 450
Washington, DC 20036
(202) 462-1100/FAX (202) 462-2270

1801 Clint Moore Road, Suite 105
Boca Raton, FL 33487
(407) 994-9910/FAX (407) 994-9393

7785 Baymeadows Way, Suite 105
Jacksonville, FL 32256
(904) 739-5600/FAX (904) 739-7777

May 17, 1995

Mr. Al Linero, P.E.
Administrator, New Source Review
Florida Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Re: PSD Permit Application
Georgia-Pacific Corporation, Palatka Mill
AC54-266676/PSD-FL-226

Dear Mr. Linero:

The purpose of this correspondence is to respond to the U.S. EPA's comments concerning the above referenced PSD permit application. The EPA's comments were contained in a letter from Jewell A. Harper, Chief, Air Enforcement Branch, EPA Region IV, to Clair Fancy, FDEP, dated May 2, 1995 (attached for your convenience). Five comments were submitted for consideration by FDEP. Each of these is addressed below, in the same order as they appear in the letter.

1. Georgia-Pacific (G-P) believes it has followed the PSD regulations in determining the two-year average actual baseline emissions. There are two components to the baseline emissions. The first is the representative emission factor for each pollutant; the second is the activity factor. In determining the representative emission factor for each pollutant and each source, the PSD regulations do not restrict an applicant to the last two years. The best and most representative emission factor should be used. For continuously monitored data, such as TRS, actual continuous data from the last two years was utilized as the representative emission factor. However, when once a year stack tests are conducted, it is appropriate to consider all stack test data which is representative of current operation.

   In the case of the G-P No. 4 Recovery Boiler (RB4), No. 4 Smelt Dissolving Tanks (SDT4) and No. 4 Lime Kiln (LK4), a PSD permit was issued in 1991, and the changes under that permit were completed in January 1992. Compliance testing followed shortly after, as well as additional stack tests in 1993 and 1994. Thus, the stack tests in 1992, 1993 and 1994 are all considered representative of current actual operation, and were used to determine the representative emission factor. The representative emission factor was then applied to the 1993-1994 actual operating hours or production rates.

   For the Tall Oil plant, only one stack test in 1992 has been conducted on this source. This compliance source test was used to determine the representative emission factor, and was applied

KBN ENGINEERING AND APPLIED SCIENCES, INC.

6241 Northwest 23rd Street, Suite 500, Gainesville, Florida 32653-1500, 904-336-5600 FAX 904-336-6603
5405 West Cypress Street, Suite 215, Tampa, Florida 33607, 813-287-1717 FAX 813-287-1716
1801 Clint Moore Road, Suite 105, Boca Raton, Florida 33487, 407-994-9910 FAX 407-994-9393
7785 Baymeadows Way, Suite 105, Jacksonville, Florida 32256, 904-739-5600 FAX 904-739-7777
1616 'P' Street N.W., Suite 450, Washington, D.C. 20036, 202-462-1100 FAX 202-462-2270

to the 1993-1994 actual production. For the TRS Incinerator, only two stack tests (in 1990 and 1994) have been conducted on this source. Since the batch digester system and other sources venting to the TRS Incinerator have not changed operation since 1990, these source tests were used to determine the representative emission factor, and was applied to the 1993-1994 actual operating hours.

The batch digester system, multiple effect evaporators, and condensate stripper system all vent to the TRS Incinerator, and as such emissions are reflected in the incinerator. The brown stock washer system was not considered in the PSD applicability analysis, since it is currently unpermitted and will be included in the facility Title V application. However, the washers emit only TRS and VOC. These pollutants are already subject to PSD review, and therefore including the washers in the applicability analysis would not affect the PSD applicability of the project. Further, the brown stock washers are not undergoing any physical change or change in the method of operation, and therefore would not be subject to a best available control technology analysis.

2. EPA focuses on specific emission tests for comparison to G-P's proposed emission rates for RB4. However, all of the test data presented in Table 6-3 are considered representative of normal source operation. The various stack tests reflect the variability that can occur in emissions due to normal process fluctuations. In addition, the maximum emission rate experienced must be considered in setting any emission limit. On April 13, 1995, G-P submitted a revised Table 6-3 to FDEP which presented statistical data for each pollutant. Also submitted was a table of continuous TRS data for the last 6 months for RB4.

   G-P conducted annual compliance testing on RB4 in April, 1995. Preliminary test results are now available, and have been included in a revised Table 6-3 which is attached.

   In determining an appropriate BACT emission limit for RB4 for each pollutant, several factors should be considered. These factors can affect all of the pollutants undergoing BACT review.

   1. RB4 is an existing boiler that was built in 1975. RB4 underwent upgrades in 1987 and in 1991, but still is an older boiler and has inherent design limitations. RB4 performance should not be expected to match the performance of a newer boiler. In addition, boiler and ESP performance can degrade somewhat over time, even when regular maintenance is performed on the boiler and ESP.

   2. G-P will be increasing black liquor throughput above the historical rates for RB4. Increasing the black liquor firing rate is expected to increase actual emissions from the boiler, while remaining within the current permit limits. While the black liquor

throughput will be increasing, there will be no changes to the black liquor firing system or the ESP system.

3. The variability in black liquor quality can affect hourly emissions from RB4. Black liquor quality is not something that can be controlled by the boiler operator. The quality is a function of daily and seasonal variations in wood quality and the pulp making process.

4. G-P is not requesting any change in the permitted throughput capacity for the boiler (5.04 million lb/day BLS). Only a minor change is being made to the boiler, which may potentially increase actual black liquor throughput by 3 percent to 5 percent. No change in the currently permitted emission limits is being requested. These permitted limits were determined to be BACT as recently as 1991.

5. Enhanced monitoring, although presently delayed, may be required within the next two to three years. At such time, continuous emission monitors may be required for the pollutants with permit limits. Therefore, G-P desires permit limits which have an adequate margin of safety considering continuous monitoring implications.

Considering the above factors, G-P reiterates its position that the current permit limits for RB4 represent BACT. The proposed BACT for each pollutant is discussed further below.

Particulate Matter

Based on all the source test data, the proposed (and current) PM emission limit of 0.033 gr/dscf is only 10 percent higher than the highest stack test result of 0.030 gr/dscf. The 95 percent confidence level for the test data reflects an emission rate of 0.032 gr/dscf, which is approximately equal to the proposed limit. Due to physical limitations (i.e., there is no more room in ESP), G-P cannot add any additional transformer-rectifier sets to the ESP to improve control efficiency. A BACT determination for a modified recovery boiler at Leaf River Forest in Mississippi was issued in 1992 with a PM limit of 0.040 gr/dscf.

Nitrogen Oxides

The proposed (and current) NO_x emission limit of 100 ppmvd is somewhat higher than the highest stack test result of 65 ppmvd. Considering the limited stack test data and potential variability in NO_x emissions, G-P cannot accept lower limits. It is also noted that NO_x emissions are inversely related to CO and VOC emissions. Therefore, if the NO_x limit is to be lowered, this would translate to higher CO and VOC limits. However, G-P is willing to accept the current limits for NO_x, CO, and VOC, even at the higher throughput rates.

It is noted that three BACT determinations for NO_x emissions were issued to recovery boilers in 1992; each of these specified BACT limits of 110 to 115 ppmvd @ 8 percent O_2. It is further noted that for the Weyerhaeuser recovery boiler issued a BACT for NO_x of 80 ppmvd in 1992, the original BACT limits set for the boiler could not be met. Therefore, based on actual test data for the boiler, the BACT limit was revised upward. The technology for achieving BACT did not change; the limit was revised to reflect actual boiler operation when maximizing black liquor combustion efficiency.

Carbon Monoxide

The proposed (and current) CO emission limit of 800 ppmvd is only 6 percent higher than the highest single run during any stack test of 756 ppmvd. Another test run resulted in a CO emission rate of 745 ppmvd. The stack test data demonstrate the variability in CO emissions and emphasize the need for the requested limit. As black liquor throughput to the boiler increases, the flue gas volume increases, resulting in decreased residence time of the flue gases within the boiler. This decreased residence time results in less time for complete combustion to occur, creating higher CO and VOC emissions. Since the proposed modifications will allow increased black liquor throughput, increased CO emissions are expected. Also, as discussed above, minimizing NO_x emissions will result in higher CO and VOC emissions. Therefore, any decrease in the NO_x emission limit would require an increase in the CO and VOC limits.

Volatile Organic Compounds

The recent 1995 stack test results for VOC demonstrate that wide variability in VOC emissions is possible from RB4. VOC emissions occur due to incomplete combustion in the boiler. As black liquor throughput to the boiler increases, the flue gas volume increases, resulting in decreased residence time of the flue gases within the boiler. This decreased residence time results in less time for complete combustion to occur, creating higher CO and VOC emissions. Since the proposed modifications will allow increased black liquor throughput, increased VOC emissions are expected. The proposed (and current) VOC emission limit of 54.6 lb/hr is only slightly higher than the maximum VOC emissions of 48 lb/hr experienced during the 1995 stack testing. Compliance with the VOC limit would be demonstrated with EPA Method 25A.

Total Reduced Sulfur

The TRS data shows that the proposed (and current) TRS emission limit of 11.4 ppmvd is only 2 percent higher than the highest single 12-hour TRS concentration during the last 6 months, i.e., 11.2 ppmvd. Several other 12-hour periods displayed TRS emissions near the proposed limit of 11.4 ppmvd.

3. G-P requests that the annual average CO limit be deleted and a single limit of 800 ppmvd and 1,025 lb/hr be set for CO. This limit is equal to the current 1-hour CO limit. This change

would eliminate the concern over the dual averaging times for CO. It is G-P's understanding that compliance with the CO limit would be based on the average of three test runs.

4. The ESP serving RB4 was upgraded in 1991. Due to physical constraints in the ESP (i.e., no more room in ESP), it is not possible to add additional transformer-rectifier sets to the ESP.

5. The solids content of black liquor at G-P is in the range of 66 percent to 68 percent.

One additional update to information previously submitted is as follows: in Attachment B - Design Information for New TRS Scrubber, the diameter of the scrubber was incorrectly stated as 36 feet. This was a typographical error and should have read "36 inches". Attached are revised pages of the application.

Thank you for consideration of this information. Please call if you have any questions.

Sincerely,

David A. Buff

David A. Buff, P.E.
Principal Engineer
Florida P.E. #19011

Enclosures

DABuff/ehj

cc: Myra Carpenter
Traylor Champion
File (2)

cc: W. Hanks
C. Holladay
C. Kirts, NED
NPA
EPA

14379C\RTC2\1

GPRB4TST
5/15/95

Table 6-3. Summary of Source Test Data From No. 4 Recovery Boiler, Georgia-Pacific Palatka Mill (Revised 05/15/95)

		Particulate Matter		Nitrogen Dioxide		Carbon Monoxide		VOC		TRS	
Test Date	Run #	gr/dscf @8% O2	lb/hr	ppmvd @8% O2	lb/hr	ppmvd @8% O2	lb/hr	ppmvd @8% O2	lb/hr	ppmvd @8% O2	lb/hr
04/25/95	1	0.006	12.0	25	44	465	407	129	48	<1.8	<1.9
04/25/95	2	0.008	16.0	63	114	745	653	67	25	<1.7	<1.8
04/25/95	3	0.010	20.9	66	118	560	491	81	30	0.71	0.8
	Average	0.008	16.3	51	92	590	518	92	34	1.40	1.5
02/15/94	1	0.007	15.0	59	104	440	472	<3	<1.0	2.6	3.2
02/15/94	2	0.006	13.6	58	101	756	798	<5	<1.7	3.7	4.8
02/15/94	3	0.007	14.7	62	109	404	428	<2	<0.7	0.7	0.9
	Average	0.007	14.4	60	105	533	566	3	1.1	2.3	3.0
02/17/93	1	0.007	16.1	43	72	193	197	<10	<4.4	<0.2	<0.2
02/17/93	2	0.006	12.1	50	84	33	33	<10	<4.4	<0.3	<0.3
02/17/93	3	0.005	10.7	43	72	80	82	<10	<4.4	<0.3	<0.3
02/17/93	4	0.006	12.9	45	76	102	104	10	4.4	<0.3	<0.3
	Average										
03/11/92	1	0.029	65.2	61	121	167	200	8.1	4.0	2.3	3.4
03/11/92	2	0.026	55.5	65	125	164	191	7.1	3.6	4.2	5.9
03/11/92	3	0.035	77.9	67	128	330	382	4.2	2.1	1.9	2.6
	Average	0.030	66.2	65	125	220	258	6.5	3.2	2.8	4.0
Allowable Limit		0.033	83.2	100	210.6	800, 1-hr 400, annual	1,025.4 512.7	--	54.6	11.4	17.8
Statistical Analysis[a]											
Number of Tests		4	4	4	4	4	4	4	4		
Average		0.013	27.5	55	100	361	362	28	11		
Standard Deviation		0.010	22.4	7.8	18.0	206	189	37	14		
95% Confidence Limit[b]		0.032	71.4	70	135	764	733	101	37		
99% Confidence Limit[c]		0.039	85.3	75	146	892	850	124	46		

[a] Based on compliance test averages.
[b] Average + (1.96 x standard deviation)
[c] Average + (2.58 x standard deviation)

Post-it® Fax Note 7671	Date 5/2/95	# of pages ▶ 4
To MYRA CARPENTER	From WILLARD HANKS	
Co./Dept. G-P - PALATKA	Co. DEP	
Phone #	Phone # (904) 488-1344	
Fax # 904/328-0014	Fax #	

UNITED STATES ENVIRONMEN
REGION
345 COURTLAND
ATLANTA, GEORGIA 30365

MAY 02 1995

To: Dave Buff

904-336-6603

4APT-AEB

Mr. Clair H. Fancy, P.E.
Chief
Bureau of Air Regulation
Florida Department of Environmental Protection
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

SUBJ: Georgia-Pacific Corporation (G-P), Palatka, Putnam County, Florida (PSD-FL-226)

Dear Mr. Fancy:

This is to acknowledge receipt of an application for a Prevention of Significant Deterioration (PSD) permit for the proposed major modification to the above referenced kraft pulp mill facility by your letter dated March 13, 1995. The proposed major modification consists of the replacement of two existing digesters (Nos. 11 and 12) with two larger digesters. Sixteen screen tube banks will also be added to the existing No. 4 recovery boiler (RB4). Other physical changes at the facility include the addition of a new chip conditioner system, white liquor heater, and automatic lime mud filter cleaner.

G-P expects pulp production to increase approximately 40 tons per day (TPD) using the larger digesters. The pulp production capacity of the existing digester system is 1850 TPD. G-P also expects about a 4 percent increase in black liquor solids (BLS) throughput with the RB4 modification. Current permitted RB4 capacity is 5.04 million pounds of BLS per day. As discussed between Mr. Willard Hanks of your staff and Mr. Stan Kukier of my staff on April 24, 1995, we have the following significant comments.

1. Calculations of current actual emissions used in G-P's netting analysis must be based on a two-year average. The definition of "actual emissions" in 40 CFR § 52.21 (b)(21) indicates that actual emissions shall be determined as follows:

> (ii) In general, actual emissions as of a particular date shall equal the average rate, in tons per year, at which the unit actually emitted the pollutant during a two-year period which precedes the particular date and which is representative of normal source operation. The

Administrator shall allow the use of a different time period upon a determination that it is more representative of normal source operation. Actual emissions shall be calculated using the unit's actual operating hours, production rates, and types of materials processed, stored or combusted during the selected time period.

Tables A-1, A-2, and A-3 in Attachment A indicate that the calculations of actual emissions for the No. 4 lime kiln (LK4), RB4, and No. 4 smelt dissolving tanks (SDT4) are based on three-year averages of 1992, 1993, and 1994 stack test results, National Council for Air and Stream Improvements (NCASI) and AP-42 emission factors, and allowable emission rate limits. Table A-4 indicates that calculations of actual emissions for the tall oil plant (TOP) are based on a 1992 stack test result and a NCASI emission factor. Table A-5 indicates that calculations of actual emissions for the total reduced sulfur (TRS) incinerator are based on two-year averages of 1990 and 1994 stack test results, and AP-42 emission factors. The applicant should also clarify whether or not emission increases associated with the new batch digester system (BDS) as well as the existing multiple effect evaporator system (MEES), condensate stripper system (CSS), and brown stock washer system (BSWS) have been considered in the netting calculations. Pursuant to the definition of "actual emissions" in 40 CFR § 52.21 (b)(21)(ii) above, the applicant should recalculate both the current actual emissions and net emissions increases for each emissions unit. Table 3-3 as well as Tables A-1 through A-5 in Attachment A should be revised to reflect any corrections.

2. Reduced particulate matter (PM), nitrogen oxides (NO_x), carbon monoxide (CO), volatile organic compounds (VOC), and TRS emission rate limits should be proposed by G-P based on the results of recent compliance stack testing. Particulate matter grains per dry standard cubic foot (gr/dscf) and pound per hour (lb/hr) emission limits proposed by G-P are up to 560 and 678 percent higher, respectively, than actual PM emission rates determined from 1993 stack testing. Proposed NO_x parts per million on volume dry basis (ppmvd) and lb/hr emission limits are up to 133 and 193 percent higher, respectively, than actual NO_x emission rates determined from 1993 stack testing. Proposed CO ppmvd and lb/hr emission limits are up to 2324 and 3007 percent higher, respectively, than actual CO emission rates determined from 1993 stack testing. The proposed VOC lb/hr emission limit is 7700 percent higher than an actual

VOC lb/hr emission rate determined from 1994 stack testing. Proposed TRS ppmvd and lb/hr emission limits are up to 5600 and 8800 percent higher, respectively, than actual TRS emission rates determined from 1993 compliance stack testing. Emission limits which more accurately reflect the actual operation of the process equipment should be proposed by the applicant. United States Environmental Protection Agency (USEPA)-Region 4 does not consider such extremely significant differences as representative of normal margins of safety. The proposed particulate matter, NO_x, CO, VOC, and TRS emission limits are unchanged from PSD permit limits previously determined Best Available Control Technology (BACT) in 1991. Clearly, these limits should be updated based on the results of recent stack testing. Table 6-3 in the application summarizes the results of RB4 stack testing for years 1992, 1993, and 1994.

3. G-P requests NO_x and CO emission limits of 100 and 400 ppmvd corrected to 8 percent oxygen (O_2), respectively, on an annual average basis. This is not acceptable. Limits based on a 24-hour average would be acceptable. A recent BACT determination for a Weyerhaeuser Company recovery boiler located in Columbus, Mississippi, (Permit No. 1680-00044) includes NO_x and CO emission limits of 80 and 300 ppmvd corrected to 8 percent O_2, respectively, on an 8-hour average basis. The corresponding Weyerhaeuser recovery boiler NO_x and CO mass emission rate permit limits are 194.7 and 444.3 lb/hr, respectively. The permit capacity of the Weyerhaeuser recovery boiler is also 5.0 million pounds of BLS per day.

4. The applicant's BACT analysis should include a technical and economic evaluation to determine the feasibility of improving existing electrostatic precipitator (ESP) particulate collection efficiency. It is unclear from information in the application whether or not the existing ESP may be upgraded with additional transformer-rectifier sets to achieve particulate matter emission rates as low as 0.021 gr/dscf corrected to 8 percent O_2. A recent USEPA-Region 4 Hammermill Papers Plant PSD permit application in Alabama included review of an ESP upgrade option in the BACT analysis for modified recovery boiler particulate matter emissions. A particulate matter emission limit of 0.021 gr/dscf corrected to 8 percent O_2 and 33.9 lb/hr was recently determined BACT for a Boise Cascade recovery boiler (Permit No. 102-0001-X016) located in Jackson, Alabama. The Boise Cascade recovery boiler also utilizes ESP

particulate control technology and has a permitted capacity of 3.26 million pounds of dry BLS per day.

5. The applicant should provide additional information which indicates the percent solids of the black liquor fired in RB4. The recent trend for recovery boilers has been to burn black liquor with about a 75 percent solids content. Increased liquor solids content, while reducing sulfur dioxide (SO_2) emissions, increases NO_x emissions.

The new RDS will be subject to the requirements of 40 CFR Part 60, Subpart BB - Standards of Performance for Kraft Pulp Mills.

Thank you for the opportunity to review and comment on this application. If you have any questions, please contact Mr. Stan Kukier of my staff at (404) 347-3555, voice mail box extension 4143.

Sincerely yours,

Jewell A. Harper
Chief
Air Enforcement Branch
Air, Pesticides, and Toxics
Management Division

ATTACHMENT B

DESIGN INFORMATION FOR THE NEW TRS SCRUBBER

(Revised 5/14/95)

TRS Scrubber Design Data (revised 5/14/95)

Scrubber Type: Packed Tower

Scrubber Dimensions: 36-inch diameter with 14 feet packing depth

Construction: Stainless steel

NCG Flow to Scrubber: 1,430 acfm @ 130°F

Scrubbing Liquor Flow Rate: 120 gpm (based on white liquor)

TRS Removal Efficiency: 50%

Georgia-Pacific Corporation

Palatka Operations
Packaged Products Division
P.O. Box 919
Palatka, Florida 32178-0919
Telephone (904) 325-2001

May 5, 1995

Mr. Willard Hanks
Permitting and Standards Section
Bureau of Air Regulation
State of Florida
Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Dear Mr. Hanks:

In the attached letter to Mr. Linero dated March 24, 1995, we described three small projects that were also included in our PSD permit application. This application was recently submitted for the installation of two digesters and modification of the Recovery Boiler.

It has come to my attention that we now have an opportunity to install the lime mud filter cleaner earlier than expected. You may recall that the automatic cleaner merely eliminates filter downtime for manual cleaning. It is my understanding from our phone conversation a couple of weeks ago (April 27, 1995) that we can proceed with installation of the cleaner since there is no potential to increase air emissions. Would you please send me a letter of approval for our files at your earliest convenience.

If you have any questions, please call me at 904-325-2001.

Sincerely,

Myra J. Carpenter

Myra J. Carpenter
Environmental Superintendent

kb

Attachment

cc: W. L. Baxter
David Buff, KBN
B. T. Champion, GA030, G-48
Henry Hirschman
J. E. McKinley
T. R. Wyles, GA030, G-48
W. R. Wilson
L. C. Yarbrough

cc Willard
Cleve
NE District
NPS
EPA

KBN

March 24, 1995

Mr. Al Linero, P.E.
Administrator, New Source Review
Florida Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Re: PSD Permit Application
Georgia-Pacific Corporation, Palatka Mill

Dear Mr. Linero:

Georgia-Pacific Corporation (G-P) recently submitted a PSD permit application for the Palatka mill. The permit application described proposed changes in certain emissions units at the Palatka mill: the addition of two new batch digesters and changes to the existing No. 4 Recovery Boiler. These proposed changes will also affect several other emission units: the Multiple Effect Evaporator (MEE) system, condensate stripper system, No. 4 Smelt Dissolving Tanks, No. 4 Lime Kiln, and the Tall Oil plant. These units will be affected by potential increased throughput rates due to the batch digester and recovery boiler changes.

G-P is now considering several other process changes and upgrades at the mill. Specifically, three separate projects are being considered, as described below:

1. Chip Conditioners

   The Palatka mill's existing chip conditioning system is used to condition wood chips before entering the digesters. The current system consists of primary chip thickness screens, high-density separators for removing foreign material, and slicers for reducing the thickness of oversize chips.

   G-P is contemplating replacing the separators and slicers with a new chip conditioner system. The new system will retain good fiber currently lost in the separators, increase wood yield by eliminating fines to the digesters and reduce maintenance costs. The chip conditioners consist of two horizontal steel rolls. The rolls turn at low rpm, and the chips fall between the rolls and are crushed or fissured.

   This process results in improved white liquor penetration into the wood in the digesters, resulting in improved yield. Therefore, a small increase in the pulp production capacity of the digesters is expected to result. However, the currently permitted capacity of the digesters, i.e., 118 TPH and 1,850 TPD, is adequate. This level of pulp production is reflected in the PSD permit application.

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6241 Northwest 23rd Street, Suite 500, Gainesville, Florida 32653-1500, 904-336-5600 FAX 904-336-6603
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7785 Baymeadows Way, Suite 105, Jacksonville, Florida 32256, 904-739-5600 FAX 904-739-7777
1616 'P' Street N.W., Suite 450, Washington, D.C. 20036, 202-462-1100, FAX 202-462-2270

2. White Liquor Heater
In the current operations at G-P, white liquor is pumped to the digesters at a temperature of about 180°F. The ideal temperature for use in cooking is somewhat higher. Therefore, steam is used to raise the white liquor temperature. However, this is an inefficient use of steam, and a heat exchanger system is preferable. G-P is considering installing a white liquor heating system (heat exchanger) to replace the current steam system. An added benefit of this system is that digester cooks will increase slightly due to less time to raise the digester pressure. Pulp uniformity will also increase. Therefore, a small increase in the pulp production capacity of the digesters is expected to result. However, the currently permitted capacity of the digesters, i.e., 118 TPH and 1,850 TPD, is adequate. This level of pulp production is reflected in the PSD permit application.

3. Lime Mud Filter Cleaner
G-P currently operates a lime mud filter in the causticizing area. The lime mud filter increases the consistency of lime mud before it is conveyed to the lime kiln. In the current system, there is no mechanism for continuous cleaning of the filter. The filter must be taken out of service for cleaning about three times per day for a total of about 1 hour of downtime. The installation of an automatic cleaning system for the filter will eliminate this downtime, as well as provide for a slight reduction in fuel oil usage per ton of lime mud.

Since these changes will not result in production rates or emissions which exceed those stated in the PSD permit application, these projects can be included in the PSD permit application.

In regard to the PSD permit application submitted, an error has been discovered in the operating hours for the TRS incinerator used determine PSD baseline emissions. Operating hours of 8,760 hr/yr were used, when in reality the unit operated at somewhat fewer hours during the past 2 years. This error was corrected and revised pages of the permit application prepared. These revised pages were left with you during our meeting on March 23rd. Please replace the respective pages in Emission Unit 4 and in the PSD report with the revised pages.

If you have any questions concerning this information, please call.

Sincerely,

David A. Buff

David A. Buff, P.E.
Principal Engineer
Florida Registration 19011

SEAL

DAB/vjp
cc: Myra Carpenter
Traylor Champion
File (2)

14379C/1

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV

345 COURTLAND STREET, N.E.
ATLANTA, GEORGIA 30365

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MAY 8 1995

Bureau of
Air Regulation

4APT-AEB

Mr. Clair H. Fancy, P.E.
Chief
Bureau of Air Regulation
Florida Department of Environmental
Protection
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

SUBJ: Georgia-Pacific Corporation (G-P), Palatka, Putnam County, Florida (PSD-FL-226)

Dear Mr. Fancy:

This is to acknowledge receipt of an application for a Prevention of Significant Deterioration (PSD) permit for the proposed major modification to the above referenced kraft pulp mill facility by your letter dated March 13, 1995. The proposed major modification consists of the replacement of two existing digesters (Nos. 11 and 12) with two larger digesters. Sixteen screen tube banks will also be added to the existing No. 4 recovery boiler (RB4). Other physical changes at the facility include the addition of a new chip conditioner system, white liquor heater, and automatic lime mud filter cleaner.

G-P expects pulp production to increase approximately 40 tons per day (TPD) using the larger digesters. The pulp production capacity of the existing digester system is 1850 TPD. G-P also expects about a 4 percent increase in black liquor solids (BLS) throughput with the RB4 modification. Current permitted RB4 capacity is 5.04 million pounds of BLS per day. As discussed between Mr. Willard Hanks of your staff and Mr. Stan Kukier of my staff on April 24, 1995, we have the following significant comments.

1. Calculations of current actual emissions used in G-P's netting analysis must be based on a two-year average. The definition of "actual emissions" in 40 CFR § 52.21 (b)(21) indicates that actual emissions shall be determined as follows:

> (ii) In general, actual emissions as of a particular date shall equal the average rate, in tons per year, at which the unit actually emitted the pollutant during a two-year period which precedes the particular date and which is representative of normal source operation. The

Administrator shall allow the use of a different time period upon a determination that it is more representative of normal source operation. Actual emissions shall be calculated using the unit's actual operating hours, production rates, and types of materials processed, stored or combusted during the selected time period.

Tables A-1, A-2, and A-3 in Attachment A indicate that the calculations of actual emissions for the No. 4 lime kiln (LK4), RB4, and No. 4 smelt dissolving tanks (SDT4) are based on three-year averages of 1992, 1993, and 1994 stack test results, National Council for Air and Stream Improvements (NCASI) and AP-42 emission factors, and allowable emission rate limits. Table A-4 indicates that calculations of actual emissions for the tall oil plant (TOP) are based on a 1992 stack test result and a NCASI emission factor. Table A-5 indicates that calculations of actual emissions for the total reduced sulfur (TRS) incinerator are based on two-year averages of 1990 and 1994 stack test results, and AP-42 emission factors. The applicant should also clarify whether or not emission increases associated with the new batch digester system (BDS) as well as the existing multiple effect evaporator system (MEES), condensate stripper system (CSS), and brown stock washer system (BSWS) have been considered in the netting calculations. Pursuant to the definition of "actual emissions" in 40 CFR § 52.21 (b)(21)(ii) above, the applicant should recalculate both the current actual emissions and net emissions increases for each emissions unit. Table 3-3 as well as Tables A-1 through A-5 in Attachment A should be revised to reflect any corrections.

2. Reduced particulate matter (PM), nitrogen oxides (NO_x), carbon monoxide (CO), volatile organic compounds (VOC), and TRS emission rate limits should be proposed by G-P based on the results of recent compliance stack testing. Particulate matter grains per dry standard cubic foot (gr/dscf) and pound per hour (lb/hr) emission limits proposed by G-P are up to 560 and 678 percent higher, respectively, than actual PM emission rates determined from 1993 stack testing. Proposed NO_x parts per million on volume dry basis (ppmvd) and lb/hr emission limits are up to 133 and 193 percent higher, respectively, than actual NO_x emission rates determined from 1993 stack testing. Proposed CO ppmvd and lb/hr emission limits are up to 2324 and 3007 percent higher, respectively, than actual CO emission rates determined from 1993 stack testing. The proposed VOC lb/hr emission limit is 7700 percent higher than an actual

VOC lb/hr emission rate determined from 1994 stack testing. Proposed TRS ppmvd and lb/hr emission limits are up to 5600 and 8800 percent higher, respectively, than actual TRS emission rates determined from 1993 compliance stack testing. Emission limits which more accurately reflect the actual operation of the process equipment should be proposed by the applicant. United States Environmental Protection Agency (USEPA)-Region 4 does not consider such extremely significant differences as representative of normal margins of safety. The proposed particulate matter, NO_x, CO, VOC, and TRS emission limits are unchanged from PSD permit limits previously determined Best Available Control Technology (BACT) in 1991. Clearly, these limits should be updated based on the results of recent stack testing. Table 6-3 in the application summarizes the results of RB4 stack testing for years 1992, 1993, and 1994.

3. G-P requests NO_x and CO emission limits of 100 and 400 ppmvd corrected to 8 percent oxygen (O_2), respectively, on an annual average basis. This is not acceptable. Limits based on a 24-hour average would be acceptable. A recent BACT determination for a Weyerhaeuser Company recovery boiler located in Columbus, Mississippi, (Permit No. 1680-00044) includes NO_x and CO emission limits of 80 and 300 ppmvd corrected to 8 percent O_2, respectively, on an 8-hour average basis. The corresponding Weyerhaeuser recovery boiler NO_x and CO mass emission rate permit limits are 194.7 and 444.3 lb/hr, respectively. The permit capacity of the Weyerhaeuser recovery boiler is also 5.0 million pounds of BLS per day.

4. The applicant's BACT analysis should include a technical and economic evaluation to determine the feasibility of improving existing electrostatic precipitator (ESP) particulate collection efficiency. It is unclear from information in the application whether or not the existing ESP may be upgraded with additional transformer-rectifier sets to achieve particulate matter emission rates as low as 0.021 gr/dscf corrected to 8 percent O_2. A recent USEPA-Region 4 Hammermill Papers Plant PSD permit application in Alabama included review of an ESP upgrade option in the BACT analysis for modified recovery boiler particulate matter emissions. A particulate matter emission limit of 0.021 gr/dscf corrected to 8 percent O_2 and 33.9 lb/hr was recently determined BACT for a Boise Cascade recovery boiler (Permit No. 102-0001-X016) located in Jackson, Alabama. The Boise Cascade recovery boiler also utilizes ESP

particulate control technology and has a permitted capacity of 3.26 million pounds of dry BLS per day.

5. The applicant should provide additional information which indicates the percent solids of the black liquor fired in RB4. The recent trend for recovery boilers has been to burn black liquor with about a 75 percent solids content. Increased liquor solids content, while reducing sulfur dioxide (SO_2) emissions, increases NO_x emissions.

The new BDS will be subject to the requirements of 40 CFR Part 60, Subpart BB - Standards of Performance for Kraft Pulp Mills.

Thank you for the opportunity to review and comment on this application. If you have any questions, please contact Mr. Stan Kukier of my staff at (404) 347-3555, voice mail box extension 4143.

Sincerely yours,

Jewell A. Harper
Chief
Air Enforcement Branch
Air, Pesticides, and Toxics
Management Division

KBN

ab

April 21, 1995

Mr. Clair H. Fancy, Chief
Bureau of Air Management
Florida Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, FL 32399-2400

RE: File No. AC54-266676/PSD-FL-226 (Georgia-Pacific PSD Application)

Dear Clair:

The enclosed air modeling analysis for the Georgia-Pacific (GP) Palatka mill's hazardous air pollutants (HAPs) is being submitted in response to the Department's letter request of April 12, 1995. One hard and disk copy of the modeling printout has been provided. Should you have any questions relating to the analysis, please call me or Dave Buff at (904) 336-5600. Thank you.

Sincerely,

Steven R. Marks

Steven R. Marks, C.C.M.
Senior Meteorologist

SRM/vjp

cc: Dave Buff, KBN
Myra Carpenter, G-P
Traylor Champion, G-P
File (2)

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KBN ENGINEERING AND APPLIED SCIENCES, INC.

6241 Northwest 23rd Street, Suite 500, Gainesville, Florida 32653-1500, 904-336-5600 FAX 904-336-6603
5405 West Cypress Street, Suite 215, Tampa, Florida 33607, 813-287-1717 FAX 813-287-1716
1801 Clint Moore Road, Suite 105, Boca Raton, Florida 33487, 407-994-9910, FAX 407-994-9393
7785 Baymeadows Way, Suite 105, Jacksonville, Florida 32256, 904-739-5600 FAX 904-739-7777
1616 'P' Street N.W., Suite 450, Washington, D.C. 20036, 202-462-1100, FAX 202-462-2270

1.0 DISPERSION MODELING ANALYSIS FOR G-P FACILITY HAPs

1.1 METHODOLOGY

The procedure used in the analysis followed the recommendations in the U.S. Environmental Protection Agency's (EPA's) modeling guidelines, which are approved by the Florida Department of Environmental Protection (FDEP) for general use. The recommendations are related to specific models and options that are preferred for use in particular situations. The guidelines provide recommendations for predicting impacts in both flat or gently rolling terrain by the use of simple terrain models (i.e., terrain less than stack height). These models are applicable to the Georgia-Pacific Palatka facility.

The Industrial Source Complex Short-Term Dispersion Model, Version 93109, (ISCST2; EPA, 1992) is preferred because EPA and FDEP have specifically recommended this model to provide refined air quality impacts in simple terrain. The ISCST2 model is a Gaussian plume model that can be used to assess the air quality impact of emissions from a wide variety of sources associated with an industrial facility.

The ISCST2 model is designed to calculate hour-by-hour concentrations or deposition values and to provide averages for time periods of 2, 3, 4, 6, 8, 12, and 24 hours and 1 year. The ISCST2 model has rural and urban options that affect the wind speed profile exponent law, dispersion rates, and mixing-height formulations used in calculating ground-level concentrations. Concentrations are readily obtainable from the model output for comparison to FDEP's ambient reference concentrations (ARCs).

For the application of the ISCST2 model, the general modeling approach followed EPA and FDEP modeling guidelines for determining compliance with regulatory standards, such as ARCs. For this analysis, the highest 8-hour average, the highest 24-hour average, and the annual average concentrations predicted using 5 years of meteorological data were compared to the proposed ARC.

Meteorological data used in the ISCST2 model to determine air quality impacts consisted of 5 years of hourly surface weather observations from the National Weather Service (NWS) station at the Jacksonville International Airport and twice-daily upper-air soundings from the NWS station at

Waycross, Georgia. The 5-year period of meteorological data was from 1983 through 1987. These data have been recommended by FDEP for projects in the Palatka area.

Receptors were located in sufficient quantity to estimate the highest concentrations and potential exceedances of the proposed ARC. Modeling was performed using a radial receptor grid centered at the TRS incinerator stack location. A total of 236 receptors were used in the dispersion modeling analysis. Receptors were located along 36 radials spaced at 10-degree increments. Along each radial, receptors were located on the property boundary, and at off-property distances of 1100, 1500, 2000, 2500, 3000, 3500, 4000, 4500, and 5000 m.

Short-term and annual HAP emission rates were developed for Recovery Boiler 4, Smelt Dissolving Tank 4, Lime Kiln 4, and the Tall Oil Plant. These emission rates are presented in Tables 1 through 4, respectively, for those sources. The short-term emission rates for each HAP were used in the modeling analysis for all averaging times.

Each source was modeled with the ISCST2 in separate source groups using a generic emission rate of 10.0 grams per second (g/sec) (i.e., 79.365 lb/hr). Modeling output consisted of data files containing the generic concentrations predicted at each receptor by each source for the annual, 24-hour, and 8-hour averaging times. The concentration files were obtained for each source and year modeled.

Maximum 8-hour, 24-hour, and annual impacts for each air toxic pollutant emitted by the facility were determined with the use of an in-house postprocessor program. The postprocessor program was developed to facilitate the process of determining the maximum impacts for numerous toxic pollutants due to multiple, separated sources. Specifically, the following functions were performed by the postprocessor program for each modeled year.

1. The generic concentration files were input by averaging time for each volume source.
2. For each time period in the year for that averaging time, the maximum toxic pollutant impacts for each building were determined at each receptor by multiplying the generic concentration in the file by the toxic pollutant emission rate and dividing the product by the generic emission rate of 10 g/sec. The maximum emission rates for each toxic pollutant are summarized by source in Table 5.

3. The toxic pollutant concentrations for each source, as determined in Step 2, were then summed by receptor and time period to determine the total toxic pollutant concentration obtained from all building sources.
4. The total toxic pollutant concentrations for each receptor were then compared for each time period in the year to determine the maximum toxic pollutant impact obtained for each averaging time.
5. The maximum air toxic concentration for the 8-hour, 24-hour and annual averaging times was then obtained for each of the 5 years of meteorological data utilized. The highest concentration obtained in any year was then used for comparison to the ARCs.

Direction-specific building heights and widths that were used for these sources in the PSD Application modeling were also used in the toxic model analysis.

1.2 MODELING RESULTS

The maximum predicted concentrations for the 8-hour, 24-hour, and annual averaging periods for each modeled year produced by the post-processor program are presented in Tables 6, 7, and 8, respectively. As shown in these tables, the maximum predicted impacts for all three averaging times (i.e., 8-hour, 24-hour, and annual) for all HAP are less than their corresponding ARC values.

Also provided with the analysis is a validation test for KBN's ISCST2 postprocessor. The test was performed for a single pollutant (methanol) by executing the ISCST2 model using the methanol short-term emission rate for each source. The maximum modeling results are provided in Table 9.

Table 1. Potential HAP Emissions from Georgia-Pacific Corporation Palatka Operations for No. 4 Recovery

Pollutant	Emission Factor	Ref.	Activity Factor	Hourly Emissions	Annual Emissions
	lb/TBLS (b)		TBLS/hr (a)	lb/hr	TPY
acetaldehyde	2.0E-02	1	105	2.14	9.36
methanol	6.5E-02	1	105	6.83	29.91
methylene chloride	< 4.6E-03	1	105	0.24	1.07
methyl ethyl ketone	3.5E-03	1	105	0.37	1.62
n-hexane	< 2.8E-04	1	105	0.015	0.064
chloroform	< 6.8E-03	1	105	0.36	1.56
1,2-dichloroethane	< 2.4E-03	1	105	0.13	0.55
1,1,1-trichloroethane	< 2.4E-03	1	105	0.13	0.56
benzene	1.3E-02	1	105	1.32	5.76
carbon tetrachloride	< 1.1E-02	1	105	0.59	2.58
trichloroethylene	< 2.4E-03	1	105	0.13	0.55
methyl isobutyl ketone	1.6E-03	1	105	0.17	0.73
1,1,2-trichloroethane	< 2.4E-03	1	105	0.13	0.56
toluene	6.0E-04	1	105	0.063	0.27
tetrachloroethylene	2.0E-03	1	105	0.21	0.91
chlorobenzene	< 6.8E-04	1	105	0.036	0.16
m,p-xylene	5.7E-04	1	105	0.060	0.26
o-xylene	5.2E-04	1	105	0.055	0.24
xylenes	2.4E-03	1	105	0.25	1.08
styrene	9.8E-04	1	105	0.10	0.45
1,2,4-trichlorobenzene	< 1.1E-03	1	105	0.058	0.25
acrolein	< 9.5E-04	1	105	0.050	0.22
formaldehyde	9.8E-03	1	105	1.03	4.52
PAH	1.1E-04	2	105	0.011	0.049
napthalene	5.8E-04	2	105	0.061	0.27
As	2.4E-04	2	105	0.025	0.11
Be	3.4E-06	2	105	3.5E-04	0.0015
Cd	1.2E-05	2	105	0.0013	0.0055
Cr (total)	3.1E-05	2	105	0.0033	0.014
Cr+6	1.7E-05	2	105	0.0018	0.0077
Mn	5.0E-05	2	105	0.0053	0.023
Ni	4.3E-05	2	105	0.0045	0.020
Pb	6.7E-05	2	105	0.0071	0.031
Hg	3.7E-05	2	105	0.0039	0.017
Se	2.4E-04	2	105	0.025	0.11
Sb	7.2E-05	2	105	0.0076	0.033
Grand Total HAPs (c)				14.59	63.92

References

1. Data is the average of Mills C, J, K and M for NDCE Recovery Furnaces studied in the NCASI MACT Sampling Program, pg. 68.
2. Data is from NCASI Bulletin No. 650, Tables 11B and 11E, for NDCE Recovery Furnaces with dry botton ESP were conversion factors of 6000 Btu/lb solids and 3000 lb solids/Ton Pulp were used.

Footnotes:

(a) Activity factor is based on maximum allowable BLS rate permited for the No. 4 Recovery Boiler

(b) For sumary calculations organic species below quantitation limit values were included at 1/2 the quantitation limit.

(c) For summation totals Cr+6 emissions were included in the Cr value.

Table 2. Potential HAP Emissions from Georgia-Pacific Corporation Palatka Operations for No. 4 Smelt Dissolving Ta

Pollutant	Emission Facto	Ref.	Activety Factor	Hourly Emissions	Annual Emissions
	lb/TBLS (b)		TBLS/hr (a)	lb/hr	TPY
acetaldehyde	5.8E-04	1	105	0.060	0.26
methanol	3.0E-01	1	105	31.64	138.58
methylene chloride	< 5.1E-04	1	105	0.027	0.12
methyl ethyl ketone	8.1E-04	1	105	0.085	0.37
chloroform	< 9.5E-04	1	105	0.050	0.22
1,2-dichloroethane	< 2.6E-04	1	105	0.014	0.060
1,1,1-trichloroethane	< 2.6E-04	1	105	0.014	0.061
benzene	1.2E-04	1	105	0.013	0.055
carbon tetrachloride	< 1.2E-03	1	105	0.064	0.28
trichloroethylene	2.3E-04	1	105	0.024	0.11
methyl isobutyl ketone	3.5E-04	1	105	0.037	0.16
1,1,2-trichloroethane	2.6E-04	1	105	0.027	0.12
toluene	1.6E-04	1	105	0.017	0.075
tetrachloroethylene	3.0E-04	1	105	0.031	0.14
chlorobenzene	7.7E-05	1	105	0.008	0.035
m,p-xylene	1.3E-04	1	105	0.014	0.062
o-xylene	3.5E-04	1	105	0.037	0.16
xylenes	1.1E-04	1	105	0.011	0.05
styrene	1.5E-04	1	105	0.016	0.071
1,2,4-trichlorobenzene	8.6E-05	1	105	0.0090	0.039
acrolein	2.3E-05	1	105	0.0024	0.011
formaldehyde	3.5E-03	1	105	0.369	1.6
carbon disulfide	3.3E-05	2	105	0.003	0.015
cumene	2.5E-03	2	105	0.263	1.1
ethyl benzene	2.0E-04	2	105	0.021	0.092
n-hexane (H)	1.9E-04	2	105	0.020	0.087
napthalene	5.0E-04	2	105	0.053	0.230
vinyl acetate	4.4E-05	2	105	0.0046	0.020
As	7.0E-07	2	105	7.4E-05	3.2E-04
Be	1.4E-07	2	105	1.5E-05	6.4E-05
Cd	1.1E-07	2	105	1.2E-05	5.1E-05
Cr (total)	1.2E-05	2	105	0.0013	0.0055
Cr+6	3.4E-06	2	105	3.6E-04	0.0016
Mn	3.3E-05	2	105	0.0035	0.015
Ni	4.1E-06	2	105	4.3E-04	0.0019
Pb	1.7E-05	2	105	0.0018	0.0078
Hg	1.8E-07	2	105	1.9E-05	8.3E-05
Se	8.6E-07	2	105	9.0E-05	4.0E-04
Sb	5.6E-06	2	105	5.9E-04	0.0026
P	6.4E-05	2	105	0.0067	0.029
Grand Total HAPs (c)				32.95	144.30

References

1. Data is the average of Mills C, D and K for Smelt Dissolving Tanks with Scrubbers studied in the NCASI MACT Sampling Program, pg. 15.
2. Data is averages from NCASI Bulletin No. 650, Tables 14A and 14B, for smelt dissolving tanks.

Footnotes:

(a) Activity factor is based on maximum allowable BLS rate permited for the No. 4 Recovery Boiler.

(b) For sumary calculations organic species below quantitation limit values were included at 1/2 the quantitation limit.

(c) For summation totals Cr+6 emissions were included in the Cr value.

Table 3. Potential HAP Emissions from Georgia-Pacific Corporation Palatka Operations for No. 4 Lime Kiln

Pollutant	Emission Factor	Reference	Activety Factor	Hourly Emissions	Annual Emissions
	lb/TCaO (b)		TCaO/hr (a)	lb/hr	TPY
acetaldehyde	1.4E-02	1	19.44	0.28	1.23
methanol	9.3E-02	1	19.44	1.81	7.95
methylene chloride	< 3.4E-03	1	19.44	0.033	0.14
methyl ethyl ketone	2.0E-03	1	19.44	0.039	0.17
n-hexane (H)	< 4.1E-04	1	19.44	0.004	0.018
chloroform	< 5.6E-03	1	19.44	0.055	0.24
1,2-dichloroethane	< 2.2E-03	1	19.44	0.021	0.092
1,1,1-trichloroethane	< 2.2E-03	1	19.44	0.021	0.093
benzene	9.4E-04	1	19.44	0.018	0.080
carbon tetrachloride	< 1.0E-02	1	19.44	0.10	0.43
trichloroethylene	< 2.2E-03	1	19.44	0.021	0.092
methyl isobutyl ketone	5.9E-04	1	19.44	0.011	0.050
1,1,2-trichloroethane	< 2.2E-03	1	19.44	0.021	0.093
toluene	2.4E-03	1	19.44	0.047	0.20
tetrachloroethylene	2.1E-03	1	19.44	0.040	0.18
chlorobenzene	< 6.1E-04	1	19.44	0.0060	0.026
m,p-xylene	1.5E-03	1	19.44	0.029	0.13
o-xylene	9.3E-04	1	19.44	0.018	0.079
styrene	5.5E-04	1	19.44	0.011	0.047
1,2,4-trichlorobenzene	9.9E-03	1	19.44	0.19	0.84
acrolein	8.1E-04	1	19.44	0.016	0.069
formaldehyde	5.6E-03	1	19.44	0.11	0.48
carbon disulfide	4.4E-03	2	19.44	0.086	0.37
napthalene	2.0E-02	2	19.44	0.39	1.70
PAH	4.8E-03	2	19.44	0.093	0.41
As	5.0E-04	2	19.44	0.010	0.043
Be	1.0E-05	2	19.44	1.9E-04	8.5E-04
Cd	6.5E-05	2	19.44	0.0013	0.0055
Cr (total)	6.3E-04	2	19.44	0.012	0.054
Cr+6	7.6E-05	2	19.44	0.0015	0.0065
Mn	3.5E-04	2	19.44	0.0068	0.030
Ni	5.1E-04	2	19.44	0.010	0.043
Pb	6.3E-04	2	19.44	0.012	0.054
Hg	5.0E-07	2	19.44	9.7E-06	4.3E-05
Se	5.0E-04	2	19.44	0.010	0.043
Sb	3.2E-04	2	19.44	0.0062	0.027
Grand Total HAPs (c)				3.54	15.51

References

1. Data is the average of Mills J, F K and L for Lime Kilns with Scrubbers studied in the NCASI MACT Sampling Program, pg. 14.
2. Data is averages from NCASI Bulletin No. 650, Tables 13A and 13C, for lime kilns with scrubbers.

Footnotes:

(a) Activity factor is based on maximum allowable TCaO rate permited for the No. 4 Lime Kiln.

(b) For sumary calculations organic species below quantitation limit values were included at 1/2 the quantitation limit.

(c) For summation totals Cr+6 emissions were included in the Cr value.

Table 4. Potential HAP Emissions from Georgia-Pacific Corporation Palatka Operations for the Tall Oil Plant

Pollutant	Emission Factor	Ref.	Activity Factor (a)		Hourly Emissions	Annual Emissions
	lb/TTO (b)		TTO/hr 12 hr ave	TTO/hr year	lb/hr	TPY
acetaldehyde	1.2E-02	1	4.58	20020	0.056	0.12
methanol	1.4E+00	1	4.58	20020	6.61	14.44
methylene chloride	< 1.9E-03	1	4.58	20020	0.0044	0.019
methyl ethyl ketone	4.0E-02	1	4.58	20020	0.18	0.40
chloroform	< 3.8E-03	1	4.58	20020	0.0086	0.038
1,2-dichloroethane	< 1.0E-03	1	4.58	20020	0.0024	0.010
1,1,1-trichloroethane	< 1.1E-03	1	4.58	20020	0.0024	0.011
benzene	3.1E-03	1	4.58	20020	0.014	0.031
carbon tetrachloride	< 4.9E-03	1	4.58	20020	0.011	0.049
trichloroethylene	3.0E-03	1	4.58	20020	0.014	0.030
methyl isobutyl ketone	3.6E-03	1	4.58	20020	0.016	0.036
1,1,2-trichloroethane	1.4E-02	1	4.58	20020	0.063	0.14
toluene	2.8E-02	1	4.58	20020	0.13	0.28
tetrachloroethylene	2.0E-02	1	4.58	20020	0.091	0.20
chlorobenzene	2.5E-03	1	4.58	20020	0.012	0.025
m,p-xylene	1.1E-02	1	4.58	20020	0.049	0.11
o-xylene	4.7E-02	1	4.58	20020	0.21	0.47
xylenes	1.7E-03	1	4.58	20020	0.008	0.017
styrene	4.4E-03	1	4.58	20020	0.020	0.044
1,2,4-trichlorobenzene	< 5.9E-04	1	4.58	20020	0.001	0.006
n-hexane	5.1E-02	2	4.58	20020	0.23	0.51
carbon disulfide	2.6E-03	2	4.58	20020	0.012	0.026
cumene	6.7E-02	2	4.58	20020	0.31	0.67
Grand Total HAPs					8.06	17.68

References

1. Data is the average of Mills C and D for Tall Oil Scrubber Outlets studied in the NCASI MACT Sampling Program pg. 26.
2. Data is from NCASI Bulletin No. 650, Tables 15, for Tall Oil Reactor Vents with packed scrubbers, average emission factor.

Footnotes:

(a) Activity factor is based on maximum allowable TTO rate permited for the Tall Oil Plant.

(b) For sumary calculations organic species below quantitation limit values were included at 1/2 the quantitation limit.

Table 5. Potential HAP Short-Term Emissions (lb/hr) from Georgia-Pacific Corporation Palatka Operations

Pollutant	Source			
	rb4	sdt4	top	lk
acetaldehyde	2.14	0.060	0.056	0.28
methanol	6.83	31.64	6.61	1.81
methylene chloride	0.24	0.027	0.0044	0.033
methyl ethyl ketone	0.37	0.085	0.18	0.039
n-hexane	0.015	0.020	0.23	0.004
chloroform	0.36	0.050	0.0086	0.055
1,2-dichloroethane	0.13	0.014	0.0024	0.021
1,1,1-trichloroetha	0.13	0.014	0.0024	0.021
benzene	1.32	0.013	0.014	0.018
carbon tetrachlorid	0.59	0.064	0.011	0.10
trichloroethylene	0.13	0.024	0.014	0.021
methyl isobutyl ket	0.17	0.037	0.016	0.011
1,1,2-trichloroetha	0.13	0.027	0.063	0.021
toluene	0.063	0.017	0.13	0.047
tetrachloroethylene	0.21	0.031	0.091	0.040
chlorobenzene	0.036	0.008	0.012	0.0060
m,p-xylene	0.060	0.014	0.049	0.029
o-xylene	0.055	0.037	0.21	0.018
xylenes	0.25	0.011	0.008	0
styrene	0.10	0.016	0.020	0.011
1,2,4-trichlorobenz	0.058	0.0090	0.001	0.19
acrolein	0.050	0.0024	0	0.016
formaldehyde	1.03	0.369	0	0.11
carbon disulfide	0	0.003	0.012	0.086
cumene	0	0.263	0.31	0.00
ethyl benzene	0	0.021	0	0.00
PAH	0.011	0	0	0.093
napthalene	0.061	0.053	0	0.39
vinyl acetate	0	0.0046	0	0.00
As	0.025	7.4E-05	0	0.010
Be	3.5E-04	1.5E-05	0	1.9E-04
Cd	0.0013	1.2E-05	0	0.0013
Cr	0.0033	0.0013	0	0.012
Cr+6	0.00176	0.00036	0	0.001477
Mn	0.0053	0.0035	0	0.0068
Ni	0.0045	4.3E-04	0	0.010
Pb	0.0071	0.0018	0	0.012
Hg	0.0039	1.9E-05	0	9.7E-06
Se	0.025	9.0E-05	0	0.010
Sb	0.0076	5.9E-04	0	0.0062
P	0.0000	0.0067	0	0
Grand Total HAPs	14.59	32.95	8.06	3.54

Table 6. Maximum 8-Hour HAP Concentrations as Compared with Ambient Reference Concentrations

Pollutant	CAS No.	Concentration ($\mu g/m^3$)	Period Ending	Receptor Location		Ambient Reference Concentration ($\mu g/m^3$)	Meets ARC?
				Distance (m)	Direction (deg)		
1,1,1-trichloroethane	71-55-6	0.02526	86121524	610	180	38200	YES
1,1,2-trichloroethane	79-00-5	0.38605	83110308	457	130	550	YES
1,2-dichloroethane	107-06-2	0.02526	86121524	610	180	400	YES
1,2,4-trichlorobenzene	120-82-1	0.11281	87071416	700	140	370	YES
acetaldehyde	75-07-0	0.35899	83110308	457	130	1800	YES
acrolein	107-02-8	0.00977	87071416	700	140	2.3	YES
arsenic	7440-38-2	0.00599	87071416	700	140	1.6	YES
benzene	71-43-1	0.08887	83110308	457	130	30	YES
beryllium	7440-41-7	0.00011	87071416	700	140	0.02	YES
cadmium	7440-43-9	0.00077	87071416	700	140	0.5	YES
carbon disulfide	75-15-0	0.07259	83110308	457	130	310	YES
carbon tetrachloride	56-23-5	0.11559	86121524	610	180	310	YES
chlorobenzene	108-90-7	0.07479	83110308	457	130	3450	YES
chloroform	67-66-3	0.09027	86121524	610	180	490	YES
chromium	16065-83-	0.00716	87071416	700	140	5	YES
chromium VI	7440-47-3	0.0009	87071416	700	140	0.5	YES
cumene	98-82-8	1.95684	83110308	457	130	2460	YES
ethyl benzene	100-41-4	0.02416	85071716	457	110	4340	YES
formaldehyde	50-00-0	0.42522	85071716	457	110	12.0	YES
lead	7439-92-1	0.00721	87071416	700	140	0.5	YES
manganese	7439-96-5	0.00474	85060216	457	110	50	YES
mercury	7439-97-6	0.00015	86060816	2000	70	0.5	YES
methanol	67-56-1	62.32882	86121524	610	180	2620	YES
methyl ethyl ketone	78-93-3	1.10646	83110308	457	130	5900	YES
methyl isobutyl ketone	108-10-1	0.11479	85041408	533	170	2050	YES
methylene chloride	75-09-2	0.04765	86121524	610	180	1740.0	YES
m,p-xylene	108-38-3	0.29719	83110308	457	130	see xylenes	
napthalene	91-20-3	0.23325	87071416	700	140	520	YES
n-hexane	110-54-3	1.37486	83110308	457	130	1760.0	YES
nickel	7440-02-0	0.00593	87071416	700	140	10	YES
o-xylene	95-47-6	1.26354	83110308	457	130	see xylenes	
PAH		0.05475	87071416	700	140	2	YES
phosphorus	7723-14-0	0.00771	85071716	457	110	1	YES
selenium	7782-49-2	0.00599	87071416	700	140	2	YES
styrene	100-42-5	0.12582	83110308	457	130	2130	YES
tetrachloroethylene	127-18-4	0.55412	83110308	457	130	3390	YES
tin	7440-31-5	0.00372	87071416	700	140	20	YES
toluene	108-88-3	0.7796	83110308	457	130	3770	YES
trichloroethylene	79-01-6	0.09451	85041408	533	170	2690.0	YES
vinyl acetate	108-05-4	0.00529	85071716	457	110	350	YES
xylenes	1330-20-7	0.05235	83110308	457	130	4340.0	YES

Table 7. Maximum 24–Hour HAP Concentrations as Compared with Ambient Reference Concentrations

Pollutant	CAS No.	Concentration (µg/m³)	Period Ending	Receptor Location Distance (m)	Receptor Location Direction (deg)	Ambient Reference Concentration (µg/m³)	Meets ARC?
1,1,1–trichloroethane	71–55–6	0.0189	84011524	610	180	9168	YES
1,1,2–trichloroethane	79–00–5	0.24596	84011524	610	180	132	YES
1,2–dichloroethane	107–06–2	0.0189	84011524	610	180	96	YES
1,2,4–trichlorobenzene	120–82–1	0.04813	86082424	700	130	88.8	YES
acetaldehyde	75–07–0	0.24651	84011524	610	180	432	YES
acrolein	107–02–8	0.00437	86082424	700	130	0.552	YES
arsenic	7440–38–2	0.00253	86082424	700	130	0.48	YES
benzene	71–43–1	0.05982	84011524	610	180	7.2	YES
beryllium	7440–41–7	0.00005	87101124	1100	190	0.0048	YES
cadmium	7440–43–9	0.00032	86082424	700	130	0.12	YES
carbon disulfide	75–15–0	0.04587	84011524	610	180	74.4	YES
carbon tetrachloride	56–23–5	0.08654	84011524	610	180	74.4	YES
chlorobenzene	108–90–7	0.04893	84011524	610	180	828	YES
chloroform	67–66–3	0.06747	84011524	610	180	117.6	YES
chromium	16065–83–	0.0031	86082424	700	130	1.2	YES
chromium VI	7440–47–3	0.00042	87101124	1100	190	0.12	YES
cumene	98–82–8	1.30381	84011524	610	180	590.4	YES
ethyl benzene	100–41–4	0.0152	84011524	610	180	1041.6	YES
formaldehyde	50–00–0	0.26793	84011524	610	180	2.9	YES
lead	7439–92–1	0.00318	86082424	700	130	0.12	YES
manganese	7439–96–5	0.00258	84011524	610	180	12	YES
mercury	7439–97–6	0.0001	83021324	3000	220	0.12	YES
methanol	67–56–1	46.6612	84011524	610	180	628.8	YES
methyl ethyl ketone	78–93–3	0.7083	84011524	610	180	1416	YES
methyl isobutyl ketone	108–10–1	0.08433	84011524	610	180	492	YES
methylene chloride	75–09–2	0.03558	84011524	610	180	417.6	YES
m,p–xylene	108–38–3	0.18633	84011524	610	180	see xylenes	
napthalene	91–20–3	0.10201	86082424	700	130	124.8	YES
n–hexane	110–54–3	0.84058	84011524	610	180	422.4	YES
nickel	7440–02–0	0.00251	86082424	700	130	0.24	YES
o–xylene	95–47–6	0.78115	84011524	610	180	see xylenes	
PAH		0.02275	86082424	700	130	48	YES
phosphorus	7723–14–0	0.00485	84011524	610	180	0.24	YES
selenium	7782–49–2	0.00253	86082424	700	130	0.48	YES
styrene	100–42–5	0.08349	84011524	610	180	517.2	YES
tetrachloroethylene	127–18–4	0.34956	84011524	610	180	813.6	YES
tin	7440–31–5	0.00161	86082424	700	130	4.8	YES
toluene	108–88–3	0.47954	84011524	610	180	904.8	YES
trichloroethylene	79–01–6	0.0678	84011524	610	180	645.6	YES
vinyl acetate	108–05–4	0.00333	84011524	610	180	84	YES
xylenes	1330–20–7	0.0367	84011524	610	180	1041.6	YES

Table 8. Maximum Annual HAP Concentrations as Compared with Ambient Reference Concentrations

Pollutant	CAS No.	Concentration ($\mu g/m^3$)	Period Ending	Receptor Location Distance (m)	Receptor Location Direction (deg)	Ambient Reference Concentration ($\mu g/m^3$)	Meets ARC?
1,1,1-trichloroethane	71-55-6	0.00179	87123124	457	110	NA	
1,1,2-trichloroethane	79-00-5	0.0194	87123124	457	120	0.063	YES
1,2-dichloroethane	107-06-2	0.00179	87123124	457	110	0.038	YES
1,2,4-trichlorobenzene	120-82-1	0.00447	87123124	700	130	20	YES
acetaldehyde	75-07-0	0.02241	87123124	457	120	0.45	YES
acrolein	107-02-8	0.00043	87123124	700	130	0.02	YES
arsenic	7440-38-2	0.00023	87123124	1100	130	0.00023	YES
benzene	71-43-1	0.00488	87123124	457	120	0.12	YES
beryllium	7440-41-7	0	87123124	1100	130	0.00042	YES
cadmium	7440-43-9	0.00003	87123124	1100	130	0.00056	YES
carbon disulfide	75-15-0	0.00458	87123124	457	120	200	YES
carbon tetrachloride	56-23-5	0.00825	87123124	457	110	0.067	YES
chlorobenzene	108-90-7	0.00387	87123124	457	120	NA	
chloroform	67-66-3	0.00614	87123124	457	110	0.043	YES
chromium	16065-83-	0.0003	87123124	700	130	NA	
chromium VI	7440-47-3	0.00004	87123124	700	130	0.000083	YES
cumene	98-82-8	0.10109	87123124	457	120	1	YES
ethyl benzene	100-41-4	0.0014	87123124	457	110	1000	YES
formaldehyde	50-00-0	0.02612	87123124	457	110	0.077	YES
lead	7439-92-1	0.00032	87123124	700	130	0.09	YES
manganese	7439-96-5	0.00032	87123124	457	110	0.4	YES
mercury	7439-97-6	0	87123124	3500	230	0.3	YES
methanol	67-56-1	3.73143	87123124	457	110	NA	
methyl ethyl ketone	78-93-3	0.05559	87123124	457	120	80	YES
methyl isobutyl ketone	108-10-1	0.0066	87123124	457	120	NA	
methylene chloride	75-09-2	0.0033	87123124	457	110	2.1	YES
m,p-xylene	108-38-3	0.01487	87123124	457	120	NA	
napthalene	91-20-3	0.01006	87123124	700	130	NA	
n-hexane	110-54-3	0.06574	87123124	457	120	200	YES
nickel	7440-02-0	0.00023	87123124	1100	130	0.0042	YES
o-xylene	95-47-6	0.0612	87123124	457	120	NA	
PAH		0.002	87123124	1100	130	NA	
phosphorus	7723-14-0	0.00045	87123124	457	110	NA	
selenium	7782-49-2	0.00023	87123124	1100	130	NA	
styrene	100-42-5	0.00661	87123124	457	120	NA	
tetrachloroethylene	127-18-4	0.02771	87123124	457	120	NA	
tin	7440-31-5	0.00015	87123124	700	130	NA	
toluene	108-88-3	0.03801	87123124	457	120	300	YES
trichloroethylene	79-01-6	0.00547	87123124	457	120	NA	
vinyl acetate	108-05-4	0.00031	87123124	457	110	200	YES
xylenes	1330-20-7	0.00284	87123124	457	120	80	YES

NA = Not Applicable

Table 9. Maximum Predicted Methanol Concentrations for the ISCST2 Postprocessor Validation Test

Averaging Time	Concentration ($\mu g/m^3$)	Receptor Location[a] Direction (degrees)	Receptor Location[a] Distance (m)	Period Ending (YYMMDDHH)
Annual	3.19836	120.	457.	83123124
	2.91626	110.	457.	84123124
	2.84912	110.	457.	85123124
	2.79472	110.	457.	86123124
	3.73143	110.	457.	87123124
24-Hour[a]	24.62090	170.	533.	83011024
	46.66121	180.	610.	84011524
	24.13634	130.	457.	85121924
	37.01173	180.	610.	86121524
	30.45360	120.	457.	87102724
8-Hour[a]	59.06980	170.	533.	83121908
	56.95271	170.	533.	84011308
	59.03494	170.	533.	85041408
	62.32882	180.	610.	86121524
	53.59153	120.	457.	87020408

Note: YY=Year, MM=Month, DD=Day, HH=Hour

[b] All short-term concentrations indicate highest concentrations.

United States Department of the Interior

FISH AND WILDLIFE SERVICE
1875 Century Boulevard
Atlanta, Georgia 30345

APR 18 1995

IN REPLY REFER TO:

Mr. Clair H. Fancy
Chief, Bureau of Air Regulation
Department of Environmental Protection
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399

Dear Mr. Fancy:

We have reviewed the information forwarded by your department regarding Georgia-Pacific Corporation's proposed modification of the digester system and recovery boiler at its Kraft pulp mill in Palatka, Florida. The facility is located approximately 111 km southeast of Okefenokee Wilderness Area (WA) and 150 km south of Wolf Island WA, Class I air quality areas, administered by the Fish and Wildlife Service (Service).

Best Available Control Technology

The Best Available Control Technology (BACT) analysis appears to be complete except for the discussion regarding control of total reduced sulfur (TRS) emissions from the reboiler. Data from the EPA's RACT/BACT/LAER clearinghouse indicate that virtually every BACT determination for reboilers has required that an emission level of 5 ppm TRS be met. This includes all of the determinations in the historical data base. Georgia-Pacific proposes a BACT emission rate of 11.4 ppm. The application indicates that continuous emission monitors (CEM) at Georgia-Pacific's reboiler have recorded an average rate of 2.4 ppm, with a maximum rate of 11.2 ppm. Prior to determining BACT, we request that you and Georgia-Pacific review the CEM data to determine if a BACT level lower than 11.4 is appropriate. The data should be examined to determine how often the high values occur, if they are avoidable, or how they can be minimized. At the very least, the BACT determination should require that 5 ppm be met on an average basis, perhaps with an allowance for higher values, according to what is discovered during examination of the CEM data.

Air Quality Analysis

Georgia-Pacific's air quality impact analysis is complete except for a regional haze visibility analysis. In this case, because of the distance from the Class I areas and Georgia-Pacific's relatively small amounts of visibility reducing emissions, we do

not believe that a regional haze analysis is required. However, future applicants should consult with us on the need to perform a regional haze visibility analysis. Guidance for such an analysis is found in the EPA document Interagency Workgroup on Air Quality Modeling (IWAQM) Phase 1 Report: Interim Recommendation for Modeling Long Range Transport and Impacts on Regional Visibility (EPA-454/R-93-015, April 1993). In addition, we can provide technical assistance for the analysis to applicants.

Georgia-Pacific did perform a Level-1 visibility screening analysis for the Okefenokee WA using the VISCREEN visibility screening analysis model, as recommended in EPA's Workbook for Plume Visual Impact Screening and Analysis (EPA 1988). The proposed project passed the Level-1 screening test, and therefore, would have low potential for plume impacts at Okefenokee WA. However, Georgia-Pacific used a background visual range of 40 km. We now have several years of fine particle data from which we have reconstructed a visual range value that more accurately represents conditions at Okefenokee WA. We recommend that future applicants use a visual range of 77 km, the value that represents the 10 percent of days with best visibility at Okefenokee WA. It is Service policy to protect that 10 percent of days with best visibility at Class I areas.

Predicted impacts from the proposed modification were below Service Class I significant impact levels for nitrogen dioxide and PM-10. Therefore, a cumulative increment analysis was not performed.

Air Quality Related Values Analysis

The Air Quality Related Values analysis is complete. Because of the relatively low predicted impacts of cumulative emissions, resources at the two wilderness areas are not expected to be affected.

Thank you for giving us the opportunity to comment on this permit application. We appreciate your cooperation in notifying us of proposed projects with the potential to impact the air quality and related resources of our Class I air quality areas. If you have questions, please contact Ms. Ellen Porter of our Air Quality Branch in Denver at telephone number 303/969-2617.

Sincerely yours,

Noreen K. Clough
Regional Director

CC: A. Hanks
C. Holladay
C. Kitts, NE Dist
J. Harper, EPA
D. Buff, KBN

April 17, 1995

Mr. Al Linero, P.E.
Administrator, New Source Review
Florida Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, FL 32399-2400

RECEIVED
APR 18 1995
Bureau of
Air Regulation

Re: PSD Permit Application
Georgia-Pacific Corporation, Palatka Mill
AC54-266676/PSD-FL-226

Dear Mr. Linero:

This correspondence presents the response to Question 3 contained in the Department's letter dated March 29, 1995, requesting additional information on the above-referenced PSD permit application. On behalf of G-P, response to Question 3 is provided below.

3. The Department requests more justification, including cost data, on any air pollution control option that was eliminated from consideration in the BACT determination. This issue was discussed between G-P and FDEP staff during the March 23 meeting. To clarify further, it is noted that BACT is required only for the Digester System and the No. 4 Recovery Boiler. During the March 23 meeting, additional information was requested in regard to No. 4 Recovery Boiler only. Therefore, additional BACT information is provided below for PM, NO_x, and CO emissions from No. 4 Recovery Boiler.

   PM - FDEP requested that a baghouse be investigated for possible application to the No. 4 Recovery Boiler. There are no known applications of baghouses to recovery boilers. The pulp and paper industry has employed ESP technology on recovery boilers for more than 70 years, and the industry has spent considerable investment in improving the performance of these devices. As shown by the test data from the G-P recovery boiler, very low PM emissions are typically achieved.

   In contrast, baghouse technology has not been applied to recovery boilers. Before a baghouse could be applied on a commercial scale, significant research, engineering, pilot testing and full scale testing would be necessary. Technical considerations would include fire potential, plugging potential, moisture content of the flue gases, bag cleaning mechanism, type of bags to employ, maintenance procedures, etc. Due to the unproven nature of baghouses and lack of commercial demonstration on recovery boilers, this technology is considered to be technically infeasible. It would not be appropriate to replace a well operating ESP on an existing source with an unproven technology.

   NO_x- The Department requested that flue gas recirculation (FGR), selective non-catalytic reduction (SNCR), and selective catalytic reduction (SCR) be investigated further as possible options for NO_x control on No. 4 Recovery Boiler.

   SCR would not be technically feasible for No. 4 Recovery Boiler since the particulate loading is too high at the point where the SCR device would be employed (600°F - 750°F temperature). This point would normally be located between the economizer and the air preheater. Based on AP-42 uncontrolled PM factor for recovery boilers, the PM loading before the ESP on No. 4 Recovery

KBN ENGINEERING AND APPLIED SCIENCES, INC.

6241 Northwest 23rd Street, Suite 500, Gainesville, Florida 32653-1500, 904-336-5600 FAX 904-336-6603
5405 West Cypress Street, Suite 215, Tampa, Florida 33607, 813-287-1717 FAX 813-287-1716
1801 Clint Moore Road, Suite 105, Boca Raton, Florida 33487, 407-994-9910, FAX 407-994-9393
7785 Baymeadows Way, Suite 105, Jacksonville, Florida 32256, 904-739-5600 FAX 904-739-7777
1616 'P' Street N.W., Suite 450, Washington, D.C. 20036, 202-462-1100, FAX 202-462-2270

Boiler would be approximately 16,000 lb/hr, or 9 gr/dscf. Such a loading would immediately cover the catalyst and render it ineffective. As a result, SCR is considered technically infeasible for No. 4 Recovery Boiler.

Both SNCR and FGR will be considered for application to recovery boilers, although neither technology is known to have ever been applied to a recovery boiler. One SNCR vendor, Nalco-Fueltech indicated that SNCR application to a recovery boiler was feasible. As a result, a vendor quote was obtained. Vendor quotes previously obtained for FGR application to a municipal solid waste incinerator were used for the present analysis. A cost analysis for these two technologies applied to No. 4 Recovery Boiler are presented in Table A. As shown, the capital cost for SNCR is estimated at $3.7 million, and for FGR is $1.9 million. The total annualized operating cost is $1.7 million for SNCR, and $0.7 million for FGR. In order to determine cost effectiveness, the annual NO_x emissions were based on the average of the three recent stack tests on the recovery boiler, which averaged 109 lb/hr, and assuming 8,760 hr/yr operation. This results in annual uncontrolled NO_x emissions of 477 tons per year (TPY). The resulting cost effectiveness values are over $7,000 per ton NO_x removed for both SNCR and FGR. As a result, these technologies are considered economically infeasible.

CO- CO oxidation catalyst systems have not been applied to recovery boilers. For the same reasons that SNCR for NO_x control is not feasible for a recovery boiler, an oxidation catalyst for CO is not feasible for a recovery boiler. Catalyst systems require elevated temperatures (>500°F) and low PM loadings (<0.1 lb/MMBtu). There is no point along the flue gas flow for No. 4 Recovery Boiler where this condition is met. As a result, a CO oxidation catalyst is considered technically infeasible for the G-P recovery boiler.

Also included with this correspondence are copies of the stack test data for No. 4 Recovery Boiler, and copies of the current operating permits for affected units. These copies were inadvertently left out of the April 13, 1995, submittal.

Thank you for consideration of this information. Please call if you have any questions.

Sincerely,

David A. Buff

David A. Buff, P.E.
Principal Engineer
Florida P.E. #19011

Enclosures

DB/ehj

cc: Myra Carpenter
Traylor Champion
File (2)

cc: Willard Hanks
Cleve Holladay
Chris Kirts, NE
EPA
NPS

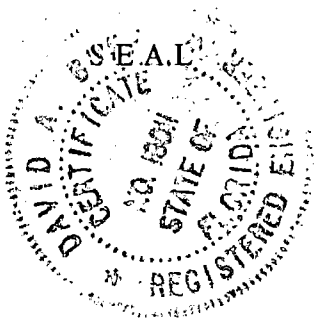

Table A. Estimated Costs for SNCR and FGR application to No. 4 Recovery Boiler at G-P, Palatka

Cost Items	Cost Factors	SNCR	FGR
DIRECT CAPITAL COSTS (DCC):			
(1) Purchased Equipment Costs			
(a) Basic Equipment/Services or	Based on Vendor Quotes (a)	–	$800,000
NOxOUT System Components	Based on Vendor Quotes (a)	$1,207,000	–
(b) Reductant Tank & Auxiliary System	Included	Included	–
(c) Instrumentation & Controls (b)	0.1 x (1a .. 1b)	$120,700	$80,000
(d) Structural Support	0.1 x (1a .. 1b)	$120,700	$80,000
(e) Freight (b)	0.05 x (1a .. 1d)	$72,420	$48,000
(f) Sales Tax (Florida)	0.06 x (1a .. 1d)	$86,904	$57,600
(g) Subtotal	(1a .. 1f)	$1,607,724	$1,065,600
(2) Direct Installation (b)	Based on Vendor Quote for SNCR	$300,000	
	0.30 for FGR x (1g)		$319,680
Total DCC:	(1g) + (2)	$1,907,724	$1,385,280
INDIRECT CAPITAL COST (ICC):			
(3) Indirect Installation Costs			
(a) Technology License Fee	Estimated from Vendor Quote	included	–
(b) Engineering & Supervision (b)	0.2 for SNCR or 0.1 for FGR x (DCC)	$381,545	$138,528
(c) Construction & Field Expenses (b)	0.2 for SNCR or 0.1 for FGR x (DCC)	$381,545	$138,528
(d) Construction Contractor Fee (b)	0.1 for SNCR or 0.05 for FGR x (DCC)	$190,772	$69,264
(e) Contingencies	0.4 for SNCR or 0.1 for FGR x (DCC)	$763,090	$138,528
(4) Other Indirect Costs			
(a) Start-up & Testing (b)	0.03 for FGR x (DCC)	included	$41,558
(b) Model Study	Estimated from Vendor Quote	N/A	–
(c) Working Capital	30-day DOC (c)	$64,620	$21,891
Total ICC	(3)+(4)	$1,781,572	$548,298
TOTAL CAPITAL INVESTMENT (TCI):	DCC + ICC	$3,689,296	$1,933,578
DIRECT OPERATING COST (DOC):			
(1) Operating Labor			
Operator	$22 /hr @ 8760 hr/yr	$192,720	–
Supervisor (b)	15% of operator cost	$28,908	–
(2) Maintenance (b)	5% of total DCC	$95,386	$69,264
(3) Utilities			
(a) Reductant Injection System	$85 /MW-hr @ 219 MWhr	$18,615	–
(b) Air Handling Fan	$85 /MW-hr @ 2276 MWhr	–	$193,429
(c) Dilution Water for SNCR	$0.27 /1000 gal 12.8 gpm	$1,816	
(4) Chemicals (Reductant)	$1.00 per gal@ 438,000 gal /yr	$438,000	–
Total DOC		$775,446	$262,693
INDIRECT OPERATING COST (IOC):			
(5) Overhead (b)	60% of operating labor & maintenance	$190,209	$41,558
(6) Property Taxes (b)	1% of TCI	$36,893	$19,336
(7) Insurance (b)	1% of TCI	$36,893	$19,336
(8) Administration (b)	2% of TCI	$73,786	$38,672
Total IOC	(5)+(6)+(7)+(8)	$337,780	$118,902
CAPITAL RECOVERY COST (CRC)	CFR of 0.1627 x TCI	$600,248	$314,593
ANNUALIZED COST (AC)	DOC + IOC + CRC	$1,713,475	$696,188
UNCONTROLLED NOx EMISSIONS:	477 TPY based on actual average emissions	477	477
TOTAL NOx REMOVAL	50% for SNCR or	239	
	20% for FGR		95
COST EFFECTIVENESS	$ per ton of NOx removed	$7,184	$7,298

Notes:

(a) Typical existing boiler 1,278 MMBtu/hr unit with exhaust flow rate of 430,000 acfm.

(b) Cost factors are based on EPA's OAQPS Control Cost Manual, Fourth Edition.

(c) 30 days of direct operating costs (i.e., total DOC / 12 months).

COPIES OF OPERATING PERMITS

Florida Department of Environmental Regulation

Northeast District • Suite B200, 7825 Baymeadows Way • Jacksonville, Florida 32256-7577

Lawton Chiles, Governor Carol M. Browner, Secretary

PERMITTEE:	I.D. Number:	31JAX54000518&19
Georgia-Pacific Corporation	Permit/Certification Number:	A054-209650
Post Office Box 919	Date of Issue:	07-30-92
Palatka, Florida 32178-0919	Expiration Date:	June 10, 1997
	County:	Putnam
	Latitude/Longitude:	29°41'00"N; 81°40'45"W
	Project:	No. 4 Recovery Boiler No. 4 Smelt Dissolving Tanks
	UTM:	E-(17)434.0; N-3283.4

This permit is issued under the provisions of Chapter(s) 403, Florida Statutes, and Florida Administrative Code Rule(s) 17-2 and 17-4. The above named permittee is hereby authorized perform the work or operate the facility shown on the application and approved drawing(s), plans, and other documents attached hereto or on file with the department and made a part hereof and specifically described as follows:

For the operation of:

Pt. #

18 No. 4 Recovery Boiler (RB) which is low odor design with an electrostatic precipitator for particulate matter emissions control; and

19 No. 4 Smelt Dissolving Tanks (SDTs); two tanks, each vented through a Venturi scrubber to control particulate matter emissions.

Located north of S.R. 216, west of U.S. 17, north of Palatka, Putnam County, Florida.

In accordance with:

RB construction permit #AC54-192550 issued 06-07-91
SDTs construction permit #AC54-193841 issued 06-07-91
RB Certificate of Completion of Construction received 03-04-92
SDTs Certificate of Completion of Construction received 03-04-92
Additional information received 04-01-92
Additional information received 05-06-92

Administration 448-4300
Air 448-4310
Waste Management 448-4320
Water Facilities 448-4330
Water Management 448-4340
FAX 448-4366

PERMITTEE:	I.D. Number:	31JAX54000518&19
Georgia-Pacific Corporation	Permit/Certification Number:	A054-209650
Post Office Box 919	Date of Issue:	
Palatka, Florida 32178-0919	Expiration Date:	June 10, 1997

SPECIFIC CONDITIONS:

1. The maximum input rate/production rate (operating rate) is SEE BELOW and shall not be exceeded without prior approval.

Rate	Material	To
210,000 lbs/hr[1]	BLS[2]	RB
85,890 lbs/hr	Smelt[3]	SDTs
5,400 gals/hr	No. 6 fuel oil[4]	RB

[1]Basis: 323,077 lbs/hr black liquor at 65% solids
[2]BLS - black liquor solids
[3]Smelt (green liquor solids)
[4]Sulfur content shall not exceed 2.5% by wt.

2. Testing of emissions must be performed at an operating rate of at least 90% of the rate in Specific Condition (SC) No. 1, or SC No. 3 will become effective.

3. The operating rate shall not exceed 110% of the operating rate during the most recent test except for testing purposes, but shall not exceed that rate in SC No. 1. After testing at an operating rate greater than 110% of the last test operating rate, the operating rate shall not exceed 110% of the last (submitted) test operating rate until the test report at the higher rate has been reviewed and accepted by the Department.

4. The permitted maximum allowable emission rate for each pollutant is as follows:

Pollutant	FAC Rule	lbs/hr	TPY
From RB:			
PM/PM_{10}[1]	---[2]	83.2[3]	364.4[4]
NO_x[5]	---[2]	210.6[6]	922.4[4]
CO[7]	---[2]	1025.4[8]	2245.6[4]
VOC[9]	---[2]	54.6[10]	239.1[4]
TRS[11]	---12	17.8[13]	78.0[4]
SO_2[14]	---12	109.9[15]	481.4[4]
SAM[16]	---12	3.2[17]	14.2[4]
VE[18]	---[2]	<20% opacity	
odor	17-2.620(2)	none objectionable off plant property	
From SDTs:			
PM/PM_{10}	---[19]	12.6[20]	55.2[4]
TRS	17-2.600(4)(c)4.a.	3.4[21]	14.9[4]
VE	---[19]	<20% opacity	
odor	17-2.620(2)	none objectionable off plant property	

SPECIFIC CONDITIONS:

SC No. 4 Cont'd.

[1]PM - particulate matter
[1]PM_{10} - PM less than or equal to 10 micrometers (see def. 151)
[2]Pursuant to BACT
[3]Basis: 0.033 gr/DSCF, corrected to 8% O_2
[4]Hours of operation are limited to 24 H/D, 7 D/W, 52 W/Y (8760 H/Y) and shall be recorded.
[5]NO_x - Nitrogen oxides
[6]Basis: 100 ppmvd, corrected to 8% O_2, 24-hr and annual avg.
[7]CO - carbon monoxide
[8]Basis: 800 ppmvd, corrected to 8% O_2, 1-hr level maximum.
TPY based on annual avg. of 512.7 lbs/hr (400 ppmvd, corrected to 8% O_2)
[9]VOC - volatile organic compounds
[10]Basis: 0.52 lb/ton BLS
[11]TRS - Total reduced sulfur
[12]From CP #AC54-192550
[13]Basis: 11.4 ppmvd, corrected to 8% O_2, as hydrogen sulfide (H_2S)
[14]SO_2 - sulfur dioxide
[15]Basis: in CP #AC54-192550, SC #5
[16]SAM - sulfuric acid mist
[17]Basis: 0.81 ppm in stack gases (NCASI Technical Bulletin No. 106) and 427,560 ACFM
[18]VE - visible emissions
[19]From CP #AC54-193841
[20]Basis: 0.12 lb/ton BLS to #4 RB, which is based on BACT
[21]Basis: 0.048 lb/3000 lbs BLS (as H_2S - hydrogen sulfide)

5. Test the emission for the following pollutant(s) at the interval(s) indicated, notify the Department 14 days prior to testing, and submit the test report documentation to the Department within 45 days after completion of the testing:

Pollutant	Interval	Test Method[1]
From RB:		
PM/PM_{10}	12 months from 03-10-92	EPA 5
NO_x	12 months from 03-10-92	EPA 7E
CO	12 months from 03-10-92	EPA 10
VOC	12 months from 03-10-92	EPA 25
TRS[2]	12 months from 03-10-92	EPA 16 or 16A
SO_2	12 months from 03-10-92	EPA 8
SAM	12 months from 03-10-92	EPA 8
VE	12 months from 03-10-92	EPA 9
From SDTs:		
PM/PM_{10}	12 months from 03-12-92	EPA 5
TRS[3]	12 months from 03-12-92	EPA 16 or 16A
VE	see SC #9	---

PERMITTEE:	I.D. Number:	31JAX54000518&19
Georgia-Pacific Corporation	Permit/Certification Number:	AO54-209650
Post Office Box 919	Date of Issue:	
Palatka, Florida 32178-0919	Expiration Date:	June 10, 1997

SPECIFIC CONDITIONS:

SC #5 Cont'd.

[1]From AP #AC54-192550 & CP #AC54-193841
[2]Also, see SC #7
[3]Also, see SC #8

Tests and test reports shall comply with the requirements of Florida Administrative Code Rule 17-2.700(6) and (7), respectively.

6. In each test report, submit the maximum input/production rate at which this source was operated since the most recent test.

7. Recovery Boiler TRS continuous monitoring system (CMS) report shall be postmarked by the 30th day following the end of each calendar quarter and shall include the information required by Florida Administrative Code Rule 17-2.710(4). (now 17-297.500(4))

8. SDT continuous monitoring requirement is met by establishing the surrogate parameter of 119 gpm, minimum 12 hr. avg., of weak wash liquor flow rate to the scrubber per FAC Rule 17-2.710(3)(d). The surrogate parameter flow rate shall be monitored continuously and reported as required by FAC Rule 17-2.710(4).

9. Due to moisture interference, the visible emission limiting standard pursuant to FAC Rule 17-2.610(2) is not applicable and is deferred to FAC Rule 17-2.600(4)(a). (17-296.4(2)(b)) However, if the Department observes visible emissions in excess of 20% opacity pursuant to FAC Rule 17-2.700(6)(b)9, it shall be considered good reason to believe that the applicable mass emission standard is in danger of being violated. The permittee shall be required to run a special compliance test in accordance with FAC Rule 17-2.700(2)(b). Such test shall be conducted within 14 days after the Department has notified the permittee of the applicability of this permit condition. (17-297.401(6)(b)(9))

10. Submit an annual operation report for this source on the form supplied by the Department for each calendar year on or before March 1.

11. Any revision(s) to a permit (and application) must be submitted and approved prior to implementing.

12. The ID No. and ID Name for this source is to be used on all correspondence.

PERMITTEE:	I.D. Number:	31JAX54000518&19
Georgia-Pacific Corporation	Permit/Certification Number:	A054-209650
Post Office Box 919	Date of Issue:	
Palatka, Florida 32178-0919	Expiration Date:	June 10, 1997

SPECIFIC CONDITIONS:

13. Forms for the renewal will be sent 5 months prior to 06-10-97 and the completed forms with test results are due 90 days prior to 06-10-97.

Executed in Jacksonville, Florida.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION

Ernest E. Frey
Director of District Management

FILING AND ACKNOWLEDGEMENT
FILED, on this date, pursuant to S120.52 , Florida Statutes, with the designated Department Clerk, receipt of which is hereby acknowledged. 7/30/97

Clerk Date

CERTIFICATION

PROJECT NAME: Georgia-Pacific Corporation
No. 4 Recovery Boiler
No. 4 Smelt Dissolving Tanks

APPLICATION NO: AO54-209650

I HEREBY CERTIFY that the engineering features described in application No. AO54-209650 provide reasonable assurance of compliance with the applicable provisions of Chapter 403, Florida Statutes, and Florida Administrative Code Title 17. However, I have not evaluated and I do not certify aspects of the proposal outside of my area of expertise (including, but not limited to, the electrical, mechanical, structural, hydrological, and geological features).

Andrew G. Kutyna, P.E.
Name, P.E.

Andrew G. Kutyna
Signature and Seal

7-28-92
Date

Florida Department of Environmental Regulation

Northeast District • Suite B200, 7825 Baymeadows Way • Jacksonville, Florida 32256-7577

Lawton Chiles, Governor — Carol M. Browner, Secretary

PERMITTEE:	I.D. Number:	31JAX54000531
Georgia-Pacific Corporation	Permit/Certification Number:	A054-209098
Post Office Box 919	Date of Issue:	09-18-92
Palatka, Florida 32178-0919	Expiration Date:	June 30, 1997
	County:	Putnam
	Latitude/Longitude:	29°41'00"N; 81°40'45"W
	Project:	Tall Oil Plant
	UTM:	E-(17)434.0; N-3283.4

This permit is issued under the provisions of Chapter(s) 403, Florida Statutes, and Florida Administrative Code Rule(s) 17-2 and 17-4. The above named permittee is hereby authorized perform the work or operate the facility shown on the application and approved drawing(s), plans, and other documents attached hereto or on file with the department and made a part hereof and specifically described as follows:

For the operation of the Tall Oil Plant with the TRS emissions from the reactor controlled by a scrubber.

Located: West of U.S. 17, north of S.R. 216, north of Palatka, Putnam County, Florida.

In accordance with:

Operate permit application dated 01-05-87
Additional information received 03-20-87
Request to revise proposed permit dated 05-29-87
Permit No. AC54-108945 revision dated 01-11-88
Renewal application received 02-25-92
Additional information received 09-01-92

Administration 448-4300
Air 448-4310
Waste Management 448-4320

Water Facilities 448-4330
Water Management 448-4340
FAX 448-4366

SPECIFIC CONDITIONS:

1. The maximum operating rate is SEE BELOW and shall not be exceeded without prior approval.

Rate	Material
55 T/12-hr[1]	CTO[1]
20,020 T/yr[1]	CTO

[1]One cook of 55 tons of crude tall oil (CTO) per 12-hr period per amendment to CP# AC54-108945 dated 01-11-88. Also, yearly max of 20,020 tons of CTO.

2. Testing of emissions must be performed at an operating rate of at least 90% of the rate in Specific Condition (SC) No. 1, or SC No. 3 will become effective.

3. The operating rate shall not exceed 110% of the operating rate during the most recent test except for testing purposes, but shall not exceed that rate in SC No. 1. After testing at an operating rate greater than 110% of the last test operating rate, the operating rate shall not exceed 110% of the last (submitted) test operating rate until the test report at the higher rate has been reviewed and accepted by the Department.

4. The permitted maximum allowable emission rate for each pollutant is as follows:

Pollutant	FAC Rule	Emission Rate lbs/hr	Emission Rate TPY
TRS	17-2.600(4)(c)2.a.	4.23[1]	0.50[1]
Odor	17-2.620(2)	None objectionable off plant property	

[1]Basis: 55 Ton (CTO prod)/12-hr.
0.05 lb TRS/Ton CTO prod as 12-hr average; see 1/11/88 revisions to AC54-108945

Hours of operation are limited to 8760 H/Y and shall be recorded.

5. Test the emission for the following pollutant(s) at the interval(s) indicated, notify the Department 14 days prior to testing, and submit the test report documentation to the Department within 45 days after completion of the testing:

Pollutant	Interval	Test Method[1]
TRS[2]	5 years from 02/15/92[3]	EPA 16 or 16A or 16B

[1]From 17-2.700(1), FAC in Table 700-1.
[2]Surrogate parameter & reporting -- see SCs. 8 & 9
[3]Basis: FAC Rule 17-2.700(2)(a)3.

Tests and test reports shall comply with the requirements of Florida Administrative Code Rule 17-2.700(6) and (7), respectively.

PERMITTEE:	I.D. Number:	31JAX54000531
Georgia-Pacific Corporation	Permit/Certification Number:	A054-209098
Post Office Box 919	Date of Issue:	
Palatka, Florida 32178-0919	Expiration Date:	June 30, 1997

SPECIFIC CONDITIONS:

6. In each test report, submit the maximum input/production rate at which this source was operated since the most recent test.

7. As the surrogate parameter for TRS control, the scrubber liquor outlet flow rate (in GPM) shall be monitored and maintained at 149 GPM or greater during the entire acidulation and neutralization process of each cook. The quality of the scrubber liquor which is "white" liquor shall be maintained at process specifications.

8. A TRS surrogate parameter data report shall be postmarked by the 30th day following the end of each calendar quarter and shall include the information required by Florida Administrative Code Rule 17-2.710(4).

9. Submit an annual operation report for this source on the form supplied by the Department for each calendar year on or before March 1.

10. Any revision(s) to a permit (and application) must be submitted and approved prior to implementing.

11. The ID No. and ID Name for this source is to be used on all correspondence.

12. Forms for the renewal will be sent 5 months prior to 06-30-97 and the completed forms with test results are due 90 days prior to 06-30-97.

Executed in Jacksonville, Florida.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION

Ernest E. Frey, P.E.
Director of District Management

DER Form 17-1.201(5) Effective November 30, 1982

FILING AND ACKNOWLEDGEMENT
FILED, on this date, pursuant to S120.52, Florida Statutes, with the designated Department Clerk, receipt of which is hereby acknowledged.

Clerk

Date

CERTIFICATION

PROJECT NAME: Georgia-Pacific Corporation
Tall Oil Plant

APPLICATION NO: A054-209098

I HEREBY CERTIFY that the engineering features described in application No. A054-209098 provide reasonable assurance of compliance with the applicable provisions of Chapter 403, Florida Statutes, and Florida Administrative Code Title 17. However, I have not evaluated and I do not certify aspects of the proposal outside of my area of expertise (including, but not limited to, the electrical, mechanical, structural, hydrological, and geological features).

Andrew G. Kutyna, P.E.
Name, P.E.

Andrew G. Kutyna
Signature and Seal

9-17-92
Date

Florida Department of Environmental Regulation

Northeast District • Suite 200, 7825 Baymeadows Way • Jacksonville, Florida 32256-7577 • 904-448-4300

Bob Martinez, Governor | Dale Twachtmann, Secretary | John Shearer, Assistant Secretary
Ernest Frey, Deputy Assistant Secretary

PERMITTEE:	I.D. Number:	31JAX54000532
	Permit Number:	A054-166018
	Date of Issue:	01-22-91
Georgia-Pacific Corporation	Expiration Date:	December 31, 1995
Post Office Box 919	County:	Putnam
Palatka, Florida 32078	Latitude/Longitude:	29°41'00"N; 81°40'45"W
	Project:	TRS Incinerator
	UTM:	E-(17)434.0; N-3283.4

This permit is issued under the provisions of Chapter(s) 403, Florida Statutes, and Florida Administrative Code Rule(s) 17-2 and 17-4. The above named permittee is hereby authorized perform the work or operate the facility shown on the application and approved drawing(s), plans, and other documents attached hereto or on file with the department and made a part hereof and specifically described as follows:

For the operation of TRS (Total Reduced Sulfur) incinerator to incinerate the noncondensable gases (NCG) from the following:

Digester System (13 units)
Multiple Effect Evaporation (MEE) System (4 units)
Condensate Stripper System

Located west of U.S. 17; north of S.R. 216, north of Palatka, Putnam County, Florida.

In accordance with:

1. TRS incinerator CP#AC54-142291 issued 04-26-88
2. Digester system CP#AC54-142282 issued 04-26-88
3. MEE system CP#AC54-142283 issued 04-26-88
4. Condensate stripper system CP#AC54-142288 issued 04-26-88
5. CP revisions for (#1-4 above) dated 07-18-88
6. Certificate of Completion of Construction for (#1-4 above) dated 06-08-89
7. CP revisions for (#1-4 above) dated 12-06-89
8. Nos. 10 & 13 digester system CP#AC54-170420 issued 01-26-90
9. CP revisions for (#1-4 above) dated 09-05-90
10. Certificate of Completion of Construction for #8 above dated 09-20-90
11. Additional information for (#1-4 above) received 10-25-90

PERMITTEE:
Georgia-Pacific Corporation
Post Office Box 919
Palatka, Florida 32078

I.D. Number: 31JAX54000532
Permit/Cert: A054-166018
Date of Issue:
Expiration Date: December 31, 1995

SPECIFIC CONDITIONS:

1. The maximum operating rate is shown below and shall not be exceeded without prior approval.

Rate[1]	Material	Unit/System
118 TPH[2,3]	ADUP[4]	From digester
1,850 TPD[5]	ADUP	From digester
259,121 lbs/hr[6,7]	Dry BLS[8]	From MEE
109,500 lbs/hr[9]	Condensate	To condensate stripper
8.0 MMBTU/hr[10]	Fuel[10]	To incinerator

[1]All rates are from the construction permits
#AC54-142282 Digester system
#AC54-142283 Multiple effect evaporator (MEE)
#AC54-142288 Condensate stripper system
#AC54-142291 TRS incinerator
[2]This production rate is for testing and NSPS applicability purposes.
[3]For testing, the operating rate shall be no less than 85% of this rate.
[4]ADUP - air dried unbleached pulp.
[5]This production rate is for PSD purposes and it based on the usage rates of 291,417 lbs/hr dry wood chips; 566,501 lbs/hr of white liquor and 167,078 lbs/hr of liquor to the digester system.
[6]At the concentrator outlet.
[7]Based on nominal input of 259,121 lbs of dry BLS/hr to the pre-evaporator; 40,208 lbs of dry BLS/hr to the No. 1 multiple effect evaporators (MEE); 71,482 lbs of dry BLS/hr to each of the No. 2 and No. 3 MEE; 75,949 lbs of dry BLS/hr to the No. 4 MEE; and 259,121 lbs of dry BLS/hr to the concentrator stage of evaporation.
[8]BLS - black liquor solids
[9]Based on 220 gals of condensate/min. Also, shall not exceed a 24-hr average of 180 gals of condensate/min. (89,700 lbs/hr)
[10]Total heat input firing methanol and natural gas (NG).
Natural gas sulfur content shall not exceed 0.1%.
Natural gas may be fired during periods of startup, shutdown, malfunction and, also, as a supplemental fuel.
NG input rate shall be recorded hourly.

2. Testing of emissions must be performed at an operating rate of at least 90% of the rate in Specific Condition (SC) No. 1, or SC No. 3 will become effective.

3. The operating rate shall not exceed 110% of the operating rate during the most recent test except for testing purposes, but shall not exceed that rate in SC No. 1. After testing at an operating rate greater than 110% of the last test operating rate, the operating rate shall not exceed 110% of the last (submitted) test operating rate until the test report at the higher rate has been reviewed and accepted by the Department.

PERMITTEE:
Georgia-Pacific Corporation
Post Office Box 919
Palatka, Florida 32078

I.D. Number: 31JAX54000532
Permit/Cert: A054-166018
Date of Issue:
Expiration Date: December 31, 1995

SPECIFIC CONDITIONS:

4. The permitted maximum allowable emission rate for each pollutant is as follows:

Pollutant	F.A.C. Rule	lbs/hr	TPY
PM[1]	---[2]	5.5 [2]	24.1 [2,3]
TRS[4,5]	17-2.600(4)(c)6.a.	0.12[2]	0.53[2,3]
SO_2[6]	---[2]	1200[2]	3434[2]
Odor	---[2]	None objectionable[7]	
VE[8]	---[2]	5% opacity, except 20% opacity for 3 mins/hr	

[1]PM - Particulate matter
[2]From CP#AC54-142291
[3]Hours of operation are limited to 8760 hrs/yr and shall be recorded.
[4]TRS - Total reduced sulfur
[5]All TRS gases burned in the TRS incinerator shall be subjected to a minimum temperature of at least 1200° F for at least 0.5 second.
[6]SO_2 - sulfur dioxide
[7]Off plant property
[8]VE - Visible emissions

5. Test the emission for the following pollutant(s) at the interval(s) indicated, notify us 14 days prior to testing, and submit the test report documentation to this office within 45 days after completion of the testing:

Pollutant	Interval	Test Method
PM	5 Years from 01-25-90[1]	EPA 5[1]
TRS[2]	5 Years from 01-25-90[3]	EPA 16 or 16A[1]
SO_2	5 Years from 01-25-90[4]	EPA 6[1]
VE	5 Years from 01-25-90	DER 9[1]

[1]From CP#AC54-142291
[2]For continuous monitoring, recording and reporting requirements (See 7,8 & 10)
[3]From letter dated 04-05-90
[4]Basis: FAC Rule 17-2.700(2)(a)3.

Tests and test reports shall comply with the requirements of Florida Administrative Code Rule 17-2.700(6) and (7), respectively.

PERMITTEE:
Georgia-Pacific Corporation
Post Office Box 919
Palatka, Florida 32078

I.D. Number: 31JAX54000532
Permit/Cert: A054-166018
Date of Issue:
Expiration Date: December 31, 1995

SPECIFIC CONDITIONS:

6. In each test report, submit the maximum input/production rate at which this source was operated since the most recent test.

7. A continuous monitoring system (CMS) shall monitor and record combustion temperature at the point of incineration pursuant to all applicable requirements of 40 CFR 60.284(b)(1).
All monitoring and recording systems shall be regularly calibrated and maintained pursuant to written procedures and schedules in accordance with applicable regulations and accepted industry practice.

8. Excess emissions of TRS from the TRS incinerator shall be reported and evaluated pursuant to FAC Rule 17-2.710(4). For the purposes of this Specific Condition the excess emissions to be reported shall be those defined by 40 CFR 60.284 (c)(3)(ii).

9. All excess emissions from the digester system, the multiple effect evaporation system, the condensate stripper system, the noncondensable gas handling (NCG) system, and the TRS incinerator shall be subject to the applicable requirements of FAC Rules 17-2.240, 17-2.250, 17-2.600(4)(c)1.c., and 17-2.130.

10. A temperature continuous monitoring system (CMS) report shall be postmarked by the 30th day following the end of each calendar quarter and shall include the information required by Florida Administrative Code Rule 17-2.710(4).

11. The TRS incinerator contingency plan to vent through elevated vents is approved with the following requirements:
    1. The venting time shall be as short as possible and limited to required maintenance.
    2. The cumulative venting time shall not exceed 10 days in any annual period unless authorized.
    3. The cumulative venting time shall be in the incinerator temperature CMS quarterly reports (see SC #10).

12. For the purposes of future permits and PSD determinations, the mass emissions of pollutants listed in Table 500-2 and the associated emission changes are:

Pollutant	Pre- Compliance		Post-		Changes	
	lbs/hr[1]	T/Y[2]	lbs/hr[1]	T/Y[2]	lbs/hr[1]	T/Y[2]
Particulate	--	--	2.4	10.7	+2.4	+10.7
TRS[3]	637.5	1824.3	0.1	0.5	-637.4	-1823.8
SO_2	--	--	1200	3433.9	+1200	+3433.9
NOx	--	--	1.5	6.8	+1.5	+6.8
CO	--	--	0.4	1.7	+0.4	+1.7
VOC	--	--	0.1	0.3	+0.1	+0.3

PERMITTEE:
Georgia-Pacific Corporation
Post Office Box 919
Palatka, Florida 32078

I.D. Number: 31JAX54000532
Permit/Cert: A054-166018
Date of Issue:
Expiration Date: December 31, 1995

SPECIFIC CONDITIONS:

SC No. 12 Cont'd.

[1]Based on maximum 3-hour estimate.
[2]Based on maximum daily estimate.
[3]Based on information supplied by the company that the TRS gases emitted by the pre-evaporators and condensate stripper were previously emitted to the air.

13. The Nos. 10 and 13 batch digester systems are subject to all applicable provisions of F.A.C. Chapters 17-2 and 17-4 and 40 CFR (July 1, 1988 version).

14. The emissions from the two new batch digester systems (Nos. 10 and 13), are defined in 40 CFR 60.281(d), shall be collected and transported by the noncondensible gas handling system to the incinerator in accordance with 40 CFR 60.283(a)(1)(iii).

15. Submit an annual operation report for this source on the form supplied by the Department for each calendar year on or before March 1.

16. Any revision(s) to a permit (and application) must be submitted and approved prior to implementing.

17. The ID Number and ID Name for this source is to be used on all correspondences.

18. Forms for the renewal will be sent 5 months prior to 12-31-95 and the completed forms with the compliance report is due 90 days prior to 12-31-95.

Executed in Jacksonville, Florida.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION

Ernest E. Frey, P.E.
Deputy Assistant Secretary

FILING AND ACKNOWLEDGEMENT
FILED, on this date, pursuant to S120.52, Florida Statutes, with the designated Department Clerk, receipt of which is hereby acknowledged.

Clerk

1-22-91
Date

CERTIFICATION

PROJECT NAME: Georgia Pacific Corporation
TRS Incinerator

Application No. A054-166018

I HEREBY CERTIFY that the engineering features described in application No. A054-166018 provide reasonable assurance of compliance with the applicable provisions of Chapter 403, Florida Statutes, and Florida Administrative Code Title 17. However, I have not evaluated and I do not certify aspects of the proposal outside of my area of expertise (including, but not limited to, the electrical, mechanical, structural, hydrological, and geological features).

Andrew G. Kutyna, P.E.
Name, P.E.

Signature and Seal

1-17-9(
Date

Florida Department of Environmental Regulation

Northeast District • Suite B200, 7825 Baymeadows Way • Jacksonville, Florida 32256-7577

Lawton Chiles, Governor

Carol M. Browner, Secretary

	I.D. Number:	31JAX54000517
PERMITTEE:	Permit/Certification Number:	A054-209858
Georgia-Pacific Corporation	Date of Issue:	07-29-92
Post Office Box 919	Expiration Date:	May 31, 1997
Palatka, Florida 32178-0919	County:	Putnam
	Latitude/Longitude:	29°40'51"N; 81°40'54"W
	Project:	No. 4 Lime Kiln
	UTM:	E-(17)434.0; N-3283.4

This permit is issued under the provisions of Chapter(s) 403, Florida Statutes, and Florida Administrative Code Rule(s) 17-2 and 17-4. The above named permittee is hereby authorized perform the work or operate the facility shown on the application and approved drawing(s), plans, and other documents attached hereto or on file with the department and made a part hereof and specifically described as follows:

For the operation of No. 4 Lime Kiln with the particulate matter emissions controlled by a Zurn variable throat venturi scrubber.

Located north of S.R. 216, west of U.S. 17, north of Palatka, Putnam County, Florida.

In accordance with:

Construction permit No. AC54-192551 issued 06-07-91
Certificate of Completion of Construction received 03-09-92
Additional information received 05-06-92

Administration 448-4300
Air 448-4310
Waste Management 448-4320

Water Facilities 448-4330
Water Management 448-4340
FAX 448-4366

PERMITTEE:		I.D. Number:	31JAX54000517
Georgia-Pacific Corporation		Permit/Certification Number:	AO54-209858
Post Office Box 919		Date of Issue:	
Palatka, Florida 32178-0919		Expiration Date:	May 31, 1997

SPECIFIC CONDITIONS:

1. The maximum input rate is SEE BELOW and shall not be exceeded without prior approval.

Rate		Material
62,500 lbs/hr		$CaCO_3$
3,889 lbs/hr		inerts
15,625 lbs/hr		Recycle $CaCO_3$
972 lbs/hr		Recycle inerts
82,986 lbs/hr	Total	$CaCO_3$ and inerts
870[1] gals/hr		#6 fuel oil[2]

[1]See SC #8.
[2]Sulfur content shall not exceed 2.5% by wt.

2. Testing of emissions must be performed at an operating rate of at least 90% of the rate in Specific Condition (SC) No. 1, or SC No. 3 will become effective.

3. The operating rate shall not exceed 110% of the operating rate during the most recent test except for testing purposes, but shall not exceed that rate in SC No. 1. After testing at an operating rate greater than 110% of the last test operating rate, the operating rate shall not exceed 110% of the last (submitted) test operating rate until the test report at the higher rate has been reviewed and accepted by the Department.

4. The permitted maximum allowable emission rate for each pollutant is as follows:

Pollutant	FAC Rule	lbs/hr	TPY
PM/PM_{10}[1]	---	26.0[2,3]	113.9[4,3]
SO_2 [5]	---	10.9[6,3]	47.7[4,3]
TRS [7]	17-2.600(4)(c)5.a.	4.0[8,3]	17.5[4,3]
NO_x [9]	---	50.3[10,3]	223.3[4,3]
CO[11]	---	7.3[12,3]	32.0[4,3]
VOC[13]	---	17.2[14,3]	75.3[4,3]
VE [15]	---	<20% opacity[16,3]	
odor	17-2.620(2)	none objectionable off plant property	

[1]PM - particulate matter
[1]PM_{10} - PM less than or equal to 10 micrometers (see def. 151).

SPECIFIC CONDITIONS:

SC No. 4 Cont'd.

[2]Basis: 0.081 gr/dscf corrected to 10% O_2
[3]From CP #AC54-192551 pursuant to BACT
[4]Hours of operation are limited to 24 H/D, 7 D/W, 52 W/Y (8760 H/Y) and shall be recorded.
[5]SO_2 - Sulfur dioxide
[6]Basis: 0.3 lb. per TADP; 72.9 TADP/hr; 50% eff.
[7]TRS - Total Reduced Sulfur
[8]Basis: 20 ppm, vol., dry, standard condition, 10% O_2 corr., as 12-hr avg.
[9]NO_x - nitrogen oxides
[10]Basis: 290 ppmvd, corrected to 10% O_2
[11]CO - carbon monoxide
[12]Basis: 69 ppmvd, corrected to 10% O_2
[13]VOC - volatile organic compounds
[14]Basis: 185 ppmvd, corrected to 10% O_2
[15]VE - visible emissions
[16]Deferred per CP #AC54-192551 --- see SC #8

5. Test the emission for the following pollutant(s) at the interval(s) indicated, notify the Department 14 days prior to testing, and submit the test report documentation to the Department within 45 days after completion of the testing:

Pollutant	Interval	Test Method[1]
PM/PM_{10}	12 months from 02-05-92	EPA 5
TRS	12 months from 02-05-92	EPA 16 or 16A
SO_2	12 months from 02-05-92	EPA 8
NO_x	12 months from 02-05-92	EPA 7E
CO	12 months from 02-05-92	EPA 10
VOC	12 months from 02-05-92	EPA 25

[1]From CP #AC54-192551

Tests and test reports shall comply with the requirements of Florida Administrative Code Rule 17-2.700(6) and (7), respectively.

6. A TRS continuous monitoring system (CMS) report shall be postmarked by the 30th day following the end of each calendar quarter and shall include the information required by FAC Rules 17-2.710(3) & (4).

7. Unconfined particulate matter emissions shall be controlled by application of dust suppressants, unless an alternative method is requested and approved, to all areas necessary to reasonable control such emissions per Florida Administrative Code Rule 17-2.610(3).

PERMITTEE:	I.D. Number:	31JAX54000517
Georgia-Pacific Corporation	Permit/Certification Number:	A054-209858
Post Office Box 919	Date of Issue:	
Palatka, Florida 32178-0919	Expiration Date:	May 31, 1997

SPECIFIC CONDITIONS:

8. Due to moisture interference, the visible emission limiting standard of "less than 20% opacity", in accordance with BACT, is not applicable. However, if the Department observes visible emissions of 20% opacity pursuant to FAC Rule 17-2.700(6)(b)9, DER Method 9, it shall be considered good reason to believe that the applicable PM/PM_{10} mass emission standard is in danger of being violated and the permittee shall be required to conduct a special PM/PM_{10} mass emissions compliance test in accordance with FAC Rule 17-2.700(2)(b). Such test shall be conducted within 14 days after the Department has notified the permittee of the applicability of this permit condition.

9. In each test report, submit the maximum input/production rate at which this source was operated since the most recent test.

10. Submit an annual operation report for this source on the form supplied by the Department for each calendar year on or before March 1.

11. Any revision(s) to a permit (and application) must be submitted and approved prior to implementing.

12. The ID No. and ID Name for this source is to be used on all correspondence.

13. Forms for the renewal will be sent 5 months prior to 05-31-97 and the completed forms with test results are due 90 days prior to 05-31-97.

Executed in Jacksonville, Florida.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION

Ernest E. Frey, P.E.
Director of District Management

FILING AND ACKNOWLEDGEMENT
FILED, on this date, pursuant to S120.52 , Florida Statutes, with the designated Department Clerk, receipt of which is hereby acknowledged.

Clerk

Date

CERTIFICATION

PROJECT NAME: Georgia-Pacific Corporation
No. 4 Lime Kiln

APPLICATION NO: A054-209858

I HEREBY CERTIFY that the engineering features described in application No. A054-209858 provide reasonable assurance of compliance with the applicable provisions of Chapter 403, Florida Statutes, and Florida Administrative Code Title 17. However, I have not evaluated and I do not certify aspects of the proposal outside of my area of expertise (including, but not limited to, the electrical, mechanical, structural, hydrological, and geological features).

Andrew G. Kutyna, P.E.
Name, P.E.

Signature and Seal

7-28-92
Date

COPIES OF STACK TESTS

WESTON Work Order No. 00414-016-006

NO. 4 RECOVERY FURNACE, NO. 4 SMELT DISSOLVING TANK VENTS AND NO. 4 LIME KILN EMISSION TEST REPORT GEORGIA-PACIFIC CORPORATION PALATKA, FLORIDA FEBRUARY 1994

Prepared For:

GEORGIA-PACIFIC CORPORATION
HIGHWAY 216
PALATKA, FL 32177

APPROVED FOR TRANSMITTAL
MARCH 1994

Prepared By:

Roy F. Weston, Inc.
1635 Pumphrey Avenue
Auburn, AL 36830

SECTION 1

INTRODUCTION

Roy F. Weston, Inc. (WESTON®) was retained by Georgia-Pacific Corporation to conduct emission testing as outlined in Table 1-1. The purpose of the testing was to demonstrate compliance with Florida Department of Environmental Regulation (DER) permit limitations.

Table 1-1

Summary of Emission Testing Parameters

Source	Parameter						
	Particulate	SO_2	NO_x	CO	VOC	TRS	H_2SO_4
No. 4 Recovery Furnace	X	X	X	X	X	X	X
No. 4 Smelt Dissolving Tank Vents	X					X	
No. 4 Lime Kiln	X	X	X	X	X	X	

WESTON performed the emission testing during 15-17 February 1994 with a test team comprised of Mr. Rodney Padgett, Mr. Mike Chadwick, Mr. Wayne Roberts, Mr. Jack Short, and Mr. Jeff Hollingsworth. Mr. Greg Sims was the WESTON Project Manager and Mr. David Elam served as the Project Director. Appendix A includes copies of personnel professional profiles. Mr. James Norwood of Georgia-Pacific Corporation coordinated the testing with mill operations and served as WESTON's technical contact throughout the effort. Mr. Stan Mazur of the Florida DER was present during testing.

Section 2 of this report presents the results of the emission testing conducted by WESTON and opacity testing conducted by Georgia-Pacific personnel. Section 3 describes testing procedures and provides guidelines for data interpretation. Field and laboratory data, calculations, and general project information are provided in the appendices.

SECTION 2

RESULTS AND DISCUSSION

Table 2-1 summarizes the results of emission testing performed at the Georgia-Pacific Corporation mill in Palatka, Florida. The results are compared to Florida DER permit limitations. The following subsections provide detailed results of each aspect of the testing effort.

Table 2-1

Summary of Emission Test Results

	Mean Test Value	Permit Limit
No. 4 Recovery Furnace		
Particulate, gr/dscf[a]	0.007	0.033
Particulate lb/hr	14.4	83.2
Sulfur Dioxide, lb/hr	<9.3	109.9
Sulfuric Acid Mist, lb/hr	<0.72	3.24
Nitrogen Oxides, ppmvd[a]	60	100
Nitrogen Oxides, lb/hr	105	210.6
Carbon Monoxide, lb/hr	566	1025.4
Total Reduced Sulfur, ppmvd[a]	2.3	11.4
Total Reduced Sulfur[b], lb/hr	3.0	17.8
Volatile Organic Compounds[c], lb/hr	<1.1	54.6
Volatile Organic Compounds[c], lb/ton BLS[d]	<0.01	0.52
Opacity, %	2	20
No. 4 Smelt Dissolving Tank Vent		
Particulate, lb/hr	8.5	12.6
Particulate, lb/ton BLS	0.09	0.12
Total Reduced Sulfur, lb/hr[b]	2.1	3.4
Total Reduced Sulfur, lb/3000 lb BLS[d]	0.032	0.048
No. 4 Lime Kiln		
Particulate, gr/dscf[e]	0.040	0.081
Particulate lb/hr	15.3	26
Sulfur Dioxide, lb/hr	<1.7	10.9
Nitrogen Oxides, ppmvd[e]	134	290
Nitrogen Oxides, lb/hr	42.4	50.3
Carbon Monoxide, ppmvd[e]	16	69
Carbon Monoxide, lb/hr	3.1	7.3
Total Reduced Sulfur, ppmvd[e]	<6	20
Total Reduced Sulfur[b], lb/hr	<1.4	4.0
Volatile Organic Compounds, ppmvd[e]	<15	185
Volatile Organic Compounds[c], lb/hr	<0.9	17.2

[a]Corrected to 8% O_2.
[b]As H_2S.
[c]As carbon.
[d]Black liquor solids.
[e]Corrected to 10% O_2.

2.1 NO. 4 RECOVERY FURNACE

Tables 2-2 through 2-5 summarize the results of the emission testing performed on 15 February 1994 on the No. 4 Recovery Furnace. Field and laboratory data are provided in Appendices B and E, respectively. Sample calculations are presented in Appendix F.

Table 2-2

Particulate Emission Data - No. 4 Recovery Furnace

	Run 1	Run 2	Run 3	Mean
Date	2/15/94	2/15/94	2/15/94	----
Time Began	1100	1249	1435	----
Time Ended	1210	1356	1544	----
Stack Gas				
Temperature, °F	404	412	415	410
Velocity, ft/sec	51.3	51.0	51.0	51.1
Moisture, %	29.4	27.0	26.6	27.7
CO_2 Concentration, %	14.8	15.3	14.5	14.9
O_2 Concentration, %	4.2	3.8	4.5	4.2
Volumetric Flow Rate				
At Stack Conditions, x 10^5 ft^3/min	4.19	4.17	4.16	4.17
At Standard Conditions[a], x 10^5 ft^3/min	1.83	1.86	1.87	1.85
Particulate				
Isokinetic Sampling Rate, %	100	95	97	97
Concentration, gr/dscf[b]	0.007	0.006	0.007	0.007
Emission Rate, lb/hr	15.0	13.6	14.7	14.4
Permit Limit,				
gr/dscf	----	----	----	0.033
lb/hr	----	----	----	83.2

[a]68°F, 29.92 in. Hg.
[b]Corrected to 8% O_2.

Table 2-3

SO_2, NO_x, CO, and VOC Emission Data - No. 4 Recovery Furnace

	Run 1[a]	Run 2	Run 3	Mean
Date	2/15/94	2/15/94	2/15/94	----
Time Began	1513	1646	1801	----
Time Ended	1613	1746	1901	----
Stack Gas				
Temperature, °F	415	416	415	415
Velocity, ft/sec	51.0	51.1	51.1	51.1
Moisture[b], %	26.6	27.7	27.7	27.3
CO_2 Concentration, %	14.5	14.8	14.7	14.7
O_2 Concentration, %	4.5	4.2	4.3	4.3
Volumetric Flow Rate				
At Stack Conditions, x 10^5 ft^3/min	4.16	4.18	4.17	4.17
At Standard Conditions[c], x 10^5 ft^3/min	1.87	1.85	1.86	1.86
Sulfur Dioxide				
Concentration[d], ppmvd	<5	<5	<5	<5
Emission Rate, lb/hr	<9.3	<9.2	<9.2	<9.3
Permit Limit, lb/hr	----	----	----	109.9
Nitrogen Oxides				
Concentration, ppmvd @ 8% O_2	59	58	62	60
Emission Rate, lb/hr	104	101	109	105
Permit Limit, ppmvd	----	----	----	100
Permit Limit, lb/hr	----	----	----	210.6
Carbon Monoxide				
Concentration, ppmvd @ 8% O_2	440	756	404	533
Emission Rate, lb/hr	472	798	428	566
Permit Limit, lb/hr	----	----	----	1025.4
Volatile Organic Compounds, as Carbon				
Concentration[d], ppmvd	<3	<5	<2	<3
Emission Rate, lb/hr	<1.0	<1.7	<0.7	<1.1
Emission Rate, lb/ton BLS[e]	<0.01	<0.02	<0.01	<0.01
Permit Limit, lb/hr	----	----	----	54.6
Permit Limit, lb/ton BLS[e]	----	----	----	0.52

[a]Stack gas and volumetric flow data from particulate run 3.
[b]Runs 2 and 3 moisture data are average of particulate data.
[c]68°F, 29.92 in. Hg.
[d]Values reported as "less than" because some or all injections yielded concentrations below the detection limit. Instrument detection limits are shown in Appendix B.
[e]Black liquor solids.

Table 2-4

Sulfuric Acid Mist Emission Data - No. 4 Recovery Furnace

	Run 1	Run 2	Run 3	Mean
Date	2/15/94	2/15/94	2/15/94	----
Time Began	1400	1443	1520	----
Time Ended	1430	1513	1550	----
Stack Gas[a]				
Temperature, °F	----	415	----	----
Velocity, ft/sec	----	51.0	----	----
Moisture, %	----	26.6	----	----
CO_2 Concentration, %	----	14.5	----	----
O_2 Concentration, %	----	4.5	----	----
Volumetric Flow Rate[a]				
At Stack Conditions, x 10^5 ft^3/min	----	4.16	----	----
At Standard Conditions[b], x 10^5 ft^3/min	----	1.87	----	----
Sulfuric Acid Mist				
Concentration, mg/dscm	0.83	<1.01	1.24	<1.03
Emission Rate, lb/hr	0.58	<0.71	0.87	<0.72
Permit Limit, lb/hr	----	----	----	3.24

[a]Stack gas and volumetric flow data from particulate run 3.
[b]68°F, 29.92 in. Hg.

Table 2-5

TRS Emission Data - No. 4 Recovery Furnace

	Run 1	Run 2	Run 3	Mean
Date	2/15/94	2/15/94	2/15/94	----
Time Began	0725	1132	1543	----
Time Ended	1025	1432	1843	----
Measured TRS Concentration[a], ppmvd	3.0	4.5	0.9	2.8
Recovery, %	90.3	90.3	95.5	92.0
Oxygen Concentration[b], %	4.2	3.8	4.2	4.1
Oxygen Correction Factor	0.77	0.76	0.77	0.77
Corrected TRS Concentration[c], ppmvd	2.6	3.7	0.7	2.3
TRS Emission Rate[d], lb/hr	3.2	4.8	0.93	3.0
TRS Permit Limit				
ppmvd	----	----	----	11.4
lb/hr	----	----	----	17.8

[a]Only H_2S was detected and included in reduced sulfur total. Instrument lower detection limits for other reduced sulfur compounds are shown in Appendix B.
[b]Oxygen concentrations from Orsat analyses of integrated bags collected during TRS runs.
[c]The reported value is corrected for both recovery and oxygen concentration.
[d]As H_2S.

WESTON Work Order No. 00414-016-004

NO. 4 RECOVERY FURNACE, NO. 4 SMELT DISSOLVING TANK VENT, AND NO. 4 LIME KILN EMISSION TEST REPORT GEORGIA-PACIFIC CORPORATION PALATKA, FLORIDA FEBRUARY 1993

Prepared For:

GEORGIA-PACIFIC CORPORATION
HIGHWAY 216
PALATKA, FL 32177

APPROVED FOR TRANSMITTAL
APRIL 1993

Prepared By:

Roy F. Weston, Inc.
1635 Pumphrey Avenue
Auburn, AL 36830

SECTION 2. RESULTS AND DISCUSSION

Table 2.1 summarizes the results of emission testing performed at the Georgia-Pacific Corporation mill in Palatka, Florida. These results are compared to FDER permit limitations.

TABLE 2.1. SUMMARY OF EMISSION TEST RESULTS

	MEAN TEST VALUE	PERMIT LIMIT
No. 4 Recovery Furnace		
Particulate, gr/dscf[a]	0.006	0.033
Particulate, lb/hr	12.9	83.2
Opacity, %	0	20
Sulfur Dioxide, lb/hr	301	109.9
Sulfuric Acid Mist (EPA 8), lb/hr	11.0	3.24[b]
Sulfuric Acid Mist (NCASI 106), lb/hr	4.29	3.24[b]
Nitrogen Oxides, ppmvd[a]	45	100
Nitrogen Oxides, lb/hr	76	210.6
Carbon Monoxide, ppmvd[a]	102	400
Carbon Monoxide, lb/hr	104	512.7
Total Reduced Sulfur, ppmvd[a]	≤0.3	11.4
Total Reduced Sulfur[c], lb/hr	≤0.3	17.8
Volatile Organic Compounds[d], lb/hr	<4.4	54.6
Volatile Organic Compounds[d], lb/ton BLS[e]	<0.05	0.52
No. 4 Smelt Dissolving Tank Vent		
Particulate, lb/hr	5.7	12.6
Particulate, lb/ton BLS[e]	0.06	0.12
Total Reduced Sulfur[c], lb/hr	0.7	3.4
Total Reduced Sulfur[c], lb/3000 lb BLS[e]	0.010	0.048

[a]Corrected to 8% O_2.
[b]Based on 0.81 ppm in gas (NCASI 106) and 427,560 acfm.
[c]As H_2S.
[d]As carbon.
[e]Black liquor solids.

TABLE 2.1. SUMMARY OF EMISSION TEST RESULTS
(Continued)

	MEAN TEST VALUE	PERMIT LIMIT
No. 4 Lime Kiln		
Particulate, gr/dscf[a]	0.069	0.081
Particulate, lb/hr	26	26
Sulfur Dioxide, lb/hr	<0.5	10.9
Nitrogen Oxides, ppmvd[a]	89	290
Nitrogen Oxides, lb/hr	28	50.3
Carbon Monoxide, ppmvd[a]	11	69
Carbon Monoxide, lb/hr	2.0	7.3
Total Reduced Sulfur, ppmvd[a]	≤8	20
Total Reduced Sulfur[b], lb/hr	≤1.8	4.0
Volatile Organic Compounds[c], ppmvd[a]	12	185
Volatile Organic Compounds[c], lb/hr	0.9	17.2

[a]Corrected to 10% O_2.
[b]As H_2S.
[c]As carbon.

2.1. NO. 4 RECOVERY FURNACE

Tables 2.2 through 2.5 summarize the results of the emission testing performed during 17-19 February 1993 on the No. 4 Recovery Furnace. Field and laboratory data are provided in Appendices B and E, respectively. Sample calculations are presented in Appendix F.

TABLE 2.2. PARTICULATE AND OPACITY EMISSION DATA - NO. 4 RECOVERY FURNACE

	RUN 1	RUN 2	RUN 3	MEAN
Date	02/19/93	02/19/93	02/19/93	---
Time Began	0819	1052	1227	---
Time Ended	0927	1157	1331	---
Stack Gas				
Temperature, °F	402	406	408	405
Velocity, ft/sec	54.9	52.9	51.7	53.2
Moisture, %	26.4	27.6	27.1	27.0
CO_2 Concentration, %	14.0	14.2	14.0	14.1
O_2 Concentration, %	4.4	4.6	4.4	4.5
Volumetric Flow Rate				
At Stack Conditions, x 10^5 ft^3/min	4.49	4.32	4.23	4.34
At Standard Conditions[a], x 10^5 ft^3/min	2.02	1.90	1.87	1.93
Particulate				
Isokinetic Sampling Rate, %	98	98	96	98
Concentration, gr/dscf @ 8% O_2	0.007	0.006	0.005	0.006
Emission Rate, lb/hr	16.1	12.1	10.7	12.9
Permit Limit, gr/dscf @ 8% O_2	---	---	---	0.033
Permit Limit, lb/hr	---	---	---	83.2
Opacity				
Observed, %	0	---	---	0
Permit Limit, %	---	---	---	20

[a]68°F, 29.92 in. Hg.

TABLE 2.3. SO_2 AND H_2SO_4 EMISSION DATA - NO. 4 RECOVERY FURNACE

	RUN 2[a]	RUN 3	RUN 4	MEAN
Date	02/17/93	02/17/93	02/17/93	---
Time Began	1135	1336	1552	---
Time Ended	1246	1448	1701	---
Stack Gas				
Temperature, °F	405	403	405	404
Velocity, ft/sec	51.6	50.7	50.2	50.8
Moisture, %	28.2	28.8	27.9	28.3
CO_2 Concentration, %	14.0	14.0	14.2	14.1
O_2 Concentration, %	4.6	4.6	4.6	4.6
Volumetric Flow Rate				
At Stack Conditions, x 10^5 ft^3/min	4.22	4.14	4.10	4.15
At Standard Conditions[b], x 10^5 ft^3/min	1.86	1.81	1.81	1.83
Sulfur Dioxide				
Isokinetic Sampling Rate, %	101	101	102	101
Concentration, ppmvd	203	175	118	165
Emission Rate, lb/hr	375	315	214	301
Permit Limit, lb/hr	---	---	---	109.9
Sulfuric Acid Mist				
Concentration, mg/dscm				
EPA 8	14.1	18.7	15.7	16.2
NCASI 106	5.85	6.51	6.47	6.28
Emission Rate, lb/hr				
EPA 8	9.77	12.7	10.7	11.0
NCASI 106	4.07	4.41	4.38	4.29
Permit Limit, lb/hr	---	---	---	3.24[c]

[a]Run 1 was voided due to broken glassware.
[b]68°F, 29.92 in. Hg.
[c]Based on 0.81 ppm in gas (NCASI 106) and 427,560 acfm.

TABLE 2.4. NO_x, CO, AND VOC EMISSION DATA - NO. 4 RECOVERY FURNACE

	RUN 1	RUN 2	RUN 3	MEAN
Date	02/17/93	02/17/93	02/17/93	---
Time Began	0840	1005	1125	---
Time Ended	0939	1104	1224	---
Stack Gas				
Temperature, °F	---	---	405	405
Velocity, ft/sec	---	---	51.6	51.6
Moisture, %	---	---	28.2	28.2
CO_2 Concentration, %	---	---	14.0	14.0
O_2 Concentration, %	---	---	4.6	4.6
Volumetric Flow Rate				
At Stack Conditions, x 10^5 ft^3/min	---	---	4.22	4.22
At Standard Conditions[a], x 10^5 ft^3/min	---	---	1.86	1.86
Production Rate, ton BLS[b]/hr	95.7	95.9	97.4	96.3
Nitrogen Oxides				
Concentration, ppmvd @ 8% O_2	43	50	43	45
Emission Rate[c], lb/hr	72	84	72	76
Permit Limit, ppmvd @ 8% O_2	---	---	---	100
Permit Limit, lb/hr	---	---	---	210.6
Carbon Monoxide				
Concentration, ppmvd @ 8% O_2	193	33	80	102
Emission Rate[c], lb/hr	197	33	82	104
Permit Limit, ppmvd @ 8% O_2	---	---	---	400
Permit Limit, lb/hr	---	---	---	512.7
Volatile Organic Compounds[d]				
Concentration, ppmvd @ 8% O_2	<10	<10	<10	<10
Emission Rate[c], lb/hr	<4.4	<4.4	<4.4	<4.4
Emission Rate[c], lb/ton BLS[b]	<0.05	<0.05	<0.05	<0.05
Permit Limit, lb/hr	---	---	---	54.6
Permit Limit, lb/ton BLS[b]	---	---	---	0.52

[a]68°F, 29.92 in. Hg.
[b]Black liquor solids.
[c]Emission rates calculated using one volumetric flow rate.
[d]As carbon.

TABLE 2.5. TRS EMISSION DATA - NO. 4 RECOVERY FURNACE

	RUN 1	RUN 2	RUN 3	MEAN
Date	02/17/93	02/17/93	02/17/93	---
Time Began	0809	1149	1529	---
Time Ended	1109	1449	1829	---
Stack Gas				
Temperature, °F	405	403	405	404
Velocity, ft/sec	51.6	50.7	50.2	50.8
Moisture, %	28.2	28.8	27.9	28.3
CO_2 Concentration, %	14.0	14.0	14.2	14.1
O_2 Concentration, %	4.6	4.6	4.6	4.6
Volumetric Flow Rate				
At Stack Conditions,				
x 10^5 ft^3/min	4.22	4.14	4.10	4.15
At Standard Conditions[a],				
x 10^5 ft^3/min	1.86	1.81	1.81	1.83
Total Reduced Sulfur				
Concentration[b], ppmvd @ 8% O_2	≤0.2	≤0.3	≤0.3	≤0.3
Emission Rate[c], lb/hr	≤0.2	≤0.3	≤0.3	≤0.3
Permit Limit, ppmvd @ 8% O_2	---	---	---	11.4
Permit Limit[c], lb/hr	---	---	---	17.8

[a]68°F, 29.92 in. Hg.

[b]Only H_2S was detected and included in reduced sulfur total. Values are shown as "≤" because concentrations that were below the detection limit during some injections were included in average and total. Instrument lower detection limits are shown in Appendix B.

[c]As H_2S.

2.2. NO. 4 SMELT DISSOLVING TANK VENT

Tables 2.6 and 2.7 summarize the results of the emission testing performed on 19 February 1993 on the No. 4 Smelt Dissolving Tank Vent. Field and laboratory data are provided in Appendices C and E, respectively. Sample calculations are presented in Appendix F.

TABLE 2.6. PARTICULATE EMISSION DATA - NO. 4 SMELT DISSOLVING TANK VENT

	RUN 1		RUN 2		RUN 3		MEAN	
	North Stack	South Stack	North Stack	South Stack	North Stack	South Stack	North Stack	South Stack
Date	02/19/93		02/19/93		02/19/93		---	
Time Began	0819		1009		1200		---	
Time Ended	0924		1128		1315		---	
Stack Gas								
Temperature, °F	169	163	173	163	176	161	173	162
Velocity, ft/sec	17.1	18.7	15.5	18.0	15.0	17.6	15.9	18.1
Moisture, %	38.1	34.8	41.1	34.8	43.9	33.1	41.0	34.2
CO_2 Concentration, %	0.6	0.6	0.6	0.4	0.6	0.4	0.6	0.5
O_2 Concentration, %	19.8	20.0	19.8	20.2	19.8	20.2	19.8	20.1
Volumetric Flow Rate								
At Stack Conditions, x 10^4 ft^3/min	1.98	2.17	1.79	2.09	1.74	2.04	1.84	2.10
At Standard Conditions[a], x 10^4 ft^3/min	1.03	1.20	0.88	1.15	0.81	1.16	0.91	1.17
Production Rate, ton BLS[b]/hr	96.0		94.5		96.2		95.6	
Particulate								
Isokinetic Sampling Rate, %	97	97	96	100	98	97	97	98
Concentration, gr/dscf	0.047	0.001[c]	0.055	0.022	0.067	0.016	0.057	0.013
Emission Rate, lb/hr	4.2	0.1[c]	4.2	2.2	4.7	1.6	4.3	1.3
Emission Rate, lb/ton BLS[b]	0.04	0.001[c]	0.04	0.02	0.05	0.02	0.05	0.01
Total Emission Rate, lb/hr	4.3		6.4		6.3		5.7	
Total Emission Rate, lb/ton BLS[b]	0.04		0.07		0.07		0.06	
Permit Limit, lb/hr	---		---		---		12.6	
Permit Limit, lb/ton BLS[b]	---		---		---		0.12	

[a]68°F, 29.92 in. Hg.
[b]Black liquor solids.
[c]Final filter weight was less than initial filter weight for this sample.

TABLE 2.7. TRS EMISSION DATA - NO. 4 SMELT DISSOLVING TANK VENT

	RUN 1		RUN 2		RUN 3		MEAN	
	North Stack	South Stack	North Stack	South Stack	North Stack	South Stack	North Stack	South Stack
Date	02/19/93		02/19/93		02/19/93		---	
Time Began	0811		1202		1549		---	
Time Ended	1111		1502		1848		---	
Stack Gas								
Temperature, °F	169	163	176	161	164	177	170	167
Velocity, ft/sec	17.1	18.4	15.0	17.6	18.4	15.9	16.8	17.3
Moisture, %	38.1	34.8	43.9	33.1	35.5	47.8	39.2	38.6
CO_2 Concentration, %	0.6	0.5	0.6	0.4	0.6	0.4	0.6	0.4
O_2 Concentration, %	19.8	20.1	19.8	20.2	19.8	20.2	19.8	20.2
Volumetric Flow Rate								
At Stack Conditions, x 10^4 ft^3/min	1.98	2.13	1.74	2.04	2.13	1.85	1.95	2.01
At Standard Conditions[a], x 10^4 ft^3/min	1.03	1.18	0.81	1.16	1.16	0.80	1.00	1.05
Production Rate, 3000 lb BLS[b]/hr	63.6		63.5		63.4		63.5	
Total Reduced Sulfur								
Concentration[c], ppmvd	5.0	5.6	8.8	5.6	4.9	7.2	6.3	6.1
Emission Rate[d], lb/hr	0.3	0.4	0.4	0.3	0.3	0.3	0.3	0.3
Emission Rate[d], lb/3000 lb BLS[b]	0.004	0.006	0.006	0.005	0.005	0.005	0.005	0.005
Total Emission Rate[d], lb/hr	0.7		0.7		0.6		0.7	
Total Emission Rate[d], lb/3000 lb BLS[b]	0.010		0.011		0.010		0.010	
Permit Limit[d], lb/hr	---		---		---		3.4	
Permit Limit[d], lb/3000 lb BLS[b]	---		---		---		0.048	

[a]68°F, 29.92 in. Hg.

[b]Black liquor solids.

[c]Only H_2S and MeSH were detected and included in reduced sulfur total. Instrument lower detection limits for other reduced sulfur compounds are shown in Appendix C.

[d]As H_2S.

2.3. NO. 4 LIME KILN

Tables 2.8 through 2.10 summarize the results of the emission testing performed on 20 February 1993 on the No. 4 Lime Kiln. Field and laboratory data are provided in Appendices D and E, respectively. Sample calculations are presented in Appendix F.

TABLE 2.8. PARTICULATE AND SO_2 EMISSION DATA - NO. 4 LIME KILN

	RUN 2[a]	RUN 3	RUN 4	MEAN
Date	02/20/93	02/20/93	02/20/93	---
Time Began	1700	1847	2015	---
Time Ended	1810	1955	2123	---
Stack Gas				
Temperature, °F	162	161	160	161
Velocity, ft/sec	63.3	57.6	59.9	60.3
Moisture, %	33.5	32.7	31.6	32.6
CO_2 Concentration, %	19.6	18.6	19.0	19.1
O_2 Concentration, %	5.4	6.0	5.8	5.7
Volumetric Flow Rate				
At Stack Conditions, x 10^4 ft^3/min	5.82	5.30	5.51	5.54
At Standard Conditions[b], x 10^4 ft^3/min	3.31	3.06	3.23	3.20
Particulate				
Isokinetic Sampling Rate, %	89	93	92	91
Concentration, gr/dscf @ 10% O_2	0.067	0.071	0.069	0.069
Emission Rate, lb/hr	27	25	26	26
Permit Limit, gr/dscf @ 10% O_2	---	---	---	0.081
Permit Limit, lb/hr	---	---	---	26
Sulfur Dioxide				
Concentration, ppmvd	<1.3	<1.3	<1.3	<1.3
Emission Rate, lb/hr	<0.5	<0.4	<0.5	<0.5
Permit Limit, lb/hr	---	---	---	10.9

[a]Run 1 was voided due to bad leak check.
[b]68°F, 29.92 in. Hg.

TABLE 2.9. NO_x, CO, AND VOC EMISSION DATA - NO. 4 LIME KILN

	RUN 1	RUN 2	RUN 3	MEAN
Date	02/20/93	02/20/93	02/20/93	---
Time Began	1005	1120	1249	---
Time Ended	1105	1220	1349	---
Stack Gas				
Temperature, °F	165	163	---	164
Velocity, ft/sec	64.0	64.1	---	64.1
Moisture, %	36.1	34.5	---	35.3
CO_2 Concentration, %	19.2	18.2	---	18.7
O_2 Concentration, %	5.8	6.6	---	6.2
Volumetric Flow Rate				
At Stack Conditions, x 10^4 ft^3/min	5.89	5.89	---	5.89
At Standard Conditions[a], x 10^4 ft^3/min	3.20	3.30	---	3.25
Nitrogen Oxides				
Concentration, ppmvd @ 10% O_2	91	94	83	89
Emission Rate[b], lb/hr	29	29	26	28
Permit Limit, ppmvd @ 10% O_2	---	---	---	290
Permit Limit, lb/hr	---	---	---	50.3
Carbon Monoxide				
Concentration, ppmvd @ 10% O_2	10	11	11	11
Emission Rate[b], lb/hr	2.0	2.0	2.2	2.0
Permit Limit, ppmvd @ 10% O_2	---	---	---	69
Permit Limit, lb/hr	---	---	---	7.3
Volatile Organic Compounds[c]				
Concentration, ppmvd @ 10% O_2	14	10	10	12
Emission Rate[b], lb/hr	1.1	0.8	0.8	0.9
Permit Limit, ppmvd @ 10% O_2	---	---	---	185
Permit Limit, lb/hr	---	---	---	17.2

[a]68°F, 29.92 in Hg.
[b]Run 3 emission rates calculated using Run 2 volumetric flow rate.
[c]As carbon.

TABLE 2.10. TRS EMISSION DATA - NO. 4 LIME KILN

	RUN 1	RUN 2	RUN 3	MEAN
Date	02/20/93	02/20/93	02/20/93	---
Time Began	0718	1114	1456	---
Time Ended	1036	1414	1756	---
Stack Gas				
Temperature, °F	165	163	162	163
Velocity, ft/sec	64.0	64.1	63.3	63.8
Moisture, %	36.1	34.5	33.5	34.7
CO_2 Concentration, %	19.2	18.2	19.6	19.0
O_2 Concentration, %	5.8	6.6	5.4	5.9
Volumetric Flow Rate				
At Stack Conditions,				
x 10^4 ft^3/min	5.89	5.89	5.82	5.87
At Standard Conditions[a],				
x 10^4 ft^3/min	3.20	3.30	3.31	3.27
Total Reduced Sulfur				
Concentration[b], ppmvd @ 10% O_2	≤7	≤8	≤9	≤8
Emission Rate[c], lb/hr	≤1.5	≤1.8	≤2.1	≤1.8
Permit Limit, ppmvd @ 10% O_2	---	---	---	20
Permit Limit[c], lb/hr	---	---	---	4.0

[a]68°F, 29.92 in. Hg.

[b]Only H_2S and MeSH were detected and included in reduced sulfur total. Values are shown as "≤" because MeSH concentrations that were below the detection limit during some injections were included in average and total. Instrument lower detection limits are shown in Appendix D.

[c]As H_2S.

TABLE 2.2. PARTICULATE, SO_2, AND H_2SO_4 EMISSION DATA - NO. 4 RECOVERY FURNACE

	RUN 1	RUN 2	RUN 3	MEAN
Date	03/11/92	03/11/92	03/11/92	---
Time Began	1316	1555	1716	---
Time Ended	1458	1635	1931	---
Stack Gas				
Temperature, °F	419	419	420	419
Velocity, ft/sec	55.0	54.5	54.6	54.7
Moisture, %	25.5	26.6	26.2	26.1
CO_2 Concentration, %	14.6	14.4	14.4	14.5
O_2 Concentration, %	4.0	4.2	4.0	4.1
Volumetric Flow Rate				
At Stack Conditions, x 10^5 ft^3/min	4.49	4.45	4.46	4.47
At Standard Conditions[a], x 10^5 ft^3/min	2.01	1.96	1.98	1.98
Particulate				
Isokinetic Sampling Rate, %	100	98	99	99
Concentration, gr/dscf @ 8% O_2	0.029	0.026	0.035	0.030
Emission Rate, lb/hr	65.2	55.5	77.9	66.2
Permit Limit, gr/dscf @ 8% O_2	---	---	---	0.033
Permit Limit, lb/hr	---	---	---	83.2
Opacity				
Observed, %	7	---	---	7
Permit Limit, %	---	---	---	20
Sulfur Dioxide				
Isokinetic Sampling Rate, %	100	98	99	99
Concentration, ppmvd	8.7	19.3	6.4	11.5
Emission Rate, lb/hr	17.4	37.8	12.5	22.6
Permit Limit, lb/hr	---	---	---	109.9
Sulfuric Acid Mist				
Concentration, mg/dscm	6.74	3.47	2.20	4.13
Emission Rate, lb/hr	5.07	2.54	1.63	3.08
Permit Limit, lb/hr	---	---	---	3.24[b]

[a]68°F, 29.92 in. Hg.

[b]Based on 0.81 ppm in gas (NCASI 106) and 427,560 acfm.

TABLE 2.3. NO_x AND CO EMISSION DATA - NO. 4 RECOVERY FURNACE

	RUN 1	RUN 2	RUN 3	MEAN
Date	03/10/92	03/10/92	03/10/92	---
Time Began	1357	1505	1627	---
Time Ended	1501	1605	1727	---
Stack Gas				
Temperature, °F	420	423	423	422
Velocity, ft/sec	55.0	55.0	55.0	55.0
Moisture, %	22.8	23.5	22.5	22.9
CO_2 Concentration, %	14.6	14.8	14.0	14.5
O_2 Concentration, %	3.8	4.0	4.4	4.1
Volumetric Flow Rate				
At Stack Conditions, x 10^5 ft^3/min	4.49	4.49	4.49	4.49
At Standard Conditions[a], x 10^5 ft^3/min	2.08	2.05	2.08	2.07
Nitrogen Oxides				
Concentration, ppmvd @ 8% O_2	61	65	67	65
Emission Rate, lb/hr	121	125	128	125
Permit Limit, ppmvd @ 8% O_2	---	---	---	100
Permit Limit, lb/hr	---	---	---	210.6
Carbon Monoxide				
Concentration, ppmvd @ 8% O_2	167	164	330	220
Emission Rate, lb/hr	200	191	382	258
Permit Limit, ppmvd @ 8% O_2	---	---	---	400
Permit Limit, lb/hr	---	---	---	512.7

[a]68°F, 29.92 in. Hg.

TABLE 2.4. TRS EMISSION DATA - NO. 4 RECOVERY FURNACE

	RUN 1	RUN 2	RUN 3	MEAN
Date	03/10/92	03/11/92	03/11/92	---
Time Began	1454	0734	1130	---
Time Ended	1748	1028	1424	---
Stack Gas				
CO_2 Concentration, %	14.6	14.4	14.4	14.5
O_2 Concentration, %	4.0	3.8	4.2	4.0
Total Reduced Sulfur				
Concentration, ppmvd @ 8% O_2	2.3	4.2	1.9	2.8
Emission Rate[ab], lb/hr	3.4	5.9	2.6	4.0
Permit Limit, ppmvd @ 8% O_2	---	---	---	11.4
Permit Limit[b], lb/hr	---	---	---	17.8

[a]Run 1 emission rate was calculated using 2.07 x 10^5 dscf/min (average of Runs 2 and 3 of NO_x and CO data). Runs 2 and 3 emission rates were calculated using 2.01 x 10^5 dscf/min (Run 1 of particulate data).

[b]As H_2S.

TABLE 2.5. VOC EMISSION DATA -
NO. 4 RECOVERY FURNACE

	RUN 1	RUN 2	RUN 3	MEAN
Date	03/13/92	03/13/92	03/13/92	---
Time Began	1147	1311	1432	---
Time Ended	1250	1415	1535	---
Stack Gas				
Temperature, °F	430	433	432	432
Velocity, ft/sec	54.6	54.7	54.2	54.5
Moisture, %	23.2	21.9	22.2	22.4
CO_2 Concentration, %	14.6	14.6	14.8	14.7
O_2 Concentration, %	4.0	4.2	4.2	4.1
Volumetric Flow Rate				
At Stack Conditions, x 10^5 ft^3/min	4.46	4.47	4.43	4.45
At Standard Conditions[a], x 10^5 ft^3/min	2.03	2.07	2.04	2.05
Production Rate, ton BLS[b]/hr	96.6	97.1	97.4	97.0
Volatile Organic Compounds[c]				
Concentration, ppmvd @ 8% O_2				
EPA 25	602.4	34.9	54.3	230.6
EPA 25A	8.1	7.1	4.2	6.5
Emission Rate, lb/hr				
EPA 25	299.0	17.5	26.8	114.4
EPA 25A	4.0	3.6	2.1	3.2
Emission Rate, lb/ton BLS[b]				
EPA 25	3.10	0.18	0.28	1.19
EPA 25A	0.04	0.04	0.02	0.03
Permit Limit, lb/hr	---	---	---	54.6
Permit Limit, lb/ton BLS[b]	---	---	---	0.52

[a]68°F, 29.92 in. Hg.
[b]Black liquor solids.
[c]As carbon.

TABLE 2.6. PARTICULATE EMISSION DATA - NO. 4 SMELT DISSOLVING TANK VENT

	RUN 1		RUN 2		RUN 3		MEAN	
	North Stack	South Stack	North Stack	South Stack	North Stack	South Stack	North Stack	South Stack
Date	03/12/92		03/12/92		03/12/92		---	
Time Began	1240		1450		1657		---	
Time Ended	1345		1600		1800		---	
Stack Gas								
Temperature, °F	167	160	171	165	169	166	169	164
Velocity, ft/sec	16.6	16.3	16.7	16.3	16.2	16.7	16.5	16.4
Moisture, %	36.4	32.1	40.0	36.4	38.3	37.0	38.2	35.2
CO_2 Concentration, %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
O_2 Concentration, %	20.8	20.8	20.8	20.8	20.8	20.8	20.8	20.8
Volumetric Flow Rate								
At Stack Conditions, x 10^4 ft^3/min	1.92	1.89	1.93	1.89	1.88	1.93	1.91	1.90
At Standard Conditions[a], x 10^4 ft^3/min	1.03	1.09	0.97	1.02	0.98	1.03	0.99	1.05
Production Rate, ton BLS[b]/hr	95.6		95.1		96.1		95.6	
Particulate								
Isokinetic Sampling Rate, %	94	89	105	102	98	96	99	96
Concentration, gr/dscf	0.039	0.019	0.051	0.022	0.041	0.024	0.044	0.021
Emission Rate, lb/hr	3.5	1.7	4.2	1.9	3.5	2.1	3.7	1.9
Emission Rate, lb/ton BLS[b]	0.04	0.02	0.04	0.02	0.04	0.02	0.04	0.02
Total Emission Rate, lb/hr	5.2		6.1		5.6		5.6	
Total Emission Rate, lb/ton BLS[b]	0.06		0.06		0.06		0.06	
Permit Limit, lb/hr	----		----		----		12.6	
Permit Limit, lb/ton BLS[b]	----		----		----		0.12	

[a]68°F, 29.92 in. Hg.
[b]Black liquor solids.

TABLE 2.7. TRS EMISSION DATA - NO. 4 SMELT DISSOLVING TANK VENT

	RUN 1		RUN 2		RUN 3		MEAN	
	North Stack	South Stack	North Stack	South Stack	North Stack	South Stack	North Stack	South Stack
Date	03/12/92		03/12/92		03/12/92		---	
Time Began	0720		1130		1528		---	
Time Ended	1014		1424		1822		---	
Stack Gas[a]								
Temperature, °F	158	168	167	160	169	165	165	164
Velocity, ft/sec	17.1	16.9	16.6	16.3	16.2	16.3	16.6	16.5
Moisture, %	30.7	38.9	36.4	32.1	38.3	36.4	35.1	35.8
CO_2 Concentration, %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
O_2 Concentration, %	20.8	20.8	20.8	20.8	20.8	20.8	20.8	20.8
Volumetric Flow Rate[a]								
At Stack Conditions, x 10^4 ft^3/min	1.97	1.95	1.92	1.89	1.88	1.89	1.92	1.91
At Standard Conditions[b], x 10^4 ft^3/min	1.17	1.00	1.03	1.09	0.98	1.02	1.06	1.04
Production Rate, 3000 lb BLS[c]/hr	64.4	64.3	63.9	63.4	64.1	63.6	64.1	63.8
Total Reduced Sulfur								
Concentration, ppmvd	11.6	5.3	10.5	3.0	6.8	6.6	9.6	5.0
Emission Rate[d], lb/hr	0.72	0.28	0.57	0.18	0.35	0.36	0.55	0.27
Emission Rate[d], lb/3000 lb BLS[c]	0.011	0.004	0.009	0.003	0.005	0.006	0.008	0.004
Total Emission Rate[d], lb/hr	1.0		0.75		0.71		0.82	
Total Emission Rate[d], lb/3000 lb BLS[c]	0.015		0.012		0.011		0.013	
Permit Limit[d], lb/hr	----		----		----		3.4	
Permit Limit[d], lb/3000 lb BLS[c]	----		----		----		0.048	

[a]Run 2 data were taken from Run 1 of particulate data. Run 3 North data were taken from Run 3 of particulate data. Run 3 South data were taken from Run 2 of particulate data.

[b]68°F, 29.92 in. Hg.

[c]Black liquor solids.

[d]As H_2S.

SECTION 2. RESULTS AND DISCUSSION

Table 2.1 summarizes the results of emission testing performed at the Georgia-Pacific Corporation mill in Palatka, Florida. These results are compared to FDER permit limitations.

TABLE 2.1. SUMMARY OF NO. 4 LIME KILN EMISSION TEST RESULTS

	MEAN TEST VALUE	PERMIT LIMIT
Particulate, gr/dscf[a]	0.061	0.081
Particulate, lb/hr	20.0	26
Sulfur Dioxide, lb/hr	0.1	10.9
Nitrogen Oxides, ppmvd[a]	80	290
Nitrogen Oxides, lb/hr	23.6	50.3
Carbon Monoxide, ppmvd[a]	11	69
Carbon Monoxide, lb/hr	2.0	7.3
Total Reduced Sulfur, ppmvd[a]	10	20
Total Reduced Sulfur[b], lb/hr	2.2	4.0
Volatile Organic Compounds[c] (EPA 25), ppmvd[a]	602	185
Volatile Organic Compounds[c] (EPA 25), lb/hr	46.2	17.2
Volatile Organic Compounds[c] (EPA 25A), ppmvd[a]	6	185
Volatile Organic Compounds[c] (EPA 25A), lb/hr	0.5	17.2

[a]Corrected to 10% O_2.
[b]As H_2S.
[c]As carbon.

TABLE 2.2. PARTICULATE AND SO_2 EMISSION DATA - NO. 4 LIME KILN

	RUN 1	RUN 2	RUN 3	MEAN
Date	02/04/92	02/04/92	02/05/92	---
Time Began	1520	1750	1339	---
Time Ended	1636	1850	1455	---
Stack Gas				
Temperature, °F	164	163	169	165
Velocity, ft/sec	57.3	53.0	67.8	59.4
Moisture, %	34.6	32.2	39.6	35.4
CO_2 Concentration, %	22.0	14.8	16.8	17.9
O_2 Concentration, %	4.4	8.0	6.8	6.4
Volumetric Flow Rate				
At Stack Conditions, x 10^4 ft^3/min	5.26	4.87	6.24	5.46
At Standard Conditions*, x 10^4 ft^3/min	2.92	2.81	3.11	2.95
Particulate				
Isokinetic Sampling Rate, %	95	93	90	93
Concentration, gr/dscf @ 10% O_2	0.053	0.076	0.054	0.061
Emission Rate, lb/hr	20.0	21.5	18.5	20.0
Permit Limit, gr/dscf @ 10% O_2	---	---	---	0.081
Permit Limit, lb/hr	---	---	---	26
Sulfur Dioxide				
Concentration, ppmvd	0.1	0.2	1.1	0.5
Emission Rate, lb/hr	<0.1	0.1	0.4	0.1
Permit Limit, lb/hr	---	---	---	10.9

*68°F, 29.92 in. Hg.

TABLE 2.3. NO_x, CO, AND VOC EMISSION DATA - NO. 4 LIME KILN

	RUN 1	RUN 2	RUN 3	MEAN
Date	02/05/92	02/05/92	02/05/92	---
Time Began	1915	2052	2315	---
Time Ended	2016	2152	0043	---
Stack Gas				
Temperature, °F	164	166	161	164
Velocity, ft/sec	60.9	60.0	60.5	60.5
Moisture, %	35.9	37.6	33.5	35.7
CO_2 Concentration, %	18.0	18.1	17.7	17.9
O_2 Concentration, %	5.8	5.8	6.0	5.9
Volumetric Flow Rate				
At Stack Conditions, x 10^4 ft^3/min	5.60	5.52	5.56	5.56
At Standard Conditions[a], x 10^4 ft^3/min	3.00	2.87	3.11	2.99
Nitrogen Oxides				
Concentration, ppmvd @ 10% O_2	69	108	65	80
Emission Rate, lb/hr	20.4	30.6	19.6	23.6
Permit Limit, ppmvd @ 10% O_2	---	---	---	290
Permit Limit, lb/hr	---	---	---	50.3
Carbon Monoxide				
Concentration, ppmvd @ 10% O_2	12	11	11	11
Emission Rate, lb/hr	2.2	1.9	2.0	2.0
Permit Limit, ppmvd @ 10% O_2	---	---	---	69
Permit Limit, lb/hr	---	---	---	7.3
Volatile Organic Compounds[b]				
Concentration, ppmvd @ 10% O_2				
EPA 25	601	673	532	602
EPA 25A	15	1	3	6
Emission Rate, lb/hr				
EPA 25	46.6	49.9	42.2	46.2
EPA 25A	1.1	0.1	0.3	0.5
Permit Limit, ppmvd @ 10% O_2	---	---	---	185
Permit Limit, lb/hr	---	---	---	17.2

[a]68°F, 29.92 in Hg.
[b]As carbon.

TABLE 2.4. TRS EMISSION DATA - NO. 4 LIME KILN

	RUN 1	RUN 2	RUN 3	MEAN
Date	02/05/92	02/05/92	02/05/92	---
Time Began	1247	1647	2053	---
Time Ended	1541	1941	2347	---
Stack Gas[a]				
Temperature, °F	169	164	164	166
Velocity, ft/sec	67.8	60.9	60.3	63.0
Moisture, %	39.6	35.9	35.6	37.0
CO_2 Concentration, %	16.8	18.0	17.9	17.6
O_2 Concentration, %	6.8	5.8	5.9	6.2
Volumetric Flow Rate[a]				
At Stack Conditions, x 10^4 ft^3/min	6.24	5.60	5.54	5.79
At Standard Conditions[b], x 10^4 ft^3/min	3.11	3.00	2.99	3.03
Total Reduced Sulfur				
Concentration, ppmvd @ 10% O_2	11	8	11	10
Emission Rate[c], lb/hr	2.4	1.9	2.5	2.2
Permit Limit, ppmvd @ 10% O_2	---	---	---	20
Permit Limit[c], lb/hr	---	---	---	4.0

[a]Run 1 data were taken from Run 3 of particulate data. Run 2 data were taken from Run 1 of NO_x, CO, and VOC data. Run 3 data were taken from average of Runs 2 and 3 of NO_x, CO, and VOC data.

[b]68°F, 29.92 in. Hg.

[c]As H_2S.

WESTON Work Order No. 0414-16-03

TALL OIL REACTOR
TOTAL REDUCED SULFUR
EMISSION TEST REPORT
GEORGIA-PACIFIC CORPORATION
PALATKA, FLORIDA
JULY 1992

Prepared For:

GEORGIA-PACIFIC CORPORATION
HIGHWAY 216
PALATKA, FL 32177

APPROVED FOR TRANSMITTAL
AUGUST 1992

Prepared By:

Roy F. Weston, Inc.
1635 Pumphrey Avenue
Auburn, AL 36830-4303

TABLE 2.1. TRS EMISSION DATA - TALL OIL REACTOR

	RUN 1		RUN 2		RUN 3		MEAN	
	Cook Phase	Neut.[a] Phase	Cook Phase	Neut.[a] Phase	Cook Phase	Neut.[a] Phase	Cook Phase	Neut.[a] Phase
Date	07/22/92	07/22/92	07/23/92	07/23/92	07/24/92	07/24/92	---	---
Time Began	0918	1812	0825	2012	0837	1907	---	---
Time Ended	1218	1918	1225	2119	1233	2007	---	---
Stack Gas								
Temperature, °F	156	188	164	201	136	206	152	198
Velocity, ft/sec	42.8	42.7	40.8	39.6	40.4	39.5	41.3	40.6
Moisture, %	29.0	59.0	35.1	79.2	17.0	85.9	27.0	74.7
CO_2 Concentration, %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
O_2 Concentration, %	20.9	20.9	20.9	20.9	20.9	20.9	20.9	20.9
Volumetric Flow Rate								
At Stack Conditions, ft^3/min	3580	3580	3410	3320	3380	3310	3460	3400
At Standard Conditions[b], ft^3/min	2200	1210	1900	560	2510	370	2200	710
Tall Oil Processed, tons	50	50	50	50	50	50	50	50
Total Reduced Sulfur								
Concentration, ppm	28.5	36.7	38.2	97.8	29.8	68.5	32.2	67.7
Emission Rate, lb/ton[c]	0.023	0.008	0.037	0.009	0.038	0.004	0.033	0.007
Total Emission Rate, lb/ton[c]	0.031		0.046		0.042		0.040	
Permit Limit, lb/ton[c]	----		----		----		0.05	

[a]Neutralization.
[b]68°F, 29.92 in. Hg.
[c]Pounds of TRS per ton of tall oil processed.

WESTON Work Order No. 00414-016-006

NCG INCINERATOR
TOTAL REDUCED SULFUR AND SULFUR DIOXIDE
EMISSION TEST REPORT
GEORGIA-PACIFIC CORPORATION
PALATKA, FLORIDA
FEBRUARY 1994

Prepared For:

GEORGIA-PACIFIC CORPORATION
HIGHWAY 216
PALATKA, FL 32177

APPROVED FOR TRANSMITTAL
MARCH 1994

Prepared By:

Roy F. Weston, Inc.
1635 Pumphrey Avenue
Auburn, AL 36830-4303

SECTION 2

RESULTS AND DISCUSSION

Tables 2-1 and 2-2 summarize the results of the TRS and SO_2 emission testing performed on 18 February 1994 on the NCG Incinerator. Field data are provided in Appendix B. Sample calculations are presented in Appendix C.

Table 2-1

TRS Emission Data - NCG Incinerator

	Run 1	Run 2	Run 3	Mean
Date	2/18/94	2/18/94	2/18/94	----
Time Began	0849	1245	1643	----
Time Ended	1149	1545	1943	----
Stack Gas				
Temperature, °F	515	504	515	511
Velocity, ft/sec	96.4	94.2	94.7	95.1
Moisture, %	6.0	6.5	6.5	6.3
CO_2 Concentration, %	1.1	1.0	1.1	1.1
O_2 Concentration, %	18.6	18.5	18.7	18.5
Volumetric Flow Rate				
At Stack Conditions, x 10^4 ft^3/min	4.32	4.22	4.25	4.26
At Standard Conditions[a], x 10^4 ft^3/min	2.22	2.18	2.18	2.19
Total Reduced Sulfur				
Concentration[b], ppm	<0.95	<1.0	<0.93	<0.96
Emission Rate, lb/hr	<0.11	<0.12	<0.11	<0.11
Permit Limit, lb/hr	----	----	----	0.12

[a]68°F, 29.92 in. Hg.
[b]All reduced sulfur compounds were below the detection limit. Instrument lower detection limits can be found in Appendix B. Reported concentrations are corrected for recovery.

Table 2-2

SO_2 Emission Data - NCG Incinerator

	Run 1	Run 2	Run 3	Mean
Date	2/18/94	2/18/94	2/18/94	----
Time Began	1611	1803	1923	----
Time Ended	1711	1903	2023	----
Stack Gas				
Temperature, °F	510	515	505	510
Velocity, ft/sec	94.7	92.9	91.7	93.1
Moisture, %	6.5	6.5	6.5	6.5
CO_2 Concentration, %	1.1	1.1	1.0	1.1
O_2 Concentration, %	18.7	18.7	18.5	18.6
Volumetric Flow Rate				
At Stack Conditions, x 10^4 ft^3/min	4.25	4.16	4.11	4.17
At Standard Conditions[a], x 10^4 ft^3/min	2.18	2.13	2.12	2.14
Sulfur Dioxide				
Concentration, ppm	2000	2515	2432	2316
Emission Rate, lb/hr	435	534	514	494
Permit Limit, lb/hr	----	----	----	1200

[a]68°F, 29.92 in. Hg.

SECTION 2. RESULTS AND DISCUSSION

Emission testing on the NCG incinerator was performed on 25 January 1990. The results of the TRS, particulate, and SO_2 testing are summarized in Table 2.1. In addition, visible emission testing was performed according to EPA Method 9 between the hours of 0800 and 0920 on 25 January 1990 by GP personnel. A constant zero percent opacity was determined during the test, which is below the FDER allowable limit of five percent. Supporting field, laboratory, and process data are provided in Appendices B through F. Example calculations are illustrated in Appendix I.

TABLE 2.1. SUMMARY OF EMISSIONS
NCG INCINERATOR

	RUN 1	RUN 2	RUN 3	MEAN
Date	1/25/89	1/25/89	1/25/89	---
Time Began	0810	0952	1130	---
Time Ended	0910	1100	1230	---
Stack Gas				
Temperature, °F	466	496	529	497
Velocity, ft/sec	86.6	87.7	89.1	87.8
Moisture, %	6.5	6.4	7.5	6.8
Oxygen, %	18.7	18.8	18.5	18.7
Carbon Dioxide, %	1.0	1.0	1.0	1.0
Volumetric Flow Rate				
At Stack Conditions				
x 10^4 ft³/min	4.09	4.15	4.21	4.15
At Standard Conditions				
x 10^4 ft³/min	2.19	2.15	2.09	2.14
Total Reduced Sulfur[a]				
Concentration, ppm[b,c]	<2.1	<1.9	<2.2	<2.1
Allowable, ppm[a]	---	---	---	5.0
Particulate				
Isokinetic Sampling Rate, %	101	104	103	103
Concentration, gr/ft³	0.023	0.047	0.017	0.029
Emission Rate, lb/hr	4.3	8.7	2.9	5.3
Allowable, lb/hr	---	---	---	5.50
Sulfur Dioxide				
Concentration, ppm	2398	2320	1898	2211
Emission Rate, lb/hr	523	497	426	482
Allowable, lb/hr	---	---	---	1200

[a] TRS Sampling Time
Run 1: 0818-1118
Run 2: 1206-1506
Run 3: 1600-1900

[b] Corrected to 100 percent recovery and 10 percent oxygen

[c] Data biased to minimum detection of each TRS compound minimum detection of each TRS compound minimum detection limit for H_2S, MeSH, DMS, or DMDS were 0.1, 0.1, 0.1, and 0.1 ppm, respectively.

April 13, 1995

Mr. Al Linero, P.E.
Administrator, New Source Review
Florida Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Re: PSD Permit Application
Georgia-Pacific Corporation, Palatka Mill
AC54-266676/PSD-FL-226

Dear Mr. Linero:

Georgia-Pacific Corporation (G-P) has received the Department's letter, attached for your reference, dated March 29, 1995, requesting additional information on the above-referenced PSD permit application. On behalf of G-P, responses to the Department's questions are provided below. The responses are provided in the same order as they appear in the March 29 letter.

1. Boilers are designed to produce steam by indirect contact of water with hot flue gases. In a Recovery Boiler, the hot gases result from burning black liquor, a self-generated fuel with a high Btu value consisting primarily of dissolved organic compounds (lignin). Water passes through metal tubes with the hot gases contacting the outside of the tubes. Heat is transferred from the hot gases to the metal tubes which transfer the heat to the water. The particular tubes referred to as screen tubes are so named because of their special function. They screen, or protect, tubes in the boiler bank where steam is produced, simply by cooling the hot flue gases to an appropriate level. With inadequate heat transfer occurring through the screen tubes, the flue gases are too hot when reaching the boiler bank. At this elevated temperature, the particulate matter (salt cake) in the flue gas is "sticky" and plugs the tight spaces between the tubes in the boiler bank. Also, tube wastage is more pronounced at elevated flue gas temperatures. "Tube wastage" is a term used to describe the wearing of the tubes on the gas side through thermal stress, abrasion, corrosion, etc., which ultimately leads to tube failure.

   G-P is proposing to install additional screen tube modules in the No. 4 Recovery Boiler in August 1995. Each module consists of a bundle of 10 individual tubes. The boiler is currently equipped with 15 screen tube modules on 24-inch centers. G-P is proposing to install the additional tube modules on either side of the existing modules such that the distance between modules will be 12 inches. Heat transfer will be improved, resulting in a 30 to 50°F decrease in temperature of the flue gases.

KBN ENGINEERING AND APPLIED SCIENCES, INC.

6241 Northwest 23rd Street, Suite 500, Gainesville, Florida 32653-1500, 904-336-5600 FAX 904-336-6603
5405 West Cypress Street, Suite 215, Tampa, Florida 33607, 813-287-1717 FAX 813-287-1716
1801 Clint Moore Road, Suite 105, Boca Raton, Florida 33487, 407-994-9910, FAX 407-994-9393
7785 Baymeadows Way, Suite 105, Jacksonville, Florida 32256, 904-739-5600 FAX 904-739-7777
1616 'P' Street N.W., Suite 450, Washington, D.C. 20036, 202-462-1100, FAX 202-462-2270

2. Copies of all of the stack test data for the No. 4 Recovery Boiler, No. 4 Smelt Dissolving Tanks, No. 4 Lime Kiln, TRS Incinerator, and Tall Oil Plant since January 1992, when the previous modifications were completed, are attached. The only exception to this is two stack tests conducted on No. 4 Recovery Boiler for SO_2 and H_2SO_4 mist. These are not included since these pollutants are not subject to PSD review. Also included is a stack test conducted on the TRS incinerator in 1990.

   It is noted that Table 6-3 from the PSD report, which summarized all of the available test data from No. 4 Recovery Boiler, did not include the CO test data from March, 1992. These data have been added to Table 6-3, and statistical analysis information has been included in the table. The revised table is attached. The results of the statistical analysis are discussed below in regard to the proposed BACT limits.

   PM--The statistical analysis shows that the 95 percent confidence level value is 79.7 lb/hr, which is nearly equal to the allowable limit of 83.2 lb/hr. The 99 percent confidence level is much higher. Therefore, the data support the proposed BACT limit as equal to the allowable limit, which was also judged to be BACT in 1991.

   NO_x--The statistical analysis shows that the 95 percent confidence level values are 73 ppmv and 141 lb/hr, and the 99 percent confidence level values are 79 ppmv and 154 lb/hr. These values are below the allowable limit of 100 ppmv and 210.6 lb/hr. However, the data are very limited (three compliance tests), and the proposed BACT limit does not leave much margin for continuous compliance. Therefore, G-P proposes to retain the current allowable limit as BACT, which was judged to be BACT in 1991.

   CO--The statistical analysis shows that the 95 percent confidence level value is 641 ppmv, and the 99 percent confidence level value is 754 ppmv. These values are up to the current allowable and proposed BACT of 800 ppmv. Considering the data are very limited (three compliance tests) and the variability in short-term CO concentrations, the proposed BACT limit does not leave any margin for continuous compliance. Therefore, G-P proposes to retain the current allowable limit as BACT, which was judged to be BACT in 1991.

   VOC--A statistical analysis could not be performed on the VOC test data from No. 4 Recovery Boiler due to only one compliance test indicating emissions above the detectable limit. It is noted that these test results are based on EPA Method 25A.

TRS--Continuous TRS data for the period October 1994 through March 1995 were analyzed. These data representing typical operating conditions are shown in the attached Table A (two 12-hour averages per day). The data display a maximum 12-hour TRS concentration of 11.2 ppm. The 95 percent confidence level for all the data is 8.1 ppm, while the 99 percent confidence level is 9.6 ppm. These confidence level limits are close to the current permitted limit of 11.4 ppm, which was judged to be BACT in 1991. Considering the variability in short-term TRS emissions (actual TRS emissions as high as 11.2 ppm 12-hour average), the proposed BACT limit of 11.4 ppm (12-hour average) does not leave any margin for continuous compliance. Therefore, G-P proposes to retain the current allowable limit as BACT.

3. The information on this is unavailable at this time but a response will be provided in the near future.

4. The only pollutants for which multi-averaging time limits are proposed are SO_2 for the TRS incinerator and CO for the recovery boiler. In the case of SO_2 from the TRS incinerator, the compliance method currently in use on TRS sources with scrubbers is proposed. The method is to determine surrogate parameter limits for the TRS scrubber through source testing, and then continuously operate the scrubber within those surrogate parameter limits. This will ensure that 50 percent TRS removal (and therefore 50 percent SO_2 removal) is continuously achieved. In G-P's case, the TRS scrubber precedes the TRS incinerator and thereby controls SO_2 emissions from the incinerator. It is further proposed that the stack testing be conducted once every five (5) years for SO_2 on the incinerator as required by the current permit, in order to further confirm the TRS scrubber efficiency.

   In the case of CO emissions from the recovery boiler, both a 1-hour and annual CO emission limit are proposed. In order to provide greater assurance that the annual CO limit is being achieved, it is proposed to implement semiannual stack testing for CO emissions for a 2-year period. At the end of a 2-year period, G-P will request to reduce the testing frequency to annual testing, if supported by the data.

5. There is currently not enough data to set an emission limit for H_2SO_4 mist based on EPA Method 8. Only three valid test runs on No. 4 Recovery Boiler have been made using Method 8. G-P is currently discussing with the Department the appropriate testing methodology for this source.

6. The maximum production rate for the Tall Oil plant is 55 tons of crude tall oil in a 12-hour period. This is correctly reflected in the application, except on the segment information form for the emission unit. A corrected page is attached.

7. The only effect of the proposed modification upon the brown stock washers is that the brown stock washers will experience increased throughput rates, corresponding to the minor increase in pulp

production in the digesters. As a result, any emissions from the brown stock washers may increase correspondingly. The brown stock washers at G-P have not been required to be permitted; however, they will be included in the Title V permit application.

The proposed modification does not trigger new source performance standards (NSPS) for the brown stock washers. NSPS are triggered due to a physical change or a change in the method of operation which results in an increase in emissions to the atmosphere of a regulated pollutant. There will be no physical change or change in the method of operation of the brown stock washers.

8. Attached are copies of current permits for all affected emission units at the facility.

Thank you for consideration of this information. Please call if you have any questions.

Sincerely,

Mark J. Aguilar for
David A. Buff, P.E.
Principal Engineer
Florida P.E. #19011
DB/mk

cc: Myra Carpenter
Traylor Champion
File (2)

cc: Willard Hanks
Marty Costello
Clive Holladay
E. Frey, NED
J. Harper, EPA
J. Bunyak, NPS

Table 6–3. Summary of Source Test Data From No. 4 Recovery Boiler, Georgia–Pacific Palatka Mill (Revised 04/08/95)

Test Date	Run #	Particulate Matter gr/dscf @8% O2	Particulate Matter lb/hr	Nitrogen Dioxide ppmvd @8% O2	Nitrogen Dioxide lb/hr	Carbon Monoxide ppmvd @8% O2	Carbon Monoxide lb/hr	VOC ppmvd @8% O2	VOC lb/hr	TRS ppmvd @8% O2	TRS lb/hr
02/15/94	1	0.007	15.0	59	104	440	472	<3	<1.0	2.6	3.2
02/15/94	2	0.006	13.6	58	101	756	798	<5	<1.7	3.7	4.8
02/15/94	3	0.007	14.7	62	109	404	428	<2	<0.7	0.7	0.9
	Average	0.007	14.4	60	105	533	566	<3	<1.1	2.3	3.0
02/17/93	1	0.007	16.1	43	72	193	197	<10	<4.4	<0.2	<0.2
02/17/93	2	0.006	12.1	50	84	33	33	<10	<4.4	<0.3	<0.3
02/17/93	3	0.005	10.7	43	72	80	82	<10	<4.4	<0.3	<0.3
02/17/93	4	0.006	12.9	45	76	102	104	<10	<4.4	<0.3	<0.3
	Average										
03/11/92	1	0.029	65.2	61	121	167	200	8.1	4.0	2.3	3.4
03/11/92	2	0.026	55.5	65	125	164	191	7.1	3.6	4.2	5.9
03/11/92	3	0.035	77.9	67	128	330	382	4.2	2.1	1.9	2.6
	Average	0.030	66.2	65	125	220	258	6.5	3.2	2.8	4.0
Allowable Limit		0.033	83.2	100	210.6	800, 1–hr 400, annual	1,025.4 512.7	--	54.6	11.4	17.8
Statistical Analysis[a]											
Number of Tests		3	3	3	3	3	3				
Average		0.014	31.2	57	102	285	309				
Standard Deviation		0.011	24.8	8	20	182	192				
95% Confidence Limit[b]		0.036	79.7	73	141	641	686				
99% Confidence Limit[c]		0.043	95.1	79	154	754	805				

[a] Based on compliance test averages.
[b] Average + (1.96 x standard deviation)
[c] Average + (2.58 x standard deviation)

Table A. 12-Hour TRS Concentrations for the No. 4 Recovery Boiler

Day	Oct 94 Period 1	Oct 94 Period 2	Nov 94 Period 1	Nov 94 Period 2	Dec 94 Period 1	Dec 94 Period 2	Jan 95 Period 1	Jan 95 Period 2	Feb 95 Period 1	Feb 95 Period 2	Mar 95 Period 1	Mar 95 Period 2
1			4.47	0.49	0.54	0.51	2.00	1.10	8.70	6.90	3.37	4.00
2			0.27	0.00	2.53	1.72	2.60	5.20	4.50	10.40	1.97	2.75
3	10.09	4.65	0.65	0.67	2.11	2.63	2.20	2.30	7.70	6.50	2.36	2.93
4	6.90	3.14	1.96	0.79	4.07	3.85	3.00	3.10	5.60	9.40	2.79	1.28
5	3.35	6.61	2.22	0.40	2.92	3.36	2.30	2.10	7.00	8.90	1.79	2.00
6	5.18	3.80	0.77	2.67	3.35	6.84	3.20	4.50	11.20	9.80	1.88	2.49
7	4.75	4.35	3.93	6.41	4.91	4.67	4.30	2.30			3.24	2.43
8	2.63	4.72	6.95	5.17	6.89	5.26	3.00	1.20	6.00	1.70	2.34	0.73
9	4.44	4.70	3.12	8.21	6.98	5.26	2.50	1.80	1.10	0.90	0.72	0.58
10	7.43	4.84	4.16	2.66	4.93	3.44	5.70	1.60	2.40	3.40	0.91	1.96
11	8.60		3.87	1.70	5.71	6.72	1.10	0.10	1.20	0.60	2.93	3.65
12	9.73	2.06	9.45	4.04	5.33	10.00	0.50	2.80	1.10	1.30	3.40	3.37
13	3.20	5.81	8.75	6.14	6.66	7.31	1.60	9.10	1.70	0.60	1.46	0.82
14	4.89	6.63	6.52	10.16	11.09	1.66	6.90	3.40	0.55	0.31	1.46	1.59
15	4.81	10.80	4.48	3.84	4.20	4.59	2.40	6.70	1.30	2.40	4.08	4.88
16	10.76	9.07	6.36	7.21	2.99	1.06	4.60	3.00	0.90	1.60	5.44	2.96
17	3.60	4.34	4.04	1.26	1.36	1.32	7.60	4.20	4.90	2.50	1.89	1.87
18	8.06	2.30	3.21	1.78	1.56	1.83	11.20	1.90	1.70	1.10	2.66	2.52
19	0.50	1.16	2.43	0.30	2.21	1.00	1.70	2.30	4.30	1.60	1.10	1.38
20	1.72	1.80	1.10	0.22	1.49	1.76	0.80	1.60	2.10	1.80	3.06	4.44
21	2.57	0.98	1.24	3.71	6.79	3.49	0.80	1.00	1.50	1.00	7.22	3.58
22	4.25	2.34	4.73	4.24	1.46	0.79	0.80	2.70	1.20	1.00	2.51	2.36
23	4.88	1.28	1.24	3.71	1.58	2.22	5.40	2.20	1.70	0.80	5.86	3.81
24	1.82	0.66	2.04	2.87	3.46	2.64	6.80	7.40	1.10	1.90	3.06	4.71
25	2.62	4.03	2.75	0.98	2.52	1.31	4.20	2.00	1.90	0.40	4.76	3.89
26	1.63	2.32	0.88	1.39	2.81	5.50	2.90	1.50	1.40	1.00	3.80	1.67
27	4.14	3.08	1.21	2.21	3.68	2.77	6.80	4.90	1.00	1.70		
28	2.66	6.30	1.52	1.71	1.54	0.86	3.20	4.50	4.50	2.20		
29	1.75	1.90	1.21	1.03	2.36	3.96	4.30	1.80				
30	2.44	3.74	0.89	0.80	5.36	2.54	6.60	4.50				
31	1.38	0.89			4.15	1.69	3.40	1.50				
Minimum	0.50		0.00		0.51		0.10		0.31		0.58	
Average	4.19		3.05		3.55		3.37		3.15		2.78	
Maximum	10.80		10.16		11.09		11.20		11.20		7.22	

Minimum for all Months	0.00	No. of Observations =	347
Average for all Months	3.35	Average =	3.36
Maximum for all Months	11.20	Standard deviation =	2.42
		95% confidence limit[a] =	8.11
		99% confidence limit[a] =	9.61

[a] 95% C.L. = Average + (1.96 x standard deviation).
99% C.L. = Average + (2.58 x standard deviation).

Emissions Unit Information Section 4 **of** 8

Segment Description and Rate Information: Segment 2 of 2

1. Segment Description (Process/Fuel Type and Associated Operating Method/Mode): Natural gas burning	
2. Source Classification Code: 3-07-900-13	
3. SCC Units: Million cubic feet burned	
4. Maximum Hourly Rate: 0.00762	5. Maximum Annual Rate: 66.75
6. Estimated Annual Activity Factor:	
7. Maximum Percent Sulfur:	8. Maximum Percent Ash:
9. Million Btu per SCC Unit: 1,050	
10. Segment Comment: Average sulfur content = 2,000 gr/MMscf (0.3 lb/MMft^3)	

D. SEGMENT (PROCESS/FUEL) INFORMATION

For the emissions unit addressed in this Emissions Unit Information Section, a separate set of segment data (Fields 1-10) must be completed for each segment required to be reported and for each alternative operating method or mode (emissions trading scenario) under Chapter 62-213, F.A.C., for which the maximum hourly or annual segment-related rate would vary. A segment is a material handling, process, fuel burning, volatile organic liquid storage, production, or other such operation to which emissions of the unit are directly related. See instructions for further details on this subsection of the Application for Air Permit.

Segment Description and Rate Information: Segment 1 of 1

1. Segment Description (Process/Fuel Type and Associated Operating Method/Mode): **Tall Oil Production**	
2. Source Classification Code (SCC): **3-99-999-96**	
3. SCC Units: **1,000 gallons**	
4. Maximum Hourly Rate: **55 tons/hr Crude Tall oil per 12 hours**	5. Maximum Annual Rate: **20,020 tons/yr Crude Tall oil**
6. Estimated Annual Activity Factor:	
7. Maximum Percent Sulfur:	8. Maximum Percent Ash:
9. Million Btu per SCC Unit:	
10. Segment Comment:	

Department of
Environmental Protection

Lawton Chiles
Governor

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Virginia B. Wetherell
Secretary

March 29, 1995

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Ms. Myra Carpenter
Superintendent of Environmental Affairs
Georgia-Pacific Corporation
P. O. Box 919
Palatka, Florida 32178-0919

Dear Ms. Carpenter:

Re: File No. AC 54-266676/PSD-FL-226

As discussed during our March 23, 1995, meeting, the Department will need more information to process the application for permit to modify the digester system and recovery boiler at Georgia-Pacific Corporation's Palatka, Putnam County, Florida, pulp mill. Following is a list of the additional information the Department has requested.

1. Please provide a brief description of the proposed screen tubes for the recovery boiler.

2. Please provide a copy of all tests results of the regulated air pollutants from all affected units since the 1991 pulp mill modification and a statistical analysis of the data to support the requested BACT emission limits.

3. Please provide more justification, including cost data, on any air pollution control option you eliminated from consideration in the requested BACT determination.

4. Explain how compliance with each emission standard (1-hour, 24-hour, annual) can be determined.

5. What would be the requested sulfuric acid mist emission standard if compliance was to be determined by EPA Method 8 instead of the Alternate Sampling Procedure you have requested?

6. Please clarify the production rate or calculations for the Tall Oil Plant.

7. Are the emissions from the brown stock washer system affected by the proposed modification? If so, please describe changes.

8. Please provide a copy of all current permits to operate all affected units at this facility.

The ambient air modeling submitted with the application is being reviewed separately. Mr. Cleve Holiday will contact you if he has any questions on the modeling aspects of this application.

The Department will resume processing the application after receipt of the requested information. If you have any questions on this matter, please write to me or call Willard Hanks at (904)488-1344.

Sincerely,

for A. A. Linero, P.E.
Supervisor,
New Source Review Section

AL/wh/h

cc: David Buff, KBN
Chris Kirts, NED
Jewell Harper, EPA
John Bunyak, NPS

Department of Environmental Protection

Lawton Chiles
Governor

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Virginia B. Wetherell
Secretary

April 12, 1995

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Ms. Myra Carpenter
Superintendent of Environmental Affairs
Georgia-Pacific Corporation
Post Office Box 919
Palatka, Florida 32178-0919

Dear Ms. Carpenter:

Re: File No. AC54-266676/PSD-FL-226

As stated in the Department's March 29, 1995, letter to you requesting more information on this project, the ambient air modeling submitted with the application was reviewed separately. Based on this review, the Department is requesting the following additional modeling information.

If the affected emissions units at Georgia-Pacific emit any of the 189 hazardous air pollutants listed in Title III of the 1990 Clean Air Act Amendments, please provide emissions calculations and perform an impact analysis for each pollutant emitted for comparison with the applicable Florida Ambient Reference Concentrations.

The Department will resume processing the application after receipt of the requested information. If you have any questions on this matter, please write to me at the address above, or call Katherine Zhang or Cleve Holladay at 904/488-1344.

Sincerely,

C. H. Fancy, P.E.
Chief
Bureau of Air Regulation

CHF/al/h

cc: David Buff, KBN
Chris Kirts, NED
Jewell Harper, EPA
John Bunyak, NPS

Z 311 902 912

Receipt for Certified Mail

No Insurance Coverage Provided
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PS Form **3800**, March 1993

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Street and No.: Ga-Pacific	
P.O., State and ZIP Code: Palatka, Fl	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, and Addressee's Address	
TOTAL Postage & Fees	$
Postmark or Date: 4-13-95 AC 54-316676/PSD-Fl-226	

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- Complete items 3, and 4a & b.
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1. ☐ Addressee's Address
2. ☐ Restricted Delivery

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3. Article Addressed to:
Myra Carpenter
Superintendent of Env. Affairs
Ga-Pacific Corp.
P O Box 919
Palatka, Fl 32178-0919

4a. Article Number: Z 311 902 912

4b. Service Type
☐ Registered ☐ Insured
☒ Certified ☐ COD
☐ Express Mail ☐ Return Receipt for Merchandise

7. Date of Delivery: 4-17-95

5. Signature (Addressee)

8. Addressee's Address (Only if requested and fee is paid)

6. Signature (Agent)

PS Form **3811**, December 1991 ☆U.S. GPO: 1993—352-714 **DOMESTIC RETURN RECEIPT**

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Department of
Environmental Protection

Lawton Chiles
Governor

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Virginia B. Wetherell
Secretary

March 29, 1995

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Ms. Myra Carpenter
Superintendent of Environmental Affairs
Georgia-Pacific Corporation
P. O. Box 919
Palatka, Florida 32178-0919

Dear Ms. Carpenter:

Re: File No. AC 54-266676/PSD-FL-226

As discussed during our March 23, 1995, meeting, the Department will need more information to process the application for permit to modify the digester system and recovery boiler at Georgia-Pacific Corporation's Palatka, Putnam County, Florida, pulp mill. Following is a list of the additional information the Department has requested.

1. Please provide a brief description of the proposed screen tubes for the recovery boiler.

2. Please provide a copy of all tests results of the regulated air pollutants from all affected units since the 1991 pulp mill modification and a statistical analysis of the data to support the requested BACT emission limits.

3. Please provide more justification, including cost data, on any air pollution control option you eliminated from consideration in the requested BACT determination.

4. Explain how compliance with each emission standard (1-hour, 24-hour, annual) can be determined.

5. What would be the requested sulfuric acid mist emission standard if compliance was to be determined by EPA Method 8 instead of the Alternate Sampling Procedure you have requested?

6. Please clarify the production rate or calculations for the Tall Oil Plant.

7. Are the emissions from the brown stock washer system affected by the proposed modification? If so, please describe changes.

8. Please provide a copy of all current permits to operate all affected units at this facility.

The ambient air modeling submitted with the application is being reviewed separately. Mr. Cleve Holiday will contact you if he has any questions on the modeling aspects of this application.

The Department will resume processing the application after receipt of the requested information. If you have any questions on this matter, please write to me or call Willard Hanks at (904)488-1344.

Sincerely,

for A. A. Linero, P.E.
Supervisor,
New Source Review Section

AL/wh/h

cc: David Buff, KBN
Chris Kirts, NED
Jewell Harper, EPA
John Bunyak, NPS

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I also wish to receive the following services (for an extra fee):
1. ☐ Addressee's Address
2. ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:
Ms. Myra Carpenter
Superintendent of Environmental Affairs
Georgia-Pacific Corp.
P. O. Box 919
Palatka, FL 32178-0919

4a. Article Number
P 872 563 676

4b. Service Type
☐ Registered ☐ Insured
☒ Certified ☐ COD
☐ Express Mail ☐ Return Receipt for Merchandise

7. Date of Delivery
4-3-95

5. Signature (Addressee)

8. Addressee's Address (Only if requested and fee is paid)

6. Signature (Agent)
[signature]

PS Form **3811**, December 1991 ☆U.S. GPO: 1992—323-402 **DOMESTIC RETURN RECEIPT**

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Return Receipt Showing to Whom, Date, and Addressee's Address	
TOTAL Postage & Fees	$
Postmark or Date Mailed: 3-29-95 Permit: AC 54-266676 PSD-FL-226	

PS Form **3800**, JUNE 1991

March 24, 1995

Mr. Al Linero, P.E.
Administrator, New Source Review
Florida Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Re: PSD Permit Application
Georgia-Pacific Corporation, Palatka Mill

Dear Mr. Linero:

Georgia-Pacific Corporation (G-P) recently submitted a PSD permit application for the Palatka mill. The permit application described proposed changes in certain emissions units at the Palatka mill: the addition of two new batch digesters and changes to the existing No. 4 Recovery Boiler. These proposed changes will also affect several other emission units: the Multiple Effect Evaporator (MEE) system, condensate stripper system, No. 4 Smelt Dissolving Tanks, No. 4 Lime Kiln, and the Tall Oil plant. These units will be affected by potential increased throughput rates due to the batch digester and recovery boiler changes.

G-P is now considering several other process changes and upgrades at the mill. Specifically, three separate projects are being considered, as described below:

1. Chip Conditioners

   The Palatka mill's existing chip conditioning system is used to condition wood chips before entering the digesters. The current system consists of primary chip thickness screens, high-density separators for removing foreign material, and slicers for reducing the thickness of oversize chips.

   G-P is contemplating replacing the separators and slicers with a new chip conditioner system. The new system will retain good fiber currently lost in the separators, increase wood yield by eliminating fines to the digesters and reduce maintenance costs. The chip conditioners consist of two horizontal steel rolls. The rolls turn at low rpm, and the chips fall between the rolls and are crushed or fissured.

   This process results in improved white liquor penetration into the wood in the digesters, resulting in improved yield. Therefore, a small increase in the pulp production capacity of the digesters is expected to result. However, the currently permitted capacity of the digesters, i.e., 118 TPH and 1,850 TPD, is adequate. This level of pulp production is reflected in the PSD permit application.

KBN ENGINEERING AND APPLIED SCIENCES, INC.

6241 Northwest 23rd Street, Suite 500, Gainesville, Florida 32653-1500, 904-336-5600 FAX 904-336-6603
5405 West Cypress Street, Suite 215, Tampa, Florida 33607, 813-287-1717 FAX 813-287-1716
1801 Clint Moore Road, Suite 105, Boca Raton, Florida 33487, 407-994-9910 FAX 407-994-9393
7785 Baymeadows Way, Suite 105, Jacksonville, Florida 32256, 904-739-5600 FAX 904-739-7777
1616 'P' Street N.W., Suite 450, Washington, D.C. 20036, 202-462-1100 FAX 202-462-2270

2. White Liquor Heater
   In the current operations at G-P, white liquor is pumped to the digesters at a temperature of about 180°F. The ideal temperature for use in cooking is somewhat higher. Therefore, steam is used to raise the white liquor temperature. However, this is an inefficient use of steam, and a heat exchanger system is preferable. G-P is considering installing a white liquor heating system (heat exchanger) to replace the current steam system. An added benefit of this system is that digester cooks will increase slightly due to less time to raise the digester pressure. Pulp uniformity will also increase. Therefore, a small increase in the pulp production capacity of the digesters is expected to result. However, the currently permitted capacity of the digesters, i.e., 118 TPH and 1,850 TPD, is adequate. This level of pulp production is reflected in the PSD permit application.

3. Lime Mud Filter Cleaner
   G-P currently operates a lime mud filter in the causticizing area. The lime mud filter increases the consistency of lime mud before it is conveyed to the lime kiln. In the current system, there is no mechanism for continuous cleaning of the filter. The filter must be taken out of service for cleaning about three times per day for a total of about 1 hour of downtime. The installation of an automatic cleaning system for the filter will eliminate this downtime, as well as provide for a slight reduction in fuel oil usage per ton of lime mud.

Since these changes will not result in production rates or emissions which exceed those stated in the PSD permit application, these projects can be included in the PSD permit application.

In regard to the PSD permit application submitted, an error has been discovered in the operating hours for the TRS incinerator used determine PSD baseline emissions. Operating hours of 8,760 hr/yr were used, when in reality the unit operated at somewhat fewer hours during the past 2 years. This error was corrected and revised pages of the permit application prepared. These revised pages were left with you during our meeting on March 23rd. Please replace the respective pages in Emission Unit 4 and in the PSD report with the revised pages.

If you have any questions concerning this information, please call.

Sincerely,

David A. Buff

David A. Buff, P.E.
Principal Engineer
Florida Registration 19011

DAB/vjp
cc: Myra Carpenter
Traylor Champion
File (2)

E. POLLUTANT INFORMATION

For the emissions unit addressed in this Emissions Unit Information Section, a separate set of pollutant information must be completed for each pollutant required to be reported. See instructions for further details on this subsection of the Application for Air Permit.

Pollutant Potential/Estimated Emissions: Pollutant 1 of 7

1. Pollutant Emitted: **TRS**	
2. Total Percent Efficiency of Control:	**99.97%**
3. Primary Control Device Code: **013**	
4. Secondary Control Device Code: **021**	
5. Potential Emissions:	**0.12** lbs/hr **0.53** tons/yr
6. Synthetically Limited? [ ] Yes	[X] No
7. Range of Estimated Fugitive/Other Emissions: [ ] 1 [ ] 2 [ ] 3 _____ to _____ tons/yr	
8. Emission Factor: **5 ppm TRS in exhaust gases** Reference:	
9. Emissions Method Code: [ ] 1 [ ] 2 [ ] 3 [ ] 4 [X] 5	
10. Calculation of Emissions: **See Attachment A-1**	
11. Pollutant Potential/Estimated Emissions Comment:	

Allowable Emissions (Pollutant identified on front page)

A.

1. Basis for Allowable Emissions Code: Rule	
2. Future Effective Date of Allowable Emissions:	
3. Requested Allowable Emissions and Units: 5 ppmvd TRS at 10% O_2	
4. Equivalent Allowable Emissions: 0.12 lbs/hr	0.53 tons/yr
5. Method of Compliance: Stack testing on incinerator outlet using Method 16 or 16A once every 5 years.	
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode): Rule 62-296.404(3)(a)1.	

B.

1. Basis for Allowable Emissions Code: Rule	
2. Future Effective Date of Allowable Emissions:	
3. Requested Allowable Emissions and Units: Incineration at 1200°F for 0.5 second	
4. Equivalent Allowable Emissions: lbs/hr	tons/yr
5. Method of Compliance: Continuous monitor for combustion temperature	
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode): Rule 62-296.404(3)(f)	

E. POLLUTANT INFORMATION

For the emissions unit addressed in this Emissions Unit Information Section, a separate set of pollutant information must be completed for each pollutant required to be reported. See instructions for further details on this subsection of the Application for Air Permit.

Pollutant Potential/Estimated Emissions: Pollutant 2 of 7

1. Pollutant Emitted: **PM**	
2. Total Percent Efficiency of Control:	%
3. Primary Control Device Code:	
4. Secondary Control Device Code:	
5. Potential Emissions:	**5.5** lbs/hr **24.1** tons/yr
6. Synthetically Limited? [ ] Yes [X] No	
7. Range of Estimated Fugitive/Other Emissions: [ ] 1 [ ] 2 [ ] 3 _____ to _____ tons/yr	
8. Emission Factor: Reference: **Stack test results**	
9. Emissions Method Code: [X] 1 [ ] 2 [ ] 3 [ ] 4 [ ] 5	
10. Calculation of Emissions: **See Attachment A-1**	
11. Pollutant Potential/Estimated Emissions Comment:	

Allowable Emissions (Pollutant identified on front page)

A.

1. Basis for Allowable Emissions Code: Other	
2. Future Effective Date of Allowable Emissions:	
3. Requested Allowable Emissions and Units: 5.5 lb/hr	
4. Equivalent Allowable Emissions: 5.5 lbs/hr	24.1 tons/yr
5. Method of Compliance: Stack testing using Method 5 once every 5 years	
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode):	

B.

1. Basis for Allowable Emissions Code:	
2. Future Effective Date of Allowable Emissions:	
3. Requested Allowable Emissions and Units:	
4. Equivalent Allowable Emissions: lbs/hr	tons/yr
5. Method of Compliance:	
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode):	

E. POLLUTANT INFORMATION

For the emissions unit addressed in this Emissions Unit Information Section, a separate set of pollutant information must be completed for each pollutant required to be reported. See instructions for further details on this subsection of the Application for Air Permit.

Pollutant Potential/Estimated Emissions: Pollutant 3 of 7

1. Pollutant Emitted: **PM10**		
2. Total Percent Efficiency of Control:	%	
3. Primary Control Device Code:		
4. Secondary Control Device Code:		
5. Potential Emissions:	**5.5** lbs/hr	**24.1** tons/yr
6. Synthetically Limited? [ ] Yes	[**X**] No	
7. Range of Estimated Fugitive/Other Emissions: [ ] 1 [ ] 2	[ ] 3 _____ to _____ tons/yr	
8. Emission Factor: Reference: **Stack test results**		
9. Emissions Method Code: [**X**] 1 [ ] 2 [ ] 3 [ ] 4 [ ] 5		
10. Calculation of Emissions: **See Attachment A-1**		
11. Pollutant Potential/Estimated Emissions Comment:		

Allowable Emissions (Pollutant identified on front page)

A.

1. Basis for Allowable Emissions Code: **Other**	
2. Future Effective Date of Allowable Emissions:	
3. Requested Allowable Emissions and Units: **5.5 lb/hr**	
4. Equivalent Allowable Emissions: **5.5** lbs/hr	**24.1** tons/yr
5. Method of Compliance: **Stack testing using Method 5 once every 5 years**	
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode):	

B.

1. Basis for Allowable Emissions Code:	
2. Future Effective Date of Allowable Emissions:	
3. Requested Allowable Emissions and Units:	
4. Equivalent Allowable Emissions: lbs/hr	tons/yr
5. Method of Compliance:	
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode):	

E. POLLUTANT INFORMATION

For the emissions unit addressed in this Emissions Unit Information Section, a separate set of pollutant information must be completed for each pollutant required to be reported. See instructions for further details on this subsection of the Application for Air Permit.

Pollutant Potential/Estimated Emissions: Pollutant 4 of 7

1. Pollutant Emitted: SO_2	
2. Total Percent Efficiency of Control:	%
3. Primary Control Device Code:	
4. Secondary Control Device Code:	
5. Potential Emissions:	1,200 lbs/hr 1,677.5 tons/yr
6. Synthetically Limited? [X] Yes	[ ] No
7. Range of Estimated Fugitive/Other Emissions: [ ] 1 [ ] 2 [ ] 3	_____ to _____ tons/yr
8. Emission Factor: Reference: Uncontrolled TRS and approximately 50% removal in scrubber	
9. Emissions Method Code: [ ] 1 [ ] 2 [ ] 3 [ ] 4 [X] 5	
10. Calculation of Emissions: See Attachment A-1	
11. Pollutant Potential/Estimated Emissions Comment:	

Allowable Emissions (Pollutant identified on front page)

A.

1. Basis for Allowable Emissions Code: ESCPSD	
2. Future Effective Date of Allowable Emissions:	
3. Requested Allowable Emissions and Units: 1,200 lb/hr, max; 784 lb/hr, 24-hr	
4. Equivalent Allowable Emissions: 1,200 lbs/hr	1,677.5 tons/yr
5. Method of Compliance: Test initially and once every 5 years for SO_2 using Method 8 at outlet of TRS incinerator. This testing will demonstrate surrogate parameter (scrubber liquor flow rate) for TRS removal.	
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode):	

B.

1. Basis for Allowable Emissions Code:	
2. Future Effective Date of Allowable Emissions:	
3. Requested Allowable Emissions and Units:	
4. Equivalent Allowable Emissions: lbs/hr	tons/yr
5. Method of Compliance:	
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode):	

E. POLLUTANT INFORMATION

For the emissions unit addressed in this Emissions Unit Information Section, a separate set of pollutant information must be completed for each pollutant required to be reported. See instructions for further details on this subsection of the Application for Air Permit.

Pollutant Potential/Estimated Emissions: Pollutant 5 of 7

1. Pollutant Emitted: NO_x
2. Total Percent Efficiency of Control: %
3. Primary Control Device Code:
4. Secondary Control Device Code:
5. Potential Emissions: 1.74 lbs/hr 7.60 tons/yr
6. Synthetically Limited? [ ] Yes [X] No
7. Range of Estimated Fugitive/Other Emissions: [ ] 1 [ ] 2 [ ] 3 _____ to _____ tons/yr
8. Emission Factor: 14 lb/1000 gal Reference: AP-42 for propane
9. Emissions Method Code: [ ] 1 [ ] 2 [ ] 3 [X] 4 [ ] 5
10. Calculation of Emissions: 124 gal/hr x 14 lb/1000 gal = 1.74 lb/hr 1.74 lb/hr x 8,760 hr/yr ÷ 2,000 lb/ton = 7.60 TPY
11. Pollutant Potential/Estimated Emissions Comment:

Allowable Emissions (Pollutant identified on front page)

A.

1. Basis for Allowable Emissions Code:		
2. Future Effective Date of Allowable Emissions:		
3. Requested Allowable Emissions and Units:		
4. Equivalent Allowable Emissions:	lbs/hr	tons/yr
5. Method of Compliance:		
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode):		

B.

1. Basis for Allowable Emissions Code:		
2. Future Effective Date of Allowable Emissions:		
3. Requested Allowable Emissions and Units:		
4. Equivalent Allowable Emissions:	lbs/hr	tons/yr
5. Method of Compliance:		
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode):		

E. POLLUTANT INFORMATION

For the emissions unit addressed in this Emissions Unit Information Section, a separate set of pollutant information must be completed for each pollutant required to be reported. See instructions for further details on this subsection of the Application for Air Permit.

Pollutant Potential/Estimated Emissions: **Pollutant 6 of 7**

1. Pollutant Emitted: **CO**	
2. Total Percent Efficiency of Control:	%
3. Primary Control Device Code:	
4. Secondary Control Device Code:	
5. Potential Emissions:	**0.24** lbs/hr **1.03** tons/yr
6. Synthetically Limited? [ ] Yes [X] No	
7. Range of Estimated Fugitive/Other Emissions: [ ] 1 [ ] 2 [ ] 3 _____ to _____ tons/yr	
8. Emission Factor: **1.9 lb/1000 gal** Reference: **AP-42 for propane**	
9. Emissions Method Code: [ ] 1 [ ] 2 [ ] 3 [X] 4 [ ] 5	
10. Calculation of Emissions: **124 gal/hr x 1.9 lb/1000 gal = 0.24 lb/hr** **0.24 lb/hr x 8,760 hr/yr ÷ 2,000 lb/ton = 1.03 TPY**	
11. Pollutant Potential/Estimated Emissions Comment:	

Allowable Emissions (Pollutant identified on front page)

A.

1. Basis for Allowable Emissions Code:		
2. Future Effective Date of Allowable Emissions:		
3. Requested Allowable Emissions and Units:		
4. Equivalent Allowable Emissions:	lbs/hr	tons/yr
5. Method of Compliance:		
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode):		

B.

1. Basis for Allowable Emissions Code:		
2. Future Effective Date of Allowable Emissions:		
3. Requested Allowable Emissions and Units:		
4. Equivalent Allowable Emissions:	lbs/hr	tons/yr
5. Method of Compliance:		
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode):		

E. POLLUTANT INFORMATION

For the emissions unit addressed in this Emissions Unit Information Section, a separate set of pollutant information must be completed for each pollutant required to be reported. See instructions for further details on this subsection of the Application for Air Permit.

Pollutant Potential/Estimated Emissions: **Pollutant 7 of 7**

1. Pollutant Emitted: **SAM**		
2. Total Percent Efficiency of Control:	%	
3. Primary Control Device Code:		
4. Secondary Control Device Code:		
5. Potential Emissions:	**58.8** lbs/hr	**82.2** tons/yr
6. Synthetically Limited? [X] Yes	[ ] No	
7. Range of Estimated Fugitive/Other Emissions: [ ] 1 [ ] 2 [ ] 3 _____ to _____ tons/yr		
8. Emission Factor: **4% of SO_2 emissions, as SO_3** Reference: **AP-42**		
9. Emissions Method Code: [ ] 1 [ ] 2 [ ] 3 [ ] 4 [X] 5		
10. Calculation of Emissions: **See Attachment A-1**		
11. Pollutant Potential/Estimated Emissions Comment:		

Allowable Emissions (Pollutant identified on front page)

A.

1. Basis for Allowable Emissions Code: ESCPSD	
2. Future Effective Date of Allowable Emissions:	
3. Requested Allowable Emissions and Units: 58.8 lb/hr, max; 38.4 lb/hr, 24-hr	
4. Equivalent Allowable Emissions: 58.8 lbs/hr	82.2 tons/yr
5. Method of Compliance: Test initially and once every 5 years using NCASI Method 106 at outlet of TRS incinerator. This testing will demonstrate surrogate parameter (scrubber liquor flow rate) for TRS removal.	
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode):	

B.

1. Basis for Allowable Emissions Code:		
2. Future Effective Date of Allowable Emissions:		
3. Requested Allowable Emissions and Units:		
4. Equivalent Allowable Emissions:	lbs/hr	tons/yr
5. Method of Compliance:		
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode):		

ATTACHMENT A-1
EMISSION ESTIMATES

I. SULFUR DIOXIDE (SO_2)

SO_2 emissions are based upon TRS content of gases to be incinerated. Fuel burning (methanol and natural gas) contributes negligible amounts of SO_2 to exhaust gases. Estimated TRS content of the gas streams vented to the incinerator and resulting uncontrolled SO_2 emissions are presented below:

	TRS Content (lb/hr)*		SO_2 Emissions (lb/hr)	
Gas Stream Source	Maximum 24-hour	Maximum 3-hour	Maximum 24-hour	Maximum 3-hour
(1) No. 3 Accumulator Tank	196	300	392	600
(2) Pre-Evaporators	69	106	138	212
(3) No. 1 B.L. Evaporator Set	17	26	34	52
(4) No. 2 B.L. Evaporator Set	17	26	34	52
(5) No. 3 B.L. Evaporator Set	17	26	34	52
(6) No. 4 B.L. Evaporator Set	17	26	34	52
(7) Turpentine Condenser	21	32	42	64
(8) Condensate Stripper	38	58	76	116
Totals	392	600	784	1,200

* TRS reported as sulfur

Maximum annual SO_2 emissions are based upon the maximum 24-hour average TRS content and 51% removal in the TRS scrubber:

$$392 \text{ lb/hr TRS} \times 2 \text{ lb } SO_2/\text{lb TRS} \times (1 - 0.51) = 383 \text{ lb/hr } SO_2$$

$$383 \text{ lb/hr} \times 8{,}760 \text{ hr/yr} / 2{,}000 \text{ lb/ton} = 1{,}677.5 \text{ TPY}$$

II. TOTAL REDUCED SULFUR (TRS)

Although it is expected that the TRS Incinerator will result in conversion of all TRS to SO_2, the TRS regulations allow a 5 ppm (dry basis at standard conditions, corrected to 10% O_2) TRS level

in the exhaust gases of an incineration device (12-hour average). Based upon this emission standard, maximum TRS emissions are calculated as follows:

Gas Flow Rate = 22,000 dscfm @ 18.7% O_2

Equate 5 ppm emission rate @ 10% O_2 to actual stack O_2

$C_{corr} = C_{act}\,[(21 - X)/(21 - Y)]$

X = corrected O_2 = 10%

Y = actual O_2 = 18.7%

$C_{corr} = C_{act}\,[(21 - 10)/(21 - 18.7] = 4.8\ C_{act}$

$C_{act} = C_{corr} / 4.8 = 5 / 4.8 = 1.0$ ppm

TRS emissions:

PVC = mRT

m = PVC/RT

$$m = \frac{2116.8\ lb_f}{ft^2} \times \frac{22{,}000\ ft^3}{min} \times \frac{1.0}{10^6} \times \frac{34\ lb_m\text{-}°R}{1{,}545 ft\text{-}lb_f} \times \frac{1}{528°R} \times \frac{60\ min}{hr}$$

$$= 0.12\ lb/hr$$

0.12 lb/hr x 8,760 hr/yr / 2,000 lb/ton = 0.53 TPY

III. PM(TSP)/PM10

Emissions based on permit allowable of 5.5 lb/hr and 24.1 TPY.

IV. PRODUCTS OF COMBUSTION

A. METHANOL BURNING

Emission factors for methanol burning are not published in USEPA AP-42, "Compilation of Air Pollutant Emission Factors." As a result, emission factors in AP-42 for liquified petroleum gas (propane) were used as an estimate of emissions due to methanol burning. The emission factors are as follows:

Nitrogen oxides - 14 lb/1000 gal

Carbon monoxide - 1.9 lb/1000 gal

Volatile Organic Compounds - 0.5 lb/1000 gal

Emission estimates are presented below:

Maximum Methanol burning rate =

8.0×10^6 Btu/hr / 9,781 Btu/lb / 6.6 lb/gal = 124 gal/hr

Nitrogen oxides = 124 x 14/1000 = 1.74 lb/hr

Carbon monoxide = 124 x 1.9/1000 = 0.24 lb/hr

Volatile Organic Compound = 124 x 0.5/1000 = 0.06 lb/hr

B. NATURAL GAS BURNING

From AP-42, emission factors for natural gas burning are as follows:

Nitrogen oxides - 100 lb/10^6 ft^3

Carbon monoxide - 20 lb/10^6 ft^3

Volatile Organic Compounds - 5.3 + 2.7 = 8.0 lb/10^6 ft^3

Emission estimates are presented below:

Maximum natural gas burning rate = 8.0×10^6 Btu/hr / 1,050 Btu/ft^3

= 7,619 ft^3/hr

Nitrogen oxides - 7,619 ft^3/hr x 100/10^6 = 0.76 lb/hr

Carbon monoxide = 7,619 ft^3/hr x 20/10^6 = 0.15 lb/hr

Volatile Organic Compounds = 7,619 ft^3/hr x 8/10^6 = 0.061 lb/hr

C. ANNUAL EMISSIONS

Annual emissions estimates assumes highest emissions for either fuel

Nitrogen oxides = 1.74 lb/hr x 8,760 / 2,000 = 7.60 TPY

Carbon monoxide = 0.24 lb/hr x 8,760 / 2,000 = 1.03 TPY

Volatile Organic Compounds = 0.06 lb/hr x 8,760 / 2,000 = 0.27 TPY

V. SULFURIC ACID MIST

From AP-42, Table 1.3-2 for fossil fuel combustion, SO_3 emissions represent approximately 4 percent of SO_2 emissions. The SO_3 must then be converted to H_2SO_4 based on molecular weights.

Max. hourly = 1,200 lb/hr SO_2 x 0.04 x 98/80 = 58.8 lb/hr

Max. 24-hour = 784 lb/hr SO_2 x 0.04 x 98/80 = 38.4 lb/hr

Max. annual = 1,677.5 TPY x 0.04 x 98/80 = 82.2 TPY

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Table 2–1. Current Actual Emissions From Affected Sources, Georgia–Pacific Palatka Operations

Regulated Pollutant	Current Actual Emissions (TPY)					
	No. 4 LK	No. 4 RB	No. 4 SDT	TALL OIL	TRS INCIN.	TOTAL
Particulate matter (TSP)	80.0	125.8	28.6	--	23.2	257.6
Particulate matter (PM10)	80.0	125.8	28.6	--	23.2	257.6
Sulfur dioxide	3.20	58.8	27.8	--	2,115.2	2,205.0
Nitrogen oxides	125.5	410.3	55.7	--	1.76	593.3
Carbon monoxide	9.60	1,246.2	--	--	0.30	1,256.1
Volatile organic compounds	3.20	11.7	71.3	23.5	0.10	109.8
Sulfuric acid mist	0.16	7.66	1.36	--	103.6	112.8
Total reduced sulfur	4.40	13.3	4.84	0.32	0[a]	22.9
Lead	0.034	0.070	0.017	--	--	0.12
Mercury	0.00037	0.031	6.68E-05	--	--	0.031
Beryllium	0.0015	0.0022	5.20E-05	--	--	0.0038
Fluorides	--	--	--	--	--	--
Asbestos	--	--	--	--	--	--
Vinyl Chloride	--	--	--	--	--	--

[a] Stack tests indicated TRS levels were below detectable limits.

Table 2–2. Future Maximum Annual Emissions From Affected Sources, Georgia–Pacific Palatka Operations

Regulated Pollutant	Future Maximum Emissions (TPY)					
	No. 4 LK	No. 4 RB	No. 4 SDT	TALL OIL	TRS INCIN.	TOTAL
Particulate matter (TSP)	113.9	364.4	55.2	--	24.1	557.6
Particulate matter (PM10)	113.9	364.4	55.2	--	24.1	557.6
Sulfur dioxide	47.7	481.4	34.5	--	1,677.5	2,241.1
Nitrogen oxides	220.3	922.4	69.0	--	7.60	1,219.3
Carbon monoxide	32.0	2,245.6	--	--	1.03	2,278.6
Volatile organic compounds	75.3	239.1	88.3	29.0	0.27	432.0
Sulfuric acid mist	2.34	14.2	1.70	--	82.2	100.44
Total reduced sulfur	17.5	78.0	14.9	0.50	0.53	111.4
Lead	0.045	0.090	0.021	--	--	0.16
Mercury	0.00049	0.039	8.28E–05	--	--	0.040
Beryllium	0.0020	0.0028	6.44E–05	--	--	0.0049
Fluorides	--	--	--	--	--	--
Asbestos	--	--	--	--	--	--
Vinyl Chloride	--	--	--	--	--	--

Table 2-7. Maximum Emissions from TRS Incinerator, Georgia-Pacific, Palatka Operations

Regulated Pollutant	TRS Incinerator (Natural Gas Burning) Emission Factor	Reference	Activity Factor[a]	Hourly Emissions (lb/hr)	TRS Incinerator (Methanol Burning) Emission Factor	Reference	Activity Factor[b]	Hourly Emissions (lb/hr)	Maximum Hourly Emissions (lb/hr)	Annual Emissions[c] (TPY)
Particulate (TSP)	Permit Allowable	1	--	5.5	Permit Allowable	1	--	5.5	5.5	24.1
Particulate (PM10)	Permit Allowable	1	--	5.5	Permit Allowable	1	--	5.5	5.5	24.1
Sulfur dioxide: 3-hr	5.085 lb S/ton ADUP	2	118 ton/hr ADUP	1,200	5.085 lb S/ton ADUP	2	118 ton/hr ADUP	1,200	1200	--
24-hr	5.085 lb S/ton ADUP	2	1,850 TPD ADUP	784	5.085 lb S/ton ADUP	2	1,850 TPD ADUP	784	784	--
Annual	5.085 lb S/ton ADUP; 50% control	3	1,850 TPD ADUP	383	5.085 lb S/ton ADUP; 50% control	3	1,850 TPD ADUP	383	383	1,677.5
Nitrogen oxides	100 lb/MMscf gas	4	7,620 ft^3/hr	0.76	14 lb/1000 gal	5	124 gal/hr	1.74	1.74	7.60
Carbon monoxide	20 lb/MMscf gas	4	7,620 ft^3/hr	0.15	1.9 lb/1000 gal	5	124 gal/hr	0.24	0.24	1.03
Volatile Org. Compds.	8 lb/MMscf gas	4	7,620 ft^3/hr	0.06	0.5 lb/1000 gal	5	124 gal/hr	0.06	0.06	0.27
Sulfuric acid mist	4 % of SO2 as SO3	6	--	58.8	4 % of SO2 as SO3	6	--	58.8	58.8	82.2
Total reduced sulfur	5 ppmvd @ 10% O2	1	4,590 dscfm	0.12	5 ppmvd @ 10% O2	1	4,590 dscfm	0.12	0.12	0.53
Lead	--	--	--	--	--	--	--	--		--
Mercury	--	--	--	--	--	--	--	--		--
Beryllium	--	--	--	--	--	--	--	--		--
Fluorides	--	--	--	--	--	--	--	--		--
Asbestos	--	--	--	--	--	--	--	--		--
Vinyl Chloride	--	--	--	--	--	--	--	--		--

[a] Natural gas heating value of 1,050 Btu/scf.
[b] Methanol heating value of 64,500 Btu/gal.
[c] Based on 8,760 hr/yr operation.

References

1. Emission factor based on permit allowables (AO54-166018).
2. Emission factor based on uncontrolled emissions (from permit application for TRS incinerator). Emission rate based on permit allowables (AO54-166018).
3. Based on uncontrolled 24-hour average emissions and assuming 51% control with TRS scrubber.
4. From AP-42, Table 1.4-1, 1.4-2, and 1.4-3, for natural gas burning.
5. Emission factors for methanol burning are not published in USEPA AP-42, therefore factors for propane were used to estimate the emissions (AP-42, Table 1.5-1).
6. From AP-42, Table 1.3-2 for fossil fuel combustion: SO3 represents 4% of SO2 emissions. Convert SO3 to H2SO4 based on molecular weights.

Table 3–3. Net Emissions Increase Associated With Proposed Project, Georgia–Pacific Palatka Operations

Regulated Pollutant	Current Actual Emissions (TPY)	Future Maximum Emissions (TPY)	Net Increase In Emissions (TPY)	PSD Significant Emission Rate (TPY)	PSD Review Applies?
Particulate matter (TSP)	257.6	557.6	300.0	25	Yes
Particulate matter (PM10)	257.6	557.6	300.0	15	Yes
Sulfur dioxide	2,205.0	2,241.1	36.1	40	No
Nitrogen oxides	593.3	1,219.3	626.0	40	Yes
Carbon monoxide	1,256.1	2,278.6	1,022.5	100	Yes
Volatile organic compounds	109.8	432.0	322.2	40	Yes
Sulfuric acid mist	112.8	100.4	−12.4	7	No
Total reduced sulfur	22.9	111.4	88.5	10	Yes
Lead	0.12	0.16	0.04	0.6	No
Mercury	0.031	0.040	0.009	0.1	No
Beryllium	0.0038	0.0049	0.0011	0.0004	Yes
Fluorides	--	--	--	3	No
Asbestos	--	--	--	0.007	No
Vinyl Chloride	--	--	--	1	No

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Table A–5. Current Actual Emissions from TRS Incinerator, Georgia–Pacific, Palatka Operations

	TRS Incinerator (Natural Gas Fired)				TRS Incinerator (Methanol Burning)				
Regulated Pollutant	Emission Factor	Reference	Activity Factor[a]	Annual Emissions (TPY)	Emission Factor	Reference	Activity Factor[a]	Annual Emissions (TPY)	Total Annual Emissions (TPY)
Particulate (TSP)	5.3 lb/hr	1	8,669 hr/yr	23.0					23.0
Particulate (PM10)	5.3 lb/hr	1	8,669 hr/yr	23.0					23.0
Sulfur dioxide	488 lb/hr	2	8,669 hr/yr	2,115.2					2,115.2
Nitrogen oxides	100 lb/MMscf gas	3	18.3 $MMft^3/yr$	0.92	14 lb/1000 gal	5	120 Mgal/yr	0.84	1.76
Carbon monoxide	20 lb/MMscf gas	3	18.3 $MMft^3/yr$	0.18	1.9 lb/1000 gal	5	120 Mgal/yr	0.11	0.30
Volatile Org. Compds.	8 lb/MMscf gas	3	18.3 $MMft^3/yr$	0.07	0.5 lb/1000 gal	5	120 Mgal/yr	0.03	0.10
Sulfuric acid mist	4 % of SO2 as SO3	4	--	103.6					103.6
Total reduced sulfur	0 lb/hr	1	8,669 hr/yr	0.00					0.00
Lead	--	--	--	--					--
Mercury	--	--	--	--					--
Beryllium	--	--	--	--					--
Fluorides	--	--	--	--					--
Asbestos	--	--	--	--					--
Vinyl Chloride	--	--	--	--					--

[a] Activity factor based on average of 1993 and 1994 operation.

References

1. Based on average of stack test results from 1/25/90 and 2/18/94.
2. Based on average of stack test results from 1/25/90 and 2/18/94.
3. From AP–42, Table 1.4–1, 1.4–2, and 1.4–3, for natural gas burning.
4. From AP–42, Table 1.3–2 for fossil fuel combustion, SO3 represents 4% of SO2 emissions. Convert to H2SO4 based on molecular weights.
5. Emission factors for methanol burning are not published in USEPA AP–42, therefore factors for propane were used to estimate the emissions (AP–42, Table 1.5–1)

IV. Tall Oil Plant

A. VOC

Factor from NCASI Technical Bulletin No. 677, Table X1.A.3.
Factor is 2.9 lb/ton crude tall oil.
4.58 tons/hr x 2.9 lb/ton = 13.3 lb/hr
20,020 TPY x 2.9 lb/ton ÷ 2,000 lb/ton = 29.0 TPY

B. TRS

Emissions based on permit allowable of 0.23 lb/hr and 0.50 TPY.

V. TRS Incinerator

A. PM(TSP)/PM10 and TRS

Emissions based on permitted allowables:
PM(TSP)/PM10 - 5.5 lb/hr, 24.1 TPY
TRS - 0.12 lb/hr, 0.53 TPY

B. SO_2

Maximum 3-hr emissions based upon permit allowable of 1,200 lb/hr.
Maximum 24-hr emissions based on permit application for TRS incinerator, which showed 784 lb/hr.
Maximum annual emissions based upon average of 383 lb/hr or 1,677.5 TPY.
This represents approximately 51% removal of TRS by the TRS scrubber prior to incineration.

C. NO_x, CO, VOC

Emissions based AP-42 factors for natural gas and methanol burning.

D. Sulfuric Acid Mist

As for RB4, SDT4, etc., sulfuric acid mist based on 4% of SO_2 as SO_3, and converting to H_2SO_4.

KBN

March 14, 1995

Mr. Cleveland Holladay
Bureau of Air Management
Florida Department of Environmental Regulation
2600 Blair Stone Road
Tallahassee, FL 32399-2400

RE: Georgia Pacific-Palatka Plant PSD Application Air Modeling Files

Dear Cleve:

Please find enclosed one hard and one disk copy of the PSD air modeling analysis ISCST2 model printout associated with the above-referenced application. Disk output files are compressed within archive files using the utility PKZIP. The unarchiving utility program PKUNZIP is included on the disks. A hard copy of the direction of each of these ZIPPED files is included. Should you have any questions relating to the enclosed material, please call me at (904) 336-5600. Thank you.

Sincerely,

Steven R. Marks
ehj

Steven R. Marks
Senior Meteorologist

Enclosures

SRM/ehj

cc: David Buff, KBN
File (2)

14379C\MODEL\1

6241 Northwest 23rd Street,
Suite 500
Gainesville, Florida 32653-1500
904-336-5600 FAX 904-336-6603

5400 West Cypress Street,
Suite 625
Tampa, Florida 33607
813-287-1717 FAX 813-287-1716

Department of Environmental Protection

Lawton Chiles
Governor

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Virginia B. Wetherell
Secretary

March 13, 1995

Mr. John Bunyak, Chief
Policy, Planning and Permit Review Branch
National Park Service-Air Quality Division
P. O. Box 25287
Denver, Colorado 80225

RE: Georgia-Pacific Corporation
Digester System/Recovery Boiler Modification
Putnam County, PSD-FL-226

Dear Mr. Bunyak:

Enclosed for your review and comment is the above referenced PSD application. Please forward your comments to the Department's Bureau of Air Regulation as soon as possible. The Bureau's FAX number is (904)922-6979.

If you have any questions, please contact Willard Hanks or Cleve Holladay at (904)488-1344 or write to me at the above address.

Sincerely,

Patricia B. Adams for

C. H. Fancy, P.E.
Chief
Bureau of Air Regulation

CHF/pa

Enclosures

cc: Willard Hanks
Cleve Holladay

Department of Environmental Protection

Lawton Chiles
Governor

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Virginia B. Wetherell
Secretary

March 13, 1995

Ms. Jewell A. Harper, Chief
Air Enforcement Branch
U.S. EPA, Region IV
345 Courtland Street, N.E.
Atlanta, Georgia 30308

RE: Georgia-Pacific Corporation
Digester System/Recovery Boiler Modification
Putnam County, PSD-FL-226

Dear Ms. Harper:

Enclosed for your review and comment is the above referenced PSD application. Please forward your comments to the Department's Bureau of Air Regulation as soon as possible. The Bureau's FAX number is (904)922-6979.

If you have any questions, please contact Willard Hanks or Cleve Holladay at (904)488-1344 or write to me at the above address.

Sincerely,

Patricia G. Adams

for C. H. Fancy, P.E.
Chief
Bureau of Air Regulation

CHF/pa

Enclosures

cc: Willard Hanks
Cleve Holladay

Georgia-Pacific Corporation

Palatka Operations
Packaged Products Division
P.O. Box 919
Palatka, Florida 32178-0919
Telephone (904) 325-2001

March 8, 1995

Mr. Al Linero
Administrator
New Source Review Section
Florida Department of Environmental Protection
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, FL 32399-2400

RE: Georgia-Pacific Corporation
Pulp and Paper Mill
Putnam County
PSD Permit Application
DEP ID No. 548515762

Dear Mr. Linero:

Enclosed are 7 copies of the PSD Permit Application for a project in which we plan to replace two existing digesters with digesters of slightly larger size. During this same time we plan to install screen tube modules to our No. 4 Recovery Boiler. Also enclosed is a check for $7500 to cover the application fee.

After your office has had a couple of weeks to become familiar with the project, we would like to schedule a meeting to discuss the conceptual issues of the permit application. We hope to address any preliminary questions you may have at that time. Dave Buff of KBN Engineering (our permitting consultant) will be contacting you to schedule the meeting at your earliest convenience.

Please call me if I can be of further assistance.

Sincerly,

Myra Carpenter

Myra Carpenter
Environmental Superintendent

cc: Ernie Frey - FDEP, N.E. District (w/o enclosures)
Bob Leetch - "
Bill Baxter - (w/o enclosures)
Henry Hirschman - "
John McKinley - "
David Buff - KBN Engineering

DIGESTER SYSTEM/RECOVERY BOILER MODIFICATION PSD PERMIT APPLICATION

Georgia-Pacific Cororation
Palatka, Florida
March 1995

Prepared For:

Georgia-Pacific Corporation
P.O. Box 919
Palatka, Florida 32078

Prepared By:

KBN Engineering and Applied Sciences, Inc.
6241 NW 23rd Street
Gainesville, Florida 32653-1500

March 1995
14379C

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PART A

PERMIT APPLICATION FORMS

Department of Environmental Protection

DIVISION OF AIR RESOURCES MANAGEMENT

APPLICATION FOR AIR PERMIT - LONG FORM

See Instructions for Form No. 62-210.900(1)

I. APPLICATION INFORMATION

This section of the Application for Air Permit form provides general information on the scope of this application, the purpose for which this application is being submitted, and the nature of any construction or modification activities proposed as a part of this application. This section also includes information on the owner or authorized representative of the facility (or the responsible official in the case of a Title V source) and the necessary statements for the applicant and professional engineer, where required, to sign and date for formal submittal of the Application for Air Permit to the Department. If the application form is submitted to the Department on diskette, this section of the Application for Air Permit must also be submitted in hard-copy.

Identification of Facility Addressed in This Application

Enter the name of the corporation, business, governmental entity, or individual that has ownership or control of the facility; the facility name, if any; and a brief reference to the facility's physical location. If known, also enter the ARMS or AIRS facility identification number. This information is intended to give a quick reference, on the first page of the application form, to the facility addressed in this application. Elsewhere in the form, numbered data fields are provided for entry of the facility data in computer-input format.

Georgia-Pacific Corporation **Palatka Mill**

Application Processing Information (DEP Use)

1. Date of Receipt of Application:	3/9/95
2. Permit Number:	AC 54-266676
3. PSD Number (if applicable):	PSD-FL-226
4. Siting Number (if applicable):	

Owner/Authorized Representative or Responsible Official

1. Name and Title of Owner/Authorized Representative or Responsible Official:
   Henry Hirschman - General Manager

2. Owner/Authorized Representative or Responsible Official Mailing Address:

   Organization/Firm: **Georgia-Pacific Corporation**
   Street Address: **P.O. Box 919**
   City: **Palatka** State: **FL** Zip Code: **32178-0919**

3. Owner/Authorized Representative or Responsible Official Telephone Numbers:

   Telephone: **(904) 325-2001** Fax: **(904) 328-0014**

4. Owner/Authorized Representative or Responsible Official Statement:

   I, the undersigned, am the owner or authorized representative of the facility (non-Title V source) addressed in this Application for Air Permit or the responsible official, as defined in Chapter 62-213, F.A.C., of the Title V source addressed in this application, whichever is applicable. I hereby certify, based on information and belief formed after reasonable inquiry, that the statements made in this application are true, accurate and complete and that, to the best of my knowledge, any estimates of emissions reported in this application are based upon reasonable techniques for calculating emissions. Further, I agree to operate and maintain the air pollutant emissions units and air pollution control equipment described in this application so as to comply with all applicable standards for control of air pollutant emissions found in the statutes of the State of Florida and rules of the Department of Environmental Protection and revisions thereof. If the purpose of this application is to obtain an air operation permit or operation permit revision for one or more emissions units which have undergone construction or modification, I certify that, with the exception of any changes detailed as part of this application, each such emissions unit has been constructed or modified in substantial accordance with the information given in the corresponding application for air construction permit and with all provisions contained in such permit. I understand that a permit, if granted by the Department, cannot be transferred without authorization from the Department, and I will promptly notify the Department upon sale or legal transfer of any permitted emissions unit.*

Signature

3/6/95
Date

* Attach letter of authorization if not currently on file.

Scope of Application

This Application for Air Permit addresses the following emissions unit(s) at the facility (or Title V source). An Emissions Unit Information Section (a Section III of the form) must be included for each emissions unit listed.

Emissions Unit Id	Description of Emissions Unit
31JAX54000532	Digester System
31JAX54000532	Multiple Effect Evaporator System
31JAX54000532	Condensate Stripper System
31JAX54000532	TRS Scrubber and Incinerator
31JAX54000518	No. 4 Recovery Boiler
31JAX54000519	No. 4 Smelt Dissolving Tanks
31JAX54000517	No. 4 Lime Kiln
31JAX54000531	Tall Oil Plant

Purpose of Application and Category

Check one (except as otherwise indicated):

Category I: All Air Operation Permit Applications Subject to Processing Under Chapter 62-213, F.A.C.

This Application for Air Permit is submitted to obtain:

[ ] Initial air operation permit under Chapter 62-213, F.A.C., for an existing facility which is classified as a Title V source.

[ ] Initial air operation permit under Chapter 62-213, F.A.C., for a facility which, upon start up of one or more newly constructed or modified emissions units addressed in this application, would become classified as a Title V source.

Current construction permit number: _____

[ ] Air operation permit renewal under Chapter 62-213, F.A.C., for a Title V source.

Operation permit to be renewed: _____

[ ] Air operation permit revision for a Title V source to address one or more newly constructed or modified emissions units addressed in this application.

Current construction permit number: _____

Operation permit to be revised: _____

[ ] Air operation permit revision or administrative correction for a Title V source to address one or more proposed new or modified emissions units and to be processed concurrently with the air construction permit application. Also check Category III.

Operation permit to be revised/corrected: _____

_____

[ ] Air operation permit revision for a Title V source for reasons other than construction or modification of an emissions unit. Give reason for the revision; e.g., to comply with a new applicable requirement or to request approval of an "Early Reductions" proposal.

Operation permit to be revised: _____

Reason for revision: _____

_____

Category II: All Air Operation Permit Applications Subject to Processing Under Rule 62-210.300(2)(b), F.A.C.

This Application for Air Permit is submitted to obtain:

[ ] Initial air operation permit under Rule 62-210.300(2)(b), F.A.C., for an existing facility seeking classification as a synthetic non-Title V source.

Current operation/construction permit number(s): _____

_____

[ ] Renewal air operation permit under Rule 62-210.300(2)(b), F.A.C., for a synthetic non-Title V source.

Operation permit to be renewed: _____

[ ] Air operation permit revision for a synthetic non-Title V source. Give reason for revision; e.g., to address one or more newly constructed or modified emissions units.

Operation permit to be revised: _____

Reason for revision: _____

_____

Category III: All Air Construction Permit Applications for All Facilities and Emissions Units

This Application for Air Permit is submitted to obtain:

[X] Air construction permit to construct or modify one or more emissions units within a facility (including any facility classified as a Title V source).

Current operation permit number(s), if any: see attached listing

[ ] Air construction permit to make federally enforceable an assumed restriction on the potential emissions of one or more existing, permitted emissions units.

Current operation permit number(s): _____

[ ] Air construction permit for one or more existing, but unpermitted, emissions units.

Application Processing Fee

Check one:

[X] Attached - Amount: $ 7,500.00 [ ] Not Applicable.

Construction/Modification Information

1. Description of Proposed Project or Alterations: **Replace two digesters with digesters of slightly larger size. Add screen tubes to No. 4 Recovery Boiler. Refer to PSD report for further information.**
2. Projected or Actual Date of Commencement of Construction (DD-MON-YYYY): **01-08-1995**
3. Projected Date of Completion of Construction (DD-MON-YYYY): **01-06-1996**

Professional Engineer Certification

1. Professional Engineer Name: David A. Buff
   Registration Number: 19011

2. Professional Engineer Mailing Address:
   Organization/Firm: KBN Engineering and Applied Sciences, Inc.
   Street Address: 6241 NW 23rd Street, Suite 500
   City: Gainesville State: FL Zip Code: 32653-1500

3. Professional Engineer Telephone Numbers:
   Telephone: (904) 336-5600 Fax: (904) 336-6603

4. Professional Engineer Statement:

I, the undersigned, hereby certify, except as particularly noted herein, that:*

(1) To the best of my knowledge, there is reasonable assurance (a) that the air pollutant emissions unit(s) and the air pollution control equipment described in this Application for Air Permit, when properly operated and maintained, will comply with all applicable standards for control of air pollutant emissions found in the Florida Statutes and rules of the Department of Environmental Protection; or (b) for any application for a Title V source air operation permit, that each emissions unit described in this Application for Air Permit, when properly operated and maintained, will comply with the applicable requirements identified in this application to which the unit is subject, except those emissions units for which a compliance schedule is submitted with this application;

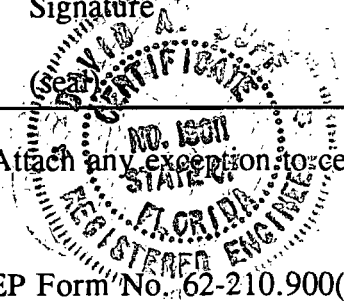
(2) To the best of my knowledge, any emission estimates reported or relied on in this application are true, accurate, and complete and are either based upon reasonable techniques available for calculating emissions or, for emission estimates of hazardous air pollutants not regulated for an emissions unit addressed in this application, based solely upon the materials, information and calculations submitted with this application; and

(3) For any application for an air construction permit for one or more proposed new or modified emissions units, the engineering features of each such emissions unit described in this application have been designed or examined by me or individuals under my direct supervision and found to be in conformity with sound engineering principles applicable to the control of emissions of the air pollutants characterized in this application.

David A. Buff
Signature

March 6, 1995
Date

(Seal)



* Attach any exception to certification statement.

DEP Form No. 62-210.900(1) - Form
Effective: 11-23-94

14379C/TVAI (02/12/95)

Application Contact

1. Name and Title of Application Contact:
   Myra Carpenter, Superintendent of Environmental Affairs

2. Application Contact Mailing Address:

   Organization/Firm: **Georgia-Pacific Corporation**
   Street Address: **P.O. Box 919**
   City: **Palatka** State:**FL** Zip Code: **32178-0919**

3. Application Contact Telephone Numbers:

   Telephone: **(904) 325-2001** Fax: **(904) 328-0014**

Application Comment

II. FACILITY INFORMATION

A. GENERAL FACILITY INFORMATION

Facility Name, Location, and Type

1. Facility Owner or Operator:
   Georgia-Pacific Corporation

2. Facility Name:
   Palatka Mill

3. Facility Identification Number: **31JAX540005** [ ] Unknown

4. Facility Location Information:
   Facility Street Address: **North of CR 216; West of U.S. 17**
   City: **Palatka** County: **Putnam** Zip Code: **32177**

5. Facility UTM Coordinates:
   Zone: **17** East (km): **434.0** North (km): **3283.4**

6. Facility Latitude/Longitude:
   Latitude (DD/MM/SS): Longitude (DD/MM/SS):

7. Governmental Facility Code:	8. Facility Status Code:	9. Relocatable Facility?	10. Facility Major Group SIC Code:
0	**A**	[ ] Yes [**X**] No	**26**

11. Facility Comment:

Facility Contact

1. Name and Title of Facility Contact:
   Myra Carpenter, Superintendent of Environmental Affairs

2. Facility Contact Mailing Address:
   Organization/Firm: **Georgia-Pacific Corporation**
   Street Address: **P.O. Box 919**
   City: **Palatka** State: **FL** Zip Code: **32178-0919**

3. Facility Contact Telephone Numbers:
   Telephone: **(904) 325-2001** Fax: **(904) 328-0014**

Facility Regulatory Classifications

1. Small Business Stationary Source?	[ ] Yes	[X] No	[ ] Unknown
2. Title V Source?	[X] Yes	[ ] No	
3. Synthetic Non-Title V Source?	[ ] Yes	[X] No	
4. Major Source of Pollutants Other than Hazardous Air Pollutants (HAPs)?	[X] Yes	[ ] No	
5. Synthetic Minor Source of Pollutants Other than HAPs?	[ ] Yes	[X] No	
6. Major Source of HAPs?	[X] Yes	[ ] No	[ ] Possible
7. Synthetic Minor Source of HAPs?	[ ] Yes	[X] No	
8. One or More Emissions Units Subject to NSPS?	[X] Yes	[ ] No	
9. One or More Emissions Units Subject to NESHAP?	[ ] Yes	[X] No	
10. Title V Source by EPA Designation?	[ ] Yes	[X] No	
11. Facility Regulatory Classifications Comment:			

B. FACILITY REGULATIONS

Depending on the application category, this subsection of the Application for Air Permit form provides either a brief analysis or detailed listing of federal, state, and local regulations applicable to the facility as a whole. (Regulations applicable to individual emissions units within the facility are addressed in Subsection III-B of the form.)

Rule Applicability Analysis (Required for Category II applications and Category III applications involving non Title-V sources. See Instructions.)

List of Applicable Regulations (Required for Category I applications and Category III applications involving Title-V sources. See Instructions.)

62-212.400 PSD Review	

C. FACILITY POLLUTANT INFORMATION

This subsection of the Application for Air Permit form allows for the reporting of potential and estimated emissions of selected pollutants on a facility-wide basis. It must be completed for each pollutant for which the applicant proposes to establish a facility-wide emissions cap and for each pollutant for which emissions are not reported at the emissions-unit level.

Facility Pollutant Information: Pollutant ____ of ____

1. Pollutant Emitted:		
2. Estimated Emissions:		(tons/yr)
3. Requested Emissions Cap:	(lb/hr)	(tons/yr)
4. Basis for Emissions Cap Code:		
5. Facility Pollutant Comment:		

Facility Pollutant Information Pollutant ____ of ____

1. Pollutant Emitted:		
2. Estimated Emissions:		(tons/yr)
3. Requested Emissions Cap:	(lb/hr)	(tons/yr)
4. Basis for Emissions Cap Code:		
5. Facility Pollutant Comment:		

Facility Pollutant Information Pollutant ____ of ____

1. Pollutant Emitted:		
2. Estimated Emissions:		(tons/yr)
3. Requested Emissions Cap:	(lb/hr)	(tons/yr)
4. Basis for Emissions Cap Code:		
5. Facility Pollutant Comment:		

Facility Pollutant Information Pollutant ____ of ____

1. Pollutant Emitted:		
2. Estimated Emissions:		(tons/yr)
3. Requested Emissions Cap:	(lb/hr)	(tons/yr)
4. Basis for Emissions Cap Code:		
5. Facility Pollutant Comment:		

D. FACILITY SUPPLEMENTAL INFORMATION

This subsection of the Application for Air Permit form provides supplemental information related to the facility as a whole. (Supplemental information related to individual emissions units within the facility is provided in Subsection III-I of the form.) Supplemental information must be submitted as an attachment to each copy of the form, in hard-copy or computer-readable form.

Supplemental Requirements for All Applications

1. Area Map Showing Facility Location:
   [X] Attached, Document ID: PSD Report, Figure 2-1
   [ ] Not Applicable [ ] Waiver Requested

2. Facility Plot Plan:
   [X] Attached, Document ID: PSD Report, Figure 2-2
   [ ] Not Applicable [ ] Waiver Requested

3. Process Flow Diagram(s):
   [X] Attached, Document ID(s): Attachment C of PSD Report
   [ ] Not Applicable [ ] Waiver Requested

4. Precautions to Prevent Emissions of Unconfined Particulate Matter:
   [ ] Attached, Document ID: _____
   [X] Not Applicable

5. Fugitive Emissions Identification:
   [ ] Attached, Document ID: _____
   [X] Not Applicable

6. Supplemental Information for Construction Permit Application:
   [X] Attached, Document ID: PSD Report
   [ ] Not Applicable

Additional Supplemental Requirements for Category I Applications Only

7. List of Insignificant Activities:
   [ ] Attached, Document ID: _____
   [ ] Not Applicable

8. List of Equipment/Activities Regulated under Title VI:
   [ ] Attached, Document ID: _____
   [ ] Equipment/Activities Onsite but Not Required to be Individually Listed
   [ ] Not Applicable

9. Alternative Methods of Operation:
   [ ] Attached, Document ID: _____
   [ ] Not Applicable

10. Alternative Modes of Operation (Emissions Trading):
   [ ] Attached, Document ID: _____
   [ ] Not Applicable

11. Enhanced Monitoring Plan:
   [ ] Attached, Document ID: _____
   [ ] Not Applicable

12. Risk Management Plan Verification:

   [ ] Plan Submitted to Implementing Agency - Verification Attached
   Attached, Document ID: _____

   [ ] Plan to be Submitted to Implementing Agency by Required Date

   [ ] Not Applicable

13. Compliance Report and Plan
   [ ] Attached, Document ID: _____
   [ ] Not Applicable

14. Compliance Statement (Hard-copy Required)
   [ ] Attached, Document ID: _____
   [ ] Not Applicable

Current Air Permits for Affected Sources at Georgia-Pacific Palatka Mill

Emission Unit	ARMS ID Number	Air Operating Permit Number
TRS Incinerator (Including Batch Digester System, Multiple Effect Evaporator System, and Condensate Stripper System)	31JAX54000532	AO54-166018
No. 4 Recovery Boiler	31JAX54000518	AO54-209650
No. 4 Smelt Dissolving Tanks	31JAX54000519	AO54-209650
No. 4 Lime Kiln	31JAX54000517	AO54-209858
Tall Oil Plant	31JAX54000531	AO54-209098

III. EMISSIONS UNIT INFORMATION

A separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each emissions unit addressed in this Application for Air Permit. If submitting the application form in hard copy, indicate, in the space provided at the top of each page, the number of this Emissions Unit Information Section and the total number of Emissions Unit Information Sections submitted as part of this application.

A. GENERAL EMISSIONS UNIT INFORMATION

This subsection of the Application for Air Permit form provides general information on the emissions unit addressed in this Emissions Unit Information Section, including information on the type, control equipment, operating capacity, and operating schedule of the emissions unit.

Type of Emissions Unit Addressed in This Section

Check one:

[X] This Emissions Unit Information Section addresses, as a single emissions unit, a single process or production unit, or activity, which produces one or more air pollutants and which has at least one definable emission point (stack or vent).

[ ] This Emissions Unit Information Section addresses, as a single emissions unit, an individually-regulated emission point (stack or vent) serving a single process or production unit, or activity, which also has other individually-regulated emission points.

[ ] This Emissions Unit Information Section addresses, as a single emissions unit, a collectively-regulated group of process or production units and activities which has at least one definable emission point (stack or vent) but may also produce fugitive emissions.

[ ] This Emissions Unit Information Section addresses, as a single emissions unit, one or more process or production units and activities which produce fugitive emissions only.

Emissions Unit Information Section 1 of 8

Emissions Unit Description and Status

1. Description of Emissions Unit Addressed in This Section: **Digester system consisting of 13 batch digesters, blow heat accumulator, and associated equipment.**		
2. ARMS Identification Number: [X] No Corresponding ID [ ] Unknown		
3. Emissions Unit Status Code: **A**	4. Acid Rain Unit? [ ] Yes [X] No	5. Emissions Unit Major Group SIC Code: **26**
6. Initial Startup Date (DD-MON-YYYY):		
7. Long-term Reserve Shutdown Date (DD-MON-YYYY):		
8. Package Unit: Manufacturer: Model Number:		
9. Generator Nameplate Rating: MW		
10. Incinerator Information: Dwell Temperature: °F Dwell Time: seconds Incinerator Afterburner Temperature: °F		
11. Emissions Unit Comment: **Emissions vented to TRS scrubber and incinerator.**		

Emissions Unit Information Section 1 of 8

Emissions Unit Control Equipment

A.

1. Description: TRS scrubber using alkaline solution as scrubbing medium.

2. Control Device or Method Code: 013

B.

1. Description: TRS incinerator

2. Control Device or Method Code: 021

C.

1. Description:

2. Control Device or Method Code:

Emissions Unit Information Section 1 of 8

Emissions Unit Operating Capacity

1. Maximum Heat Input Rate: mmBtu/hr
2. Maximum Incineration Rate: lbs/hr tons/day
3. Maximum Process or Throughput Rate:
4. Maximum Production Rate: 118 tons/hr ADUP
5. Operating Capacity Comment: Maximum 24-hour production: 1,850 TPD ADUP

Emissions Unit Operating Schedule

Requested Maximum Operating Schedule:			
24	hours/day	7	days/week
52	weeks/yr	8,760	hours/yr

B. EMISSIONS UNIT REGULATIONS

Depending on the application category, this subsection of the Application for Air Permit form provides either a brief analysis or detailed listing of all federal, state, and local regulations applicable to the emissions unit addressed in this Emissions Unit Information Section.

Rule Applicability Analysis (Required for Category II applications and Category III applications involving non Title-V sources. See Instructions.)

List of Applicable Regulations (Required for Category I applications and Category III applications involving Title-V sources. See Instructions.)

62-2.960(1)(a)	
62-2.960(1)(b)	
62-2.960(1)(d)1.	
62-2.960(1)(g)	
62-2.960(1)(h)	
62-210.300(2)	
62-210.650	
62-210.700(1)	
62-210.700(4)	
62-210.700(6)	
62-296.320(2)	
62-296.404(3)(a)1.	
62-296.404(3)(a)3.	
62-296.404(3)(a)4.	
62-296.404(6)(a)	
62-296.404(6)(b)	
62-296.404(6)(c)3.	
62-296.404(6)(d)	
40CFR60.283(a)(1)(iii)	

C. EMISSION POINT (STACK/VENT) INFORMATION

This subsection of the Application for Air Permit form provides information about the emission point associated with the emissions unit addressed in this Emissions Unit Information Section. An emission point is typically a stack or vent but can be any identifiable location at which air pollutants, including fugitive emissions, are discharged into the atmosphere.

Emission Point Description and Type

1. Identification of Point on Plot Plan or Flow Diagram:
   Digesters

2. Emission Point Type Code:
   [ ] 1 [ ] 2 [X] 3 [ ] 4

3. Descriptions of Emissions Points Comprising this Emissions Unit:

4. ID Numbers or Descriptions of Emission Units with this Emission Point in Common:
   Digester system, multiple effect evaporator system, and condensate stripper system all vent to TRS scrubber and incinerator (Pt. #32)

5. Discharge Type Code:
   [ ] D [ ] F [ ] H [X] P
   [ ] R [ ] V [ ] W

6. Stack Height:	ft
7. Exit Diameter:	ft
8. Exit Temperature:	°F
9. Actual Volumetric Flow Rate:	acfm
10. Percent Water Vapor:	%
11. Maximum Dry Standard Flow Rate:	dscfm
12. Nonstack Emission Point Height:	ft
13. Emission Point UTM Coordinates: Zone: East (km): North (km):	
14. Emission Point Comment: **Refer to TRS scrubber and incinerator (Pt. #32) for stack parameters.**	

D. SEGMENT (PROCESS/FUEL) INFORMATION

For the emissions unit addressed in this Emissions Unit Information Section, a separate set of segment data (Fields 1-10) must be completed for each segment required to be reported and for each alternative operating method or mode (emissions trading scenario) under Chapter 62-213, F.A.C., for which the maximum hourly or annual segment-related rate would vary. A segment is a material handling, process, fuel burning, volatile organic liquid storage, production, or other such operation to which emissions of the unit are directly related. See instructions for further details on this subsection of the Application for Air Permit.

Segment Description and Rate Information: Segment 1 of 1

1. Segment Description (Process/Fuel Type and Associated Operating Method/Mode): **Digester Relief and Blow Tank**	
2. Source Classification Code (SCC): **3-07-001-01**	
3. SCC Units: **Air-Dry Tons Unbleached Pulp**	
4. Maximum Hourly Rate: **118 tons/hr ADUP**	5. Maximum Annual Rate: **675,250 tons/yr ADUP**
6. Estimated Annual Activity Factor: **1,850 tons/day ADUP**	
7. Maximum Percent Sulfur:	8. Maximum Percent Ash:
9. Million Btu per SCC Unit:	
10. Segment Comment:	

Emissions Unit Information Section 1 of 8

Segment Description and Rate Information: Segment ____ of ____

1. Segment Description (Process/Fuel Type and Associated Operating Method/Mode):	
2. Source Classification Code:	
3. SCC Units:	
4. Maximum Hourly Rate:	5. Maximum Annual Rate:
6. Estimated Annual Activity Factor:	
7. Maximum Percent Sulfur:	8. Maximum Percent Ash:
9. Million Btu per SCC Unit:	
10. Segment Comment:	

E. POLLUTANT INFORMATION

For the emissions unit addressed in this Emissions Unit Information Section, a separate set of pollutant information must be completed for each pollutant required to be reported. See instructions for further details on this subsection of the Application for Air Permit.

Pollutant Potential/Estimated Emissions: Pollutant 1 of 1

1. Pollutant Emitted: TRS	
2. Total Percent Efficiency of Control:	99.97%
3. Primary Control Device Code: 013	
4. Secondary Control Device Code: 021	
5. Potential Emissions:	lbs/hr tons/yr
6. Synthetically Limited? [ ] Yes	[ ] No
7. Range of Estimated Fugitive/Other Emissions: [ ] 1 [ ] 2 [ ] 3 _____ to _____ tons/yr	
8. Emission Factor: Reference:	
9. Emissions Method Code: [ ] 1 [ ] 2 [ ] 3 [ ] 4 [ ] 5	
10. Calculation of Emissions:	
11. Pollutant Potential/Estimated Emissions Comment: Refer to Pt. #32, TRS scrubber and incinerator, for emissions.	

Allowable Emissions (Pollutant identified on front page)

A.

1. Basis for Allowable Emissions Code: Rule		
2. Future Effective Date of Allowable Emissions:		
3. Requested Allowable Emissions and Units: Incinerate for 0.5 second at 1200°F		
4. Equivalent Allowable Emissions:	lbs/hr	tons/yr
5. Method of Compliance: Method 16 or 16A on TRS Incinerator every 5 years		
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode): Rule 62-296.404(3)(a)1.: Refer to TRS scrubber and incinerator for allowable emissions		

B.

1. Basis for Allowable Emissions Code:		
2. Future Effective Date of Allowable Emissions:		
3. Requested Allowable Emissions and Units:		
4. Equivalent Allowable Emissions:	lbs/hr	tons/yr
5. Method of Compliance:		
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode):		

F. VISIBLE EMISSIONS INFORMATION

This subsection of the Application for Air Permit form must be completed for only those emissions units which are subject to a visible emissions limitation. The intent of this subsection of the form is to identify each activity associated with the emissions unit addressed in this section for which a separate opacity limitation would be applicable. Visible emission subtype codes for each such activity are listed in the instructions for Field 1. Most emissions units will be subject to a "subtype VE" limit only.

Visible Emissions Limitations: Visible Emissions Limitation ____ of ____

1. Visible Emissions Subtype:
2. Basis for Allowable Opacity: [ ] Rule [ ] Other
3. Requested Allowable Opacity: Normal Conditions: % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hr
4. Method of Compliance:
5. Visible Emissions Comment:

Visible Emissions Limitations: Visible Emissions Limitation ____ of ____

1. Visible Emissions Subtype:
2. Basis for Allowable Opacity: [ ] Rule [ ] Other
3. Requested Allowable Opacity: Normal Conditions: % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hr
4. Method of Compliance:
5. Visible Emissions Comment:

Visible Emissions Limitations: Visible Emissions Limitation ____ of ____

1. Visible Emissions Subtype:
2. Basis for Allowable Opacity: [ ] Rule [ ] Other
3. Requested Allowable Opacity: Normal Conditions: % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hr
4. Method of Compliance:
5. Visible Emissions Comment:

G. CONTINUOUS MONITOR INFORMATION

This subsection of the Application for Air Permit form must be completed for only those emissions units which are required by rule or permit to install and operate one or more continuous emission, opacity, flow, or other type monitors. A separate set of continuous monitor information (fields 1-6) must be completed for each monitoring system required.

Continuous Monitoring System Continuous Monitor ____ of ____

1. Parameter Code:
2. CMS Requirement: [ ] Rule [ ] Other
3. Monitor Information: Manufacturer: Model Number: Serial Number:
4. Installation Date (DD-MON-YYYY):
5. Performance Specification Test Date (DD-MON-YYYY):
6. Continuous Monitor Comment:

Continuous Monitoring System Continuous Monitor ____ of ____

1. Parameter Code:
2. CMS Requirement: [ ] Rule [ ] Other
3. Monitor Information: Manufacturer: Model Number: Serial Number:
4. Installation Date (DD-MON-YYYY):
5. Performance Specification Test Date (DD-MON-YYYY):
6. Continuous Monitor Comment:

Continuous Monitoring System Continuous Monitor ____ of ____

1. Parameter Code:
2. CMS Requirement: [ ] Rule [ ] Other
3. Monitor Information: Manufacturer: Model Number: Serial Number:
4. Installation Date (DD-MON-YYYY):
5. Performance Specification Test Date (DD-MON-YYYY):
6. Continuous Monitor Comment:

H. PREVENTION OF SIGNIFICANT DETERIORATION (PSD) INCREMENT TRACKING INFORMATION

This subsection of the Application for Air Permit form must be completed for all applications, not just those undergoing prevention-of-significant-deterioration (PSD) review pursuant to Rule 62-212.400, F.A.C. The intent of this subsection is to make a preliminary determination as to whether the emissions unit addressed in this Emissions Unit Information Section consumes PSD increment. PSD increment is consumed (or expanded) as a result of emission increases (decreases) occurring after pollutant-specific baseline dates. Pollutants for which baseline dates have been established are sulfur dioxide, particulate matter, and nitrogen dioxide.

PSD Increment Consumption Determination

1. Increment Consuming for Particulate Matter or Sulfur Dioxide?

   If the emissions unit addressed in this section emits particulate matter or sulfur dioxide, answer the following series of questions to make a preliminary determination as to whether or not the emissions unit consumes PSD increment for particulate matter or sulfur dioxide. Check the first statement, if any, that applies and skip remaining statements.

   [ ] The emissions unit is undergoing PSD review as part of this application, or has undergone PSD review previously, for particulate matter or sulfur dioxide. If so, emissions unit consumes increment.

   [ ] The facility addressed in this application is classified as an EPA major source pursuant to paragraph (c) of the definition of "major source of air pollution" in Chapter 62-213, F.A.C., and the emissions unit addressed in this section commenced (or will commence) construction after January 6, 1975. If so, baseline emissions are zero, and emissions unit consumes increment.

   [ ] The facility addressed in this application is classified as an EPA major source, and the emissions unit began initial operation after January 6, 1975, but before December 27, 1977. If so, baseline emissions are zero, and emissions unit consumes increment.

   [ ] For any facility, the emissions unit began (or will begin) initial operation after December 27, 1977. If so, baseline emissions are zero, and emissions unit consumes increment.

   [ ] None of the above apply. If so, the baseline emissions of the emissions unit are nonzero. In such case, additional analysis, beyond the scope of this application, is needed to determine whether changes in emissions have occurred (or will occur) after the baseline date that may consume or expand increment.

2. Increment Consuming for Nitrogen Dioxide?

If the emissions unit addressed in this section emits nitrogen oxides, answer the following series of questions to make a preliminary determination as to whether or not the emissions unit consumes PSD increment for nitrogen dioxide. Check first statement, if any, that applies and skip remaining statements.

[ ] The emissions unit addressed in this section is undergoing PSD review as part of this application, or has undergone PSD review previously, for nitrogen dioxide. If so, emissions unit consumes increment.

[ ] The facility addressed in this application is classified as an EPA major source pursuant to paragraph (c) of the definition of "major source of air pollution" in Chapter 62-213, F.A.C., and the emissions unit addressed in this section commenced (or will commence) construction after February 8, 1988. If so, baseline emissions are zero, and emissions unit consumes increment.

[ ] The facility addressed in this application is classified as an EPA major source, and the emissions unit began initial operation after February 8, 1988, but before March 28, 1988. If so, baseline emissions are zero, and emissions unit consumes increment.

[ ] For any facility, the emissions unit began (or will begin) initial operation after March 28, 1988. If so, baseline emissions are zero, and emissions unit consumes increment.

[ ] None of the above apply. If so, the baseline emissions of the emissions unit are nonzero. In such case, additional analysis, beyond the scope of this application, is needed to determine whether changes in emissions have occurred (or will occur) after the baseline date that may consume or expand increment.

3. Increment Consuming/Expanding Code:			
PM	[ ] C	[ ] E	[ ] Unknown
SO2	[ ] C	[ ] E	[ ] Unknown
NO2	[ ] C	[ ] E	[ ] Unknown
4. Baseline Emissions:			
PM		lbs/hr	tons/yr
SO2		lbs/hr	tons/yr
NO2			tons/yr
5. PSD Comment:			

I. EMISSIONS UNIT SUPPLEMENTAL INFORMATION

This subsection of the Application for Air Permit form provides supplemental information related to the emissions unit addressed in this Emissions Unit Information Section. Supplemental information must be submitted as an attachment to each copy of the form, in hard-copy or computer-readable form.

Supplemental Requirements for All Applications

1. Process Flow Diagram	
[X] Attached, Document ID: Attachment C of PSD Report	
[ ] Not Applicable	[ ] Waiver Requested
2. Fuel Analysis or Specification	
[ ] Attached, Document ID: _____	
[X] Not Applicable	[ ] Waiver Requested
3. Detailed Description of Control Equipment	
[X] Attached, Document ID: Attachment B of PSD Report	
[ ] Not Applicable	[ ] Waiver Requested
4. Description of Stack Sampling Facilities	
[ ] Attached, Document ID: _____	
[X] Not Applicable	[ ] Waiver Requested
5. Compliance Test Report	
[ ] Attached, Document ID: _____	[X] Not Applicable
[ ] Previously Submitted, Date: _____	
6. Procedures for Startup and Shutdown	
[ ] Attached, Document ID: _____	[X] Not Applicable
7. Operation and Maintenance Plan	
[ ] Attached, Document ID: _____	[X] Not Applicable
8. Supplemental Information for Construction Permit Application	
[X] Attached, Document ID: PSD Report	[ ] Not Applicable
9. Other Information Required by Rule or Statute	
[X] Attached, Document ID: PSD Report	[ ] Not Applicable

Additional Supplemental Requirements for Category I Applications Only

10. Alternative Methods of Operation

[ ] Attached, Document ID: _____ [ ] Not Applicable

11. Alternative Modes of Operation (Emissions Trading)

[ ] Attached, Document ID: _____ [ ] Not Applicable

12. Enhanced Monitoring Plan

[ ] Attached, Document ID: _____ [ ] Not Applicable

13. Identification of Additional Applicable Requirements

[ ] Attached, Document ID: _____ [ ] Not Applicable

14. Acid Rain Permit Application

[ ] Acid Rain Part - Phase II (Form No. 62-210.900(1)(a))
Attached, Document ID: _____

[ ] Repowering Extension Plan (Form No. 62-210.900(1)(a)1.)
Attached, Document ID: _____

[ ] New Unit Exemption (Form No. 62-210.900(1)(a)2.)
Attached, Document ID: _____

[ ] Retired Unit Exemption (Form No. 62-210.900(1)(a)3.)
Attached, Document ID: _____

[ ] Not Applicable

III. EMISSIONS UNIT INFORMATION

A separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each emissions unit addressed in this Application for Air Permit. If submitting the application form in hard copy, indicate, in the space provided at the top of each page, the number of this Emissions Unit Information Section and the total number of Emissions Unit Information Sections submitted as part of this application.

A. GENERAL EMISSIONS UNIT INFORMATION

This subsection of the Application for Air Permit form provides general information on the emissions unit addressed in this Emissions Unit Information Section, including information on the type, control equipment, operating capacity, and operating schedule of the emissions unit.

Type of Emissions Unit Addressed in This Section

Check one:

[X] This Emissions Unit Information Section addresses, as a single emissions unit, a single process or production unit, or activity, which produces one or more air pollutants and which has at least one definable emission point (stack or vent).

[ ] This Emissions Unit Information Section addresses, as a single emissions unit, an individually-regulated emission point (stack or vent) serving a single process or production unit, or activity, which also has other individually-regulated emission points.

[ ] This Emissions Unit Information Section addresses, as a single emissions unit, a collectively-regulated group of process or production units and activities which has at least one definable emission point (stack or vent) but may also produce fugitive emissions.

[ ] This Emissions Unit Information Section addresses, as a single emissions unit, one or more process or production units and activities which produce fugitive emissions only.

Emissions Unit Information Section 2 of 8

Emissions Unit Description and Status

1. Description of Emissions Unit Addressed in This Section: **Multiple Effect Evaporator (MEE) System consisting of 4 MEEs and associated equipment**		
2. ARMS Identification Number: [X] No Corresponding ID [ ] Unknown		
3. Emissions Unit Status Code: **A**	4. Acid Rain Unit? [ ] Yes [X] No	5. Emissions Unit Major Group SIC Code: **26**
6. Initial Startup Date (DD-MON-YYYY):		
7. Long-term Reserve Shutdown Date (DD-MON-YYYY):		
8. Package Unit: Manufacturer: Model Number:		
9. Generator Nameplate Rating: MW		
10. Incinerator Information: Dwell Temperature: °F Dwell Time: seconds Incinerator Afterburner Temperature: °F		
11. Emissions Unit Comment: **Emissions vented to TRS scrubber and incinerator.**		

Emissions Unit Information Section 2 of 8

Emissions Unit Control Equipment

A.

1. Description: TRS scrubber using alkaline solution as the scrubbing media

2. Control Device or Method Code: 013

B.

1. Description: TRS incinerator

2. Control Device or Method Code 021

C.

1. Description:

2. Control Device or Method Code:

Emissions Unit Operating Capacity

1. Maximum Heat Input Rate: mmBtu/hr
2. Maximum Incineration Rate: lbs/hr tons/day
3. Maximum Process or Throughput Rate: **259,161 lb/hr black liquor solids**
4. Maximum Production Rate: **118 tons/hr ADUP**
5. Operating Capacity Comment: **Maximum 24-hour production: 1,850 TPD ADUP**

Emissions Unit Operating Schedule

Requested Maximum Operating Schedule:	
24 hours/day	**7** days/week
52 weeks/yr	**8,760** hours/yr

B. EMISSIONS UNIT REGULATIONS

Depending on the application category, this subsection of the Application for Air Permit form provides either a brief analysis or detailed listing of all federal, state, and local regulations applicable to the emissions unit addressed in this Emissions Unit Information Section.

Rule Applicability Analysis (Required for Category II applications and Category III applications involving non Title-V sources. See Instructions.)

List of Applicable Regulations (Required for Category I applications and Category III applications involving Title-V sources. See Instructions.)

62-2.960(1)(a)	
62-2.960(1)(b)	
62-2.960(1)(d)1.	
62-2.960(1)(g)	
62-2.960(1)(h)	
62-210.300(2)	
62-210.650	
62-210.700(1)	
62-210.700(4)	
62-210.700(6)	
62-296.320(2)	
62-296.404(3)(a)1.	
62-296.404(3)(a)3.	
62-296.404(3)(a)4.	
62-296.404(6)(a)	
62-296.404(6)(b)	
62-296.404(6)(c)3.	
62-296.404(6)(d)	

C. EMISSION POINT (STACK/VENT) INFORMATION

This subsection of the Application for Air Permit form provides information about the emission point associated with the emissions unit addressed in this Emissions Unit Information Section. An emission point is typically a stack or vent but can be any identifiable location at which air pollutants, including fugitive emissions, are discharged into the atmosphere.

Emission Point Description and Type

1. Identification of Point on Plot Plan or Flow Diagram:
   MEE 1, MEE 2, MEE 3, MEE 4

2. Emission Point Type Code:
   [ ] 1 [X] 2 [ ] 3 [ ] 4

3. Descriptions of Emissions Points Comprising this Emissions Unit:

4. ID Numbers or Descriptions of Emission Units with this Emission Point in Common:
   Digester system, MEE system, and condensate stripper system all vent to TRS scrubber and incinerator (Pt. #32)

5. Discharge Type Code:
   [ ] D [ ] F [ ] H [X] P
   [ ] R [ ] V [ ] W

6. Stack Height:	ft
7. Exit Diameter:	ft
8. Exit Temperature:	°F
9. Actual Volumetric Flow Rate:	acfm
10. Percent Water Vapor:	%
11. Maximum Dry Standard Flow Rate:	dscfm
12. Nonstack Emission Point Height:	ft
13. Emission Point UTM Coordinates: Zone: East (km): North (km):	
14. Emission Point Comment: **Refer to TRS scrubber and incinerator for stack parameters.**	

D. SEGMENT (PROCESS/FUEL) INFORMATION

For the emissions unit addressed in this Emissions Unit Information Section, a separate set of segment data (Fields 1-10) must be completed for each segment required to be reported and for each alternative operating method or mode (emissions trading scenario) under Chapter 62-213, F.A.C., for which the maximum hourly or annual segment-related rate would vary. A segment is a material handling, process, fuel burning, volatile organic liquid storage, production, or other such operation to which emissions of the unit are directly related. See instructions for further details on this subsection of the Application for Air Permit.

Segment Description and Rate Information: Segment 1 of 1

1. Segment Description (Process/Fuel Type and Associated Operating Method/Mode): **Multiple Effect Evaporator**	
2. Source Classification Code (SCC): **3-07-001-03**	
3. SCC Units: **Air-Dry Tons Unbleached Pulp**	
4. Maximum Hourly Rate: **118 tons/hr ADUP**	5. Maximum Annual Rate: **675,250 tons/yr ADUP**
6. Estimated Annual Activity Factor: **1,850 tons/day ADUP**	
7. Maximum Percent Sulfur:	8. Maximum Percent Ash:
9. Million Btu per SCC Unit:	
10. Segment Comment: **259,121 lb/hr black liquor solids (BLS) to pre-evaporator;** **40,208 lb/hr BLS to No. 1 MEE** **71,482 lb/hr BLS to No. 2 MEE** **71,482 lb/hr BLS to No. 3 MEE** **75,949 lb/hr BLS to No. 4 MEE** **259,121 lb/hr BLS to concentrator**	

Emissions Unit Information Section __2__ **of** __8__

Segment Description and Rate Information: Segment ____ of ____

1. Segment Description (Process/Fuel Type and Associated Operating Method/Mode):	
2. Source Classification Code:	
3. SCC Units:	
4. Maximum Hourly Rate:	5. Maximum Annual Rate:
6. Estimated Annual Activity Factor:	
7. Maximum Percent Sulfur:	8. Maximum Percent Ash:
9. Million Btu per SCC Unit:	
10. Segment Comment:	

E. POLLUTANT INFORMATION

For the emissions unit addressed in this Emissions Unit Information Section, a separate set of pollutant information must be completed for each pollutant required to be reported. See instructions for further details on this subsection of the Application for Air Permit.

Pollutant Potential/Estimated Emissions: Pollutant 1 of 1

1. Pollutant Emitted: **TRS**
2. Total Percent Efficiency of Control: **99.97%**
3. Primary Control Device Code: **013**
4. Secondary Control Device Code: **021**
5. Potential Emissions: lbs/hr tons/yr
6. Synthetically Limited? [ ] Yes [ ] No
7. Range of Estimated Fugitive/Other Emissions: [ ] 1 [ ] 2 [ ] 3 _____ to _____ tons/yr
8. Emission Factor: Reference:
9. Emissions Method Code: [ ] 1 [ ] 2 [ ] 3 [ ] 4 [ ] 5
10. Calculation of Emissions:
11. Pollutant Potential/Estimated Emissions Comment: **Refer to Pt. #32, TRS scrubber and incinerator, for emissions.**

Allowable Emissions (Pollutant identified on front page)

A.

1. Basis for Allowable Emissions Code: **Rule**	
2. Future Effective Date of Allowable Emissions:	
3. Requested Allowable Emissions and Units: **Incinerate for 0.5 second at 1200°F**	
4. Equivalent Allowable Emissions:	lbs/hr tons/yr
5. Method of Compliance: **Method 16 or 16A on TRS incinerator every 5 years**	
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode): **Rule 62-296.404(3)(a)1.: Refer to TRS scrubber and incinerator for allowable emissions.**	

B.

1. Basis for Allowable Emissions Code:	
2. Future Effective Date of Allowable Emissions:	
3. Requested Allowable Emissions and Units:	
4. Equivalent Allowable Emissions:	lbs/hr tons/yr
5. Method of Compliance:	
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode):	

F. VISIBLE EMISSIONS INFORMATION

This subsection of the Application for Air Permit form must be completed for only those emissions units which are subject to a visible emissions limitation. The intent of this subsection of the form is to identify each activity associated with the emissions unit addressed in this section for which a separate opacity limitation would be applicable. Visible emission subtype codes for each such activity are listed in the instructions for Field 1. Most emissions units will be subject to a "subtype VE" limit only.

Visible Emissions Limitations: Visible Emissions Limitation ____ of ____

1. Visible Emissions Subtype:
2. Basis for Allowable Opacity: [ ] Rule [ ] Other
3. Requested Allowable Opacity: Normal Conditions: % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hr
4. Method of Compliance:
5. Visible Emissions Comment:

Visible Emissions Limitations: Visible Emissions Limitation ____ of ____

1. Visible Emissions Subtype:
2. Basis for Allowable Opacity: [ ] Rule [ ] Other
3. Requested Allowable Opacity: Normal Conditions: % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hr
4. Method of Compliance:
5. Visible Emissions Comment:

Visible Emissions Limitations: Visible Emissions Limitation ____ of ____

1. Visible Emissions Subtype:
2. Basis for Allowable Opacity: [ ] Rule [ ] Other
3. Requested Allowable Opacity: Normal Conditions: % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hr
4. Method of Compliance:
5. Visible Emissions Comment:

G. CONTINUOUS MONITOR INFORMATION

This subsection of the Application for Air Permit form must be completed for only those emissions units which are required by rule or permit to install and operate one or more continuous emission, opacity, flow, or other type monitors. A separate set of continuous monitor information (fields 1-6) must be completed for each monitoring system required.

Continuous Monitoring System Continuous Monitor ____ of ____

1. Parameter Code:	
2. CMS Requirement:	[ ] Rule [ ] Other
3. Monitor Information: Manufacturer: Model Number:	Serial Number:
4. Installation Date (DD-MON-YYYY):	
5. Performance Specification Test Date (DD-MON-YYYY):	
6. Continuous Monitor Comment:	

Continuous Monitoring System Continuous Monitor ____ of ____

1. Parameter Code:
2. CMS Requirement: [ ] Rule [ ] Other
3. Monitor Information: Manufacturer: Model Number: Serial Number:
4. Installation Date (DD-MON-YYYY):
5. Performance Specification Test Date (DD-MON-YYYY):
6. Continuous Monitor Comment:

Continuous Monitoring System Continuous Monitor ____ of ____

1. Parameter Code:
2. CMS Requirement: [ ] Rule [ ] Other
3. Monitor Information: Manufacturer: Model Number: Serial Number:
4. Installation Date (DD-MON-YYYY):
5. Performance Specification Test Date (DD-MON-YYYY):
6. Continuous Monitor Comment:

H. PREVENTION OF SIGNIFICANT DETERIORATION (PSD) INCREMENT TRACKING INFORMATION

This subsection of the Application for Air Permit form must be completed for all applications, not just those undergoing prevention-of-significant-deterioration (PSD) review pursuant to Rule 62-212.400, F.A.C. The intent of this subsection is to make a preliminary determination as to whether the emissions unit addressed in this Emissions Unit Information Section consumes PSD increment. PSD increment is consumed (or expanded) as a result of emission increases (decreases) occurring after pollutant-specific baseline dates. Pollutants for which baseline dates have been established are sulfur dioxide, particulate matter, and nitrogen dioxide.

PSD Increment Consumption Determination

1. Increment Consuming for Particulate Matter or Sulfur Dioxide?

   If the emissions unit addressed in this section emits particulate matter or sulfur dioxide, answer the following series of questions to make a preliminary determination as to whether or not the emissions unit consumes PSD increment for particulate matter or sulfur dioxide. Check the first statement, if any, that applies and skip remaining statements.

   [ ] The emissions unit is undergoing PSD review as part of this application, or has undergone PSD review previously, for particulate matter or sulfur dioxide. If so, emissions unit consumes increment.

   [ ] The facility addressed in this application is classified as an EPA major source pursuant to paragraph (c) of the definition of "major source of air pollution" in Chapter 62-213, F.A.C., and the emissions unit addressed in this section commenced (or will commence) construction after January 6, 1975. If so, baseline emissions are zero, and emissions unit consumes increment.

   [ ] The facility addressed in this application is classified as an EPA major source, and the emissions unit began initial operation after January 6, 1975, but before December 27, 1977. If so, baseline emissions are zero, and emissions unit consumes increment.

   [ ] For any facility, the emissions unit began (or will begin) initial operation after December 27, 1977. If so, baseline emissions are zero, and emissions unit consumes increment.

   [ ] None of the above apply. If so, the baseline emissions of the emissions unit are nonzero. In such case, additional analysis, beyond the scope of this application, is needed to determine whether changes in emissions have occurred (or will occur) after the baseline date that may consume or expand increment.

2. Increment Consuming for Nitrogen Dioxide?

If the emissions unit addressed in this section emits nitrogen oxides, answer the following series of questions to make a preliminary determination as to whether or not the emissions unit consumes PSD increment for nitrogen dioxide. Check first statement, if any, that applies and skip remaining statements.

[ ] The emissions unit addressed in this section is undergoing PSD review as part of this application, or has undergone PSD review previously, for nitrogen dioxide. If so, emissions unit consumes increment.

[ ] The facility addressed in this application is classified as an EPA major source pursuant to paragraph (c) of the definition of "major source of air pollution" in Chapter 62-213, F.A.C., and the emissions unit addressed in this section commenced (or will commence) construction after February 8, 1988. If so, baseline emissions are zero, and emissions unit consumes increment.

[ ] The facility addressed in this application is classified as an EPA major source, and the emissions unit began initial operation after February 8, 1988, but before March 28, 1988. If so, baseline emissions are zero, and emissions unit consumes increment.

[ ] For any facility, the emissions unit began (or will begin) initial operation after March 28, 1988. If so, baseline emissions are zero, and emissions unit consumes increment.

[ ] None of the above apply. If so, the baseline emissions of the emissions unit are nonzero. In such case, additional analysis, beyond the scope of this application, is needed to determine whether changes in emissions have occurred (or will occur) after the baseline date that may consume or expand increment.

3. Increment Consuming/Expanding Code:			
PM	[ ] C	[ ] E	[ ] Unknown
SO2	[ ] C	[ ] E	[ ] Unknown
NO2	[ ] C	[ ] E	[ ] Unknown
4. Baseline Emissions:			
PM		lbs/hr	tons/yr
SO2		lbs/hr	tons/yr
NO2			tons/yr
5. PSD Comment:			

I. EMISSIONS UNIT SUPPLEMENTAL INFORMATION

This subsection of the Application for Air Permit form provides supplemental information related to the emissions unit addressed in this Emissions Unit Information Section. Supplemental information must be submitted as an attachment to each copy of the form, in hard-copy or computer-readable form.

Supplemental Requirements for All Applications

1. Process Flow Diagram	
[X] Attached, Document ID: Attachment C of PSD Report	
[ ] Not Applicable	[ ] Waiver Requested
2. Fuel Analysis or Specification	
[ ] Attached, Document ID: _____	
[X] Not Applicable	[ ] Waiver Requested
3. Detailed Description of Control Equipment	
[X] Attached, Document ID: Attachment B of PSD report	
[ ] Not Applicable	[ ] Waiver Requested
4. Description of Stack Sampling Facilities	
[ ] Attached, Document ID: _____	
[X] Not Applicable	[ ] Waiver Requested
5. Compliance Test Report	
[ ] Attached, Document ID: _____	[X] Not Applicable
[ ] Previously Submitted, Date: _____	
6. Procedures for Startup and Shutdown	
[ ] Attached, Document ID: _____	[X] Not Applicable
7. Operation and Maintenance Plan	
[ ] Attached, Document ID: _____	[X] Not Applicable
8. Supplemental Information for Construction Permit Application	
[X] Attached, Document ID: PSD Report	[ ] Not Applicable
9. Other Information Required by Rule or Statute	
[X] Attached, Document ID: PSD Report	[ ] Not Applicable

Additional Supplemental Requirements for Category I Applications Only

10. Alternative Methods of Operation

[ ] Attached, Document ID: _____ [ ] Not Applicable

11. Alternative Modes of Operation (Emissions Trading)

[ ] Attached, Document ID: _____ [ ] Not Applicable

12. Enhanced Monitoring Plan

[ ] Attached, Document ID: _____ [ ] Not Applicable

13. Identification of Additional Applicable Requirements

[ ] Attached, Document ID: _____ [ ] Not Applicable

14. Acid Rain Permit Application

[ ] Acid Rain Part - Phase II (Form No. 62-210.900(1)(a))
Attached, Document ID: _____

[ ] Repowering Extension Plan (Form No. 62-210.900(1)(a)1.)
Attached, Document ID: _____

[ ] New Unit Exemption (Form No. 62-210.900(1)(a)2.)
Attached, Document ID: _____

[ ] Retired Unit Exemption (Form No. 62-210.900(1)(a)3.)
Attached, Document ID: _____

[ ] Not Applicable

III. EMISSIONS UNIT INFORMATION

A separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each emissions unit addressed in this Application for Air Permit. If submitting the application form in hard copy, indicate, in the space provided at the top of each page, the number of this Emissions Unit Information Section and the total number of Emissions Unit Information Sections submitted as part of this application.

A. GENERAL EMISSIONS UNIT INFORMATION

This subsection of the Application for Air Permit form provides general information on the emissions unit addressed in this Emissions Unit Information Section, including information on the type, control equipment, operating capacity, and operating schedule of the emissions unit.

Type of Emissions Unit Addressed in This Section

Check one:

[X] This Emissions Unit Information Section addresses, as a single emissions unit, a single process or production unit, or activity, which produces one or more air pollutants and which has at least one definable emission point (stack or vent).

[ ] This Emissions Unit Information Section addresses, as a single emissions unit, an individually-regulated emission point (stack or vent) serving a single process or production unit, or activity, which also has other individually-regulated emission points.

[ ] This Emissions Unit Information Section addresses, as a single emissions unit, a collectively-regulated group of process or production units and activities which has at least one definable emission point (stack or vent) but may also produce fugitive emissions.

[ ] This Emissions Unit Information Section addresses, as a single emissions unit, one or more process or production units and activities which produce fugitive emissions only.

Emissions Unit Information Section 3 of 8

Emissions Unit Description and Status

1. Description of Emissions Unit Addressed in This Section: **Condensate Stripper System (including Turpentine Condenser System)**		
2. ARMS Identification Number: [X] No Corresponding ID [ ] Unknown		
3. Emissions Unit Status Code: **A**	4. Acid Rain Unit? [ ] Yes [X] No	5. Emissions Unit Major Group SIC Code: **26**
6. Initial Startup Date (DD-MON-YYYY):		
7. Long-term Reserve Shutdown Date (DD-MON-YYYY):		
8. Package Unit: Manufacturer: Model Number:		
9. Generator Nameplate Rating: MW		
10. Incinerator Information: Dwell Temperature: °F Dwell Time: seconds Incinerator Afterburner Temperature: °F		
11. Emissions Unit Comment: **Emissions vented to TRS scrubber and incinerator.**		

Emissions Unit Information Section 3 of 8

Emissions Unit Control Equipment

A.

1. Description: TRS scrubber using alkaline solution as the scrubbing media.

2. Control Device or Method Code: 013

B.

1. Description: TRS incinerator

2. Control Device or Method Code 021

C.

1. Description:

2. Control Device or Method Code:

Emissions Unit Information Section 3 of 8

Emissions Unit Operating Capacity

1. Maximum Heat Input Rate: mmBtu/hr
2. Maximum Incineration Rate: lbs/hr tons/day
3. Maximum Process or Throughput Rate: **109,500 lb/hr condensate**
4. Maximum Production Rate: **118 tons/hr ADUP**
5. Operating Capacity Comment: **Maximum 24-hour production: 1,850 TPD ADUP**

Emissions Unit Operating Schedule

Requested Maximum Operating Schedule:	
24 hours/day	**7** days/week
52 weeks/yr	**8,760** hours/yr

B. EMISSIONS UNIT REGULATIONS

Depending on the application category, this subsection of the Application for Air Permit form provides either a brief analysis or detailed listing of all federal, state, and local regulations applicable to the emissions unit addressed in this Emissions Unit Information Section.

Rule Applicability Analysis (Required for Category II applications and Category III applications involving non Title-V sources. See Instructions.)

Emissions Unit Information Section 3 of 8

List of Applicable Regulations (Required for Category I applications and Category III applications involving Title-V sources. See Instructions.)

62-2.960(1)(a)	
62-2.960(1)(b)	
62-2.960(1)(d)1.	
62-2.960(1)(g)	
62-2.960(1)(h)	
62-210.300(2)	
62-210.650	
62-210.700(1)	
62-210.700(4)	
62-210.700(6)	
62-296.320(2)	
62-296.404(3)(a)1.	
62-296.404(3)(a)3.	
62-296.404(3)(a)4.	
62-296.404(6)(a)	
62-296.404(6)(b)	
62-296.404(6)(c)3.	
62-296.404(6)(d)	

C. EMISSION POINT (STACK/VENT) INFORMATION

This subsection of the Application for Air Permit form provides information about the emission point associated with the emissions unit addressed in this Emissions Unit Information Section. An emission point is typically a stack or vent but can be any identifiable location at which air pollutants, including fugitive emissions, are discharged into the atmosphere.

Emission Point Description and Type

1. Identification of Point on Plot Plan or Flow Diagram:
   Condensate stripper

2. Emission Point Type Code:
   [ ] 1 [X] 2 [ ] 3 [ ] 4

3. Descriptions of Emissions Points Comprising this Emissions Unit:

4. ID Numbers or Descriptions of Emission Units with this Emission Point in Common:
   Digester system, MEE system, and condensate stripper system all vent to TRS scrubber and incinerator (Pt. #32)

5. Discharge Type Code:
   [ ] D [ ] F [ ] H [X] P
   [ ] R [ ] V [ ] W

6. Stack Height:	ft
7. Exit Diameter:	ft
8. Exit Temperature:	°F
9. Actual Volumetric Flow Rate:	acfm
10. Percent Water Vapor:	%
11. Maximum Dry Standard Flow Rate:	dscfm
12. Nonstack Emission Point Height:	ft
13. Emission Point UTM Coordinates: Zone: East (km): North (km):	
14. Emission Point Comment: **Refer to TRS scrubber and incinerator for stack parameters.**	

D. SEGMENT (PROCESS/FUEL) INFORMATION

For the emissions unit addressed in this Emissions Unit Information Section, a separate set of segment data (Fields 1-10) must be completed for each segment required to be reported and for each alternative operating method or mode (emissions trading scenario) under Chapter 62-213, F.A.C., for which the maximum hourly or annual segment-related rate would vary. A segment is a material handling, process, fuel burning, volatile organic liquid storage, production, or other such operation to which emissions of the unit are directly related. See instructions for further details on this subsection of the Application for Air Permit.

Segment Description and Rate Information: Segment 1 of 1

1. Segment Description (Process/Fuel Type and Associated Operating Method/Mode): **Condensate stripper**	
2. Source Classification Code (SCC): **3-07-001-99**	
3. SCC Units: **Air-Dry Tons Unbleached Pulp**	
4. Maximum Hourly Rate: **118 tons/hr ADUP**	5. Maximum Annual Rate: **675,250 tons/yr ADUP**
6. Estimated Annual Activity Factor: **1,850 tons/day ADUP**	
7. Maximum Percent Sulfur:	8. Maximum Percent Ash:
9. Million Btu per SCC Unit:	
10. Segment Comment:	

Emissions Unit Information Section 3 of 8

Segment Description and Rate Information: Segment ____ of ____

1. Segment Description (Process/Fuel Type and Associated Operating Method/Mode):	
2. Source Classification Code:	
3. SCC Units:	
4. Maximum Hourly Rate:	5. Maximum Annual Rate:
6. Estimated Annual Activity Factor:	
7. Maximum Percent Sulfur:	8. Maximum Percent Ash:
9. Million Btu per SCC Unit:	
10. Segment Comment:	

E. POLLUTANT INFORMATION

For the emissions unit addressed in this Emissions Unit Information Section, a separate set of pollutant information must be completed for each pollutant required to be reported. See instructions for further details on this subsection of the Application for Air Permit.

Pollutant Potential/Estimated Emissions: Pollutant 1 of 1

1. Pollutant Emitted: **TRS**
2. Total Percent Efficiency of Control: **99.97%**
3. Primary Control Device Code: **013**
4. Secondary Control Device Code: **021**
5. Potential Emissions: lbs/hr tons/yr
6. Synthetically Limited? [ ] Yes [ ] No
7. Range of Estimated Fugitive/Other Emissions: [ ] 1 [ ] 2 [ ] 3 _____ to _____ tons/yr
8. Emission Factor: Reference:
9. Emissions Method Code: [ ] 1 [ ] 2 [ ] 3 [ ] 4 [ ] 5
10. Calculation of Emissions:
11. Pollutant Potential/Estimated Emissions Comment: **Refer to Pt. #32, TRS scrubber and incinerator, for emissions.**

Allowable Emissions (Pollutant identified on front page)

A.

1. Basis for Allowable Emissions Code: Rule	
2. Future Effective Date of Allowable Emissions:	
3. Requested Allowable Emissions and Units: Incinerate for 0.5 second at 1200°F	
4. Equivalent Allowable Emissions:	lbs/hr tons/yr
5. Method of Compliance: Method 16 or 16A on TRS incinerator every 5 years	
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode): Rule 62-296.404(3)(a)1.: Refer to TRS scrubber and incinerator for allowable emissions.	

B.

1. Basis for Allowable Emissions Code:	
2. Future Effective Date of Allowable Emissions:	
3. Requested Allowable Emissions and Units:	
4. Equivalent Allowable Emissions:	lbs/hr tons/yr
5. Method of Compliance:	
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode):	

F. VISIBLE EMISSIONS INFORMATION

This subsection of the Application for Air Permit form must be completed for only those emissions units which are subject to a visible emissions limitation. The intent of this subsection of the form is to identify each activity associated with the emissions unit addressed in this section for which a separate opacity limitation would be applicable. Visible emission subtype codes for each such activity are listed in the instructions for Field 1. Most emissions units will be subject to a "subtype VE" limit only.

Visible Emissions Limitations: Visible Emissions Limitation ____ of ____

1. Visible Emissions Subtype:
2. Basis for Allowable Opacity: [ ] Rule [ ] Other
3. Requested Allowable Opacity: Normal Conditions: % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hr
4. Method of Compliance:
5. Visible Emissions Comment:

Emissions Unit Information Section 3 of 8

Visible Emissions Limitations: Visible Emissions Limitation ____ of ____

1. Visible Emissions Subtype:
2. Basis for Allowable Opacity: [ ] Rule [ ] Other
3. Requested Allowable Opacity: Normal Conditions: % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hr
4. Method of Compliance:
5. Visible Emissions Comment:

Visible Emissions Limitations: Visible Emissions Limitation ____ of ____

1. Visible Emissions Subtype:
2. Basis for Allowable Opacity: [ ] Rule [ ] Other
3. Requested Allowable Opacity: Normal Conditions: % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hr
4. Method of Compliance:
5. Visible Emissions Comment:

G. CONTINUOUS MONITOR INFORMATION

This subsection of the Application for Air Permit form must be completed for only those emissions units which are required by rule or permit to install and operate one or more continuous emission, opacity, flow, or other type monitors. A separate set of continuous monitor information (fields 1-6) must be completed for each monitoring system required.

Continuous Monitoring System Continuous Monitor ____ of ____

1. Parameter Code:
2. CMS Requirement: [ ] Rule [ ] Other
3. Monitor Information: Manufacturer: Model Number: Serial Number:
4. Installation Date (DD-MON-YYYY):
5. Performance Specification Test Date (DD-MON-YYYY):
6. Continuous Monitor Comment:

Emissions Unit Information Section 3 of 8

Continuous Monitoring System Continuous Monitor ____ of ____

1. Parameter Code:	
2. CMS Requirement:	[ ] Rule [ ] Other
3. Monitor Information: Manufacturer: Model Number:	Serial Number:
4. Installation Date (DD-MON-YYYY):	
5. Performance Specification Test Date (DD-MON-YYYY):	
6. Continuous Monitor Comment:	

Continuous Monitoring System Continuous Monitor ____ of ____

1. Parameter Code:	
2. CMS Requirement:	[ ] Rule [ ] Other
3. Monitor Information: Manufacturer: Model Number:	Serial Number:
4. Installation Date (DD-MON-YYYY):	
5. Performance Specification Test Date (DD-MON-YYYY):	
6. Continuous Monitor Comment:	

H. PREVENTION OF SIGNIFICANT DETERIORATION (PSD) INCREMENT TRACKING INFORMATION

This subsection of the Application for Air Permit form must be completed for all applications, not just those undergoing prevention-of-significant-deterioration (PSD) review pursuant to Rule 62-212.400, F.A.C. The intent of this subsection is to make a preliminary determination as to whether the emissions unit addressed in this Emissions Unit Information Section consumes PSD increment. PSD increment is consumed (or expanded) as a result of emission increases (decreases) occurring after pollutant-specific baseline dates. Pollutants for which baseline dates have been established are sulfur dioxide, particulate matter, and nitrogen dioxide.

PSD Increment Consumption Determination

1. Increment Consuming for Particulate Matter or Sulfur Dioxide?

   If the emissions unit addressed in this section emits particulate matter or sulfur dioxide, answer the following series of questions to make a preliminary determination as to whether or not the emissions unit consumes PSD increment for particulate matter or sulfur dioxide. Check the first statement, if any, that applies and skip remaining statements.

   [ ] The emissions unit is undergoing PSD review as part of this application, or has undergone PSD review previously, for particulate matter or sulfur dioxide. If so, emissions unit consumes increment.

   [ ] The facility addressed in this application is classified as an EPA major source pursuant to paragraph (c) of the definition of "major source of air pollution" in Chapter 62-213, F.A.C., and the emissions unit addressed in this section commenced (or will commence) construction after January 6, 1975. If so, baseline emissions are zero, and emissions unit consumes increment.

   [ ] The facility addressed in this application is classified as an EPA major source, and the emissions unit began initial operation after January 6, 1975, but before December 27, 1977. If so, baseline emissions are zero, and emissions unit consumes increment.

   [ ] For any facility, the emissions unit began (or will begin) initial operation after December 27, 1977. If so, baseline emissions are zero, and emissions unit consumes increment.

   [ ] None of the above apply. If so, the baseline emissions of the emissions unit are nonzero. In such case, additional analysis, beyond the scope of this application, is needed to determine whether changes in emissions have occurred (or will occur) after the baseline date that may consume or expand increment.

III. EMISSIONS UNIT INFORMATION

A separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each emissions unit addressed in this Application for Air Permit. If submitting the application form in hard copy, indicate, in the space provided at the top of each page, the number of this Emissions Unit Information Section and the total number of Emissions Unit Information Sections submitted as part of this application.

A. GENERAL EMISSIONS UNIT INFORMATION

This subsection of the Application for Air Permit form provides general information on the emissions unit addressed in this Emissions Unit Information Section, including information on the type, control equipment, operating capacity, and operating schedule of the emissions unit.

Type of Emissions Unit Addressed in This Section

Check one:

[ ] This Emissions Unit Information Section addresses, as a single emissions unit, a single process or production unit, or activity, which produces one or more air pollutants and which has at least one definable emission point (stack or vent).

[ ] This Emissions Unit Information Section addresses, as a single emissions unit, an individually-regulated emission point (stack or vent) serving a single process or production unit, or activity, which also has other individually-regulated emission points.

[X] This Emissions Unit Information Section addresses, as a single emissions unit, a collectively-regulated group of process or production units and activities which has at least one definable emission point (stack or vent) but may also produce fugitive emissions.

[ ] This Emissions Unit Information Section addresses, as a single emissions unit, one or more process or production units and activities which produce fugitive emissions only.

Emissions Unit Information Section 4 of 8

Emissions Unit Description and Status

1. Description of Emissions Unit Addressed in This Section: **TRS Scrubber and Incinerator**		
2. ARMS Identification Number: [ ] No Corresponding ID [ ] Unknown **31JAX54000532**		
3. Emissions Unit Status Code: **A**	4. Acid Rain Unit? [ ] Yes [X] No	5. Emissions Unit Major Group SIC Code: **26**
6. Initial Startup Date (DD-MON-YYYY):		
7. Long-term Reserve Shutdown Date (DD-MON-YYYY):		
8. Package Unit: Manufacturer: Model Number:		
9. Generator Nameplate Rating: MW		
10. Incinerator Information: Dwell Temperature: **1,200** °F; Dwell Time: **0.5** seconds; Incinerator Afterburner Temperature: °F		
11. Emissions Unit Comment: **Controls TRS emissions from digester system, MEE system, and condensate stripper system.**		

Emissions Unit Information Section 4 of 8

Emissions Unit Control Equipment

A.

1. Description: TRS scrubber using alkaline solution as the scrubbing medium.

2. Control Device or Method Code: 013

B.

1. Description: TRS incinerator

2. Control Device or Method Code 021

C.

1. Description:

2. Control Device or Method Code:

Emissions Unit Information Section 4 of 8

Emissions Unit Operating Capacity

1. Maximum Heat Input Rate: **8.0** mmBtu/hr
2. Maximum Incineration Rate: lbs/hr tons/day
3. Maximum Process or Throughput Rate: **600 lb/hr TRS**
4. Maximum Production Rate:
5. Operating Capacity Comment: **392 lb/hr TRS maximum 24-hour average**

Emissions Unit Operating Schedule

Requested Maximum Operating Schedule:	
24 hours/day	**7** days/week
52 weeks/yr	**8,760** hours/yr

B. EMISSIONS UNIT REGULATIONS

Depending on the application category, this subsection of the Application for Air Permit form provides either a brief analysis or detailed listing of all federal, state, and local regulations applicable to the emissions unit addressed in this Emissions Unit Information Section.

Rule Applicability Analysis (Required for Category II applications and Category III applications involving non Title-V sources. See Instructions.)

List of Applicable Regulations (Required for Category I applications and Category III applications involving Title-V sources. See Instructions.)

62-2.960(1)(a)	62-297.401(6)
62-2.960(1)(b)	62-297.401(9)
62-2.960(1)(d)1.	62-297.401(16)
62-2.960(1)(g)	62-297.401(16)(a)
62-2.960(1)(h)	40CFR60.7
62-210.300(2)	40CFR60.8
62-210.650	40CFR60.11(a)
62-210.700(1)	40CFR60.11(d)
62-210.700(4)	40CFR60.13(a)
62-210.700(6)	40CFR60.13(b)
62-296.310(2)	40CFR60.13(e)(2)
62-296.320(2)	40CFR60.13(f)
62-296.404(3)(a)1.	40CFR60.283(a)(1)(iii)
62-296.404(3)(a)3.	40CFR60.284(b)(1)
62-296.404(3)(f)	40CFR60.284(d)(3)(ii)
62-296.404(4)(e)	
62-296.404(4)(f)	
62-296.404(5)(c)	
62-296.404(5)(d)	
62-296.404(6)(a)	
62-296.404(6)(b)	
62-296.404(6)(c)3.	
62-297.401(5)	

C. EMISSION POINT (STACK/VENT) INFORMATION

This subsection of the Application for Air Permit form provides information about the emission point associated with the emissions unit addressed in this Emissions Unit Information Section. An emission point is typically a stack or vent but can be any identifiable location at which air pollutants, including fugitive emissions, are discharged into the atmosphere.

Emission Point Description and Type

1. Identification of Point on Plot Plan or Flow Diagram:
   TRS incinerator

2. Emission Point Type Code:
   [ ] 1 [X] 2 [ ] 3 [ ] 4

3. Descriptions of Emissions Points Comprising this Emissions Unit:

4. ID Numbers or Descriptions of Emission Units with this Emission Point in Common:
   Digester system, MEE system, and condensate stripper system all vent to TRS scrubber and incinerator

5. Discharge Type Code:
   [ ] D [ ] F [ ] H [ ] P
   [ ] R [X] V [ ] W

6. Stack Height:	250	ft
7. Exit Diameter:	3.2	ft
8. Exit Temperature:	500	°F
9. Actual Volumetric Flow Rate:	41,000	acfm
10. Percent Water Vapor:	7	%
11. Maximum Dry Standard Flow Rate:	21,000	dscfm
12. Nonstack Emission Point Height:		ft
13. Emission Point UTM Coordinates: Zone: East (km): North (km):		
14. Emission Point Comment:		

D. SEGMENT (PROCESS/FUEL) INFORMATION

For the emissions unit addressed in this Emissions Unit Information Section, a separate set of segment data (Fields 1-10) must be completed for each segment required to be reported and for each alternative operating method or mode (emissions trading scenario) under Chapter 62-213, F.A.C., for which the maximum hourly or annual segment-related rate would vary. A segment is a material handling, process, fuel burning, volatile organic liquid storage, production, or other such operation to which emissions of the unit are directly related. See instructions for further details on this subsection of the Application for Air Permit.

Segment Description and Rate Information: Segment 1 of 2

1. Segment Description (Process/Fuel Type and Associated Operating Method/Mode): **Methanol burning**	
2. Source Classification Code (SCC): **3-07-900-11**	
3. SCC Units: **1,000 gallons burned**	
4. Maximum Hourly Rate: **0.124**	5. Maximum Annual Rate: **1,086**
6. Estimated Annual Activity Factor:	
7. Maximum Percent Sulfur:	8. Maximum Percent Ash:
9. Million Btu per SCC Unit: **64.5**	
10. Segment Comment: **Methanol burning**	

Emissions Unit Information Section 4 **of** 8

Segment Description and Rate Information: Segment 2 of 2

1. Segment Description (Process/Fuel Type and Associated Operating Method/Mode): **Natural gas burning**	
2. Source Classification Code: **3-07-900-13**	
3. SCC Units: **Million cubic feet burned**	
4. Maximum Hourly Rate: **0.00762**	5. Maximum Annual Rate: **66.75**
6. Estimated Annual Activity Factor:	
7. Maximum Percent Sulfur: **0.1**	8. Maximum Percent Ash:
9. Million Btu per SCC Unit: **1,050**	
10. Segment Comment:	

$$TRS\ IN = 0.12\ \frac{lbs}{hr}\ \frac{(\quad)}{(1-.9993)}$$

Emissions Unit Information Section 4 of 8

E. POLLUTANT INFORMATION

For the emissions unit addressed in this Emissions Unit Information Section, a separate set of pollutant information must be completed for each pollutant required to be reported. See instructions for further details on this subsection of the Application for Air Permit.

Pollutant Potential/Estimated Emissions: Pollutant 1 of 6

1. Pollutant Emitted: **TRS**		
2. Total Percent Efficiency of Control:	**99.97%**	
3. Primary Control Device Code: **013**		
4. Secondary Control Device Code: **021**		
5. Potential Emissions:	**0.12** lbs/hr	**0.53** tons/yr
6. Synthetically Limited? [ ] Yes	[X] No	
7. Range of Estimated Fugitive/Other Emissions: [ ] 1 [ ] 2 [ ] 3 _____ to _____ tons/yr		
8. Emission Factor: **5 ppm TRS in exhaust gases** Reference:		
9. Emissions Method Code: [ ] 1 [ ] 2 [ ] 3 [ ] 4 [X] 5		
10. Calculation of Emissions: **See Attachment A-1**		
11. Pollutant Potential/Estimated Emissions Comment:		

Emissions Unit Information Section 4 of 8

Allowable Emissions (Pollutant identified on front page)

A.

1. Basis for Allowable Emissions Code: **Rule**
2. Future Effective Date of Allowable Emissions:
3. Requested Allowable Emissions and Units: **5 ppmvd TRS at 10% O_2**
4. Equivalent Allowable Emissions: **0.12** lbs/hr **0.53** tons/yr
5. Method of Compliance: **Stack testing on incinerator outlet using Method 16 or 16A once every 5 years.**
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode): **Rule 62-296.404(3)(a)1.**

B.

1. Basis for Allowable Emissions Code: **Rule**
2. Future Effective Date of Allowable Emissions:
3. Requested Allowable Emissions and Units: **Incineration at 1200°F for 0.5 second**
4. Equivalent Allowable Emissions: lbs/hr tons/yr
5. Method of Compliance: **Continuous monitor for combustion temperature**
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode): **Rule 62-296.404(3)(f)**

Emissions Unit Information Section 4 of 8

E. POLLUTANT INFORMATION

For the emissions unit addressed in this Emissions Unit Information Section, a separate set of pollutant information must be completed for each pollutant required to be reported. See instructions for further details on this subsection of the Application for Air Permit.

Pollutant Potential/Estimated Emissions: Pollutant 2 of 6

1. Pollutant Emitted: **PM**
2. Total Percent Efficiency of Control: %
3. Primary Control Device Code:
4. Secondary Control Device Code:
5. Potential Emissions: **5.5** lbs/hr **24.1** tons/yr
6. Synthetically Limited? [ ] Yes [X] No
7. Range of Estimated Fugitive/Other Emissions: [ ] 1 [ ] 2 [ ] 3 _____ to _____ tons/yr
8. Emission Factor: Reference: **Stack test results**
9. Emissions Method Code: [X] 1 [ ] 2 [ ] 3 [ ] 4 [ ] 5
10. Calculation of Emissions: **See Attachment A-1**
11. Pollutant Potential/Estimated Emissions Comment:

Allowable Emissions (Pollutant identified on front page)

A.

1. Basis for Allowable Emissions Code: **Other**	
2. Future Effective Date of Allowable Emissions:	
3. Requested Allowable Emissions and Units: **5.5 lb/hr**	
4. Equivalent Allowable Emissions: **5.5** lbs/hr	**24.1** tons/yr
5. Method of Compliance: **Stack testing using Method 5 once every 5 years**	
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode):	

B.

1. Basis for Allowable Emissions Code:		
2. Future Effective Date of Allowable Emissions:		
3. Requested Allowable Emissions and Units:		
4. Equivalent Allowable Emissions:	lbs/hr	tons/yr
5. Method of Compliance:		
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode):		

E. POLLUTANT INFORMATION

For the emissions unit addressed in this Emissions Unit Information Section, a separate set of pollutant information must be completed for each pollutant required to be reported. See instructions for further details on this subsection of the Application for Air Permit.

Pollutant Potential/Estimated Emissions: Pollutant 3 of 6

1. Pollutant Emitted: **PM10**
2. Total Percent Efficiency of Control: %
3. Primary Control Device Code:
4. Secondary Control Device Code:
5. Potential Emissions: **5.5** lbs/hr **24.1** tons/yr
6. Synthetically Limited? [ ] Yes [X] No
7. Range of Estimated Fugitive/Other Emissions: [ ] 1 [ ] 2 [ ] 3 _____ to _____ tons/yr
8. Emission Factor: Reference: **Stack test results**
9. Emissions Method Code: [X] 1 [ ] 2 [ ] 3 [ ] 4 [ ] 5
10. Calculation of Emissions: **See Attachment A-1**
11. Pollutant Potential/Estimated Emissions Comment:

Emissions Unit Information Section 4 of 8

Allowable Emissions (Pollutant identified on front page)

A.

1. Basis for Allowable Emissions Code: **Other**	
2. Future Effective Date of Allowable Emissions:	
3. Requested Allowable Emissions and Units: **5.5 lb/hr**	
4. Equivalent Allowable Emissions: **5.5** lbs/hr	**24.1** tons/yr
5. Method of Compliance: **Stack testing using Method 5 once every 5 years**	
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode):	

B.

1. Basis for Allowable Emissions Code:	
2. Future Effective Date of Allowable Emissions:	
3. Requested Allowable Emissions and Units:	
4. Equivalent Allowable Emissions: lbs/hr	tons/yr
5. Method of Compliance:	
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode):	

E. POLLUTANT INFORMATION

For the emissions unit addressed in this Emissions Unit Information Section, a separate set of pollutant information must be completed for each pollutant required to be reported. See instructions for further details on this subsection of the Application for Air Permit.

Pollutant Potential/Estimated Emissions: **Pollutant 5 of 6**

1. Pollutant Emitted: **NO_x**	
2. Total Percent Efficiency of Control:	%
3. Primary Control Device Code:	
4. Secondary Control Device Code:	
5. Potential Emissions:	1.74 lbs/hr 7.60 tons/yr
6. Synthetically Limited? [ ] Yes	[X] No
7. Range of Estimated Fugitive/Other Emissions: [ ] 1 [ ] 2	[ ] 3 _____ to _____ tons/yr
8. Emission Factor: **14 lb/1000 gal** Reference: **AP-42 for propane**	
9. Emissions Method Code: [ ] 1 [ ] 2 [ ] 3	[X] 4 [ ] 5
10. Calculation of Emissions: **124 gal/hr x 14 lb/1000 gal = 1.74 lb/hr** **1.74 lb/hr x 8,760 hr/yr ÷ 2,000 lb/ton = 7.60 TPY**	
11. Pollutant Potential/Estimated Emissions Comment:	

Allowable Emissions (Pollutant identified on front page)

A.

1. Basis for Allowable Emissions Code:		
2. Future Effective Date of Allowable Emissions:		
3. Requested Allowable Emissions and Units:		
4. Equivalent Allowable Emissions:	lbs/hr	tons/yr
5. Method of Compliance:		
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode):		

B.

1. Basis for Allowable Emissions Code:		
2. Future Effective Date of Allowable Emissions:		
3. Requested Allowable Emissions and Units:		
4. Equivalent Allowable Emissions:	lbs/hr	tons/yr
5. Method of Compliance:		
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode):		

Emissions Unit Information Section 5 of 8

Emissions Unit Operating Capacity

1. Maximum Heat Input Rate: **1,277.7** mmBtu/hr
2. Maximum Incineration Rate: lbs/hr tons/day
3. Maximum Process or Throughput Rate: **210,000 lb/hr black liquor solids**
4. Maximum Production Rate: **85,890 lb/hr smelt**
5. Operating Capacity Comment:

Emissions Unit Operating Schedule

Requested Maximum Operating Schedule:			
24	hours/day	**7**	days/week
52	weeks/yr	**8,760**	hours/yr

E. POLLUTANT INFORMATION

For the emissions unit addressed in this Emissions Unit Information Section, a separate set of pollutant information must be completed for each pollutant required to be reported. See instructions for further details on this subsection of the Application for Air Permit.

Pollutant Potential/Estimated Emissions: Pollutant 6 of 6

1. Pollutant Emitted: **CO**
2. Total Percent Efficiency of Control: %
3. Primary Control Device Code:
4. Secondary Control Device Code:
5. Potential Emissions: **0.24** lbs/hr **1.03** tons/yr
6. Synthetically Limited? [ ] Yes [X] No
7. Range of Estimated Fugitive/Other Emissions: [ ] 1 [ ] 2 [ ] 3 _____ to _____ tons/yr
8. Emission Factor: **1.9 lb/1000 gal** Reference: **AP-42 for propane**
9. Emissions Method Code: [ ] 1 [ ] 2 [ ] 3 [X] 4 [ ] 5
10. Calculation of Emissions: **124 gal/hr x 1.9 lb/1000 gal = 0.24 lb/hr** **0.24 lb/hr x 8,760 hr/yr ÷ 2,000 lb/ton = 1.03 TPY**
11. Pollutant Potential/Estimated Emissions Comment:

Allowable Emissions (Pollutant identified on front page)

A.

1. Basis for Allowable Emissions Code:		
2. Future Effective Date of Allowable Emissions:		
3. Requested Allowable Emissions and Units:		
4. Equivalent Allowable Emissions:	lbs/hr	tons/yr
5. Method of Compliance:		
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode):		

B.

1. Basis for Allowable Emissions Code:		
2. Future Effective Date of Allowable Emissions:		
3. Requested Allowable Emissions and Units:		
4. Equivalent Allowable Emissions:	lbs/hr	tons/yr
5. Method of Compliance:		
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode):		

F. VISIBLE EMISSIONS INFORMATION

This subsection of the Application for Air Permit form must be completed for only those emissions units which are subject to a visible emissions limitation. The intent of this subsection of the form is to identify each activity associated with the emissions unit addressed in this section for which a separate opacity limitation would be applicable. Visible emission subtype codes for each such activity are listed in the instructions for Field 1. Most emissions units will be subject to a "subtype VE" limit only.

Visible Emissions Limitations: Visible Emissions Limitation 1 of 1

1. Visible Emissions Subtype: **VE**
2. Basis for Allowable Opacity: [ ] Rule [X] Other
3. Requested Allowable Opacity: Normal Conditions: **5** % Exceptional Conditions: **20** % Maximum Period of Excess Opacity Allowed: **3** min/hr
4. Method of Compliance: **Method 9 testing once every 5 years**
5. Visible Emissions Comment:

Emissions Unit Information Section 4 of 8

Visible Emissions Limitations: Visible Emissions Limitation ____ of ____

1. Visible Emissions Subtype:
2. Basis for Allowable Opacity: [ ] Rule [ ] Other
3. Requested Allowable Opacity: Normal Conditions: % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hr
4. Method of Compliance:
5. Visible Emissions Comment:

Visible Emissions Limitations: Visible Emissions Limitation ____ of ____

1. Visible Emissions Subtype:
2. Basis for Allowable Opacity: [ ] Rule [ ] Other
3. Requested Allowable Opacity: Normal Conditions: % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hr
4. Method of Compliance:
5. Visible Emissions Comment:

ATTACHMENT A-1
EMISSION ESTIMATES

I. SULFUR DIOXIDE (SO_2)

SO_2 emissions are based upon TRS content of gases to be incinerated. Fuel burning (methanol and natural gas) contributes negligible amounts of SO_2 to exhaust gases. Estimated TRS content of the gas streams vented to the incinerator and resulting uncontrolled SO_2 emissions are presented below:

	TRS Content (lb/hr)*		SO_2 Emissions (lb/hr)	
Gas Stream Source	Maximum 24-hour	Maximum 3-hour	Maximum 24-hour	Maximum 3-hour
(1) No. 3 Accumulator Tank	196	300	392	600
(2) Pre-Evaporators	69	106	138	212
(3) No. 1 B.L. Evaporator Set	17	26	34	52
(4) No. 2 B.L. Evaporator Set	17	26	34	52
(5) No. 3 B.L. Evaporator Set	17	26	34	52
(6) No. 4 B.L. Evaporator Set	17	26	34	52
(7) Turpentine Condenser	21	32	42	64
(8) Condensate Stripper	38	58	76	116
Totals	392	600	784	1,200

* TRS reported as sulfur

Maximum annual SO_2 emissions are based upon the maximum 24-hour average TRS content and 50.5% removal in the TRS scrubber:

$$392 \text{ lb/hr TRS} \times 2 \text{ lb } SO_2/\text{lb TRS} \times (1 - 0.505) = 388 \text{ lb/hr } SO_2$$

$$388 \text{ lb/hr} \times 8{,}760 \text{ hr/yr} / 2{,}000 \text{ lb/ton} = 1{,}699.4 \text{ TPY}$$

II. TOTAL REDUCED SULFUR (TRS)

Although it is expected that the TRS Incinerator will result in conversion of all TRS to SO_2, the TRS regulations allow a 5 ppm (dry basis at standard conditions, corrected to 10% O_2) TRS level

in the exhaust gases of an incineration device (12-hour average). Based upon this emission standard, maximum TRS emissions are calculated as follows:

Gas Flow Rate = 22,000 dscfm @ 18.7% O_2

Equate 5 ppm emission rate @ 10% O_2 to actual stack O_2

$C_{corr} = C_{act} [(21 - X)/(21 - Y)]$

X = corrected O_2 = 10%

Y = actual O_2 = 18.7%

$C_{corr} = C_{act} [(21 - 10)/(21 - 18.7] = 4.8\ C_{act}$

$C_{act} = C_{corr} / 4.8 = 5 / 4.8 = 1.0$ ppm

TRS emissions:

PVC = mRT

m = PVC/RT

$$m = \frac{2116.8\ lb_f}{ft^2} \times \frac{22{,}000\ ft^3}{min} \times \frac{1.0}{10^6} \times \frac{34\ lb_m - °R}{1{,}545 ft\text{-}lb_f} \times \frac{1}{528°R} \times \frac{60\ min}{hr}$$

$$= 0.12\ lb/hr$$

0.12 lb/hr x 8,760 hr/yr / 2,000 lb/ton = 0.53 TPY

III. PM(TSP)/PM10

Emissions based on permit allowable of 5.5 lb/hr and 24.1 TPY.

IV. OTHER POLLUTANTS

A. METHANOL BURNING

Emission factors for methanol burning are not published in USEPA AP-42, "Compilation of Air Pollutant Emission Factors." As a result, emission factors in AP-42 for liquified petroleum gas (propane) were used as an estimate of emissions due to methanol burning. The emission factors are as follows:

Nitrogen oxides - 14 lb/1000 gal

Carbon monoxide - 1.9 lb/1000 gal

Volatile Organic Compounds - 0.5 lb/1000 gal

Emission estimates are presented below:

Maximum Methanol burning rate =

8.0×10^6 Btu/hr / 9,781 Btu/lb / 6.6 lb/gal = 124 gal/hr

Nitrogen oxides = 124 x 14/1000 = 1.74 lb/hr

Carbon monoxide = 124 x 1.9/1000 = 0.24 lb/hr

Volatile Organic Compound = 124 x 0.5/1000 = 0.06 lb/hr

B. NATURAL GAS BURNING

From AP-42, emission factors for natural gas burning are as follows:

Nitrogen oxides - 100 lb/10^6 ft^3

Carbon monoxide - 20 lb/10^6 ft^3

Volatile Organic Compounds - 5.3 + 2.7 = 8.0 lb/10^6 ft^3

Emission estimates are presented below:

Maximum natural gas burning rate = 8.0×10^6 Btu/hr / 1,050 Btu/ft^3

= 7,619 ft^3/hr

Nitrogen oxides - 7,619 ft^3/hr x 100/10^6 = 0.76 lb/hr

Carbon monoxide = 7,619 ft^3/hr x 20/10^6 = 0.15 lb/hr

Volatile Organic Compounds = 7,619 ft^3/hr x 8/10^6 = 0.061 lb/hr

C. ANNUAL EMISSIONS

Annual emissions estimates assumes highest emissions for either fuel

Nitrogen oxides = 1.74 lb/hr x 8,760 / 2,000 = 7.60 TPY

Carbon monoxide = 0.24 lb/hr x 8,760 / 2,000 = 1.03 TPY

Volatile Organic Compounds = 0.06 lb/hr x 8,760 / 2,000 = 0.27 TPY

Emissions Unit Information Section 5 of 8

Emissions Unit Control Equipment

A.

1. Description: Electrostatic Precipitator

2. Control Device or Method Code: 010

B.

1. Description:

2. Control Device or Method Code:

C.

1. Description:

2. Control Device or Method Code:

I. EMISSIONS UNIT SUPPLEMENTAL INFORMATION

This subsection of the Application for Air Permit form provides supplemental information related to the emissions unit addressed in this Emissions Unit Information Section. Supplemental information must be submitted as an attachment to each copy of the form, in hard-copy or computer-readable form.

Supplemental Requirements for All Applications

1. Process Flow Diagram	
[X] Attached, Document ID: Attachment C of PSD Report	
[ ] Not Applicable	[ ] Waiver Requested
2. Fuel Analysis or Specification	
[ ] Attached, Document ID: _____	
[X] Not Applicable	[ ] Waiver Requested
3. Detailed Description of Control Equipment	
[X] Attached, Document ID: Attachment B of PSD report	
[ ] Not Applicable	[ ] Waiver Requested
4. Description of Stack Sampling Facilities	
[ ] Attached, Document ID: _____	
[X] Not Applicable	[ ] Waiver Requested
5. Compliance Test Report	
[ ] Attached, Document ID: _____	[X] Not Applicable
[ ] Previously Submitted, Date: _____	
6. Procedures for Startup and Shutdown	
[ ] Attached, Document ID: _____	[X] Not Applicable
7. Operation and Maintenance Plan	
[ ] Attached, Document ID: _____	[X] Not Applicable
8. Supplemental Information for Construction Permit Application	
[X] Attached, Document ID: PSD Report	[ ] Not Applicable
9. Other Information Required by Rule or Statute	
[X] Attached, Document ID: PSD Report	[ ] Not Applicable

III. EMISSIONS UNIT INFORMATION

A separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each emissions unit addressed in this Application for Air Permit. If submitting the application form in hard copy, indicate, in the space provided at the top of each page, the number of this Emissions Unit Information Section and the total number of Emissions Unit Information Sections submitted as part of this application.

A. GENERAL EMISSIONS UNIT INFORMATION

This subsection of the Application for Air Permit form provides general information on the emissions unit addressed in this Emissions Unit Information Section, including information on the type, control equipment, operating capacity, and operating schedule of the emissions unit.

Type of Emissions Unit Addressed in This Section

Check one:

[X] This Emissions Unit Information Section addresses, as a single emissions unit, a single process or production unit, or activity, which produces one or more air pollutants and which has at least one definable emission point (stack or vent).

[ ] This Emissions Unit Information Section addresses, as a single emissions unit, an individually-regulated emission point (stack or vent) serving a single process or production unit, or activity, which also has other individually-regulated emission points.

[ ] This Emissions Unit Information Section addresses, as a single emissions unit, a collectively-regulated group of process or production units and activities which has at least one definable emission point (stack or vent) but may also produce fugitive emissions.

[ ] This Emissions Unit Information Section addresses, as a single emissions unit, one or more process or production units and activities which produce fugitive emissions only.

Emissions Unit Information Section 5 of 8

Emissions Unit Description and Status

1. Description of Emissions Unit Addressed in This Section: **No. 4 Recovery Boiler**		
2. ARMS Identification Number: [ ] No Corresponding ID [ ] Unknown **31JAX54000518**		
3. Emissions Unit Status Code: **A**	4. Acid Rain Unit? [ ] Yes [X] No	5. Emissions Unit Major Group SIC Code: **26**
6. Initial Startup Date (DD-MON-YYYY):		
7. Long-term Reserve Shutdown Date (DD-MON-YYYY):		
8. Package Unit: Manufacturer: Model Number:		
9. Generator Nameplate Rating: MW		
10. Incinerator Information: Dwell Temperature: °F Dwell Time: seconds Incinerator Afterburner Temperature: °F		
11. Emissions Unit Comment:		

Emissions Unit Information Section 4 of 8

E. POLLUTANT INFORMATION

For the emissions unit addressed in this Emissions Unit Information Section, a separate set of pollutant information must be completed for each pollutant required to be reported. See instructions for further details on this subsection of the Application for Air Permit.

Pollutant Potential/Estimated Emissions: Pollutant 4 of 6

1. Pollutant Emitted: SO_2
2. Total Percent Efficiency of Control: %
3. Primary Control Device Code:
4. Secondary Control Device Code:
5. Potential Emissions: 1,200 lbs/hr 1,699.4 tons/yr
6. Synthetically Limited? [X] Yes [ ] No
7. Range of Estimated Fugitive/Other Emissions: [ ] 1 [ ] 2 [ ] 3 _____ to _____ tons/yr
8. Emission Factor: Reference: Uncontrolled TRS and approximately 50% removal in scrubber
9. Emissions Method Code: [ ] 1 [ ] 2 [ ] 3 [ ] 4 [X] 5
10. Calculation of Emissions: See Attachment A-1
11. Pollutant Potential/Estimated Emissions Comment:

Allowable Emissions (Pollutant identified on front page)

A.

1. Basis for Allowable Emissions Code: **ESCPSD**
2. Future Effective Date of Allowable Emissions:
3. Requested Allowable Emissions and Units: **1,200 lb/hr, max; 784 lb/hr, 24-hr**
4. Equivalent Allowable Emissions: **1,200** lbs/hr **1,699.4** tons/yr
5. Method of Compliance: **Test initially and once every 5 years for SO_2 using Method 8 at outlet of TRS incinerator. This testing will demonstrate surrogate parameter (scrubber liquor flow rate) for SO_2 removal.**
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode):

B.

1. Basis for Allowable Emissions Code:
2. Future Effective Date of Allowable Emissions:
3. Requested Allowable Emissions and Units:
4. Equivalent Allowable Emissions: lbs/hr tons/yr
5. Method of Compliance:
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode):

G. CONTINUOUS MONITOR INFORMATION

This subsection of the Application for Air Permit form must be completed for only those emissions units which are required by rule or permit to install and operate one or more continuous emission, opacity, flow, or other type monitors. A separate set of continuous monitor information (fields 1-6) must be completed for each monitoring system required.

Continuous Monitoring System Continuous Monitor 1 of 2

1. Parameter Code: **Scrubber liquor flow rate**
2. CMS Requirement: [ ] Rule [X] Other
3. Monitor Information: **Not yet selected** Manufacturer: Model Number: Serial Number:
4. Installation Date (DD-MON-YYYY): **N/A**
5. Performance Specification Test Date (DD-MON-YYYY): **N/A**
6. Continuous Monitor Comment: **Surrogate parameter for TRS removal efficiency.**

Emissions Unit Information Section 4 of 8

Continuous Monitoring System Continuous Monitor 2 of 2

1. Parameter Code: TEMP	
2. CMS Requirement:	[X] Rule [ ] Other
3. Monitor Information: Manufacturer: Rosemount Model Number: 3044C41B4M5	Serial Number: 0042477
4. Installation Date (DD-MON-YYYY):	
5. Performance Specification Test Date (DD-MON-YYYY):	
6. Continuous Monitor Comment: Continuous monitor for combustion temperature Rule 62-296.404(5)(c)	

Continuous Monitoring System Continuous Monitor ____ of ____

1. Parameter Code:	
2. CMS Requirement:	[ ] Rule [ ] Other
3. Monitor Information: Manufacturer: Model Number:	Serial Number:
4. Installation Date (DD-MON-YYYY):	
5. Performance Specification Test Date (DD-MON-YYYY):	
6. Continuous Monitor Comment:	

H. PREVENTION OF SIGNIFICANT DETERIORATION (PSD) INCREMENT TRACKING INFORMATION

This subsection of the Application for Air Permit form must be completed for all applications, not just those undergoing prevention-of-significant-deterioration (PSD) review pursuant to Rule 62-212.400, F.A.C. The intent of this subsection is to make a preliminary determination as to whether the emissions unit addressed in this Emissions Unit Information Section consumes PSD increment. PSD increment is consumed (or expanded) as a result of emission increases (decreases) occurring after pollutant-specific baseline dates. Pollutants for which baseline dates have been established are sulfur dioxide, particulate matter, and nitrogen dioxide.

PSD Increment Consumption Determination

1. Increment Consuming for Particulate Matter or Sulfur Dioxide?

   If the emissions unit addressed in this section emits particulate matter or sulfur dioxide, answer the following series of questions to make a preliminary determination as to whether or not the emissions unit consumes PSD increment for particulate matter or sulfur dioxide. Check the first statement, if any, that applies and skip remaining statements.

   [ ] The emissions unit is undergoing PSD review as part of this application, or has undergone PSD review previously, for particulate matter or sulfur dioxide. If so, emissions unit consumes increment.

   [X] The facility addressed in this application is classified as an EPA major source pursuant to paragraph (c) of the definition of "major source of air pollution" in Chapter 62-213, F.A.C., and the emissions unit addressed in this section commenced (or will commence) construction after January 6, 1975. If so, baseline emissions are zero, and emissions unit consumes increment.

   [ ] The facility addressed in this application is classified as an EPA major source, and the emissions unit began initial operation after January 6, 1975, but before December 27, 1977. If so, baseline emissions are zero, and emissions unit consumes increment.

   [ ] For any facility, the emissions unit began (or will begin) initial operation after December 27, 1977. If so, baseline emissions are zero, and emissions unit consumes increment.

   [ ] None of the above apply. If so, the baseline emissions of the emissions unit are nonzero. In such case, additional analysis, beyond the scope of this application, is needed to determine whether changes in emissions have occurred (or will occur) after the baseline date that may consume or expand increment.

2. Increment Consuming for Nitrogen Dioxide?

If the emissions unit addressed in this section emits nitrogen oxides, answer the following series of questions to make a preliminary determination as to whether or not the emissions unit consumes PSD increment for nitrogen dioxide. Check first statement, if any, that applies and skip remaining statements.

[ ] The emissions unit addressed in this section is undergoing PSD review as part of this application, or has undergone PSD review previously, for nitrogen dioxide. If so, emissions unit consumes increment.

[X] The facility addressed in this application is classified as an EPA major source pursuant to paragraph (c) of the definition of "major source of air pollution" in Chapter 62-213, F.A.C., and the emissions unit addressed in this section commenced (or will commence) construction after February 8, 1988. If so, baseline emissions are zero, and emissions unit consumes increment.

[ ] The facility addressed in this application is classified as an EPA major source, and the emissions unit began initial operation after February 8, 1988, but before March 28, 1988. If so, baseline emissions are zero, and emissions unit consumes increment.

[ ] For any facility, the emissions unit began (or will begin) initial operation after March 28, 1988. If so, baseline emissions are zero, and emissions unit consumes increment.

[ ] None of the above apply. If so, the baseline emissions of the emissions unit are nonzero. In such case, additional analysis, beyond the scope of this application, is needed to determine whether changes in emissions have occurred (or will occur) after the baseline date that may consume or expand increment.

3. Increment Consuming/Expanding Code:			
PM	[X] C	[ ] E	[ ] Unknown
SO2	[X] C	[ ] E	[ ] Unknown
NO2	[X] C	[ ] E	[ ] Unknown
4. Baseline Emissions:			
PM		lbs/hr	tons/yr
SO2		lbs/hr	tons/yr
NO2			tons/yr
5. PSD Comment:			

I. EMISSIONS UNIT SUPPLEMENTAL INFORMATION

This subsection of the Application for Air Permit form provides supplemental information related to the emissions unit addressed in this Emissions Unit Information Section. Supplemental information must be submitted as an attachment to each copy of the form, in hard-copy or computer-readable form.

Supplemental Requirements for All Applications

1. Process Flow Diagram	
[X] Attached, Document ID: Attachment C of PSD Report	
[ ] Not Applicable	[ ] Waiver Requested
2. Fuel Analysis or Specification	
[ ] Attached, Document ID: _____	
[X] Not Applicable	[ ] Waiver Requested
3. Detailed Description of Control Equipment	
[X] Attached, Document ID: Attachment B of PSD Report	
[ ] Not Applicable	[ ] Waiver Requested
4. Description of Stack Sampling Facilities	
[ ] Attached, Document ID: _____	
[X] Not Applicable	[ ] Waiver Requested
5. Compliance Test Report	
[ ] Attached, Document ID: _____	[X] Not Applicable
[ ] Previously Submitted, Date: _____	
6. Procedures for Startup and Shutdown	
[ ] Attached, Document ID: _____	[X] Not Applicable
7. Operation and Maintenance Plan	
[ ] Attached, Document ID: _____	[X] Not Applicable
8. Supplemental Information for Construction Permit Application	
[X] Attached, Document ID: PSD Report	[ ] Not Applicable
9. Other Information Required by Rule or Statute	
[X] Attached, Document ID: PSD Report	[ ] Not Applicable

Additional Supplemental Requirements for Category I Applications Only

10. Alternative Methods of Operation	
[ ] Attached, Document ID: _____	[ ] Not Applicable
11. Alternative Modes of Operation (Emissions Trading)	
[ ] Attached, Document ID: _____	[ ] Not Applicable
12. Enhanced Monitoring Plan	
[ ] Attached, Document ID: _____	[ ] Not Applicable
13. Identification of Additional Applicable Requirements	
[ ] Attached, Document ID: _____	[ ] Not Applicable
14. Acid Rain Permit Application	
[ ] Acid Rain Part - Phase II (Form No. 62-210.900(1)(a)) Attached, Document ID: _____	
[ ] Repowering Extension Plan (Form No. 62-210.900(1)(a)1.) Attached, Document ID: _____	
[ ] New Unit Exemption (Form No. 62-210.900(1)(a)2.) Attached, Document ID: _____	
[ ] Retired Unit Exemption (Form No. 62-210.900(1)(a)3.) Attached, Document ID: _____	
[ ] Not Applicable	

2. Increment Consuming for Nitrogen Dioxide?

If the emissions unit addressed in this section emits nitrogen oxides, answer the following series of questions to make a preliminary determination as to whether or not the emissions unit consumes PSD increment for nitrogen dioxide. Check first statement, if any, that applies and skip remaining statements.

[ ] The emissions unit addressed in this section is undergoing PSD review as part of this application, or has undergone PSD review previously, for nitrogen dioxide. If so, emissions unit consumes increment.

[ ] The facility addressed in this application is classified as an EPA major source pursuant to paragraph (c) of the definition of "major source of air pollution" in Chapter 62-213, F.A.C., and the emissions unit addressed in this section commenced (or will commence) construction after February 8, 1988. If so, baseline emissions are zero, and emissions unit consumes increment.

[ ] The facility addressed in this application is classified as an EPA major source, and the emissions unit began initial operation after February 8, 1988, but before March 28, 1988. If so, baseline emissions are zero, and emissions unit consumes increment.

[ ] For any facility, the emissions unit began (or will begin) initial operation after March 28, 1988. If so, baseline emissions are zero, and emissions unit consumes increment.

[ ] None of the above apply. If so, the baseline emissions of the emissions unit are nonzero. In such case, additional analysis, beyond the scope of this application, is needed to determine whether changes in emissions have occurred (or will occur) after the baseline date that may consume or expand increment.

3. Increment Consuming/Expanding Code:			
PM	[ ] C	[ ] E	[ ] Unknown
SO2	[ ] C	[ ] E	[ ] Unknown
NO2	[ ] C	[ ] E	[ ] Unknown
4. Baseline Emissions:			
PM		lbs/hr	tons/yr
SO2		lbs/hr	tons/yr
NO2			tons/yr
5. PSD Comment:			

Additional Supplemental Requirements for Category I Applications Only

10. Alternative Methods of Operation

[ ] Attached, Document ID: _____ [ ] Not Applicable

11. Alternative Modes of Operation (Emissions Trading)

[ ] Attached, Document ID: _____ [ ] Not Applicable

12. Enhanced Monitoring Plan

[ ] Attached, Document ID: _____ [ ] Not Applicable

13. Identification of Additional Applicable Requirements

[ ] Attached, Document ID: _____ [ ] Not Applicable

14. Acid Rain Permit Application

[ ] Acid Rain Part - Phase II (Form No. 62-210.900(1)(a))
Attached, Document ID: _____

[ ] Repowering Extension Plan (Form No. 62-210.900(1)(a)1.)
Attached, Document ID: _____

[ ] New Unit Exemption (Form No. 62-210.900(1)(a)2.)
Attached, Document ID: _____

[ ] Retired Unit Exemption (Form No. 62-210.900(1)(a)3.)
Attached, Document ID: _____

[ ] Not Applicable

B. EMISSIONS UNIT REGULATIONS

Depending on the application category, this subsection of the Application for Air Permit form provides either a brief analysis or detailed listing of all federal, state, and local regulations applicable to the emissions unit addressed in this Emissions Unit Information Section.

Rule Applicability Analysis (Required for Category II applications and Category III applications involving non Title-V sources. See Instructions.)

List of Applicable Regulations (Required for Category I applications and Category III applications involving Title-V sources. See Instructions.)

62-2.960(1)(a)	62-297.401(5)
62-2.960(1)(b)	62-297.401(7)(e)
62-2.960(1)(d)2.	62-297.401(8)
62-2.960(1)(g)	62-297.401(9)
62-2.960(1)(h)	62-297.401(10)
62-210.300(2)	62-297.401(16)
62-210.650	62-297.401(16)(a)
62-210.700(1)	62-297.401(25)
62-210.700(4)	62-297.401(25)(a)
62-296.310(3)	
62-296.320(2)	
62-296.404(1)(a)1.	
62-296.404(2)	
62-296.404(3)(c)1.a.	
62-296.404(3)(c)3.	
62-296.404(4)(a)	
62-296.404(4)(f)	
62-296.404(5)(a)	
62-296.404(5)(b)	
62-296.404(6)(a)	
62-296.404(6)(b)	
62-296.404(6)(c)1.	
62-296.404(6)(d)	

C. EMISSION POINT (STACK/VENT) INFORMATION

This subsection of the Application for Air Permit form provides information about the emission point associated with the emissions unit addressed in this Emissions Unit Information Section. An emission point is typically a stack or vent but can be any identifiable location at which air pollutants, including fugitive emissions, are discharged into the atmosphere.

Emission Point Description and Type

1. Identification of Point on Plot Plan or Flow Diagram:
   RB4

2. Emission Point Type Code:
   [X] 1 [ ] 2 [ ] 3 [ ] 4

3. Descriptions of Emissions Points Comprising this Emissions Unit:

4. ID Numbers or Descriptions of Emission Units with this Emission Point in Common:

5. Discharge Type Code:
   [ ] D [ ] F [ ] H [ ] P
   [ ] R [X] V [ ] W

6. Stack Height:	230 ft
7. Exit Diameter:	12.0 ft
8. Exit Temperature:	400 °F
9. Actual Volumetric Flow Rate:	432,000 acfm
10. Percent Water Vapor:	21 %
11. Maximum Dry Standard Flow Rate:	210,000 dscfm
12. Nonstack Emission Point Height:	ft
13. Emission Point UTM Coordinates: Zone: East (km): North (km):	
14. Emission Point Comment:	

D. SEGMENT (PROCESS/FUEL) INFORMATION

For the emissions unit addressed in this Emissions Unit Information Section, a separate set of segment data (Fields 1-10) must be completed for each segment required to be reported and for each alternative operating method or mode (emissions trading scenario) under Chapter 62-213, F.A.C., for which the maximum hourly or annual segment-related rate would vary. A segment is a material handling, process, fuel burning, volatile organic liquid storage, production, or other such operation to which emissions of the unit are directly related. See instructions for further details on this subsection of the Application for Air Permit.

Segment Description and Rate Information: Segment 1 of 2

1. Segment Description (Process/Fuel Type and Associated Operating Method/Mode): **Recovery Furnace/Indirect Contact Evaporator**	
2. Source Classification Code (SCC): **3-07-001-10**	
3. SCC Units: **Air-dry tons unbleached pulp**	
4. Maximum Hourly Rate: **118.0 tons/hr ADUP**	5. Maximum Annual Rate: **675,250 tons/yr ADUP**
6. Estimated Annual Activity Factor: **1,850 tons/day ADUP**	
7. Maximum Percent Sulfur:	8. Maximum Percent Ash:
9. Million Btu per SCC Unit:	
10. Segment Comment:	

Emissions Unit Information Section 5 of 8

Segment Description and Rate Information: Segment 2 of 2

1. Segment Description (Process/Fuel Type and Associated Operating Method/Mode): **No. 6 fuel oil**	
2. Source Classification Code: **1-02-004-01**	
3. SCC Units: **1,000 gallons burned**	
4. Maximum Hourly Rate: **5.4**	5. Maximum Annual Rate: **47,304**
6. Estimated Annual Activity Factor:	
7. Maximum Percent Sulfur: **2.5**	8. Maximum Percent Ash: **0.05**
9. Million Btu per SCC Unit: **145.78**	
10. Segment Comment:	

E. POLLUTANT INFORMATION

For the emissions unit addressed in this Emissions Unit Information Section, a separate set of pollutant information must be completed for each pollutant required to be reported. See instructions for further details on this subsection of the Application for Air Permit.

Pollutant Potential/Estimated Emissions: Pollutant 1 of 8

1. Pollutant Emitted: **PM**	
2. Total Percent Efficiency of Control:	**99** %
3. Primary Control Device Code: **010**	
4. Secondary Control Device Code:	
5. Potential Emissions:	**83.2** lbs/hr **364.4** tons/yr
6. Synthetically Limited? [**X**] Yes [ ] No	
7. Range of Estimated Fugitive/Other Emissions: [ ] 1 [ ] 2 [ ] 3 _____ to _____ tons/yr	
8. Emission Factor: **0.033 gr/dscf @ 8% O_2** Reference: **BACT**	
9. Emissions Method Code: [ ] 1 [ ] 2 [ ] 3 [ ] 4 [**X**] 5	
10. Calculation of Emissions: **See PSD Report**	
11. Pollutant Potential/Estimated Emissions Comment:	

Allowable Emissions (Pollutant identified on front page)

A.

1. Basis for Allowable Emissions Code: Other		
2. Future Effective Date of Allowable Emissions:		
3. Requested Allowable Emissions and Units: 0.033 gr/dscf @ 8% O_2		
4. Equivalent Allowable Emissions:	83.2 lbs/hr	364.4 tons/yr
5. Method of Compliance: Annual stack test using EPA Method 5		
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode): BACT		

B.

1. Basis for Allowable Emissions Code:		
2. Future Effective Date of Allowable Emissions:		
3. Requested Allowable Emissions and Units:		
4. Equivalent Allowable Emissions:	lbs/hr	tons/yr
5. Method of Compliance:		
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode):		

E. POLLUTANT INFORMATION

For the emissions unit addressed in this Emissions Unit Information Section, a separate set of pollutant information must be completed for each pollutant required to be reported. See instructions for further details on this subsection of the Application for Air Permit.

Pollutant Potential/Estimated Emissions: Pollutant 2 of 8

1. Pollutant Emitted: **PM10**		
2. Total Percent Efficiency of Control:	**99** %	
3. Primary Control Device Code: **010**		
4. Secondary Control Device Code:		
5. Potential Emissions:	**83.2** lbs/hr	**364.4** tons/yr
6. Synthetically Limited? [**X**] Yes	[ ] No	
7. Range of Estimated Fugitive/Other Emissions: [ ] 1 [ ] 2 [ ] 3 _____ to _____ tons/yr		
8. Emission Factor: **0.033 gr/dscf @ 8% O_2** Reference: **BACT**		
9. Emissions Method Code: [ ] 1 [ ] 2 [ ] 3 [ ] 4 [**X**] 5		
10. Calculation of Emissions: **See PSD Report**		
11. Pollutant Potential/Estimated Emissions Comment:		

Allowable Emissions (Pollutant identified on front page)

A.

1. Basis for Allowable Emissions Code: **OTHER**		
2. Future Effective Date of Allowable Emissions:		
3. Requested Allowable Emissions and Units: **0.033 gr/dscf @ 8% O_2**		
4. Equivalent Allowable Emissions:	**83.2** lbs/hr	**364.4** tons/yr
5. Method of Compliance: **Annual stack test using EPA Method 5**		
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode): **BACT**		

B.

1. Basis for Allowable Emissions Code:		
2. Future Effective Date of Allowable Emissions:		
3. Requested Allowable Emissions and Units:		
4. Equivalent Allowable Emissions:	lbs/hr	tons/yr
5. Method of Compliance:		
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode):		

Emissions Unit Information Section 5 of 8

E. POLLUTANT INFORMATION

For the emissions unit addressed in this Emissions Unit Information Section, a separate set of pollutant information must be completed for each pollutant required to be reported. See instructions for further details on this subsection of the Application for Air Permit.

Pollutant Potential/Estimated Emissions: Pollutant 3 of 8

1. Pollutant Emitted: NO_x
2. Total Percent Efficiency of Control: %
3. Primary Control Device Code:
4. Secondary Control Device Code:
5. Potential Emissions: 210.6 lbs/hr 922.4 tons/yr
6. Synthetically Limited? [X] Yes [ ] No
7. Range of Estimated Fugitive/Other Emissions: [ ] 1 [ ] 2 [ ] 3 _____ to _____ tons/yr
8. Emission Factor: 100 ppmvd @ 8% O_2 Reference: BACT
9. Emissions Method Code: [ ] 1 [ ] 2 [ ] 3 [ ] 4 [X] 5
10. Calculation of Emissions: See PSD Report
11. Pollutant Potential/Estimated Emissions Comment:

Allowable Emissions (Pollutant identified on front page)

A.

1. Basis for Allowable Emissions Code: OTHER	
2. Future Effective Date of Allowable Emissions:	
3. Requested Allowable Emissions and Units: 100 ppmvd @ 8% O_2	
4. Equivalent Allowable Emissions: 210.6 lbs/hr	922.4 tons/yr
5. Method of Compliance: Annual stack test using EPA Method 7 or 7E	
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode): BACT	

B.

1. Basis for Allowable Emissions Code:		
2. Future Effective Date of Allowable Emissions:		
3. Requested Allowable Emissions and Units:		
4. Equivalent Allowable Emissions:	lbs/hr	tons/yr
5. Method of Compliance:		
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode):		

E. POLLUTANT INFORMATION

For the emissions unit addressed in this Emissions Unit Information Section, a separate set of pollutant information must be completed for each pollutant required to be reported. See instructions for further details on this subsection of the Application for Air Permit.

Pollutant Potential/Estimated Emissions: **Pollutant 4 of 8**

1. Pollutant Emitted: **CO**	
2. Total Percent Efficiency of Control:	%
3. Primary Control Device Code:	
4. Secondary Control Device Code:	
5. Potential Emissions:	**1,025.4** lbs/hr **2,245.6** tons/yr
6. Synthetically Limited? [**X**] Yes [ ] No	
7. Range of Estimated Fugitive/Other Emissions: [ ] 1 [ ] 2 [ ] 3 _____ to _____ tons/yr	
8. Emission Factor: **800 ppmvd @ 8% O_2, 1-hr; 400 ppmvd @ 8% O_2, annual average** Reference: **BACT**	
9. Emissions Method Code: [ ] 1 [ ] 2 [ ] 3 [ ] 4 [**X**] 5	
10. Calculation of Emissions: **See PSD Report**	
11. Pollutant Potential/Estimated Emissions Comment:	

Allowable Emissions (Pollutant identified on front page)

A.

1. Basis for Allowable Emissions Code: **OTHER**	
2. Future Effective Date of Allowable Emissions:	
3. Requested Allowable Emissions and Units: **800 ppmvd @ 8% O_2, 1-hr; 400 ppmvd @ 8% O_2, annual average**	
4. Equivalent Allowable Emissions: **1,025.4** lbs/hr	**2,245.6** tons/yr
5. Method of Compliance: **Annual stack test using EPA Method 10**	
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode): **BACT**	

B.

1. Basis for Allowable Emissions Code:		
2. Future Effective Date of Allowable Emissions:		
3. Requested Allowable Emissions and Units:		
4. Equivalent Allowable Emissions:	lbs/hr	tons/yr
5. Method of Compliance:		
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode):		

E. POLLUTANT INFORMATION

For the emissions unit addressed in this Emissions Unit Information Section, a separate set of pollutant information must be completed for each pollutant required to be reported. See instructions for further details on this subsection of the Application for Air Permit.

Pollutant Potential/Estimated Emissions: Pollutant 5 of 8

1. Pollutant Emitted: **VOC**
2. Total Percent Efficiency of Control: %
3. Primary Control Device Code:
4. Secondary Control Device Code:
5. Potential Emissions: **54.6** lbs/hr **239.1** tons/yr
6. Synthetically Limited? [**X**] Yes [ ] No
7. Range of Estimated Fugitive/Other Emissions: [ ] 1 [ ] 2 [ ] 3 _____ to _____ tons/yr
8. Emission Factor: **0.52 lb/ton BLS** Reference: **BACT**
9. Emissions Method Code: [ ] 1 [ ] 2 [ ] 3 [ ] 4 [**X**] 5
10. Calculation of Emissions: **210,000 lb/hr BLS x 0.52 lb/ton ÷ 2,000 lb/ton = 54.6 lb/hr**
11. Pollutant Potential/Estimated Emissions Comment:

Allowable Emissions (Pollutant identified on front page)

A.

1. Basis for Allowable Emissions Code: **OTHER**		
2. Future Effective Date of Allowable Emissions:		
3. Requested Allowable Emissions and Units: **0.52 lb/ton BLS**		
4. Equivalent Allowable Emissions:	**54.6** lbs/hr	**239.1** tons/yr
5. Method of Compliance: **Annual stack test using EPA Method 25 or 25A**		
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode): **BACT**		

B.

1. Basis for Allowable Emissions Code:		
2. Future Effective Date of Allowable Emissions:		
3. Requested Allowable Emissions and Units:		
4. Equivalent Allowable Emissions:	lbs/hr	tons/yr
5. Method of Compliance:		
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode):		

E. POLLUTANT INFORMATION

For the emissions unit addressed in this Emissions Unit Information Section, a separate set of pollutant information must be completed for each pollutant required to be reported. See instructions for further details on this subsection of the Application for Air Permit.

Pollutant Potential/Estimated Emissions: Pollutant 6 of 8

1. Pollutant Emitted: **TRS**
2. Total Percent Efficiency of Control: %
3. Primary Control Device Code:
4. Secondary Control Device Code:
5. Potential Emissions: **17.8** lbs/hr **78.0** tons/yr
6. Synthetically Limited? [**X**] Yes [ ] No
7. Range of Estimated Fugitive/Other Emissions: [ ] 1 [ ] 2 [ ] 3 _____ to _____ tons/yr
8. Emission Factor: **11.4 ppmvd @ 8% O_2** Reference: **BACT**
9. Emissions Method Code: [ ] 1 [ ] 2 [ ] 3 [ ] 4 [**X**] 5
10. Calculation of Emissions: **See PSD Report**
11. Pollutant Potential/Estimated Emissions Comment:

Emissions Unit Information Section 5 of 8

Allowable Emissions (Pollutant identified on front page)

A.

1. Basis for Allowable Emissions Code: **OTHER**		
2. Future Effective Date of Allowable Emissions:		
3. Requested Allowable Emissions and Units: **11.4 ppmvd @ 8% O_2**		
4. Equivalent Allowable Emissions:	**17.8** lbs/hr	**78.0** tons/yr
5. Method of Compliance: **Continuous TRS Monitor**		
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode): **BACT**		

B.

1. Basis for Allowable Emissions Code:		
2. Future Effective Date of Allowable Emissions:		
3. Requested Allowable Emissions and Units:		
4. Equivalent Allowable Emissions:	lbs/hr	tons/yr
5. Method of Compliance:		
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode):		

Emissions Unit Information Section 5 of 8

E. POLLUTANT INFORMATION

For the emissions unit addressed in this Emissions Unit Information Section, a separate set of pollutant information must be completed for each pollutant required to be reported. See instructions for further details on this subsection of the Application for Air Permit.

Pollutant Potential/Estimated Emissions: Pollutant 7 of 8

1. Pollutant Emitted: SO_2		
2. Total Percent Efficiency of Control:	%	
3. Primary Control Device Code:		
4. Secondary Control Device Code:		
5. Potential Emissions:	109.9 lbs/hr	481.4 tons/yr
6. Synthetically Limited? [ ] Yes	[X] No	
7. Range of Estimated Fugitive/Other Emissions: [ ] 1 [ ] 2 [ ] 3 _____ to _____ tons/yr		
8. Emission Factor: 37.5 ppmvd @ 8% O_2 Reference: FDEP Limitation		
9. Emissions Method Code: [ ] 1 [ ] 2 [ ] 3 [ ] 4 [X] 5		
10. Calculation of Emissions: See PSD Report		
11. Pollutant Potential/Estimated Emissions Comment:		

Emissions Unit Information Section 5 of 8

Allowable Emissions (Pollutant identified on front page)

A.

1. Basis for Allowable Emissions Code: **OTHER**	
2. Future Effective Date of Allowable Emissions:	
3. Requested Allowable Emissions and Units: **37.5 ppmvd @ 8% O_2**	
4. Equivalent Allowable Emissions: **109.9** lbs/hr	**481.4** tons/yr
5. Method of Compliance: **Annual stack test using EPA Method 8**	
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode):	

B.

1. Basis for Allowable Emissions Code:	
2. Future Effective Date of Allowable Emissions:	
3. Requested Allowable Emissions and Units:	
4. Equivalent Allowable Emissions: lbs/hr	tons/yr
5. Method of Compliance:	
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode):	

E. POLLUTANT INFORMATION

For the emissions unit addressed in this Emissions Unit Information Section, a separate set of pollutant information must be completed for each pollutant required to be reported. See instructions for further details on this subsection of the Application for Air Permit.

Pollutant Potential/Estimated Emissions: Pollutant 8 of 8

1. Pollutant Emitted: SAM	
2. Total Percent Efficiency of Control:	%
3. Primary Control Device Code:	
4. Secondary Control Device Code:	
5. Potential Emissions:	3.2 lbs/hr 14.2 tons/yr
6. Synthetically Limited? [ ] Yes	[X] No
7. Range of Estimated Fugitive/Other Emissions: [ ] 1 [ ] 2 [ ] 3 _____ to _____ tons/yr	
8. Emission Factor: 0.81 ppm Reference: NCASI Bulletin No. 106	
9. Emissions Method Code: [ ] 1 [ ] 2 [ ] 3 [ ] 4 [X] 5	
10. Calculation of Emissions: 427,500 acfm x 2,116.8 lb_f/ft^2 + 15.765 ft-lb_f/lb_m-°R + 860°R x 0.81/10^6 x 60 min/hr = 3.2 lb/hr	
11. Pollutant Potential/Estimated Emissions Comment:	

Emissions Unit Information Section 5 of 8

Allowable Emissions (Pollutant identified on front page)

A.

1. Basis for Allowable Emissions Code: **OTHER**		
2. Future Effective Date of Allowable Emissions:		
3. Requested Allowable Emissions and Units: **0.81 ppm**		
4. Equivalent Allowable Emissions:	**3.2** lbs/hr	**14.2** tons/yr
5. Method of Compliance: **Annual stack test using NCASI Method 106**		
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode): **BACT**		

B.

1. Basis for Allowable Emissions Code:		
2. Future Effective Date of Allowable Emissions:		
3. Requested Allowable Emissions and Units:		
4. Equivalent Allowable Emissions:	lbs/hr	tons/yr
5. Method of Compliance:		
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode):		

F. VISIBLE EMISSIONS INFORMATION

This subsection of the Application for Air Permit form must be completed for only those emissions units which are subject to a visible emissions limitation. The intent of this subsection of the form is to identify each activity associated with the emissions unit addressed in this section for which a separate opacity limitation would be applicable. Visible emission subtype codes for each such activity are listed in the instructions for Field 1. Most emissions units will be subject to a "subtype VE" limit only.

Visible Emissions Limitations: Visible Emissions Limitation 1 of 1

1. Visible Emissions Subtype: **VE**
2. Basis for Allowable Opacity: [X] Rule [ ] Other
3. Requested Allowable Opacity: Normal Conditions: **20** % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hr
4. Method of Compliance: **Annual VE test using EPA Method 9**
5. Visible Emissions Comment:

Visible Emissions Limitations: Visible Emissions Limitation ____ of ____

1. Visible Emissions Subtype:
2. Basis for Allowable Opacity: [ ] Rule [ ] Other
3. Requested Allowable Opacity: Normal Conditions: % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hr
4. Method of Compliance:
5. Visible Emissions Comment:

Visible Emissions Limitations: Visible Emissions Limitation ____ of ____

1. Visible Emissions Subtype:
2. Basis for Allowable Opacity: [ ] Rule [ ] Other
3. Requested Allowable Opacity: Normal Conditions: % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hr
4. Method of Compliance:
5. Visible Emissions Comment:

G. CONTINUOUS MONITOR INFORMATION

This subsection of the Application for Air Permit form must be completed for only those emissions units which are required by rule or permit to install and operate one or more continuous emission, opacity, flow, or other type monitors. A separate set of continuous monitor information (fields 1-6) must be completed for each monitoring system required.

Continuous Monitoring System Continuous Monitor 1 of 2

1. Parameter Code: **TRS**
2. CMS Requirement: [X] Rule [ ] Other
3. Monitor Information: Manufacturer: **See comment** Model Number: **NA** Serial Number: **NA**
4. Installation Date (DD-MON-YYYY):
5. Performance Specification Test Date (DD-MON-YYYY):
6. Continuous Monitor Comment: **Rule 62-296.404(5)(a); TRS continuous monitor system has been assembled by permittee from various components.**

Emissions Unit Information Section 5 of 8

Continuous Monitoring System Continuous Monitor 2 of 2

1. Parameter Code: O2
2. CMS Requirement: [X] Rule [ ] Other
3. Monitor Information: Manufacturer: Teledyne Model Number: Serial Number:
4. Installation Date (DD-MON-YYYY):
5. Performance Specification Test Date (DD-MON-YYYY):
6. Continuous Monitor Comment: Rule 62-296.404(5)(a)

Continuous Monitoring System Continuous Monitor ____ of ____

1. Parameter Code:
2. CMS Requirement: [ ] Rule [ ] Other
3. Monitor Information: Manufacturer: Model Number: Serial Number:
4. Installation Date (DD-MON-YYYY):
5. Performance Specification Test Date (DD-MON-YYYY):
6. Continuous Monitor Comment:

H. PREVENTION OF SIGNIFICANT DETERIORATION (PSD) INCREMENT TRACKING INFORMATION

This subsection of the Application for Air Permit form must be completed for all applications, not just those undergoing prevention-of-significant-deterioration (PSD) review pursuant to Rule 62-212.400, F.A.C. The intent of this subsection is to make a preliminary determination as to whether the emissions unit addressed in this Emissions Unit Information Section consumes PSD increment. PSD increment is consumed (or expanded) as a result of emission increases (decreases) occurring after pollutant-specific baseline dates. Pollutants for which baseline dates have been established are sulfur dioxide, particulate matter, and nitrogen dioxide.

PSD Increment Consumption Determination

1. Increment Consuming for Particulate Matter or Sulfur Dioxide?

   If the emissions unit addressed in this section emits particulate matter or sulfur dioxide, answer the following series of questions to make a preliminary determination as to whether or not the emissions unit consumes PSD increment for particulate matter or sulfur dioxide. Check the first statement, if any, that applies and skip remaining statements.

   [X] The emissions unit is undergoing PSD review as part of this application, or has undergone PSD review previously, for particulate matter or sulfur dioxide. If so, emissions unit consumes increment.

   [ ] The facility addressed in this application is classified as an EPA major source pursuant to paragraph (c) of the definition of "major source of air pollution" in Chapter 62-213, F.A.C., and the emissions unit addressed in this section commenced (or will commence) construction after January 6, 1975. If so, baseline emissions are zero, and emissions unit consumes increment.

   [ ] The facility addressed in this application is classified as an EPA major source, and the emissions unit began initial operation after January 6, 1975, but before December 27, 1977. If so, baseline emissions are zero, and emissions unit consumes increment.

   [ ] For any facility, the emissions unit began (or will begin) initial operation after December 27, 1977. If so, baseline emissions are zero, and emissions unit consumes increment.

   [ ] None of the above apply. If so, the baseline emissions of the emissions unit are nonzero. In such case, additional analysis, beyond the scope of this application, is needed to determine whether changes in emissions have occurred (or will occur) after the baseline date that may consume or expand increment.

2. Increment Consuming for Nitrogen Dioxide?

If the emissions unit addressed in this section emits nitrogen oxides, answer the following series of questions to make a preliminary determination as to whether or not the emissions unit consumes PSD increment for nitrogen dioxide. Check first statement, if any, that applies and skip remaining statements.

[X] The emissions unit addressed in this section is undergoing PSD review as part of this application, or has undergone PSD review previously, for nitrogen dioxide. If so, emissions unit consumes increment.

[ ] The facility addressed in this application is classified as an EPA major source pursuant to paragraph (c) of the definition of "major source of air pollution" in Chapter 62-213, F.A.C., and the emissions unit addressed in this section commenced (or will commence) construction after February 8, 1988. If so, baseline emissions are zero, and emissions unit consumes increment.

[ ] The facility addressed in this application is classified as an EPA major source, and the emissions unit began initial operation after February 8, 1988, but before March 28, 1988. If so, baseline emissions are zero, and emissions unit consumes increment.

[ ] For any facility, the emissions unit began (or will begin) initial operation after March 28, 1988. If so, baseline emissions are zero, and emissions unit consumes increment.

[ ] None of the above apply. If so, the baseline emissions of the emissions unit are nonzero. In such case, additional analysis, beyond the scope of this application, is needed to determine whether changes in emissions have occurred (or will occur) after the baseline date that may consume or expand increment.

3. Increment Consuming/Expanding Code:			
PM	[X] C	[ ] E	[ ] Unknown
SO2	[X] C	[ ] E	[ ] Unknown
NO2	[X] C	[ ] E	[ ] Unknown

4. Baseline Emissions:		
PM	0 lbs/hr	0 tons/yr
SO2	0 lbs/hr	0 tons/yr
NO2		477.9 tons/yr

5. PSD Comment:

I. EMISSIONS UNIT SUPPLEMENTAL INFORMATION

This subsection of the Application for Air Permit form provides supplemental information related to the emissions unit addressed in this Emissions Unit Information Section. Supplemental information must be submitted as an attachment to each copy of the form, in hard-copy or computer-readable form.

Supplemental Requirements for All Applications

1. Process Flow Diagram	
[X] Attached, Document ID: Attachment C of PSD Report	
[ ] Not Applicable	[ ] Waiver Requested
2. Fuel Analysis or Specification	
[ ] Attached, Document ID: _____	
[X] Not Applicable	[ ] Waiver Requested
3. Detailed Description of Control Equipment	
[ ] Attached, Document ID: _____	
[X] Not Applicable	[ ] Waiver Requested
4. Description of Stack Sampling Facilities	
[ ] Attached, Document ID: _____	
[X] Not Applicable	[ ] Waiver Requested
5. Compliance Test Report	
[ ] Attached, Document ID: _____	[X] Not Applicable
[ ] Previously Submitted, Date: _____	
6. Procedures for Startup and Shutdown	
[ ] Attached, Document ID: _____	[X] Not Applicable
7. Operation and Maintenance Plan	
[ ] Attached, Document ID: _____	[X] Not Applicable
8. Supplemental Information for Construction Permit Application	
[X] Attached, Document ID: PSD Report	[ ] Not Applicable
9. Other Information Required by Rule or Statute	
[X] Attached, Document ID: PSD Report	[ ] Not Applicable

Additional Supplemental Requirements for Category I Applications Only

10. Alternative Methods of Operation

[ ] Attached, Document ID: _____ [ ] Not Applicable

11. Alternative Modes of Operation (Emissions Trading)

[ ] Attached, Document ID: _____ [ ] Not Applicable

12. Enhanced Monitoring Plan

[ ] Attached, Document ID: _____ [ ] Not Applicable

13. Identification of Additional Applicable Requirements

[ ] Attached, Document ID: _____ [ ] Not Applicable

14. Acid Rain Permit Application

[ ] Acid Rain Part - Phase II (Form No. 62-210.900(1)(a))
Attached, Document ID: _____

[ ] Repowering Extension Plan (Form No. 62-210.900(1)(a)1.)
Attached, Document ID: _____

[ ] New Unit Exemption (Form No. 62-210.900(1)(a)2.)
Attached, Document ID: _____

[ ] Retired Unit Exemption (Form No. 62-210.900(1)(a)3.)
Attached, Document ID: _____

[ ] Not Applicable

III. EMISSIONS UNIT INFORMATION

A separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each emissions unit addressed in this Application for Air Permit. If submitting the application form in hard copy, indicate, in the space provided at the top of each page, the number of this Emissions Unit Information Section and the total number of Emissions Unit Information Sections submitted as part of this application.

A. GENERAL EMISSIONS UNIT INFORMATION

This subsection of the Application for Air Permit form provides general information on the emissions unit addressed in this Emissions Unit Information Section, including information on the type, control equipment, operating capacity, and operating schedule of the emissions unit.

Type of Emissions Unit Addressed in This Section

Check one:

[X] This Emissions Unit Information Section addresses, as a single emissions unit, a single process or production unit, or activity, which produces one or more air pollutants and which has at least one definable emission point (stack or vent).

[ ] This Emissions Unit Information Section addresses, as a single emissions unit, an individually-regulated emission point (stack or vent) serving a single process or production unit, or activity, which also has other individually-regulated emission points.

[ ] This Emissions Unit Information Section addresses, as a single emissions unit, a collectively-regulated group of process or production units and activities which has at least one definable emission point (stack or vent) but may also produce fugitive emissions.

[ ] This Emissions Unit Information Section addresses, as a single emissions unit, one or more process or production units and activities which produce fugitive emissions only.

Emissions Unit Information Section 6 of 8

Emissions Unit Description and Status

1. Description of Emissions Unit Addressed in This Section: **No. 4 Smelt Dissolving Tanks**		
2. ARMS Identification Number: [ ] No Corresponding ID [ ] Unknown **31JAX54000519**		
3. Emissions Unit Status Code: **A**	4. Acid Rain Unit? [ ] Yes [X] No	5. Emissions Unit Major Group SIC Code: **26**
6. Initial Startup Date (DD-MON-YYYY):		
7. Long-term Reserve Shutdown Date (DD-MON-YYYY):		
8. Package Unit: Manufacturer: Model Number:		
9. Generator Nameplate Rating: MW		
10. Incinerator Information: Dwell Temperature: °F Dwell Time: seconds Incinerator Afterburner Temperature: °F		
11. Emissions Unit Comment:		

Emissions Unit Control Equipment

A.

1. Description: Venturi scrubbers; one for each smelt tank

2. Control Device or Method Code: 053

B.

1. Description:

2. Control Device or Method Code:

C.

1. Description:

2. Control Device or Method Code:

Emissions Unit Information Section 6 of 8

Emissions Unit Operating Capacity

1. Maximum Heat Input Rate: mmBtu/hr
2. Maximum Incineration Rate: lbs/hr tons/day
3. Maximum Process or Throughput Rate: **85,890 lb/hr smelt**
4. Maximum Production Rate:
5. Operating Capacity Comment:

Emissions Unit Operating Schedule

Requested Maximum Operating Schedule:	
24 hours/day	**7** days/week
52 weeks/yr	**8,760** hours/yr

B. EMISSIONS UNIT REGULATIONS

Depending on the application category, this subsection of the Application for Air Permit form provides either a brief analysis or detailed listing of all federal, state, and local regulations applicable to the emissions unit addressed in this Emissions Unit Information Section.

Rule Applicability Analysis (Required for Category II applications and Category III applications involving non Title-V sources. See Instructions.)

List of Applicable Regulations (Required for Category I applications and Category III applications involving Title-V sources. See Instructions.)

62-2.960(1)(a)	62-297.401(16)
62-2.960(1)(b)	62-297.401(16)(a)
62-2.960(1)(d)1.	
62-2.960(1)(g)	
62-2.960(1)(h)	
62-210.300(2)	
62-210.650	
62-210.700(1)	
62-210.700(4)	
62-210.700(6)	
62-296.310(1)	
62-296.310(2)	
62-296.310(3)	
62-296.320(2)	
62-296.404(3)(d)	
62-296.404(4)(c)	
62-296.404(4)(f)	
62-296.404(5)(d)	
62-296.404(6)(a)	
62-296.404(6)(b)	
62-296.404(6)(c)3.	
62-296.404(6)(d)	
62-297.401(5)	

C. EMISSION POINT (STACK/VENT) INFORMATION

This subsection of the Application for Air Permit form provides information about the emission point associated with the emissions unit addressed in this Emissions Unit Information Section. An emission point is typically a stack or vent but can be any identifiable location at which air pollutants, including fugitive emissions, are discharged into the atmosphere.

Emission Point Description and Type

1. Identification of Point on Plot Plan or Flow Diagram: **SDT4**

2. Emission Point Type Code:
   [ ] 1 [ ] 2 [X] 3 [ ] 4

3. Descriptions of Emissions Points Comprising this Emissions Unit:
   2 smelt dissolving tank vents with scrubbers

4. ID Numbers or Descriptions of Emission Units with this Emission Point in Common:

5. Discharge Type Code:
   [ ] D [ ] F [ ] H [ ] P
   [ ] R [X] V [ ] W

6. Stack Height:	206 ft
7. Exit Diameter:	5.0 ft
8. Exit Temperature:	160 °F
9. Actual Volumetric Flow Rate:	32,000 acfm
10. Percent Water Vapor:	%
11. Maximum Dry Standard Flow Rate:	dscfm
12. Nonstack Emission Point Height:	ft
13. Emission Point UTM Coordinates: Zone: East (km): North (km):	
14. Emission Point Comment:	

D. SEGMENT (PROCESS/FUEL) INFORMATION

For the emissions unit addressed in this Emissions Unit Information Section, a separate set of segment data (Fields 1-10) must be completed for each segment required to be reported and for each alternative operating method or mode (emissions trading scenario) under Chapter 62-213, F.A.C., for which the maximum hourly or annual segment-related rate would vary. A segment is a material handling, process, fuel burning, volatile organic liquid storage, production, or other such operation to which emissions of the unit are directly related. See instructions for further details on this subsection of the Application for Air Permit.

Segment Description and Rate Information: Segment 1 of 1

1. Segment Description (Process/Fuel Type and Associated Operating Method/Mode): **Smelt Dissolving Tank**	
2. Source Classification Code (SCC): **3-07-001-05**	
3. SCC Units: **Air-dry tons unbleached pulp**	
4. Maximum Hourly Rate: **118.0 tons/hr ADUP**	5. Maximum Annual Rate: **675,250 tons/yr ADUP**
6. Estimated Annual Activity Factor: **1,850 tons/day ADUP**	
7. Maximum Percent Sulfur:	8. Maximum Percent Ash:
9. Million Btu per SCC Unit:	
10. Segment Comment:	

Emissions Unit Information Section 6 of 8

Segment Description and Rate Information: Segment ____ of ____

1. Segment Description (Process/Fuel Type and Associated Operating Method/Mode):	
2. Source Classification Code:	
3. SCC Units:	
4. Maximum Hourly Rate:	5. Maximum Annual Rate:
6. Estimated Annual Activity Factor:	
7. Maximum Percent Sulfur:	8. Maximum Percent Ash:
9. Million Btu per SCC Unit:	
10. Segment Comment:	

E. POLLUTANT INFORMATION

For the emissions unit addressed in this Emissions Unit Information Section, a separate set of pollutant information must be completed for each pollutant required to be reported. See instructions for further details on this subsection of the Application for Air Permit.

Pollutant Potential/Estimated Emissions: Pollutant 1 of 7

1. Pollutant Emitted: **PM**
2. Total Percent Efficiency of Control: **96 %**
3. Primary Control Device Code: **053**
4. Secondary Control Device Code:
5. Potential Emissions: **12.6** lbs/hr **55.2** tons/yr
6. Synthetically Limited? [**X**] Yes [ ] No
7. Range of Estimated Fugitive/Other Emissions: [ ] 1 [ ] 2 [ ] 3 _____ to _____ tons/yr
8. Emission Factor: **0.12 lb/ton BLS to RB4** Reference: **BACT**
9. Emissions Method Code: [ ] 1 [ ] 2 [ ] 3 [ ] 4 [**X**] 5
10. Calculation of Emissions: **210,000 lb/hr BLS x 0.12 lb/ton ÷ 2,000 lb/ton = 12.6 lb/hr**
11. Pollutant Potential/Estimated Emissions Comment:

Allowable Emissions (Pollutant identified on front page)

A.

1. Basis for Allowable Emissions Code: **OTHER**		
2. Future Effective Date of Allowable Emissions:		
3. Requested Allowable Emissions and Units: **0.12 lb/ton BLS to RB4**		
4. Equivalent Allowable Emissions:	**12.6** lbs/hr	**55.2**tons/yr
5. Method of Compliance: **Annual stack test using EPA Method 5**		
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode): **BACT**		

B.

1. Basis for Allowable Emissions Code:		
2. Future Effective Date of Allowable Emissions:		
3. Requested Allowable Emissions and Units:		
4. Equivalent Allowable Emissions:	lbs/hr	tons/yr
5. Method of Compliance:		
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode):		

E. POLLUTANT INFORMATION

For the emissions unit addressed in this Emissions Unit Information Section, a separate set of pollutant information must be completed for each pollutant required to be reported. See instructions for further details on this subsection of the Application for Air Permit.

Pollutant Potential/Estimated Emissions: Pollutant 2 of 7

1. Pollutant Emitted: **PM10**	
2. Total Percent Efficiency of Control:	**96 %**
3. Primary Control Device Code: **053**	
4. Secondary Control Device Code:	
5. Potential Emissions:	**12.6** lbs/hr **55.2** tons/yr
6. Synthetically Limited? [X] Yes [ ] No	
7. Range of Estimated Fugitive/Other Emissions: [ ] 1 [ ] 2 [ ] 3 _____ to _____ tons/yr	
8. Emission Factor: **0.12 lb/ton BLS to RB4** Reference: **BACT**	
9. Emissions Method Code: [ ] 1 [ ] 2 [ ] 3 [ ] 4 [X] 5	
10. Calculation of Emissions: **210,000 lb/hr BLS x 0.12 lb/ton ÷ 2,000 lb/ton = 12.6 lb/hr**	
11. Pollutant Potential/Estimated Emissions Comment:	

Allowable Emissions (Pollutant identified on front page)

A.

1. Basis for Allowable Emissions Code: OTHER		
2. Future Effective Date of Allowable Emissions:		
3. Requested Allowable Emissions and Units: 0.12 lb/ton BLS to RB4		
4. Equivalent Allowable Emissions:	12.6 lbs/hr	55.2 tons/yr
5. Method of Compliance: Annual stack test using EPA Method 5		
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode): BACT		

B.

1. Basis for Allowable Emissions Code:		
2. Future Effective Date of Allowable Emissions:		
3. Requested Allowable Emissions and Units:		
4. Equivalent Allowable Emissions:	lbs/hr	tons/yr
5. Method of Compliance:		
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode):		

E. POLLUTANT INFORMATION

For the emissions unit addressed in this Emissions Unit Information Section, a separate set of pollutant information must be completed for each pollutant required to be reported. See instructions for further details on this subsection of the Application for Air Permit.

Pollutant Potential/Estimated Emissions: Pollutant 3 of 7

1. Pollutant Emitted: TRS	
2. Total Percent Efficiency of Control:	90 %
3. Primary Control Device Code: 053	
4. Secondary Control Device Code:	
5. Potential Emissions:	3.4 lbs/hr 14.9 tons/yr
6. Synthetically Limited? [ ] Yes	[X] No
7. Range of Estimated Fugitive/Other Emissions: [ ] 1 [ ] 2 [ ] 3 _____ to _____ tons/yr	
8. Emission Factor: 0.048 lb/3000 lb BLS to RB4 Reference: 62-296.404(3)(d)	
9. Emissions Method Code: [ ] 1 [ ] 2 [ ] 3 [ ] 4 [X] 5	
10. Calculation of Emissions: 210,000 lb/hr BLS x 0.048 lb/3000 lb BLS = 3.36 lb/hr	
11. Pollutant Potential/Estimated Emissions Comment:	

Allowable Emissions (Pollutant identified on front page)

A.

1. Basis for Allowable Emissions Code: **Rule**		
2. Future Effective Date of Allowable Emissions:		
3. Requested Allowable Emissions and Units: **0.048 lb/3000 lb BLS**		
4. Equivalent Allowable Emissions:	**3.4** lbs/hr	**14.9** tons/yr
5. Method of Compliance: **Annual stack test using EPA Method 16 or 16A**		
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode): **62-296.404(3)(d)**		

B.

1. Basis for Allowable Emissions Code:		
2. Future Effective Date of Allowable Emissions:		
3. Requested Allowable Emissions and Units:		
4. Equivalent Allowable Emissions:	lbs/hr	tons/yr
5. Method of Compliance:		
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode):		

E. POLLUTANT INFORMATION

For the emissions unit addressed in this Emissions Unit Information Section, a separate set of pollutant information must be completed for each pollutant required to be reported. See instructions for further details on this subsection of the Application for Air Permit.

Pollutant Potential/Estimated Emissions: Pollutant 4 of 7

1. Pollutant Emitted: SO_2
2. Total Percent Efficiency of Control: %
3. Primary Control Device Code:
4. Secondary Control Device Code:
5. Potential Emissions: 7.9 lbs/hr 34.5 tons/yr
6. Synthetically Limited? [ ] Yes [X] No
7. Range of Estimated Fugitive/Other Emissions: [ ] 1 [ ] 2 [ ] 3 _____ to _____ tons/yr
8. Emission Factor: 0.075 lb/ton BLS to RB4 Reference: NCASI Bulletin No. 646
9. Emissions Method Code: [ ] 1 [ ] 2 [ ] 3 [ ] 4 [X] 5
10. Calculation of Emissions: 210,000 lb/hr BLS x 0.075 lb/ton BLS ÷ 2,000 lb/ton = 7.9 lb/hr
11. Pollutant Potential/Estimated Emissions Comment:

Allowable Emissions (Pollutant identified on front page)

A.

1. Basis for Allowable Emissions Code:		
2. Future Effective Date of Allowable Emissions:		
3. Requested Allowable Emissions and Units:		
4. Equivalent Allowable Emissions:	lbs/hr	tons/yr
5. Method of Compliance:		
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode):		

B.

1. Basis for Allowable Emissions Code:		
2. Future Effective Date of Allowable Emissions:		
3. Requested Allowable Emissions and Units:		
4. Equivalent Allowable Emissions:	lbs/hr	tons/yr
5. Method of Compliance:		
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode):		

E. POLLUTANT INFORMATION

For the emissions unit addressed in this Emissions Unit Information Section, a separate set of pollutant information must be completed for each pollutant required to be reported. See instructions for further details on this subsection of the Application for Air Permit.

Pollutant Potential/Estimated Emissions: Pollutant 5 of 7

1. Pollutant Emitted: NO_x	
2. Total Percent Efficiency of Control:	%
3. Primary Control Device Code:	
4. Secondary Control Device Code:	
5. Potential Emissions:	15.8 lbs/hr 69.0 tons/yr
6. Synthetically Limited? [ ] Yes	[X] No
7. Range of Estimated Fugitive/Other Emissions: [ ] 1 [ ] 2 [ ] 3 _____ to _____ tons/yr	
8. Emission Factor: 0.15 lb/ton BLS to RB4 Reference: NCASI Bulletin No. 646	
9. Emissions Method Code: [ ] 1 [ ] 2 [ ] 3 [ ] 4 [X] 5	
10. Calculation of Emissions: 210,000 lb/hr BLS x 0.15 lb/ton BLS ÷ 2,000 lb/ton = 15.8 lb/hr	
11. Pollutant Potential/Estimated Emissions Comment:	

Allowable Emissions (Pollutant identified on front page)

A.

1. Basis for Allowable Emissions Code:		
2. Future Effective Date of Allowable Emissions:		
3. Requested Allowable Emissions and Units:		
4. Equivalent Allowable Emissions:	lbs/hr	tons/yr
5. Method of Compliance:		
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode):		

B.

1. Basis for Allowable Emissions Code:		
2. Future Effective Date of Allowable Emissions:		
3. Requested Allowable Emissions and Units:		
4. Equivalent Allowable Emissions:	lbs/hr	tons/yr
5. Method of Compliance:		
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode):		

Emissions Unit Information Section 6 of 8

E. POLLUTANT INFORMATION

For the emissions unit addressed in this Emissions Unit Information Section, a separate set of pollutant information must be completed for each pollutant required to be reported. See instructions for further details on this subsection of the Application for Air Permit.

Pollutant Potential/Estimated Emissions: Pollutant 6 of 7

1. Pollutant Emitted: **VOC**
2. Total Percent Efficiency of Control: %
3. Primary Control Device Code:
4. Secondary Control Device Code:
5. Potential Emissions: **20.2** lbs/hr **88.3** tons/yr
6. Synthetically Limited? [ ] Yes [X] No
7. Range of Estimated Fugitive/Other Emissions: [ ] 1 [ ] 2 [ ] 3 _____ to _____ tons/yr
8. Emission Factor: **0.192 lb/ton BLS to RB4** Reference: **NCASI Bulletin No. 646**
9. Emissions Method Code: [ ] 1 [ ] 2 [ ] 3 [ ] 4 [X] 5
10. Calculation of Emissions: **210,000 lb/hr BLS x 0.192 lb/ton BLS ÷ 2,000 lb/ton = 20.2 lb/hr**
11. Pollutant Potential/Estimated Emissions Comment:

Allowable Emissions (Pollutant identified on front page)

A.

1. Basis for Allowable Emissions Code:		
2. Future Effective Date of Allowable Emissions:		
3. Requested Allowable Emissions and Units:		
4. Equivalent Allowable Emissions:	lbs/hr	tons/yr
5. Method of Compliance:		
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode):		

B.

1. Basis for Allowable Emissions Code:		
2. Future Effective Date of Allowable Emissions:		
3. Requested Allowable Emissions and Units:		
4. Equivalent Allowable Emissions:	lbs/hr	tons/yr
5. Method of Compliance:		
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode):		

E. POLLUTANT INFORMATION

For the emissions unit addressed in this Emissions Unit Information Section, a separate set of pollutant information must be completed for each pollutant required to be reported. See instructions for further details on this subsection of the Application for Air Permit.

Pollutant Potential/Estimated Emissions: **Pollutant 7 of 7**

1. Pollutant Emitted: **SAM**	
2. Total Percent Efficiency of Control:	%
3. Primary Control Device Code:	
4. Secondary Control Device Code:	
5. Potential Emissions:	**0.39** lbs/hr **1.70** tons/yr
6. Synthetically Limited? [ ] Yes	[X] No
7. Range of Estimated Fugitive/Other Emissions: [ ] 1 [ ] 2 [ ] 3 _____ to _____ tons/yr	
8. Emission Factor: **4% of SO_2 as SO_3** Reference: **AP-42, Table 1.3-2**	
9. Emissions Method Code: [ ] 1 [ ] 2 [ ] 3 [ ] 4 [ ] 5	
10. Calculation of Emissions: **7.9 lb/hr SO_2 x 0.04 x 98/80 = 0.39 lb/hr**	
11. Pollutant Potential/Estimated Emissions Comment:	

Allowable Emissions (Pollutant identified on front page)

A.

1. Basis for Allowable Emissions Code:		
2. Future Effective Date of Allowable Emissions:		
3. Requested Allowable Emissions and Units:		
4. Equivalent Allowable Emissions:	lbs/hr	tons/yr
5. Method of Compliance:		
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode):		

B.

1. Basis for Allowable Emissions Code:		
2. Future Effective Date of Allowable Emissions:		
3. Requested Allowable Emissions and Units:		
4. Equivalent Allowable Emissions:	lbs/hr	tons/yr
5. Method of Compliance:		
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode):		

F. VISIBLE EMISSIONS INFORMATION

This subsection of the Application for Air Permit form must be completed for only those emissions units which are subject to a visible emissions limitation. The intent of this subsection of the form is to identify each activity associated with the emissions unit addressed in this section for which a separate opacity limitation would be applicable. Visible emission subtype codes for each such activity are listed in the instructions for Field 1. Most emissions units will be subject to a "subtype VE" limit only.

Visible Emissions Limitations: Visible Emissions Limitation 1 of 1

1. Visible Emissions Subtype: **VEX**
2. Basis for Allowable Opacity: [ ] Rule [X] Other
3. Requested Allowable Opacity: Normal Conditions: % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hr
4. Method of Compliance:
5. Visible Emissions Comment: **Due to moisture interference, the visible emission limiting standard pursuant to F.A.C. Rule 62-296.310(2) is not applicable and is deferred to F.A.C. Rule 62-296.404(2)(b).**

Emissions Unit Information Section 6 of 8

Visible Emissions Limitations: Visible Emissions Limitation ____ of ____

1. Visible Emissions Subtype:
2. Basis for Allowable Opacity: [ ] Rule [ ] Other
3. Requested Allowable Opacity: Normal Conditions: % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hr
4. Method of Compliance:
5. Visible Emissions Comment:

Visible Emissions Limitations: Visible Emissions Limitation ____ of ____

1. Visible Emissions Subtype:
2. Basis for Allowable Opacity: [ ] Rule [ ] Other
3. Requested Allowable Opacity: Normal Conditions: % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hr
4. Method of Compliance:
5. Visible Emissions Comment:

G. CONTINUOUS MONITOR INFORMATION

This subsection of the Application for Air Permit form must be completed for only those emissions units which are required by rule or permit to install and operate one or more continuous emission, opacity, flow, or other type monitors. A separate set of continuous monitor information (fields 1-6) must be completed for each monitoring system required.

Continuous Monitoring System Continuous Monitor 1 of 2

1. Parameter Code: **Weak wash flow rate to scrubber (North tank)**
2. CMS Requirement: [X] Rule [ ] Other
3. Monitor Information: Manufacturer: **Foxboro** Model Number: **2803-SABA-TSA-G** Serial Number: **5252373**
4. Installation Date (DD-MON-YYYY):
5. Performance Specification Test Date (DD-MON-YYYY):
6. Continuous Monitor Comment: **Weak wash flow rate to scrubber of 119 gpm, minimum, 12-hour average.**

Emissions Unit Information Section 6 of 8

Continuous Monitoring System Continuous Monitor 2 of 2

1. Parameter Code: **Weak wash flow rate to scrubber (South tank)**
2. CMS Requirement: [X] Rule [ ] Other
3. Monitor Information: Manufacturer: **Taylor** Model Number: Serial Number: **1200LK03121-100-3970A**
4. Installation Date (DD-MON-YYYY):
5. Performance Specification Test Date (DD-MON-YYYY):
6. Continuous Monitor Comment:

Continuous Monitoring System Continuous Monitor ____ of ____

1. Parameter Code:
2. CMS Requirement: [ ] Rule [ ] Other
3. Monitor Information: Manufacturer: Model Number: Serial Number:
4. Installation Date (DD-MON-YYYY):
5. Performance Specification Test Date (DD-MON-YYYY):
6. Continuous Monitor Comment:

H. PREVENTION OF SIGNIFICANT DETERIORATION (PSD) INCREMENT TRACKING INFORMATION

This subsection of the Application for Air Permit form must be completed for all applications, not just those undergoing prevention-of-significant-deterioration (PSD) review pursuant to Rule 62-212.400, F.A.C. The intent of this subsection is to make a preliminary determination as to whether the emissions unit addressed in this Emissions Unit Information Section consumes PSD increment. PSD increment is consumed (or expanded) as a result of emission increases (decreases) occurring after pollutant-specific baseline dates. Pollutants for which baseline dates have been established are sulfur dioxide, particulate matter, and nitrogen dioxide.

PSD Increment Consumption Determination

1. Increment Consuming for Particulate Matter or Sulfur Dioxide?

   If the emissions unit addressed in this section emits particulate matter or sulfur dioxide, answer the following series of questions to make a preliminary determination as to whether or not the emissions unit consumes PSD increment for particulate matter or sulfur dioxide. Check the first statement, if any, that applies and skip remaining statements.

   [X] The emissions unit is undergoing PSD review as part of this application, or has undergone PSD review previously, for particulate matter or sulfur dioxide. If so, emissions unit consumes increment.

   [ ] The facility addressed in this application is classified as an EPA major source pursuant to paragraph (c) of the definition of "major source of air pollution" in Chapter 62-213, F.A.C., and the emissions unit addressed in this section commenced (or will commence) construction after January 6, 1975. If so, baseline emissions are zero, and emissions unit consumes increment.

   [ ] The facility addressed in this application is classified as an EPA major source, and the emissions unit began initial operation after January 6, 1975, but before December 27, 1977. If so, baseline emissions are zero, and emissions unit consumes increment.

   [ ] For any facility, the emissions unit began (or will begin) initial operation after December 27, 1977. If so, baseline emissions are zero, and emissions unit consumes increment.

   [ ] None of the above apply. If so, the baseline emissions of the emissions unit are nonzero. In such case, additional analysis, beyond the scope of this application, is needed to determine whether changes in emissions have occurred (or will occur) after the baseline date that may consume or expand increment.

2. Increment Consuming for Nitrogen Dioxide?

If the emissions unit addressed in this section emits nitrogen oxides, answer the following series of questions to make a preliminary determination as to whether or not the emissions unit consumes PSD increment for nitrogen dioxide. Check first statement, if any, that applies and skip remaining statements.

[X] The emissions unit addressed in this section is undergoing PSD review as part of this application, or has undergone PSD review previously, for nitrogen dioxide. If so, emissions unit consumes increment.

[ ] The facility addressed in this application is classified as an EPA major source pursuant to paragraph (c) of the definition of "major source of air pollution" in Chapter 62-213, F.A.C., and the emissions unit addressed in this section commenced (or will commence) construction after February 8, 1988. If so, baseline emissions are zero, and emissions unit consumes increment.

[ ] The facility addressed in this application is classified as an EPA major source, and the emissions unit began initial operation after February 8, 1988, but before March 28, 1988. If so, baseline emissions are zero, and emissions unit consumes increment.

[ ] For any facility, the emissions unit began (or will begin) initial operation after March 28, 1988. If so, baseline emissions are zero, and emissions unit consumes increment.

[ ] None of the above apply. If so, the baseline emissions of the emissions unit are nonzero. In such case, additional analysis, beyond the scope of this application, is needed to determine whether changes in emissions have occurred (or will occur) after the baseline date that may consume or expand increment.

3. Increment Consuming/Expanding Code:			
PM	[X] C	[ ] E	[ ] Unknown
SO2	[X] C	[ ] E	[ ] Unknown
NO2	[X] C	[ ] E	[ ] Unknown

4. Baseline Emissions:		
PM	0 lbs/hr	0 tons/yr
SO2	0 lbs/hr	0 tons/yr
NO2		48.8 tons/yr

5. PSD Comment:

I. EMISSIONS UNIT SUPPLEMENTAL INFORMATION

This subsection of the Application for Air Permit form provides supplemental information related to the emissions unit addressed in this Emissions Unit Information Section. Supplemental information must be submitted as an attachment to each copy of the form, in hard-copy or computer-readable form.

Supplemental Requirements for All Applications

1. Process Flow Diagram	
[X] Attached, Document ID: Attachment C of PSD Report	
[ ] Not Applicable	[ ] Waiver Requested
2. Fuel Analysis or Specification	
[ ] Attached, Document ID: _____	
[X] Not Applicable	[ ] Waiver Requested
3. Detailed Description of Control Equipment	
[ ] Attached, Document ID: _____	
[X] Not Applicable	[ ] Waiver Requested
4. Description of Stack Sampling Facilities	
[ ] Attached, Document ID: _____	
[X] Not Applicable	[ ] Waiver Requested
5. Compliance Test Report	
[ ] Attached, Document ID: _____	[X] Not Applicable
[ ] Previously Submitted, Date: _____	
6. Procedures for Startup and Shutdown	
[ ] Attached, Document ID: _____	[X] Not Applicable
7. Operation and Maintenance Plan	
[ ] Attached, Document ID: _____	[X] Not Applicable
8. Supplemental Information for Construction Permit Application	
[X] Attached, Document ID: PSD Report	[ ] Not Applicable
9. Other Information Required by Rule or Statute	
[X] Attached, Document ID: PSD Report	[ ] Not Applicable

Additional Supplemental Requirements for Category I Applications Only

10. Alternative Methods of Operation [ ] Attached, Document ID: _____ [ ] Not Applicable
11. Alternative Modes of Operation (Emissions Trading) [ ] Attached, Document ID: _____ [ ] Not Applicable
12. Enhanced Monitoring Plan [ ] Attached, Document ID: _____ [ ] Not Applicable
13. Identification of Additional Applicable Requirements [ ] Attached, Document ID: _____ [ ] Not Applicable
14. Acid Rain Permit Application [ ] Acid Rain Part - Phase II (Form No. 62-210.900(1)(a)) Attached, Document ID: _____ [ ] Repowering Extension Plan (Form No. 62-210.900(1)(a)1.) Attached, Document ID: _____ [ ] New Unit Exemption (Form No. 62-210.900(1)(a)2.) Attached, Document ID: _____ [ ] Retired Unit Exemption (Form No. 62-210.900(1)(a)3.) Attached, Document ID: _____ [ ] Not Applicable

III. EMISSIONS UNIT INFORMATION

A separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each emissions unit addressed in this Application for Air Permit. If submitting the application form in hard copy, indicate, in the space provided at the top of each page, the number of this Emissions Unit Information Section and the total number of Emissions Unit Information Sections submitted as part of this application.

A. GENERAL EMISSIONS UNIT INFORMATION

This subsection of the Application for Air Permit form provides general information on the emissions unit addressed in this Emissions Unit Information Section, including information on the type, control equipment, operating capacity, and operating schedule of the emissions unit.

Type of Emissions Unit Addressed in This Section

Check one:

[X] This Emissions Unit Information Section addresses, as a single emissions unit, a single process or production unit, or activity, which produces one or more air pollutants and which has at least one definable emission point (stack or vent).

[ ] This Emissions Unit Information Section addresses, as a single emissions unit, an individually-regulated emission point (stack or vent) serving a single process or production unit, or activity, which also has other individually-regulated emission points.

[ ] This Emissions Unit Information Section addresses, as a single emissions unit, a collectively-regulated group of process or production units and activities which has at least one definable emission point (stack or vent) but may also produce fugitive emissions.

[ ] This Emissions Unit Information Section addresses, as a single emissions unit, one or more process or production units and activities which produce fugitive emissions only.

Emissions Unit Information Section 7 of 8

Emissions Unit Description and Status

1. Description of Emissions Unit Addressed in This Section: **No. 4 Lime Kiln**		
2. ARMS Identification Number: [ ] No Corresponding ID [ ] Unknown **31JAX54000517**		
3. Emissions Unit Status Code: **A**	4. Acid Rain Unit? [ ] Yes [X] No	5. Emissions Unit Major Group SIC Code: **26**
6. Initial Startup Date (DD-MON-YYYY):		
7. Long-term Reserve Shutdown Date (DD-MON-YYYY):		
8. Package Unit: Manufacturer: Model Number:		
9. Generator Nameplate Rating: MW		
10. Incinerator Information: Dwell Temperature: °F Dwell Time: seconds Incinerator Afterburner Temperature: °F		
11. Emissions Unit Comment:		

Emissions Unit Information Section 7 of 8

Emissions Unit Control Equipment

A.

1. Description: **Venturi Scrubber**

2. Control Device or Method Code: **053**

B.

1. Description:

2. Control Device or Method Code:

C.

1. Description:

2. Control Device or Method Code:

Emissions Unit Information Section 7 of 8

Emissions Unit Operating Capacity

1. Maximum Heat Input Rate: **136** mmBtu/hr
2. Maximum Incineration Rate: lbs/hr tons/day
3. Maximum Process or Throughput Rate: **82,986 lb/hr $CaCO_3$ and inerts**
4. Maximum Production Rate: **38,889 lb/hr CaO_3**
5. Operating Capacity Comment:

Emissions Unit Operating Schedule

Requested Maximum Operating Schedule:	
24 hours/day	**7** days/week
52 weeks/yr	**8,760** hours/yr

B. EMISSIONS UNIT REGULATIONS

Depending on the application category, this subsection of the Application for Air Permit form provides either a brief analysis or detailed listing of all federal, state, and local regulations applicable to the emissions unit addressed in this Emissions Unit Information Section.

Rule Applicability Analysis (Required for Category II applications and Category III applications involving non Title-V sources. See Instructions.)

List of Applicable Regulations (Required for Category I applications and Category III applications involving Title-V sources. See Instructions.)

62-2.960(1)(a)	62-297.401(8)
62-2.960(1)(b)	62-297.401(10)
62-2.960(1)(d)3.	62-297.401(16)
62-2.960(1)(g)	62-297.401(16)(a)
62-2.960(1)(h)	62-297.401(25)
62-210.300(2)	62-297.401(25)(a)
62-210.650	
62-210.700(1)	
62-210.700(4)	
62-210.700(6)	
62-296.310(1)	
62-296.310(3)	
62-296.320(2)	
62-296.404(3)(e)	
62-296.404(4)(b)	
62-296.404(5)(a)	
62-296.404(5)(b)	
62-296.404(6)(a)	
62-296.404(6)(b)	
62-296.404(6)(c)2.	
62-296.404(6)(d)	
62-297.401(5)	
62-297.401(7)(e)	

C. EMISSION POINT (STACK/VENT) INFORMATION

This subsection of the Application for Air Permit form provides information about the emission point associated with the emissions unit addressed in this Emissions Unit Information Section. An emission point is typically a stack or vent but can be any identifiable location at which air pollutants, including fugitive emissions, are discharged into the atmosphere.

Emission Point Description and Type

1. Identification of Point on Plot Plan or Flow Diagram:
   LK4

2. Emission Point Type Code:
   [X] 1 [ ] 2 [ ] 3 [ ] 4

3. Descriptions of Emissions Points Comprising this Emissions Unit:

4. ID Numbers or Descriptions of Emission Units with this Emission Point in Common:

5. Discharge Type Code:
   [ ] D [ ] F [ ] H [ ] P
   [ ] R [X] V [ ] W

6. Stack Height:	131 ft
7. Exit Diameter:	4.42 ft
8. Exit Temperature:	150 °F
9. Actual Volumetric Flow Rate:	56,000 acfm
10. Percent Water Vapor:	34 %
11. Maximum Dry Standard Flow Rate:	32,000 dscfm
12. Nonstack Emission Point Height:	ft
13. Emission Point UTM Coordinates: Zone: East (km): North (km):	
14. Emission Point Comment:	

D. SEGMENT (PROCESS/FUEL) INFORMATION

For the emissions unit addressed in this Emissions Unit Information Section, a separate set of segment data (Fields 1-10) must be completed for each segment required to be reported and for each alternative operating method or mode (emissions trading scenario) under Chapter 62-213, F.A.C., for which the maximum hourly or annual segment-related rate would vary. A segment is a material handling, process, fuel burning, volatile organic liquid storage, production, or other such operation to which emissions of the unit are directly related. See instructions for further details on this subsection of the Application for Air Permit.

Segment Description and Rate Information: Segment 1 of 2

1. Segment Description (Process/Fuel Type and Associated Operating Method/Mode): **Lime Kiln**	
2. Source Classification Code (SCC): 3-07-001-06	
3. SCC Units: **Air-dry tons unbleached pulp**	
4. Maximum Hourly Rate: **118.0 tons/hr ADUP**	5. Maximum Annual Rate: **675,250 tons/yr ADUP**
6. Estimated Annual Activity Factor: **1,850 tons/day ADUP**	
7. Maximum Percent Sulfur:	8. Maximum Percent Ash:
9. Million Btu per SCC Unit:	
10. Segment Comment:	

Emissions Unit Information Section 7 **of** 8

Segment Description and Rate Information: Segment 2 of 2

1. Segment Description (Process/Fuel Type and Associated Operating Method/Mode): **No. 6 fuel oil**	
2. Source Classification Code: **1-02-004-01**	
3. SCC Units: **1,000 gallons burned**	
4. Maximum Hourly Rate: **0.933**	5. Maximum Annual Rate: **8,173.1**
6. Estimated Annual Activity Factor:	
7. Maximum Percent Sulfur: **2.5**	8. Maximum Percent Ash: **0.05**
9. Million Btu per SCC Unit: **145.78**	
10. Segment Comment:	

Emissions Unit Information Section 7 of 8

E. POLLUTANT INFORMATION

For the emissions unit addressed in this Emissions Unit Information Section, a separate set of pollutant information must be completed for each pollutant required to be reported. See instructions for further details on this subsection of the Application for Air Permit.

Pollutant Potential/Estimated Emissions: Pollutant 1 of 8

1. Pollutant Emitted: **PM**		
2. Total Percent Efficiency of Control:	**99** %	
3. Primary Control Device Code: **053**		
4. Secondary Control Device Code:		
5. Potential Emissions:	**26.0** lbs/hr	**113.9** tons/yr
6. Synthetically Limited? [X] Yes	[ ] No	
7. Range of Estimated Fugitive/Other Emissions: [ ] 1 [ ] 2 [ ] 3 _____ to _____ tons/yr		
8. Emission Factor: **0.081 gr/dscf @ 10% O_2** Reference: **BACT**		
9. Emissions Method Code: [ ] 1 [ ] 2 [ ] 3 [ ] 4 [X] 5		
10. Calculation of Emissions: **See PSD Report**		
11. Pollutant Potential/Estimated Emissions Comment:		

Emissions Unit Information Section 7 of 8

Allowable Emissions (Pollutant identified on front page)

A.

1. Basis for Allowable Emissions Code: **OTHER**	
2. Future Effective Date of Allowable Emissions:	
3. Requested Allowable Emissions and Units: **0.081 gr/dscf @ 10% O_2**	
4. Equivalent Allowable Emissions: **26.0** lbs/hr	**113.9** tons/yr
5. Method of Compliance: **Annual stack test using EPA Method 5**	
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode): **BACT**	

B.

1. Basis for Allowable Emissions Code:		
2. Future Effective Date of Allowable Emissions:		
3. Requested Allowable Emissions and Units:		
4. Equivalent Allowable Emissions:	lbs/hr	tons/yr
5. Method of Compliance:		
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode):		

E. POLLUTANT INFORMATION

For the emissions unit addressed in this Emissions Unit Information Section, a separate set of pollutant information must be completed for each pollutant required to be reported. See instructions for further details on this subsection of the Application for Air Permit.

Pollutant Potential/Estimated Emissions: Pollutant 2 of 8

1. Pollutant Emitted: **PM10**	
2. Total Percent Efficiency of Control:	**99** %
3. Primary Control Device Code: **053**	
4. Secondary Control Device Code:	
5. Potential Emissions:	**26.0** lbs/hr **113.9** tons/yr
6. Synthetically Limited? [**X**] Yes [ ] No	
7. Range of Estimated Fugitive/Other Emissions: [ ] 1 [ ] 2 [ ] 3 _____ to _____ tons/yr	
8. Emission Factor: **0.081 gr/dscf @ 10% O_2** Reference: **BACT**	
9. Emissions Method Code: [ ] 1 [ ] 2 [ ] 3 [ ] 4 [**X**] 5	
10. Calculation of Emissions: **See PSD Report**	
11. Pollutant Potential/Estimated Emissions Comment:	

Allowable Emissions (Pollutant identified on front page)

A.

1. Basis for Allowable Emissions Code: OTHER	
2. Future Effective Date of Allowable Emissions:	
3. Requested Allowable Emissions and Units: 0.081 gr/dscf @ 10% O_2	
4. Equivalent Allowable Emissions: 26.0 lbs/hr	113.9 tons/yr
5. Method of Compliance: Annual stack test using EPA Method 5	
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode): BACT	

B.

1. Basis for Allowable Emissions Code:		
2. Future Effective Date of Allowable Emissions:		
3. Requested Allowable Emissions and Units:		
4. Equivalent Allowable Emissions:	lbs/hr	tons/yr
5. Method of Compliance:		
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode):		

E. POLLUTANT INFORMATION

For the emissions unit addressed in this Emissions Unit Information Section, a separate set of pollutant information must be completed for each pollutant required to be reported. See instructions for further details on this subsection of the Application for Air Permit.

Pollutant Potential/Estimated Emissions: Pollutant 3 of 8

1. Pollutant Emitted: **NO_x**
2. Total Percent Efficiency of Control: %
3. Primary Control Device Code:
4. Secondary Control Device Code:
5. Potential Emissions: **50.3** lbs/hr **220.3** tons/yr
6. Synthetically Limited? [**X**] Yes [ ] No
7. Range of Estimated Fugitive/Other Emissions: [ ] 1 [ ] 2 [ ] 3 _____ to _____ tons/yr
8. Emission Factor: **290 ppmvd @ 10% O_2** Reference: **BACT**
9. Emissions Method Code: [ ] 1 [ ] 2 [ ] 3 [ ] 4 [**X**] 5
10. Calculation of Emissions: **See PSD Report**
11. Pollutant Potential/Estimated Emissions Comment:

Allowable Emissions (Pollutant identified on front page)

A.

1. Basis for Allowable Emissions Code: **OTHER**	
2. Future Effective Date of Allowable Emissions:	
3. Requested Allowable Emissions and Units: **290 ppmvd @ 10% O_2**	
4. Equivalent Allowable Emissions: **50.3** lbs/hr	**220.3** tons/yr
5. Method of Compliance: **Annual stack test using EPA Method 7 or 7E**	
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode): **BACT**	

B.

1. Basis for Allowable Emissions Code:	
2. Future Effective Date of Allowable Emissions:	
3. Requested Allowable Emissions and Units:	
4. Equivalent Allowable Emissions: lbs/hr	tons/yr
5. Method of Compliance:	
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode):	

E. POLLUTANT INFORMATION

For the emissions unit addressed in this Emissions Unit Information Section, a separate set of pollutant information must be completed for each pollutant required to be reported. See instructions for further details on this subsection of the Application for Air Permit.

Pollutant Potential/Estimated Emissions: Pollutant 4 of 8

1. Pollutant Emitted: **CO**	
2. Total Percent Efficiency of Control:	%
3. Primary Control Device Code:	
4. Secondary Control Device Code:	
5. Potential Emissions:	**7.3** lbs/hr **32.0** tons/yr
6. Synthetically Limited? [**X**] Yes [ ] No	
7. Range of Estimated Fugitive/Other Emissions: [ ] 1 [ ] 2 [ ] 3 _____ to _____ tons/yr	
8. Emission Factor: **69 ppmvd @ 10% O_2** Reference: **BACT**	
9. Emissions Method Code: [ ] 1 [ ] 2 [ ] 3 [ ] 4 [**X**] 5	
10. Calculation of Emissions: **See PSD Report**	
11. Pollutant Potential/Estimated Emissions Comment:	

Emissions Unit Information Section 7 of 8

Allowable Emissions (Pollutant identified on front page)

A.

1. Basis for Allowable Emissions Code: **OTHER**		
2. Future Effective Date of Allowable Emissions:		
3. Requested Allowable Emissions and Units: **69 ppmvd @ 10% O_2**		
4. Equivalent Allowable Emissions:	**7.3** lbs/hr	**32.0** tons/yr
5. Method of Compliance: **Annual stack test using EPA Method 10**		
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode): **BACT**		

B.

1. Basis for Allowable Emissions Code:		
2. Future Effective Date of Allowable Emissions:		
3. Requested Allowable Emissions and Units:		
4. Equivalent Allowable Emissions:	lbs/hr	tons/yr
5. Method of Compliance:		
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode):		

Emissions Unit Information Section 7 of 8

E. POLLUTANT INFORMATION

For the emissions unit addressed in this Emissions Unit Information Section, a separate set of pollutant information must be completed for each pollutant required to be reported. See instructions for further details on this subsection of the Application for Air Permit.

Pollutant Potential/Estimated Emissions: Pollutant 5 of 8

1. Pollutant Emitted: **VOC**
2. Total Percent Efficiency of Control: %
3. Primary Control Device Code:
4. Secondary Control Device Code:
5. Potential Emissions: **17.2** lbs/hr **75.3** tons/yr
6. Synthetically Limited? [**X**] Yes [ ] No
7. Range of Estimated Fugitive/Other Emissions: [ ] 1 [ ] 2 [ ] 3 _____ to _____ tons/yr
8. Emission Factor: **185 ppmvd @ 10% O_2** Reference: **BACT**
9. Emissions Method Code: [ ] 1 [ ] 2 [ ] 3 [ ] 4 [**X**] 5
10. Calculation of Emissions: **See PSD Report**
11. Pollutant Potential/Estimated Emissions Comment:

Allowable Emissions (Pollutant identified on front page)

A.

1. Basis for Allowable Emissions Code: OTHER	
2. Future Effective Date of Allowable Emissions:	
3. Requested Allowable Emissions and Units: 185 ppmvd @ 10% O_2	
4. Equivalent Allowable Emissions: 17.2 lbs/hr	75.3 tons/yr
5. Method of Compliance: Annual stack test using EPA Method 25 or 25A	
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode): BACT	

B.

1. Basis for Allowable Emissions Code:	
2. Future Effective Date of Allowable Emissions:	
3. Requested Allowable Emissions and Units:	
4. Equivalent Allowable Emissions: lbs/hr	tons/yr
5. Method of Compliance:	
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode):	

Emissions Unit Information Section 7 of 8

E. POLLUTANT INFORMATION

For the emissions unit addressed in this Emissions Unit Information Section, a separate set of pollutant information must be completed for each pollutant required to be reported. See instructions for further details on this subsection of the Application for Air Permit.

Pollutant Potential/Estimated Emissions: Pollutant 6 of 8

1. Pollutant Emitted: **TRS**
2. Total Percent Efficiency of Control: %
3. Primary Control Device Code:
4. Secondary Control Device Code:
5. Potential Emissions: **4.0** lbs/hr **17.5** tons/yr
6. Synthetically Limited? [ ] Yes [X] No
7. Range of Estimated Fugitive/Other Emissions: [ ] 1 [ ] 2 [ ] 3 _____ to _____ tons/yr
8. Emission Factor: **20 ppmvd @ 10% O_2, 12-hr average** Reference: **Rule 62-296.404(3)(e)1.**
9. Emissions Method Code: [ ] 1 [ ] 2 [ ] 3 [ ] 4 [X] 5
10. Calculation of Emissions: **See PSD Report**
11. Pollutant Potential/Estimated Emissions Comment:

Allowable Emissions (Pollutant identified on front page)

A.

1. Basis for Allowable Emissions Code: **OTHER**	
2. Future Effective Date of Allowable Emissions:	
3. Requested Allowable Emissions and Units: **20 ppmvd @ 10% O_2**	
4. Equivalent Allowable Emissions: **4.0** lbs/hr	**17.5** tons/yr
5. Method of Compliance: **Continuous TRS Monitor**	
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode): **Rule 62-296.404(3)(e)1.**	

B.

1. Basis for Allowable Emissions Code:		
2. Future Effective Date of Allowable Emissions:		
3. Requested Allowable Emissions and Units:		
4. Equivalent Allowable Emissions:	lbs/hr	tons/yr
5. Method of Compliance:		
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode):		

E. POLLUTANT INFORMATION

For the emissions unit addressed in this Emissions Unit Information Section, a separate set of pollutant information must be completed for each pollutant required to be reported. See instructions for further details on this subsection of the Application for Air Permit.

Pollutant Potential/Estimated Emissions: Pollutant 7 of 8

1. Pollutant Emitted: SO_2	
2. Total Percent Efficiency of Control:	%
3. Primary Control Device Code:	
4. Secondary Control Device Code:	
5. Potential Emissions:	10.9 lbs/hr 47.7 tons/yr
6. Synthetically Limited? [ ] Yes	[X] No
7. Range of Estimated Fugitive/Other Emissions: [ ] 1 [ ] 2 [ ] 3 _____ to _____ tons/yr	
8. Emission Factor: 0.15 lb/ton ADUP Reference: AP-42, Table 10.1-1: 0.3 lb/ton ADUP and 50% control with wet scrubber	
9. Emissions Method Code: [ ] 1 [ ] 2 [ ] 3 [ ] 4 [X] 5	
10. Calculation of Emissions: 19.44 tons/hr CaO x 0.90 x ton ADUP/0.24 tons CaO = 72.9 TPH ADUP 72.9 TPH ADUP x 0.15 lb/ton = 10.9 lb/hr	
11. Pollutant Potential/Estimated Emissions Comment:	

Allowable Emissions (Pollutant identified on front page)

A.

1. Basis for Allowable Emissions Code: **OTHER**		
2. Future Effective Date of Allowable Emissions:		
3. Requested Allowable Emissions and Units:		
4. Equivalent Allowable Emissions:	**10.9** lbs/hr	**47.7** tons/yr
5. Method of Compliance: **Annual stack test using EPA Method 8**		
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode): **BACT**		

B.

1. Basis for Allowable Emissions Code:		
2. Future Effective Date of Allowable Emissions:		
3. Requested Allowable Emissions and Units:		
4. Equivalent Allowable Emissions:	lbs/hr	tons/yr
5. Method of Compliance:		
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode):		

E. POLLUTANT INFORMATION

For the emissions unit addressed in this Emissions Unit Information Section, a separate set of pollutant information must be completed for each pollutant required to be reported. See instructions for further details on this subsection of the Application for Air Permit.

Pollutant Potential/Estimated Emissions: Pollutant 8 of 8

1. Pollutant Emitted: **SAM**	
2. Total Percent Efficiency of Control:	%
3. Primary Control Device Code:	
4. Secondary Control Device Code:	
5. Potential Emissions:	**0.53** lbs/hr **2.34** tons/yr
6. Synthetically Limited? [ ] Yes	[X] No
7. Range of Estimated Fugitive/Other Emissions: [ ] 1 [ ] 2 [ ] 3 _____ to _____ tons/yr	
8. Emission Factor: **SO_3 is 4% of SO_2 emissions** Reference: **AP-42, Table 1.3-2**	
9. Emissions Method Code: [ ] 1 [ ] 2 [ ] 3 [ ] 4 [X] 5	
10. Calculation of Emissions: **10.9 lb/hr x 0.04 x 98/80 = 0.53 lb/hr (SO_4/SO_3)**	
11. Pollutant Potential/Estimated Emissions Comment:	

Emissions Unit Information Section 7 of 8

Allowable Emissions (Pollutant identified on front page)

A.

1. Basis for Allowable Emissions Code: OTHER		
2. Future Effective Date of Allowable Emissions:		
3. Requested Allowable Emissions and Units: 0.5 lb/hr		
4. Equivalent Allowable Emissions:	0.5 lbs/hr	2.34 tons/yr
5. Method of Compliance:		
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode): BACT		

B.

1. Basis for Allowable Emissions Code:		
2. Future Effective Date of Allowable Emissions:		
3. Requested Allowable Emissions and Units:		
4. Equivalent Allowable Emissions:	lbs/hr	tons/yr
5. Method of Compliance:		
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode):		

F. VISIBLE EMISSIONS INFORMATION

This subsection of the Application for Air Permit form must be completed for only those emissions units which are subject to a visible emissions limitation. The intent of this subsection of the form is to identify each activity associated with the emissions unit addressed in this section for which a separate opacity limitation would be applicable. Visible emission subtype codes for each such activity are listed in the instructions for Field 1. Most emissions units will be subject to a "subtype VE" limit only.

Visible Emissions Limitations: Visible Emissions Limitation 1 of 1

1. Visible Emissions Subtype: **VEX**
2. Basis for Allowable Opacity: [X] Rule [ ] Other
3. Requested Allowable Opacity: Normal Conditions: % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hr
4. Method of Compliance:
5. Visible Emissions Comment: **Due to moisture interference, the visible emission limiting standard pursuant to F.A.C. Rule 62-296.310(2) is not applicable and is deferred to F.A.C. Rule 62-296.404(2)(b).**

Emissions Unit Information Section 7 of 8

Visible Emissions Limitations: Visible Emissions Limitation ____ of ____

1. Visible Emissions Subtype:
2. Basis for Allowable Opacity: [ ] Rule [ ] Other
3. Requested Allowable Opacity: Normal Conditions: % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hr
4. Method of Compliance:
5. Visible Emissions Comment:

Visible Emissions Limitations: Visible Emissions Limitation ____ of ____

1. Visible Emissions Subtype:
2. Basis for Allowable Opacity: [ ] Rule [ ] Other
3. Requested Allowable Opacity: Normal Conditions: % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hr
4. Method of Compliance:
5. Visible Emissions Comment:

G. CONTINUOUS MONITOR INFORMATION

This subsection of the Application for Air Permit form must be completed for only those emissions units which are required by rule or permit to install and operate one or more continuous emission, opacity, flow, or other type monitors. A separate set of continuous monitor information (fields 1-6) must be completed for each monitoring system required.

Continuous Monitoring System Continuous Monitor 1 of 2

1. Parameter Code: **TRS**	
2. CMS Requirement:	[X] Rule [ ] Other
3. Monitor Information: Manufacturer: **See Comment** Model Number: **NA**	Serial Number: **NA**
4. Installation Date (DD-MON-YYYY):	
5. Performance Specification Test Date (DD-MON-YYYY):	
6. Continuous Monitor Comment: **Rule 62-296.404(5)(a); TRS monitoring system assembled by permittee from various components.**	

Emissions Unit Information Section 7 **of** 8

Continuous Monitoring System Continuous Monitor 2 of 2

1. Parameter Code: O2
2. CMS Requirement: [X] Rule [ ] Other
3. Monitor Information: Manufacturer: Teledyne Model Number: Serial Number:
4. Installation Date (DD-MON-YYYY):
5. Performance Specification Test Date (DD-MON-YYYY):
6. Continuous Monitor Comment: Rule 62-296.404(5)(a)

Continuous Monitoring System Continuous Monitor ____ of ____

1. Parameter Code:
2. CMS Requirement: [ ] Rule [ ] Other
3. Monitor Information: Manufacturer: Model Number: Serial Number:
4. Installation Date (DD-MON-YYYY):
5. Performance Specification Test Date (DD-MON-YYYY):
6. Continuous Monitor Comment:

H. PREVENTION OF SIGNIFICANT DETERIORATION (PSD) INCREMENT TRACKING INFORMATION

This subsection of the Application for Air Permit form must be completed for all applications, not just those undergoing prevention-of-significant-deterioration (PSD) review pursuant to Rule 62-212.400, F.A.C. The intent of this subsection is to make a preliminary determination as to whether the emissions unit addressed in this Emissions Unit Information Section consumes PSD increment. PSD increment is consumed (or expanded) as a result of emission increases (decreases) occurring after pollutant-specific baseline dates. Pollutants for which baseline dates have been established are sulfur dioxide, particulate matter, and nitrogen dioxide.

PSD Increment Consumption Determination

1. Increment Consuming for Particulate Matter or Sulfur Dioxide?

   If the emissions unit addressed in this section emits particulate matter or sulfur dioxide, answer the following series of questions to make a preliminary determination as to whether or not the emissions unit consumes PSD increment for particulate matter or sulfur dioxide. Check the first statement, if any, that applies and skip remaining statements.

   [X] The emissions unit is undergoing PSD review as part of this application, or has undergone PSD review previously, for particulate matter or sulfur dioxide. If so, emissions unit consumes increment.

   [ ] The facility addressed in this application is classified as an EPA major source pursuant to paragraph (c) of the definition of "major source of air pollution" in Chapter 62-213, F.A.C., and the emissions unit addressed in this section commenced (or will commence) construction after January 6, 1975. If so, baseline emissions are zero, and emissions unit consumes increment.

   [ ] The facility addressed in this application is classified as an EPA major source, and the emissions unit began initial operation after January 6, 1975, but before December 27, 1977. If so, baseline emissions are zero, and emissions unit consumes increment.

   [ ] For any facility, the emissions unit began (or will begin) initial operation after December 27, 1977. If so, baseline emissions are zero, and emissions unit consumes increment.

   [ ] None of the above apply. If so, the baseline emissions of the emissions unit are nonzero. In such case, additional analysis, beyond the scope of this application, is needed to determine whether changes in emissions have occurred (or will occur) after the baseline date that may consume or expand increment.

2. Increment Consuming for Nitrogen Dioxide?

If the emissions unit addressed in this section emits nitrogen oxides, answer the following series of questions to make a preliminary determination as to whether or not the emissions unit consumes PSD increment for nitrogen dioxide. Check first statement, if any, that applies and skip remaining statements.

[X] The emissions unit addressed in this section is undergoing PSD review as part of this application, or has undergone PSD review previously, for nitrogen dioxide. If so, emissions unit consumes increment.

[ ] The facility addressed in this application is classified as an EPA major source pursuant to paragraph (c) of the definition of "major source of air pollution" in Chapter 62-213, F.A.C., and the emissions unit addressed in this section commenced (or will commence) construction after February 8, 1988. If so, baseline emissions are zero, and emissions unit consumes increment.

[ ] The facility addressed in this application is classified as an EPA major source, and the emissions unit began initial operation after February 8, 1988, but before March 28, 1988. If so, baseline emissions are zero, and emissions unit consumes increment.

[ ] For any facility, the emissions unit began (or will begin) initial operation after March 28, 1988. If so, baseline emissions are zero, and emissions unit consumes increment.

[ ] None of the above apply. If so, the baseline emissions of the emissions unit are nonzero. In such case, additional analysis, beyond the scope of this application, is needed to determine whether changes in emissions have occurred (or will occur) after the baseline date that may consume or expand increment.

3. Increment Consuming/Expanding Code:			
PM	[X] C	[ ] E	[ ] Unknown
SO2	[X] C	[ ] E	[ ] Unknown
NO2	[X] C	[ ] E	[ ] Unknown
4. Baseline Emissions:			
PM	0 lbs/hr		0 tons/yr
SO2	0 lbs/hr		0 tons/yr
NO2			148.4 tons/yr
5. PSD Comment:			

I. EMISSIONS UNIT SUPPLEMENTAL INFORMATION

This subsection of the Application for Air Permit form provides supplemental information related to the emissions unit addressed in this Emissions Unit Information Section. Supplemental information must be submitted as an attachment to each copy of the form, in hard-copy or computer-readable form.

Supplemental Requirements for All Applications

1. Process Flow Diagram	
[X] Attached, Document ID: Attachment C of PSD Report	
[ ] Not Applicable	[ ] Waiver Requested
2. Fuel Analysis or Specification	
[ ] Attached, Document ID: _____	
[X] Not Applicable	[ ] Waiver Requested
3. Detailed Description of Control Equipment	
[X] Attached, Document ID: _____	
[ ] Not Applicable	[ ] Waiver Requested
4. Description of Stack Sampling Facilities	
[X] Attached, Document ID: _____	
[ ] Not Applicable	[ ] Waiver Requested
5. Compliance Test Report	
[ ] Attached, Document ID: _____	[X] Not Applicable
[ ] Previously Submitted, Date: _____	
6. Procedures for Startup and Shutdown	
[ ] Attached, Document ID: _____	[X] Not Applicable
7. Operation and Maintenance Plan	
[ ] Attached, Document ID: _____	[X] Not Applicable
8. Supplemental Information for Construction Permit Application	
[X] Attached, Document ID: PSD Report	[ ] Not Applicable
9. Other Information Required by Rule or Statute	
[X] Attached, Document ID: PSD Report	[ ] Not Applicable

Additional Supplemental Requirements for Category I Applications Only

10. Alternative Methods of Operation

[ ] Attached, Document ID: _____ [ ] Not Applicable

11. Alternative Modes of Operation (Emissions Trading)

[ ] Attached, Document ID: _____ [ ] Not Applicable

12. Enhanced Monitoring Plan

[ ] Attached, Document ID: _____ [ ] Not Applicable

13. Identification of Additional Applicable Requirements

[ ] Attached, Document ID: _____ [ ] Not Applicable

14. Acid Rain Permit Application

[ ] Acid Rain Part - Phase II (Form No. 62-210.900(1)(a))
Attached, Document ID: _____

[ ] Repowering Extension Plan (Form No. 62-210.900(1)(a)1.)
Attached, Document ID: _____

[ ] New Unit Exemption (Form No. 62-210.900(1)(a)2.)
Attached, Document ID: _____

[ ] Retired Unit Exemption (Form No. 62-210.900(1)(a)3.)
Attached, Document ID: _____

[ ] Not Applicable

III. EMISSIONS UNIT INFORMATION

A separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each emissions unit addressed in this Application for Air Permit. If submitting the application form in hard copy, indicate, in the space provided at the top of each page, the number of this Emissions Unit Information Section and the total number of Emissions Unit Information Sections submitted as part of this application.

A. GENERAL EMISSIONS UNIT INFORMATION

This subsection of the Application for Air Permit form provides general information on the emissions unit addressed in this Emissions Unit Information Section, including information on the type, control equipment, operating capacity, and operating schedule of the emissions unit.

Type of Emissions Unit Addressed in This Section

Check one:

[X] This Emissions Unit Information Section addresses, as a single emissions unit, a single process or production unit, or activity, which produces one or more air pollutants and which has at least one definable emission point (stack or vent).

[ ] This Emissions Unit Information Section addresses, as a single emissions unit, an individually-regulated emission point (stack or vent) serving a single process or production unit, or activity, which also has other individually-regulated emission points.

[ ] This Emissions Unit Information Section addresses, as a single emissions unit, a collectively-regulated group of process or production units and activities which has at least one definable emission point (stack or vent) but may also produce fugitive emissions.

[ ] This Emissions Unit Information Section addresses, as a single emissions unit, one or more process or production units and activities which produce fugitive emissions only.

Emissions Unit Information Section 8 of 8

Emissions Unit Description and Status

1. Description of Emissions Unit Addressed in This Section: **Tall Oil Plant**		
2. ARMS Identification Number: [ ] No Corresponding ID [ ] Unknown **31JAX54000531**		
3. Emissions Unit Status Code: **A**	4. Acid Rain Unit? [ ] Yes [X] No	5. Emissions Unit Major Group SIC Code: **26**
6. Initial Startup Date (DD-MON-YYYY):		
7. Long-term Reserve Shutdown Date (DD-MON-YYYY):		
8. Package Unit: Manufacturer: Model Number:		
9. Generator Nameplate Rating: MW		
10. Incinerator Information: Dwell Temperature: °F Dwell Time: seconds Incinerator Afterburner Temperature: °F		
11. Emissions Unit Comment:		

Emissions Unit Information Section 8 of 8

Emissions Unit Control Equipment

A.

1. Description: **Packed-Gas Absorption Column**

2. Control Device or Method Code: **050**

B.

1. Description:

2. Control Device or Method Code:

C.

1. Description:

2. Control Device or Method Code:

Emissions Unit Information Section 8 of 8

Emissions Unit Operating Capacity

1. Maximum Heat Input Rate: mmBtu/hr
2. Maximum Incineration Rate: lbs/hr tons/day
3. Maximum Process or Throughput Rate:
4. Maximum Production Rate: 55 tons/hr crude tall oil, 12-hr average
5. Operating Capacity Comment: 20,020 tons/yr crude tall oil

Emissions Unit Operating Schedule

Requested Maximum Operating Schedule:	
24 hours/day	7 days/week
52 weeks/yr	8,760 hours/yr

B. EMISSIONS UNIT REGULATIONS

Depending on the application category, this subsection of the Application for Air Permit form provides either a brief analysis or detailed listing of all federal, state, and local regulations applicable to the emissions unit addressed in this Emissions Unit Information Section.

Rule Applicability Analysis (Required for Category II applications and Category III applications involving non Title-V sources. See Instructions.)

Emissions Unit Information Section 8 of 8

List of Applicable Regulations (Required for Category I applications and Category III applications involving Title-V sources. See Instructions.)

62-2.960(1)(a)	
62-2.960(1)(b)	
62-2.960(1)(d)1.	
62-2.960(1)(g)	
62-2.960(1)(h)	
62-210.300(2)	
62-210.650	
62-210.700(1)	
62-210.700(4)	
62-210.700(6)	
62-296.320(2)	
62-296.404(3)(b)	
62-296.404(4)(d)	
62-296.404(4)(f)	
62-296.404(5)(d)	
62-296.404(6)(a)	
62-296.404(6)(b)	
62-296.404(6)(c)3.	
62-296.404(6)(d)	
62-297.401(16)	
62-297.401(16)(a)	
62-297.401(16)(b)	

C. EMISSION POINT (STACK/VENT) INFORMATION

This subsection of the Application for Air Permit form provides information about the emission point associated with the emissions unit addressed in this Emissions Unit Information Section. An emission point is typically a stack or vent but can be any identifiable location at which air pollutants, including fugitive emissions, are discharged into the atmosphere.

Emission Point Description and Type

1. Identification of Point on Plot Plan or Flow Diagram:
   TOP

2. Emission Point Type Code:
   [ ] 1 [ ] 2 [X] 3 [ ] 4

3. Descriptions of Emissions Points Comprising this Emissions Unit:

4. ID Numbers or Descriptions of Emission Units with this Emission Point in Common:

5. Discharge Type Code:
   [ ] D [ ] F [ ] H [ ] P
   [ ] R [X] V [ ] W

6. Stack Height:	40	ft
7. Exit Diameter:	1.33	ft
8. Exit Temperature:	200	°F
9. Actual Volumetric Flow Rate:	3,400	acfm
10. Percent Water Vapor:		%
11. Maximum Dry Standard Flow Rate:		dscfm
12. Nonstack Emission Point Height:		ft
13. Emission Point UTM Coordinates:		
Zone:	East (km):	North (km):
14. Emission Point Comment:		

D. SEGMENT (PROCESS/FUEL) INFORMATION

For the emissions unit addressed in this Emissions Unit Information Section, a separate set of segment data (Fields 1-10) must be completed for each segment required to be reported and for each alternative operating method or mode (emissions trading scenario) under Chapter 62-213, F.A.C., for which the maximum hourly or annual segment-related rate would vary. A segment is a material handling, process, fuel burning, volatile organic liquid storage, production, or other such operation to which emissions of the unit are directly related. See instructions for further details on this subsection of the Application for Air Permit.

Segment Description and Rate Information: Segment 1 of 1

1. Segment Description (Process/Fuel Type and Associated Operating Method/Mode): **Tall Oil Production**	
2. Source Classification Code (SCC): **3-99-999-96**	
3. SCC Units: **1,000 gallons**	
4. Maximum Hourly Rate: **55 tons/hr Crude Tall oil**	5. Maximum Annual Rate: **20,020 tons/yr Crude Tall oil**
6. Estimated Annual Activity Factor:	
7. Maximum Percent Sulfur:	8. Maximum Percent Ash:
9. Million Btu per SCC Unit:	
10. Segment Comment:	

Emissions Unit Information Section 8 of 8

Segment Description and Rate Information: Segment ____ of ____

1. Segment Description (Process/Fuel Type and Associated Operating Method/Mode):	
2. Source Classification Code:	
3. SCC Units:	
4. Maximum Hourly Rate:	5. Maximum Annual Rate:
6. Estimated Annual Activity Factor:	
7. Maximum Percent Sulfur:	8. Maximum Percent Ash:
9. Million Btu per SCC Unit:	
10. Segment Comment:	

E. POLLUTANT INFORMATION

For the emissions unit addressed in this Emissions Unit Information Section, a separate set of pollutant information must be completed for each pollutant required to be reported. See instructions for further details on this subsection of the Application for Air Permit.

Pollutant Potential/Estimated Emissions: Pollutant 1 of 2

1. Pollutant Emitted: **TRS**
2. Total Percent Efficiency of Control: **96%**
3. Primary Control Device Code: **050**
4. Secondary Control Device Code:
5. Potential Emissions: **4.23** lbs/hr **0.50** tons/yr
6. Synthetically Limited? [ ] Yes [X] No
7. Range of Estimated Fugitive/Other Emissions: [ ] 1 [ ] 2 [ ] 3 _____ to _____ tons/yr
8. Emission Factor: **0.05 lb/ton crude tall oil** Reference: **Rule 62-296.404(3)(b)**
9. Emissions Method Code: [ ] 1 [ ] 2 [ ] 3 [ ] 4 [X] 5
10. Calculation of Emissions: **55 tons CTO x 0.05 lb/ton + 12 hr = 0.23 lb/hr** **20,020 TPY CTO x 0.05 lb/ton + 2,000 lb/ton = 0.50 TPY**
11. Pollutant Potential/Estimated Emissions Comment: **lb/hr limit is based on 12-hr average**

Allowable Emissions (Pollutant identified on front page)

A.

1. Basis for Allowable Emissions Code: **RULE**	
2. Future Effective Date of Allowable Emissions:	
3. Requested Allowable Emissions and Units: **0.05 lb/ton Crude tall oil**	
4. Equivalent Allowable Emissions: **0.23** lbs/hr	**0.50** tons/yr
5. Method of Compliance: **Annual stack test using EPA Method 16, 16A or 16B**	
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode): **Rule 62-296.404(3)(b)**	

B.

1. Basis for Allowable Emissions Code:	
2. Future Effective Date of Allowable Emissions:	
3. Requested Allowable Emissions and Units:	
4. Equivalent Allowable Emissions: lbs/hr	tons/yr
5. Method of Compliance:	
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode):	

E. POLLUTANT INFORMATION

For the emissions unit addressed in this Emissions Unit Information Section, a separate set of pollutant information must be completed for each pollutant required to be reported. See instructions for further details on this subsection of the Application for Air Permit.

Pollutant Potential/Estimated Emissions: Pollutant 2 of 2

1. Pollutant Emitted: **VOC**
2. Total Percent Efficiency of Control: %
3. Primary Control Device Code:
4. Secondary Control Device Code:
5. Potential Emissions: **13.3** lbs/hr **29.0** tons/yr
6. Synthetically Limited? [ ] Yes [X] No
7. Range of Estimated Fugitive/Other Emissions: [ ] 1 [ ] 2 [ ] 3 _____ to _____ tons/yr
8. Emission Factor: **2.9 lb/ton Crude tall oil (as C)** Reference: **NCASI Bulletin 677, Table X1.A.3**
9. Emissions Method Code: [ ] 1 [ ] 2 [ ] 3 [X] 4 [ ] 5
10. Calculation of Emissions: **55 TPH CTO x 2.9 lb/ton + 12 hrs = 13.3 lb/hr** **20,020 TPY CTO x 2.9 lb/ton + 2,000 lb/ton = 29.0 TPY**
11. Pollutant Potential/Estimated Emissions Comment:

Allowable Emissions (Pollutant identified on front page)

A.

1. Basis for Allowable Emissions Code:		
2. Future Effective Date of Allowable Emissions:		
3. Requested Allowable Emissions and Units:		
4. Equivalent Allowable Emissions:	lbs/hr	tons/yr
5. Method of Compliance:		
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode):		

B.

1. Basis for Allowable Emissions Code:		
2. Future Effective Date of Allowable Emissions:		
3. Requested Allowable Emissions and Units:		
4. Equivalent Allowable Emissions:	lbs/hr	tons/yr
5. Method of Compliance:		
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode):		

F. VISIBLE EMISSIONS INFORMATION

This subsection of the Application for Air Permit form must be completed for only those emissions units which are subject to a visible emissions limitation. The intent of this subsection of the form is to identify each activity associated with the emissions unit addressed in this section for which a separate opacity limitation would be applicable. Visible emission subtype codes for each such activity are listed in the instructions for Field 1. Most emissions units will be subject to a "subtype VE" limit only.

Visible Emissions Limitations: Visible Emissions Limitation ____ of ____

1. Visible Emissions Subtype:
2. Basis for Allowable Opacity: [ ] Rule [ ] Other
3. Requested Allowable Opacity: Normal Conditions: % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hr
4. Method of Compliance:
5. Visible Emissions Comment:

Emissions Unit Information Section 8 of 8

Visible Emissions Limitations: Visible Emissions Limitation ____ of ____

1. Visible Emissions Subtype:
2. Basis for Allowable Opacity: [ ] Rule [ ] Other
3. Requested Allowable Opacity: Normal Conditions: % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hr
4. Method of Compliance:
5. Visible Emissions Comment:

Visible Emissions Limitations: Visible Emissions Limitation ____ of ____

1. Visible Emissions Subtype:
2. Basis for Allowable Opacity: [ ] Rule [ ] Other
3. Requested Allowable Opacity: Normal Conditions: % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hr
4. Method of Compliance:
5. Visible Emissions Comment:

G. CONTINUOUS MONITOR INFORMATION

This subsection of the Application for Air Permit form must be completed for only those emissions units which are required by rule or permit to install and operate one or more continuous emission, opacity, flow, or other type monitors. A separate set of continuous monitor information (fields 1-6) must be completed for each monitoring system required.

Continuous Monitoring System Continuous Monitor 1 of 1

1. Parameter Code: **White liquor flow rate to scrubber**
2. CMS Requirement: [X] Rule [ ] Other
3. Monitor Information: Manufacturer: **Rosemount** Model Number: **8701TSA020C1** Serial Number: **0044082**
4. Installation Date (DD-MON-YYYY):
5. Performance Specification Test Date (DD-MON-YYYY):
6. Continuous Monitor Comment: **White liquor flow rate to scrubber of 149 gpm minimum**

Emissions Unit Information Section 8 of 8

Continuous Monitoring System Continuous Monitor ____ of ____

1. Parameter Code:	
2. CMS Requirement:	[ ] Rule [ ] Other
3. Monitor Information: Manufacturer: Model Number:	Serial Number:
4. Installation Date (DD-MON-YYYY):	
5. Performance Specification Test Date (DD-MON-YYYY):	
6. Continuous Monitor Comment:	

Continuous Monitoring System Continuous Monitor ____ of ____

1. Parameter Code:	
2. CMS Requirement:	[ ] Rule [ ] Other
3. Monitor Information: Manufacturer: Model Number:	Serial Number:
4. Installation Date (DD-MON-YYYY):	
5. Performance Specification Test Date (DD-MON-YYYY):	
6. Continuous Monitor Comment:	

H. PREVENTION OF SIGNIFICANT DETERIORATION (PSD) INCREMENT TRACKING INFORMATION

This subsection of the Application for Air Permit form must be completed for all applications, not just those undergoing prevention-of-significant-deterioration (PSD) review pursuant to Rule 62-212.400, F.A.C. The intent of this subsection is to make a preliminary determination as to whether the emissions unit addressed in this Emissions Unit Information Section consumes PSD increment. PSD increment is consumed (or expanded) as a result of emission increases (decreases) occurring after pollutant-specific baseline dates. Pollutants for which baseline dates have been established are sulfur dioxide, particulate matter, and nitrogen dioxide.

PSD Increment Consumption Determination

1. Increment Consuming for Particulate Matter or Sulfur Dioxide?

   If the emissions unit addressed in this section emits particulate matter or sulfur dioxide, answer the following series of questions to make a preliminary determination as to whether or not the emissions unit consumes PSD increment for particulate matter or sulfur dioxide. Check the first statement, if any, that applies and skip remaining statements.

   [ ] The emissions unit is undergoing PSD review as part of this application, or has undergone PSD review previously, for particulate matter or sulfur dioxide. If so, emissions unit consumes increment.

   [ ] The facility addressed in this application is classified as an EPA major source pursuant to paragraph (c) of the definition of "major source of air pollution" in Chapter 62-213, F.A.C., and the emissions unit addressed in this section commenced (or will commence) construction after January 6, 1975. If so, baseline emissions are zero, and emissions unit consumes increment.

   [ ] The facility addressed in this application is classified as an EPA major source, and the emissions unit began initial operation after January 6, 1975, but before December 27, 1977. If so, baseline emissions are zero, and emissions unit consumes increment.

   [ ] For any facility, the emissions unit began (or will begin) initial operation after December 27, 1977. If so, baseline emissions are zero, and emissions unit consumes increment.

   [ ] None of the above apply. If so, the baseline emissions of the emissions unit are nonzero. In such case, additional analysis, beyond the scope of this application, is needed to determine whether changes in emissions have occurred (or will occur) after the baseline date that may consume or expand increment.

2. Increment Consuming for Nitrogen Dioxide?

If the emissions unit addressed in this section emits nitrogen oxides, answer the following series of questions to make a preliminary determination as to whether or not the emissions unit consumes PSD increment for nitrogen dioxide. Check first statement, if any, that applies and skip remaining statements.

[ ] The emissions unit addressed in this section is undergoing PSD review as part of this application, or has undergone PSD review previously, for nitrogen dioxide. If so, emissions unit consumes increment.

[ ] The facility addressed in this application is classified as an EPA major source pursuant to paragraph (c) of the definition of "major source of air pollution" in Chapter 62-213, F.A.C., and the emissions unit addressed in this section commenced (or will commence) construction after February 8, 1988. If so, baseline emissions are zero, and emissions unit consumes increment.

[ ] The facility addressed in this application is classified as an EPA major source, and the emissions unit began initial operation after February 8, 1988, but before March 28, 1988. If so, baseline emissions are zero, and emissions unit consumes increment.

[ ] For any facility, the emissions unit began (or will begin) initial operation after March 28, 1988. If so, baseline emissions are zero, and emissions unit consumes increment.

[ ] None of the above apply. If so, the baseline emissions of the emissions unit are nonzero. In such case, additional analysis, beyond the scope of this application, is needed to determine whether changes in emissions have occurred (or will occur) after the baseline date that may consume or expand increment.

3. Increment Consuming/Expanding Code:			
PM	[ ] C	[ ] E	[ ] Unknown
SO2	[ ] C	[ ] E	[ ] Unknown
NO2	[ ] C	[ ] E	[ ] Unknown
4. Baseline Emissions:			
PM		lbs/hr	tons/yr
SO2		lbs/hr	tons/yr
NO2			tons/yr
5. PSD Comment:			

I. EMISSIONS UNIT SUPPLEMENTAL INFORMATION

This subsection of the Application for Air Permit form provides supplemental information related to the emissions unit addressed in this Emissions Unit Information Section. Supplemental information must be submitted as an attachment to each copy of the form, in hard-copy or computer-readable form.

Supplemental Requirements for All Applications

1. Process Flow Diagram	
[X] Attached, Document ID: Attachment C of PSD Report	
[ ] Not Applicable	[ ] Waiver Requested
2. Fuel Analysis or Specification	
[ ] Attached, Document ID: _____	
[X] Not Applicable	[ ] Waiver Requested
3. Detailed Description of Control Equipment	
[ ] Attached, Document ID: _____	
[X] Not Applicable	[ ] Waiver Requested
4. Description of Stack Sampling Facilities	
[ ] Attached, Document ID: _____	
[X] Not Applicable	[ ] Waiver Requested
5. Compliance Test Report	
[ ] Attached, Document ID: _____	[X] Not Applicable
[ ] Previously Submitted, Date: _____	
6. Procedures for Startup and Shutdown	
[ ] Attached, Document ID: _____	[X] Not Applicable
7. Operation and Maintenance Plan	
[ ] Attached, Document ID: _____	[X] Not Applicable
8. Supplemental Information for Construction Permit Application	
[X] Attached, Document ID: PSD Report	[ ] Not Applicable
9. Other Information Required by Rule or Statute	
[X] Attached, Document ID: PSD Report	[ ] Not Applicable

Additional Supplemental Requirements for Category I Applications Only

10. Alternative Methods of Operation	
[ ] Attached, Document ID: _____	[ ] Not Applicable
11. Alternative Modes of Operation (Emissions Trading)	
[ ] Attached, Document ID: _____	[ ] Not Applicable
12. Enhanced Monitoring Plan	
[ ] Attached, Document ID: _____	[ ] Not Applicable
13. Identification of Additional Applicable Requirements	
[ ] Attached, Document ID: _____	[ ] Not Applicable
14. Acid Rain Permit Application	
[ ] Acid Rain Part - Phase II (Form No. 62-210.900(1)(a)) Attached, Document ID: _____	
[ ] Repowering Extension Plan (Form No. 62-210.900(1)(a)1.) Attached, Document ID: _____	
[ ] New Unit Exemption (Form No. 62-210.900(1)(a)2.) Attached, Document ID: _____	
[ ] Retired Unit Exemption (Form No. 62-210.900(1)(a)3.) Attached, Document ID: _____	
[ ] Not Applicable	

PART B

PSD REPORT

GEORGIA-PACIFIC CORPORATION

PALATKA MILL

MARCH 1995

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ATTACHMENT C: EMISSION UNIT FLOW DIAGRAMS
ATTACHMENT D: PARTICLE SIZE DISTRIBUTIONS USED IN DEPOSITION MODELING

1.0 INTRODUCTION

Georgia-Pacific Corporation (G-P) operates a Kraft pulp mill in Palatka, Florida. Currently, there are a total of thirteen digesters used in the pulp production process at the facility. G-P is proposing to replace two of these existing digesters with new digesters of a slightly larger size. This change will potentially allow increased pulp production at the facility. In addition to this activity, G-P is proposing to add additional screen tubes to the existing No. 4 Recovery Boiler (RB4) in order to improve recovery boiler performance. This will potentially allow increased throughput of black liquor to RB4.

In addition to the potential effects upon the digester system and RB4, these changes may allow other emissions units at the facility to increase production rates. If the changes result in an increase in throughput and an associated increase in emissions, an air construction permit is required. As a result, G-P is submitting the air construction permit application contained herein in anticipation that the future throughput rates for several sources may increase, an increase in emissions may occur, and regulatory review would be warranted.

Based on the current actual emissions and the future maximum emissions anticipated for the affected sources, the proposed project may constitute a major modification at a major stationary source under federal and state air quality regulations. This report addresses the requirements of the prevention of significant deterioration (PSD) review procedures pursuant to rules and regulations implementing the Clean Air Act (CAA) Amendments of 1977. The Florida Department of Environmental Protection (FDEP) has review and approval authority for the PSD program in Florida.

Based on the calculated emissions, a PSD review is indicated for the following pollutants: particulate matter [PM(TSP)], particulate matter with an aerodynamic diameter of 10 microns or less (PM10), nitrogen oxides (NO_x), carbon monoxide (CO), volatile organic compounds (VOCs), total reduced sulfur (TRS), and beryllium (Be).

This application contains six additional sections. A description of the proposed project, including air emission rates, is presented in Section 2.0. The air quality review requirements and source

applicability of the proposed project in relation to regulatory requirements are discussed in Section 3.0.

Preconstruction PSD ambient monitoring requirements are addressed in Section 4.0. The air quality impact analysis is presented in Section 5.0, while the best available control technology (BACT) analysis required as part of the PSD permitting process is presented in Section 6.0. The impacts of the project on soils, vegetation, and visibility are addressed in Section 7.0. Also included in this section are potential impacts upon federal Class I areas. Supportive information is provided in the attachments.

2.0 PROJECT DESCRIPTION

2.1 BACKGROUND

Georgia-Pacific Corporation (G-P) operates a Kraft pulp mill located in Palatka, Florida. The mill consists of a batch digester system, multiple effect evaporator (MEE) system, condensate stripper system, recovery boiler and smelt tanks, lime kiln, tall oil plant, steam boilers, and other equipment to produce finished paper products from virgin wood. Currently, there are a total of thirteen batch digesters (Nos. 1-13) used in the pulp production process at the facility. The permitted pulp production capacity of the digester system is currently 118 tons per hour (TPH) of air-dried unbleached pulp (ADUP) and 1,850 tons per day (TPD) ADUP.

G-P is proposing to replace two existing batch digesters with new digesters of a slightly larger size. In addition, the No. 4 Recovery Boiler (RB4) is being upgraded with the addition of new screen tubes. These changes will potentially allow increased throughput and production from these process units. Other process units at the facility may also be affected due to this increased production capacity. The planned changes and the effects upon process units at the facility are described in greater detail below.

Batch Digester System

G-P is proposing to replace two of the existing digesters (Nos. 11 and 12) with new digesters of a slightly larger size. The existing Nos. 11 and 12 digesters are each 4,000 ft^3 in size; the two new replacement digesters will be 4,900 ft^3 each. Although G-P expects an increase in actual pulp production of about 40 TPD due to these larger digesters, the current permitted capacity of the system of 118 TPH and 1,850 TPD ADUP is sufficient to support the new digesters. Therefore, G-P is not requesting any change in the permitted capacity of the batch digester system.

The batch digester system total reduced sulfur (TRS) emissions are controlled by the TRS incinerator. The TRS incinerator also controls TRS emissions from the MEE system and condensate stripper system. TRS control is achieved by combustion in an incinerator that subjects the TRS non-condensible gases to a temperature of at least 1,200°F for a minimum of 0.5 second. The TRS in the gas stream is converted to sulfur dioxide (SO_2) by the incinerator.

As part of the digester replacement project, G-P is proposing to install a TRS scrubber before the TRS incinerator. This scrubber will remove a portion of the TRS, thereby reducing SO_2 emissions from the incinerator stack. Design data concerning the TRS scrubber is contained in Attachment B.

No. 4 Recovery Boiler

G-P is proposing to install additional screen tubes in the existing No. 4 Recovery Boiler (RB4). A total of sixteen (16) screen tube banks will be added to the recovery boiler. These tubes will result in a lowering of flue gas temperature in the boiler bank section and in the superheater section. This in turn will lead to less particulate adhesion to the steam tubes and will protect the super heater tubes from excessive temperatures. Overall boiler performance will improve and less downtime for maintenance will result.

The additional screen tubes will potentially allow increased throughput of black liquor to RB4. G-P expects that about a 4 percent increase in actual black liquor throughput may result, with additional steam production of about 30,000 lb/hr. This additional steam will be utilized to support the additional pulp production, as well as increase on-site electricity generation with the existing steam turbine system.

The current permitted capacity of RB4 is 210,000 lb/hr of black liquor solids (BLS), or 5.04×10^6 lb/day BLS. Although G-P expects an increase in actual BLS throughput of about 4 percent due to the proposed changes, the current permitted capacity of the recovery boiler of 5.04×10^6 lb/day BLS is sufficient to support the increased rate. Therefore, G-P is not requesting any change in the permitted capacity of RB4.

Effects Upon Other Process Equipment

In addition to the potential effects upon the digester system and RB4, the proposed changes may allow other emissions units at the facility to increase production rates. These include the MEE system, the condensate stripper system, the No. 4 Smelt Dissolving Tanks (SDT4), the No. 4 Lime Kiln (LK4), and the Tall Oil plant. No physical modifications will be made to these process units. Although the throughput of these process units may increase due to the proposed changes, the currently permitted capacities of these units are adequate.

G-P operates two oil-fired power boilers (Nos. 4 and 5 Power Boilers) and a combination bark/oil-fired boiler (No. 4 Combination Boiler) at the facility to supply steam to the process and to drive steam turbine electric generators. The power boilers and combination boiler operation will not be affected by the proposed project. These boilers provide steam to support the pulping process and to generate electricity, and are already operating at a high rate in order to maximize electricity generation. Therefore, the increased pulp production resulting from the proposed changes will not affect current power boiler or combination boiler operation.

2.2 CURRENT AIR EMISSIONS

Current actual emissions of all PSD-regulated pollutants from all emission units potentially affected by the proposed changes are presented in Table 2-1. The basis for the actual emissions is presented in Attachment A. In general, the basis of the actual emissions is actual operation during the last two years (1993-1994). For emission units and pollutants where stack test data were available, the average source test results and actual hours of operation were used to estimate current emissions. For emission units and pollutants where source test data were not available, emission factors were used in conjunction with actual production rates.

2.3 FUTURE MAXIMUM AIR EMISSIONS

Future maximum annual emissions for all PSD-regulated pollutants from the affected sources are presented in Table 2-2. Maximum short-term emission rates and the basis for the maximum annual emissions are presented in Tables 2-3 through 2-7. The future maximum emissions represent current permitted emissions rates in cases where a permit limit exists, except in the case of the TRS incinerator. Where permit limits do not exist, maximum emissions are based upon maximum operation and the same emission factors used to estimate current actual emissions.

In the case of the TRS incinerator, the proposed future TRS emissions are equal to the current permit limit. The maximum short-term SO_2 emissions for the TRS incinerator are the same as currently permitted. This is to allow for periods when the new TRS scrubber may be down for repair or maintenance. However, the maximum annual SO_2 emissions have been reduced by approximately 50 percent from the present permitted emissions of 3,434 TPY, based on operation of the TRS scrubber.

G-P proposes to demonstrate compliance with the new annual SO_2 limit through stack testing that demonstrates the TRS scrubber achieves at least 50 percent TRS removal when the scrubber is operated at certain minimum scrubber liquid flow rates. G-P proposes to install a continuous scrubber liquid flow monitor and to maintain the scrubber liquid flow above the minimum flow rate demonstrated by the compliance testing.

2.4 FACILITY AND EMISSION UNIT LOCATIONS

A site location map of the G-P mill is shown in Figure 2-1. A plot plan showing the location of the air emission sources is presented in Figure 2-2.

2.5 FLOW DIAGRAMS

Flow diagrams of each of the eight emission units affected by the proposed project are contained in Attachment C.

03-03-95

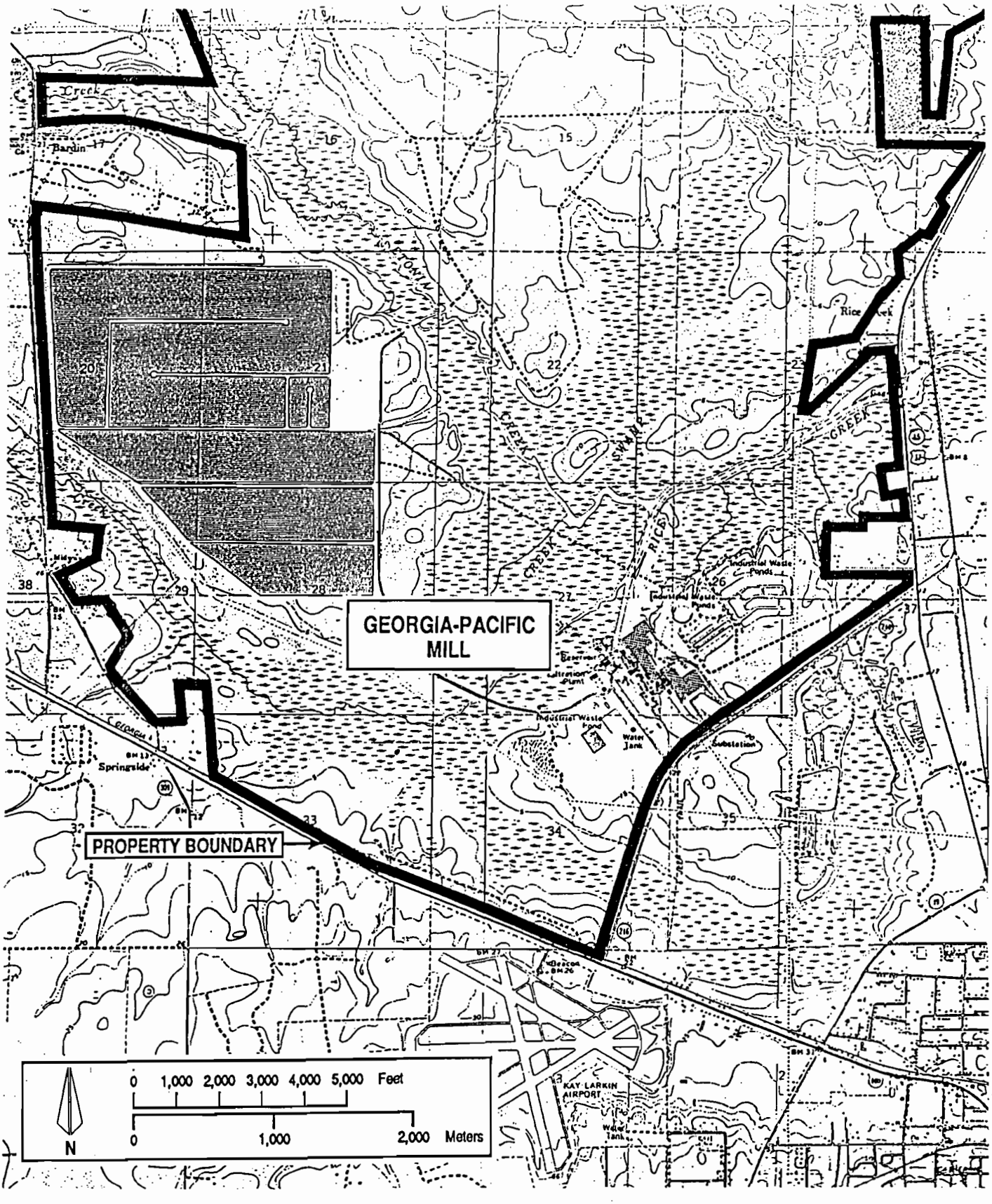

Figure 2-1
Location of the Georgia-Pacific facility, Palatka, Florida.

KBN

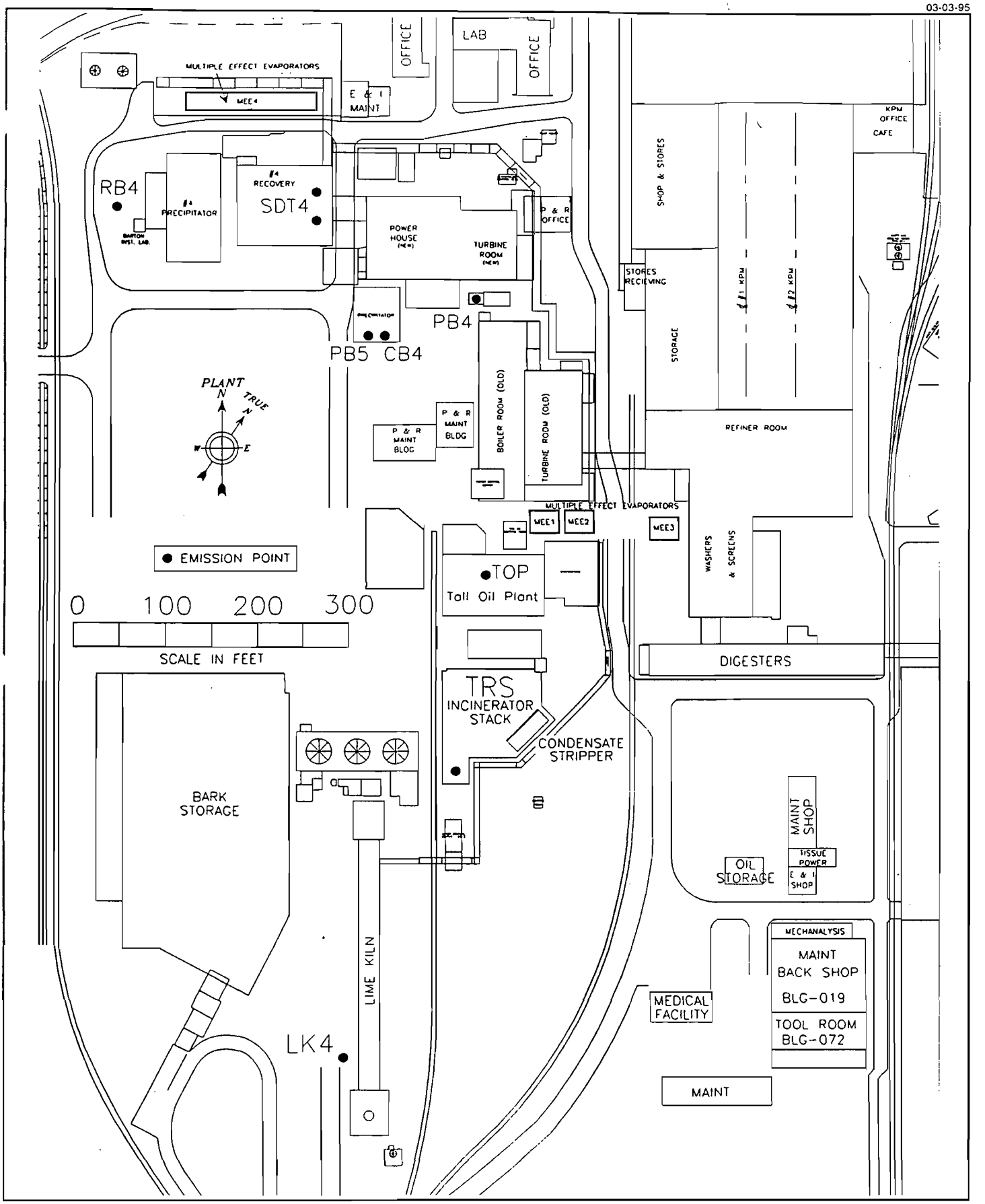

Figure 2-2
Georgia-Pacific Palatka Mill Plot Plan

Table 2–1. Current Actual Emissions From Affected Sources, Georgia–Pacific Palatka Operations

Regulated Pollutant	Current Actual Emissions (TPY)					
	No. 4 LK	No. 4 RB	No. 4 SDT	TALL OIL	TRS INCIN.	TOTAL
Particulate matter (TSP)	80.0	125.8	28.6	--	23.2	257.6
Particulate matter (PM10)	80.0	125.8	28.6	--	23.2	257.6
Sulfur dioxide	3.20	58.8	27.8	--	2,137.4	2,227.2
Nitrogen oxides	125.5	410.3	55.7	--	1.76	593.3
Carbon monoxide	9.60	1,246.2	--	--	0.30	1,256.1
Volatile organic compounds	3.20	11.7	71.3	23.5	0.10	109.8
Sulfuric acid mist	0.16	7.66	1.36	--	104.7	113.9
Total reduced sulfur	4.40	13.3	4.84	0.32	0[a]	22.9
Lead	0.034	0.070	0.017	--	--	0.12
Mercury	0.00037	0.031	6.68E-05	--	--	0.031
Beryllium	0.0015	0.0022	5.20E-05	--	--	0.0038
Fluorides	--	--	--	--	--	--
Asbestos	--	--	--	--	--	--
Vinyl Chloride	--	--	--	--	--	--

[a] Stack tests indicated TRS levels were below detectable limits.

Table 2–2. Future Maximum Annual Emissions From Affected Sources, Georgia–Pacific Palatka Operations

Regulated Pollutant	Future Maximum Emissions (TPY)					
	No. 4 LK	No. 4 RB	No. 4 SDT	TALL OIL	TRS INCIN.	TOTAL
Particulate matter (TSP)	113.9	364.4	55.2	--	24.1	557.6
Particulate matter (PM10)	113.9	364.4	55.2	--	24.1	557.6
Sulfur dioxide	47.7	481.4	34.5	--	1,699.4	2,263.0
Nitrogen oxides	220.3	922.4	69.0	--	7.60	1,219.3
Carbon monoxide	32.0	2,245.6	--	--	1.03	2,278.6
Volatile organic compounds	75.3	239.1	88.3	29.0	0.27	432.0
Sulfuric acid mist	2.34	14.2	1.70	--	83.3	101.5
Total reduced sulfur	17.5	78.0	14.9	0.50	0.53	111.4
Lead	0.045	0.090	0.021	--	--	0.16
Mercury	0.00049	0.039	8.28E–05	--	--	0.040
Beryllium	0.0020	0.0028	6.44E–05	--	--	0.0049
Fluorides	--	--	--	--	--	--
Asbestos	--	--	--	--	--	--
Vinyl Chloride	--	--	--	--	--	--

Table 2–3. Maximum Emissions from No. 4 Lime Kiln, Georgia–Pacific, Palatka Operations

Regulated Pollutant	No. 4 Lime Kiln (No. 6 Fuel Oil Fired) Emission Factor	Reference	Activity Factor	Hourly Emissions (lb/hr)	Annual Emissions[b] (TPY)
Particulate (TSP)	0.081 gr/dscf @ 10% O2	1	37,400 dscfm @ 10% O2	26.0	113.9
Particulate (PM10)	0.081 gr/dscf @ 10% O2	1	37,400 dscfm @ 10% O2	26.0	113.9
Sulfur dioxide	0.15 lb/ton ADP[a]	1	73 tons (ADP)/hr	10.9	47.7
Nitrogen oxides	290.0 ppmvd @ 10% O2	1	37,400 dscfm @ 10% O2	50.3	220.3
Carbon monoxide	69.0 ppmvd @ 10% O2	1	37,400 dscfm @ 10% O2	7.3	32.0
Volatile Organic Compds.	185.0 ppmvd @ 10% O2	1	37,400 dscfm @ 10% O2	17.2	75.3
Sulfuric acid mist	4 % of SO2 as SO3	2	--	0.53	2.34
Total reduced sulfur	20.0 ppmvd @ 10% O2	1	37,400 dscfm @ 10% O2	4.0	17.5
Lead	530 lb/MMton CaO	3	19.44 TPH CaO	0.010	0.045
Mercury	5.8 lb/MMton CaO	3	19.44 TPH CaO	0.00011	0.00049
Beryllium	23 lb/MMton CaO	3	19.44 TPH CaO	0.00045	0.0020
Fluorides	--	--	--	--	--
Asbestos	--	--	--	--	--
Vinyl chloride	--	--	--	--	--

[a] Based 0.3 lb/ton ADP uncontrolled emissions rate and 50% control efficiency.
[b] Based on 8,760 hr/yr operation

References
1. Based on Permit Allowables (AO54–209858).
2. AP–42: Compilation of Air Pollutant Emission Factors, Table 1.3–2: SO3 is 4% of SO2 emissions.
3. NCASI Technical Bulletin No. 650, June 1993. Data for lime kiln burning oil and gas with scrubber control.

Table 2–4. Maximum Emissions from No. 4 Recovery Boiler, Georgia–Pacific, Palatka Operations

Regulated Pollutant	No. 4 Recovery Boiler				
	Emission Factor	Reference	Activity Factor	Hourly Emissions (lb/hr)	Annual Emissions[b] (TPY)
Particulate (TSP)	0.033 gr/dscf @ 8% O2	1	294,000 dscfm @ 8% O2	83.2	364.4
Particulate (PM10)	0.033 gr/dscf @ 8% O2	1	294,000 dscfm @ 8% O2	83.2	364.4
Sulfur dioxide	75 ppmvd @ 8% O2	1	294,000 dscfm @ 8% O2	109.9	481.4
Nitrogen oxides	100 ppmvd @ 8% O2[a]	1	294,000 dscfm @ 8% O2	210.6	922.4
Carbon monoxide: 1–hr	800 ppmvd @ 8% O2	1	294,000 dscfm @ 8% O2	1,025.4	--
Annual average	400 ppmvd @ 8% O2	1	294,000 dscfm @ 8% O2	512.7	2,245.6
Volatile Organic Compds.	0.52 lb/ton BLS	1	210,000 lbs BLS/hr	54.6	239.1
Sulfuric acid mist	0.77 ppmvd	1	450,000 acfm	3.20	14.2
Total reduced sulfur	11.4 ppmvd @ 8% O2	1	294,000 dscfm @ 8% O2	17.8	78.0
Lead	16 lb/10^{12} Btu	2	1,277.7 MMBtu/hr	0.020	0.090
Mercury	7 lb/10^{12} Btu	2	1,277.7 MMBtu/hr	0.0089	0.039
Beryllium	0.5 lb/10^{12} Btu	2	1,277.7 MMBtu/hr	0.00064	0.0028
Fluorides	ND	3	--	--	--
Asbestos	--	--	--	--	--
Vinyl Chloride	--	--	--	--	--

[a] 24–hour and annual average.
[b] Based on 8,760 hr/yr operation.
ND = not detectable

References
1. From permit allowables (AO54–209650).
2. NCASI Bulletin No. 650, Table 11ED, non–direct contact evaporator.
3. From "Application of Combustion Modifications to Industrial Combustion Equipment" EPA–600/7–79–015a; one test from recovery boiler.

Table 2–5. Maximum Emissions from No. 4 Smelt Dissolving Tank, Georgia–Pacific, Palatka Operations

Regulated Pollutant	No. 4 Smelt Dissolving Tank				
	Emission Factor	Reference	Activity Factor	Hourly Emissions (lb/hr)	Annual Emissions[a] (TPY)
Particulate (TSP)	0.12 lb/ton BLS	1	105 tons BLS/hr	12.6	55.2
Particulate (PM10)	0.12 lb/ton BLS	1	105 tons BLS/hr	12.6	55.2
Sulfur dioxide	0.075 lb/ton BLS	2	105 tons BLS/hr	7.9	34.5
Nitrogen oxides	0.15 lb/ton BLS	2	105 tons BLS/hr	15.8	69.0
Carbon monoxide	--	--	--	--	--
Volatile Organic Compds.	0.192 lb/ton BLS	2	105 tons BLS/hr	20.2	88.3
Sulfuric acid mist	4 % of SO2 as SO3	3	--	0.39	1.70
Total reduced sulfur	0.048 lb/3000 lbs BLS	1	105 tons BLS/hr	3.4	14.9
Lead	45 lb/MMton BLS	4	105 tons BLS/hr	0.0047	0.021
Mercury	0.18 lb/MMton BLS	4	105 tons BLS/hr	1.89E–05	8.28E–05
Beryllium	0.14 lb/MMton BLS	4	105 tons BLS/hr	1.47E–05	6.44E–05
Fluorides	--	--	--	--	--
Asbestos	--	--	--	--	--
Vinyl Chloride	--	--	--	--	--

[a] Based on 8,760 hr/yr operation.

References

1. From permit allowables (AO54–209650)
2. From NCASI Technical Bulletin No. 646 (February 1993), Tables 16, 17 and 18.
3. AP–42: Compilation of Air Pollutant Emission Factors, Table 1.3–2: SO3 is 4% of SO2 emissions.
4. From NCASI Technical Bulletin No. 650 (June 1993), Table 14B.

Table 2–6. Maximum Emissions from Tall Oil Plant, Georgia–Pacific, Palatka Operations

Regulated Pollutant	Tall Oil Plant				
	Emission Factor	Reference	Activity Factor	Hourly Emissions (lb/hr)	Annual Emissions (TPY)[a]
Particulate (TSP)	--	--	--	--	--
Particulate (PM10)	--	--	--	--	--
Sulfur dioxide	--	--	--	--	--
Nitrogen oxides	--	--	--	--	--
Carbon monoxide	--	--	--	--	--
Volatile Organic Compds.					
12–hr	2.9 lb C/ton (CTO)	1	4.58 tons CTO/hr	13.3	--
Annual average	2.9 lb C/ton (CTO)	1	20,020 tons CTO/yr	--	29.0
Sulfuric acid mist	--	--	--	--	--
Total reduced sulfur					
12–hr	0.05 lb/ton CTO	2	4.58 tons CTO/hr	0.23	--
Annual average	0.05 lb/ton CTO	2	20,020 tons CTO/yr	--	0.50
Lead	--	--	--	--	--
Mercury	--	--	--	--	--
Beryllium	--	--	--	--	--
Fluorides	--	--	--	--	--
Asbestos	--	--	--	--	--
Vinyl Chloride	--	--	--	--	--

CTO= Crude Tall Oil

[a] Based on 8760 hr/yr operation

References

1. Emission factor from NCASI Technical Bulletin 677 (September 1994), Table XI. A. 3.
2. From permit allowables (AO54–209098).

Table 2-7. Maximum Emissions from TRS Incinerator, Georgia-Pacific, Palatka Operations

Regulated Pollutant	TRS Incinerator (Natural Gas Burning) Emission Factor	Reference	Activity Factor[a]	Hourly Emissions (lb/hr)	TRS Incinerator (Methanol Burning) Emission Factor	Reference	Activity Factor[b]	Hourly Emissions (lb/hr)	Maximum Hourly Emissions (lb/hr)	Annual Emissions[c] (TPY)
Particulate (TSP)	Permit Allowable	1	--	5.5	Permit Allowable	1	--	5.5	5.5	24.1
Particulate (PM10)	Permit Allowable	1	--	5.5	Permit Allowable	1	--	5.5	5.5	24.1
Sulfur dioxide: 3-hr	5.085 lb S/ton ADUP	2	118 ton/hr ADUF	1,200	5.085 lb S/ton ADUP	2	118 ton/hr	1,200	1200	--
24-hr	5.085 lb S/ton ADUP	2	1,850 TPD ADUP	784	5.085 lb S/ton ADUP	2	1,850 TPD Al	784	784	--
Annual	5.085 lb S/ton ADUP; 50% control	3	1,850 TPD ADUP	388	5.085 lb S/ton ADUP; 50% control	3	1,850 TPD Al	388	388	1,699.4
Nitrogen oxides	100 lb/MMscf gas	4	7,620 ft^3/hr	0.76	14 lb/1000 gal	4	124 gal/hr	1.74	1.74	7.60
Carbon monoxide	20 lb/MMscf gas	4	7,620 ft^3/hr	0.15	1.9 lb/1000 gal	4	124 gal/hr	0.24	0.24	1.03
Volatile Org. Compds.	8 lb/MMscf gas	4	7,620 ft^3/hr	0.06	0.5 lb/1000 gal	4	124 gal/hr	0.06	0.06	0.27
Sulfuric acid mist	4 % of SO2 as SO3	5	--	58.8	4 % of SO2 as SO3	5	--	58.8	58.8	83.3
Total reduced sulfur	5 ppmvd @ 10% O2	1	4,590 dscfm	0.12	5 ppmvd @ 10% O2	1	4,590 dscfm	0.12	0.12	0.53
Lead	--	--	--	--	--	--	--	--		--
Mercury	--	--	--	--	--	--	--	--		--
Beryllium	--	--	--	--	--	--	--	--		--
Fluorides	--	--	--	--	--	--	--	--		--
Asbestos	--	--	--	--	--	--	--	--		--
Vinyl Chloride	--	--	--	--	--	--	--	--		--

[a] Natural gas heating value of 1,050 Btu/scf.
[b] Methanol heating value of 64,500 Btu/gal.
[c] Based on 8,760 hr/yr operation.

References
1. Emission factor based on permit allowables (AO54-166018).
2. Emission factor based on uncontrolled emissions (from permit application for TRS incinerator). Emission rate based on permit allowables (AO54-166018).
3. Based on uncontrolled 24-hour average emissions and assuming 50% control with TRS scrubber.
4. From AP-42, Table 1.4-1, 1.4-2, and 1.4-3, for natural gas burning.
5. Emission factors for methanol burning are not published in USEPA AP-42, therefore factors for propane were used to estimate the emissions (AP-42, Table 1.5-1).

3.0 AIR QUALITY REVIEW REQUIREMENTS AND APPLICABILITY

The following discussion pertains to federal and state new source review requirements and their applicability to Georgia-Pacific's proposed project. These requirements must be satisfied before construction can begin on the proposed project.

3.1 NATIONAL AND STATE AAQS

The existing applicable national and Florida ambient air quality standards (AAQS) are presented in Table 3-1. National primary AAQS were promulgated to protect the public health, and national secondary AAQS were promulgated to protect the public welfare from any known or anticipated adverse effects associated with the presence of pollutants in the ambient air. Areas of the country in violation of AAQS are designated as non-attainment areas, and new sources to be located in or near these areas may be subject to more stringent air permitting requirements.

3.2 PSD REQUIREMENTS

3.2.1 GENERAL REQUIREMENTS

Federal PSD requirements are contained in the Code of Federal Regulations (CFR), Title 40, Part 52.21, prevention of significant deterioration of air quality. The State of Florida has adopted PSD regulations [Rule 62-212.400, Florida Administrative Code (F.A.C.)] that essentially are identical to the federal regulations. PSD regulations require that all new major stationary facilities or major modifications to existing major facilities which emit air pollutants regulated under CAA be reviewed and a construction permit issued. Florida's State Implementation Plan (SIP), which contains PSD regulations, has been approved by the U.S. Environmental Protection Agency (EPA) and PSD approval authority in Florida has been granted to FDEP.

A "major facility" is defined under Florida PSD regulations as any one of 28 named source categories that has the potential to emit 100 tons per year (TPY) or more of any pollutant regulated under the CAA, or any other stationary facility that has the potential to emit 250 TPY or more of any pollutant regulated under CAA. An "emission unit" is defined as any part or activity of a facility that has the potential to emit any air pollutant. "Potential to emit" means the capability, at maximum design capacity, to emit a pollutant, considering the application of control equipment and any other federally enforceable limitations on the emission units' capacity. A "major modification" is defined under PSD regulations as a change at an existing major stationary

facility that increases emissions by greater than significant amounts. PSD significant emission rates are shown in Table 3-2.

PSD review is used to determine whether significant air quality deterioration will result from the new or modified facility. Major new facilities and major modifications are required to undergo the following analyses related to PSD for each pollutant emitted in significant amounts:

1. Source information,
2. Control technology review,
3. Source impact analysis,
4. Preconstruction air quality monitoring analysis, and
5. Additional impact analyses.

In addition to these analyses, a new source also must be reviewed with respect to good engineering practice (GEP) stack height regulations. If the proposed new source or modification is located in a non-attainment area for any pollutant, the source may be subject to non-attainment new source review requirements.

Discussions concerning each of these requirements are presented in the following sections.

3.2.2 INCREMENTS/CLASSIFICATIONS

The 1977 CAA amendments address the prevention of significant deterioration of air quality. The law specifies that certain increases in air quality concentrations above the baseline concentration level of SO_2 and total suspended particulate matter [PM(TSP)] would constitute significant deterioration. The magnitude of the allowable increment depends on the classification of the area in which a new source (or modification) will be located or will have an impact. Congress also directed EPA to evaluate PSD increments for other criteria pollutants and, if appropriate, promulgate PSD increments for such pollutants.

Three classifications were designated, based on criteria established in the CAA amendments. Certain types of areas (international parks, national wilderness areas, memorial parks larger than 5,000 acres, and national parks larger than 6,000 acres) were designated as Class I areas. All other areas of the country were designated as Class II. PSD increments for Class III areas were defined, but no areas were designated as Class III. However, Congress made provisions in the

law to allow the redesignation of Class II areas to Class III areas. PSD increments for Class III areas are higher than those for Class II increments.

In 1978, EPA promulgated PSD regulations related to the requirements for classifications, increments, and area designations as set forth by Congress. PSD increments were initially set for only SO_2 and PM(TSP). However, in 1988, EPA promulgated final PSD regulations for NO_x and established PSD increments for nitrogen dioxide (NO_2). On June 3, 1993, EPA promulgated PSD increments for particulate matter with an aerodynamic diameter less than or equal to 10 micrometers (PM10). The PM10 increments replaced the PM(TSP) increments.

The current federal PSD increments are shown in Table 3-1. As shown, Class I increments are the most stringent, allowing the smallest amount of air quality deterioration, while the Class III increments allow the greatest amount of deterioration. FDEP has adopted the EPA class designations and allowable PSD increments for PM10, SO_2, and NO_2.

The term "baseline concentration" evolves from federal and state PSD regulations and refers to a fictitious concentration level corresponding to a specified baseline date and certain additional baseline sources. In reference to the baseline concentration, the baseline date actually includes three different dates:

1. The major source baseline date, which is January 6, 1975, in the cases of SO_2 and PM10, and February 8, 1988, in the case of NO_2;
2. The minor source baseline date, which is the earliest date after the trigger date on which a major stationary facility or major modification subject to PSD regulations submits a complete PSD application; and
3. The trigger date, which is August 7, 1977, for SO_2 and PM10, and February 8, 1988, for NO_2.

By definition in the PSD regulations, baseline concentration means the ambient concentration level that exists in the baseline area at the time of the applicable baseline date. A baseline concentration is determined for each pollutant for which a baseline date is established and includes:

1. The actual emissions representative of facilities in existence on the applicable minor source baseline date, and

2. The allowable emissions of major stationary facilities that began construction before January 6, 1975, for SO_2 and PM10 sources, or February 8, 1988, for NO_x sources, but which were not in operation by the applicable baseline date.

The following emissions are not included in the baseline concentration and, therefore, affect PSD increment consumption:

1. Actual emissions representative of a major stationary facility on which construction began after January 6, 1975, for SO_2 and PM10 sources, and after February 8, 1988, for NO_x sources; and
2. Actual emission increases and decreases at any stationary facility occurring after the major source baseline date that result from a physical change or change in the method of operation of the facility.

The minor source baseline date for SO_2 and PM10 has been set as December 27, 1977, for the entire State of Florida [Rule 62-212.400, F.A.C.). The minor source baseline date for NO_2 has been set as March 28, 1988, for all of Florida.

3.2.3 CONTROL TECHNOLOGY REVIEW

The control technology review requirements of the federal and state PSD regulations require that all applicable federal and state emission-limiting standards be met, and that BACT be applied to control emissions from the facility or modification [Rule 62-212.400(5)(c), F.A.C]. The BACT requirements are applicable to all regulated pollutants for which the increase in emissions from the facility or modification exceeds the significant emission rate (see Table 3-2).

BACT is defined in Rule 62-212.200, F.A.C. as:

> An emissions limitation, including a visible emission standard, based on the maximum degree of reduction of each pollutant emitted which the department, on a case by case basis, taking into account energy, environmental, and economic impacts, and other costs, determines is achievable through application of production processes and available methods, systems, and techniques (including fuel cleaning or treatment or innovative fuel combustion techniques) for control of such pollutant. If the Department determines that technological or economic limitations on the application of measurement methodology to a particular part of a source or facility would make the imposition of an emission standard infeasible, a design, equipment, work practice, operational standard or combination thereof, may be prescribed instead to satisfy the requirement for the application of BACT. Such standard shall,

> to the degree possible, set forth the emissions reductions achievable by implementation of such design, equipment, work practice, or operation.

The requirements for BACT were promulgated within the framework of PSD in the 1977 amendments of the CAA [Public Law 95-95; Part C, Section 165(a)(4)]. The primary purpose of BACT is to optimize consumption of PSD air quality increments and thereby enlarge the potential for future economic growth without significantly degrading air quality (EPA, 1978; 1980). Guidelines for the evaluation of BACT can be found in EPA's Guidelines for Determining Best Available Control Technology (BACT) (EPA, 1978) and in the PSD Workshop Manual (EPA, 1980). These guidelines were promulgated by EPA to provide a consistent approach to BACT and to ensure that the impacts of alternative emission control systems are measured by the same set of parameters. In addition, through implementation of these guidelines, BACT in one area may not be identical to BACT in another area. According to EPA (1980),

> BACT analyses for the same types of emissions unit and the same pollutants in different locations or situations may determine that different control strategies should be applied to the different sites, depending on site-specific factors. Therefore, BACT analyses must be conducted on a case-by-case basis.

The BACT requirements are intended to ensure that the control systems incorporated in the design of a proposed facility reflect the latest in control technologies used in a particular industry and take into consideration existing and future air quality in the vicinity of the proposed or modified facility. BACT must, as a minimum, demonstrate compliance with New Source Performance Standards (NSPS) for a source (if applicable). An evaluation of the air pollution control techniques and systems, including a cost-benefit analysis of alternative control technologies capable of achieving a higher degree of emission reduction than the proposed control technology, is required. The cost-benefit analysis requires the documentation of the materials, energy, and economic penalties associated with the proposed and alternative control systems, as well as the environmental benefits derived from these systems. A decision on BACT is to be based on sound judgment, balancing environmental benefits with energy, economic, and other impacts (EPA, 1978).

Historically, a "bottom-up" approach consistent with the BACT Guidelines and PSD Workshop Manual has been used. With this approach, an initial control level, which is usually NSPS, is evaluated against successively more stringent controls until a BACT level is selected.

EPA issued a draft guidance document in 1990 on the top-down approach entitled Top-Down Best Available Control Technology Guidance Document (EPA, 1990a). The "draft" guidance requires starting with the most stringent (or top) technology and emissions limits that have been applied elsewhere to the same or a similar source category. The applicant must next provide a basis for rejecting this technology in favor of the next most stringent technology or propose to use it. Rejection of control alternatives may be based on technical or economic infeasibility. Such decisions are made on the basis of physical differences (e.g., fuel type), locational differences (e.g., availability of water), or significant differences that may exist in the environmental, economic, or energy impacts. The differences between the proposed facility and the facility on which the control technique was applied previously must be justified.

It is noted that the American Paper Institute (API) initiated legal action in 1989 against the EPA over the implementation of the top-down approach. EPA and API reached a settlement agreement (July 9, 1991) which requires EPA to initiate formal rulemaking for BACT procedures. A proposed rule was required by January, 1992, but has not yet been published. However, until new rules are issued, EPA is requiring that the top-down approach still be used to determine BACT.

3.2.4 AIR QUALITY MONITORING REQUIREMENTS

In accordance with requirements of 40 CFR 52.21(m) and Rule 62-212.400(5)(f), F.A.C, any application for a PSD permit must contain an analysis of continuous ambient air quality data in the area affected by the proposed major stationary facility or major modification. For a new major facility, the affected pollutants are those that the facility potentially would emit in significant amounts. For a major modification, the pollutants are those for which the net emissions increase exceeds the significant emission rate (see Table 3-2).

Ambient air monitoring for a period of up to 1 year is generally appropriate to satisfy the PSD monitoring requirements. A minimum of 4 months of data is required. Existing data from the vicinity of the proposed source may be used if the data meet certain quality assurance requirements; otherwise, additional data may need to be gathered. Guidance in designing a PSD monitoring network is provided in EPA's Ambient Monitoring Guidelines for Prevention of Significant Deterioration (EPA, 1987a).

Under the exemption rule, FDEP may exempt a proposed major stationary facility or major modification from the monitoring requirements with respect to a particular pollutant if the emissions increase of the pollutant from the facility or modification would cause, in any area, air quality impacts less than the *de minimis* levels presented in Table 3-2 [Rule 62-212.400, F.A.C.].

3.2.5 SOURCE IMPACT ANALYSIS

A source impact analysis must be performed for a proposed major facility or major modification subject to PSD for each pollutant for which the increase in emissions exceeds the significant emission rates shown in Table 3-2 [Rule 62-212.400(5)(d) F.A.C.]. The PSD regulations specifically provide for the use of atmospheric dispersion models in performing impact analyses, estimating baseline and future air quality levels, and determining compliance with AAQS and allowable PSD increments. Designated EPA models normally must be used in performing the impact analysis. Specific applications for other than EPA-approved models require EPA's consultation and prior approval.

Guidance for the use and application of dispersion models is presented in the EPA publication Guideline on Air Quality Models (EPA, 1987b). The source impact analysis for criteria pollutants can be limited to the new or modified facility if the net increase in impacts as a result of the new or modified source is below modeling significance levels, as presented in Table 3-1.

Various lengths of record for meteorological data can be used for impact analyses. A 5-year period can be used with corresponding evaluation of highest, second-highest short-term concentrations for comparison to AAQS or PSD increments. The term "highest, second-highest" (HSH) refers to the highest of the second-highest concentrations at all receptors (i.e., the highest concentration at each receptor is discarded). The second-highest concentration is significant because short-term AAQS specify that the standard should not be exceeded at any location more than once a year. If less than 5 years of meteorological data are used in the modeling analysis, the highest concentration at each receptor must normally be used for comparison to air quality standards.

3.2.6 ADDITIONAL IMPACT ANALYSES

In addition to air quality impact analyses, federal and State of Florida PSD regulations require analysis of the impairment to visibility and the impacts on soils and vegetation that would occur as

a result of the proposed or modified facility [40 CFR 52.21; Rule 62-212.400(5)(e), F.A.C.]. These analyses are to be conducted primarily for PSD Class I areas. Impacts from general commercial, residential, industrial, and other growth associated with the facility or modification also must be addressed. These analyses are required for each pollutant emitted in significant amounts (Table 3-2).

3.2.7 GOOD ENGINEERING PRACTICE STACK HEIGHT

The 1977 CAA amendments require that the degree of emission limitation required for control of any pollutant not be affected by a stack height that exceeds GEP or any other dispersion technique. On July 8, 1985, EPA promulgated final stack height regulations (EPA, 1985). Identical regulations have been adopted by FDEP [Rule 62-210.550, F.A.C.]. GEP stack height is defined as the highest of:

1. 65 meters (m); or
2. A height established by applying the formula:

   $Hg = H + 1.5L$

   where: Hg = GEP stack height,

   H = Height of the structure or nearby structure, and

   L = Lesser dimension (height or projected width) of nearby structure(s); or
3. A height demonstrated by a fluid model or field study.

"Nearby" is defined as a distance up to five times the lesser of the height or width dimensions of a structure or terrain feature but not greater than 0.8 kilometer (km). Although GEP stack height regulations require that the stack height used in modeling for determining compliance with AAQS and PSD increments not exceed the GEP stack height, the actual stack height may be greater.

The stack height regulations also allow increased GEP stack height beyond that resulting from the formula in cases where plume impaction occurs. Plume impaction is defined as concentrations measured or predicted to occur when the plume interacts with elevated terrain. Elevated terrain is defined as terrain that exceeds the height calculated by the GEP stack height formula. Because the terrain in the vicinity of the Georgia-Pacific facility is generally flat, plume impaction was not considered in determining the GEP stack height.

3.3 NON-ATTAINMENT RULES

Based on the current non-attainment provisions (Rule 62-212.500, F.A.C.), all major new facilities and modifications to existing major facilities located in a non-attainment area must undergo non-attainment review if the proposed pieces of equipment have the potential to emit 100 TPY or more of the non-attainment pollutant, or if the modification results in a significant net emission increase of the non-attainment pollutant.

For major facilities or major modifications that locate in an attainment or unclassifiable area, the non-attainment review procedures apply if the source or modification is located within the area of influence of a non-attainment area. The area of influence is defined as an area that is outside the boundary of a non-attainment area but within the locus of all points that are 50 km outside the boundary of the non-attainment area. Based on Rule 62-212.500(2)(a), F.A.C., all VOC facilities or emission units that are located within an area of influence are exempt from the provisions of new source review for non-attainment areas. Facilities or emissions units that emit other non-attainment pollutants and are located within the area of influence are subject to non-attainment review unless the maximum allowable emissions do not have a significant impact within the non-attainment area.

3.4 SOURCE APPLICABILITY

3.4.1 PSD REVIEW

3.4.1.1 Pollutant Applicability

The G-P Kraft pulp mill is located in Putnam County, which has been designated by EPA and FDEP as an attainment area for all criteria pollutants. Putnam County and surrounding counties are designated as PSD Class II areas for SO_2, PM10, and NO_2.

The G-P facility is considered to be an existing major stationary facility because potential emissions of certain regulated pollutants exceed 100 TPY. As a result, PSD review is required for the proposed modification for each pollutant for which the net increase in emissions exceeds the PSD significant emission rates presented in Table 3-2 (i.e., a major modification).

Historically, FDEP and EPA have required that current actual emissions be compared with future maximum emissions (not future actual emissions) to determine PSD source applicability. This analysis is also to consider any contemporaneous emission changes at the facility that occurred

within the past 5 years or since the last PSD permit was issued for a particular pollutant. Current actual emissions are shown in Table 2-1 (refer also to Attachment A). Future maximum emissions are shown in Table 2-2 (refer also to Attachment A). There have been no contemporaneous emission changes at the facility since issuance of the last PSD permit for the facility in 1991. The PSD applicability analysis based on this method is presented in Table 3-3.

As shown in Table 3-3, the increase in PM(TSP), PM10, NO_x, CO, VOC, TRS, and beryllium emissions, based on comparing current actual emissions and future allowable emissions, will exceed the PSD significant emission rate. Therefore, FDEP/EPA may determine that the proposed project is subject to PSD review for these pollutants. For purposes of minimizing the permit review time by FDEP, it will be assumed that the project is subject to PSD review for these pollutants.

3.4.1.2 Ambient Monitoring

Based upon the increase in emissions from G-P's proposed project, a PSD preconstruction ambient monitoring analysis is required for PM(TSP), PM10, NO_x, CO, VOC, TRS, and beryllium. However, if the increase in impacts of a pollutant is less than the *de minimis* monitoring concentration, then an exemption from the preconstruction ambient monitoring requirement may be granted for that pollutant. In addition, if an acceptable ambient monitoring method for the pollutant has not been established by EPA, monitoring is not required.

A comparison of the net increase in impacts due to the proposed project and the *de minimis* monitoring concentrations is presented in Table 3-4. This comparison is presented for those pollutants that are subject to PSD review for the proposed project.

The air quality impact analysis presented in Section 5.0 demonstrates that the maximum impacts resulting from the net increase in emissions will be below the *de minimis* monitoring concentrations for all pollutants except ozone and TRS. The net increase in VOC emissions is greater than 100 TPY and, therefore, ozone requires a preconstruction monitoring analysis. The monitoring analysis for ozone and TRS is presented in Section 4.0.

3.4.1.3 GEP Stack Height Analysis

The GEP stack height regulations allow any stack to be at least 65 m [213 (ft)] high. All sources being modified at G-P are existing sources, with existing stacks. None of these sources exceeds GEP stack height based on the significant structures at the facility.

3.4.1.4 Best Available Control Technology

The federal PSD regulations [40 CFR 52.21(j)(3)] state that BACT is required for each pollutant for which the modification results in a net emissions increase. BACT must be applied to each emissions unit in which a net emissions increase in a PSD pollutant would occur as a result of a physical change or a change in the method of operation in the unit. As discussed in Section 2.0, the only emissions units at G-P which are being physically changed or for which there will be a change in the method of operation are the digester system and No. 4 Recovery Boiler. The MEE system, condensate stripper system, No. 4 Smelt Tank, No. 4 Lime Kiln, and tall oil plant are not being physically modified or changed. As a result, BACT only applies to the digester system and No. 4 Recovery Boiler.

The pollution control device for the digester system at G-P is the TRS incinerator. The pollution control device for the No. 4 Recovery Boiler is an electrostatic precipitator. PSD pollutants emitted by the TRS incinerator and No. 4 Recovery Boiler, which must undergo BACT review, are PM(TSP), PM10, NO_x, CO, VOC, and TRS. The No. 4 Recovery Boiler also emits trace amounts of beryllium, which must also undergo BACT review.

3.4.2 NONATTAINMENT REVIEW

The G-P mill is located in Putnam County, which has been designated as an attainment area for all pollutants. As a result, nonattainment review does not apply to the proposed project.

3.4.3 NEW SOURCE PERFORMANCE STANDARDS

Federal New Source Performance Standards (NSPS) have been promulgated for digester systems, multiple effect evaporators, condensate strippers, brown stock wasters, recovery boilers, smelt tanks, and lime kilns in the pulp and paper industry (40 CFR 60, Subpart BB). In the case of modifications to existing sources, the NSPS apply if the sources would meet the definition of "modification" under 40 CFR Part 60. A modification is defined as any physical or operational change to the source that would result in an increase in the emission rate (in lb/hr) of any

pollutant regulated under the applicable NSPS. Only PM and TRS are regulated under the NSPS for Kraft pulp mills. However, the following by themselves are not considered modifications under this part:

1. Maintenance, repair, and replacement of component parts that are considered routine; and,
2. An increase in the production rate, if that increase can be accomplished without a capital expenditure.

As described in Section 2.0, there are no physical changes being made to the G-P mill in this project except for the replacement of the Nos. 11 and 12 digesters and the modifications to the No. 4 Recovery Boiler. No other equipment is being physically modified as part of this project. The new digesters will be subject to the NSPS. The NSPS can be met by combustion in an incinerator at 1,200 °F for at least 0.5 second [40 CFR 60.283(a)(l)(iii)]. The existing TRS incinerator meets this requirement.

The only physical change being made to the No. 4 Recovery Boiler is the addition of screen tubes in the boiler. This is a physical change. However, the physical change can be accomplished without a capital expenditure. A "capital expenditure" is defined under NSPS as an expenditure for a physical or operational change that exceeds the product of the "annual asset guideline repair allowance percentage" and the existing facility's basis, as specified in the latest IRS publications. The allowable percentage for a recovery boiler is 10 percent. The cost of the changes being proposed by G-P falls well below the criteria defining a capital expenditure.

G-P has determined the existing basis for RB4 to be $27 million (1994 dollars). Therefore, a capital expenditure would be an expenditure in excess of $2.7 million for RB4. The addition of the new screen tubes on RB4 will cost approximately $2 million, which is well below the $2.7 million figure defining a capital expenditure. As a result, the change does not constitute a modification under the NSPS, and NSPS is not triggered by the changes.

Table 3-1. National and State AAQS, Allowable PSD Increments, and Significance Levels

Pollutant	Averaging Time	AAQS ($\mu g/m^3$) National Primary Standard	AAQS ($\mu g/m^3$) National Secondary Standard	AAQS ($\mu g/m^3$) State of Florida	PSD Increments ($\mu g/m^3$) Class I	PSD Increments ($\mu g/m^3$) Class II	Significant Impact Levels ($\mu g/m^3$)
Particulate Matter (PM10)	Annual Arithmetic Mean	50	50	50	4	17	1
	24-Hour Maximum	150[b]	150[b]	150[a]	8	30	5
Sulfur Dioxide	Annual Arithmetic Mean	80	NA	60	2	20	1
	24-Hour Maximum	365[b]	NA	260[a]	5	91	5
	3-Hour Maximum	NA	1,300[b]	1,300[a]	25	512	25
Carbon Monoxide	8-Hour Maximum	10,000[b]	10,000[b]	10,000[a]	NA	NA	500
	1-Hour Maximum	40,000[b]	40,000[b]	40,000[a]	NA	NA	2,000
Nitrogen Dioxide	Annual Arithmetic Mean	100	100	100	2.5	25	1
Ozone	1-Hour Maximum[c]	235	235	235	NA	NA	NA
Lead	Calendar Quarter Arithmetic Mean	1.5	1.5	15	NA	NA	NA

Note: AAQS = Ambient Air Quality Standards.
NA = Not applicable, i.e., no standard exists.
Particulate matter (PM10) = particulate matter with aerodynamic diameter less than or equal to 10 micrometers.
PSD = prevention of significant deterioration.
$\mu g/m^3$ = micrograms per cubic meter.

[a]Maximum concentration not to be exceeded more than once per year.
[b]Achieved when the expected number of exceedances per year is less than 1.
[c]Achieved when the expected number of days per year with concentrations above the standard is less than 1.

Sources: 40 CFR 50.
40 CFR 52.21.
Rule 62-272, F.A.C.

Table 3-2. PSD Significant Emission Rates and *De Minimis* Monitoring Concentrations

Pollutant	Regulated Under	Significant Emission Rate (TPY)	*De Minimis* Monitoring Concentration ($\mu g/m^3$)
Sulfur Dioxide	NAAQS, NSPS	40	13, 24-hour
Particulate Matter (TSP)	NSPS	25	10, 24-hour
Particulate Matter (PM10)	NAAQS	15	10, 24-hour
Nitrogen Oxides	NAAQS, NSPS	40	14, annual
Carbon Monoxide	NAAQS, NSPS	100	575, 8-hour
Volatile Organic Compounds (Ozone)	NAAQS, NSPS	40	100 TPY[a]
Lead	NAAQS	0.6	0.1, 3-month
Sulfuric Acid Mist	NSPS	7	NM
Fluorides	NSPS	3	0.25, 24-hour
Total Reduced Sulfur	NSPS	10	—
Reduced Sulfur Compounds	NSPS	10	—
Hydrogen Sulfide	NSPS	10	0.2, 1-hour
Asbestos	NESHAP	0.007	NM
Beryllium	NESHAP	0.0004	0.001, 24-hour
Mercury	NESHAP	0.1	0.25, 24-hour
Vinyl Chloride	NESHAP	1	15, 24-hour

Note: Ambient monitoring requirements for any pollutant may be exempted if the impact of the increase in emissions is below *de minimis* monitoring concentrations.

NAAQS = National Ambient Air Quality Standards.
NESHAP = National Emission Standards for Hazardous Air Pollutants.
NM = No ambient measurement method.
NSPS = New Source Performance Standards.
PM10 = particulate matter with aerodynamic diameter less than or equal to 10 micrometers.
PSD = prevention of significant deterioration.
TPY = tons per year.
TSP = total suspended particulate matter.
$\mu g/m^3$ = micrograms per cubic meter.

[a] No *de minimis* concentration; an increase in VOC emissions of 100 TPY or more will require monitoring analysis for ozone.

Source: Rule 62-212.400, F.A.C.

Table 3–3. Net Emissions Increase Associated With Proposed Project, Georgia–Pacific Palatka Operations

Regulated Pollutant	Current Actual Emissions (TPY)	Future Maximum Emissions (TPY)	Net Increase In Emissions (TPY)	PSD Significant Emission Rate (TPY)	PSD Review Applies?
Particulate matter (TSP)	257.6	557.6	300.0	25	Yes
Particulate matter (PM10)	257.6	557.6	300.0	15	Yes
Sulfur dioxide	2,227.2	2,263.0	35.8	40	No
Nitrogen oxides	593.3	1,219.3	626.0	40	Yes
Carbon monoxide	1,256.1	2,278.6	1,022.5	100	Yes
Volatile organic compounds	109.8	432.0	322.2	40	Yes
Sulfuric acid mist	113.9	101.5	–12.4	7	No
Total reduced sulfur	22.9	111.4	88.5	10	Yes
Lead	0.12	0.16	0.04	0.6	No
Mercury	0.031	0.040	0.009	0.1	No
Beryllium	0.0038	0.0049	0.0011	0.0004	Yes
Fluorides	--	--	--	3	No
Asbestos	--	--	--	0.007	No
Vinyl Chloride	--	--	--	1	No

Table 3-4. Comparison of Net Increase in Impacts to the *De Minimis* Monitoring Concentrations

Pollutant	Net Increase in Impacts Due to Proposed Project ($\mu g/m^3$)	*De Minimis* Monitoring Concentration ($\mu g/m^3$)	Preconstruction Ambient Monitoring Analysis Required?
Particulate Matter (TSP)	4.6	10, 24-hour	No
Particulate Matter (PM10)	4.6	10, 24-hour	No
Nitrogen Oxides	0.6	14, annual	No
Carbon Monoxide	27	575, 8-hour	No
Volatile Organic Compounds (Ozone)	322.2 TPY	100 TPY[a]	Yes
Hydrogen Sulfide	9.3	0.2, 1-hour	Yes
Beryllium	<0.00012, 24-hr	0.001, 24-hour	No

[a] No *de minimis* concentration; an increase in VOC emissions of 100 TPY or more will require a monitoring analysis for ozone.

Source: KBN, 1995.

4.0 AMBIENT MONITORING ANALYSIS

As described in Section 3.4.1.2, a PSD preconstruction monitoring analysis is required for ozone and TRS. Existing ambient ozone data for the monitoring stations nearest to Palatka are presented in Table 4-1. Two of these stations are located in Jacksonville, about 40 miles north of Palatka, and two are located in Daytona Beach, about 40 miles southeast of Palatka. Data are presented for the years 1991-1993. The two monitors in Daytona Beach started operating in late 1991, and therefore limited data is available for 1991.

The ozone data from these four air monitoring stations are considered to be representative for PSD preconstruction monitoring purposes. Due to the location of Palatka, and relatively low population and traffic density, it is expected that ozone concentrations in Daytona Beach and Jacksonville will be much higher than in Palatka. The Daytona Beach data is considered to be more representative of Palatka air quality since its population is closer to Palatka's than is Jacksonville's.

In the case of TRS, the Ambient Monitoring Guidelines for Prevention of Significant Deterioration (EPA, 1987) states that "consistent with Section 165 (e) (1) of the Clean Air Act, EPA believes that an analysis based on modeling of the impact of non-criteria pollutants on the air quality should generally be used in lieu of monitoring data." Therefore, Georgia-Pacific is submitting a modeling analysis for TRS to satisfy the PSD preconstruction monitoring requirements. This analysis is presented in Section 6.0.

Table 4-1. Summary of Ambient Ozone Data for Sites Nearest Georgia-Pacific Palatka Mill, 1991 - 1993

SAROAD Site No.	City	Monitoring Method	Period	No. of Obs.	1-Hour Ozone Concentrations (ppm) First-Maximum	Second-Maximum	Third-Maximum
1960-070-H01	Jacksonville Naval Air Station	Continuous	1991	8325	0.095	0.095	0.095
			1992	8143	0.114	0.102	0.100
			1993	8297	0.124	0.117	0.108
1960-077-H03	Jacksonville-Sheffield School	Continuous	1991	8476	0.084	0.083	0.080
			1992	8136	0.106	0.101	0.092
			1993	8512	0.103	0.103	0.099
0920-002-G01	Daytona Beach-Dunn Avenue	Continuous	1991	1267	0.079	0.062	0.057
			1992	8591	0.083	0.082	0.082
			1993	8634	0.097	0.093	0.089
3730-001-G01	Port Orange-Spruce Creek Road	Continuous	1991	1289	0.068	0.050	0.049
			1992	8663	0.085	0.082	0.080
			1993	8649	0.094	0.094	0.086

Note: No. = number.
Obs. = observations.
ppm = parts per million.
Ozone standard = 0.12 ppm, not be exceeded on more than one calendar day per year.

Source: Florida DEP, 1991, 1992, 1993.

5.0 AIR QUALITY MODELING APPROACH

5.1 GENERAL MODELING APPROACH

The general modeling approach follows EPA and FDEP modeling guidelines for determining compliance with AAQS and PSD increments. In general, when model predictions are used to determine compliance with AAQS and PSD increments, current policies stipulate that the highest annual average and highest, second-highest short-term (i.e., 24 hours or less) concentrations be compared to the applicable standard when 5 years of meteorological data are used. The highest, second-highest concentration (HSH) is calculated for a receptor field by:

1. Eliminating the highest concentration predicted at each receptor,
2. Identifying the second-highest concentration at each receptor, and
3. Selecting the highest concentration among these second-highest concentrations.

This approach is consistent with the air quality standards, which permit a short-term average concentration to be exceeded once per year at each receptor.

To develop the maximum short-term concentrations for the Georgia-Pacific (G-P) facility, the general modeling approach was divided into screening and refined phases to reduce the computation time required to perform the modeling analysis. The basic difference between the two phases was the receptor grid used in the analysis.

In general, concentrations for the screening phase were predicted using a coarse receptor grid and a 5-year meteorological record. After a final list of HSH short-term concentrations was developed, the refined phase of the analysis was conducted by predicting concentrations for a refined receptor grid centered on the receptor at which the HSH concentration was produced from the screening phase. The air dispersion model was executed for the meteorological periods during which both the highest and second-highest concentrations were predicted to occur at that receptor, based on the screening phase results. This approach was used to ensure that valid HSH concentrations were obtained. More detailed descriptions of the emission inventory and receptor grids used in the screening and refined phases of the analysis are presented in the following sections.

5.2 MODEL SELECTION

The selection of an appropriate air dispersion model was based on the model's ability to simulate impacts in areas surrounding the G-P site. Within 50 km of the site, the terrain can be described as simple, i.e., flat to gently rolling. As defined in EPA modeling guidelines, simple terrain is considered to be an area where the terrain features are all lower in elevation than the top of the stack(s) under evaluation. Therefore, a simple terrain model was selected to predict maximum ground-level concentrations.

The Industrial Source Complex Short-term (ISCST2, Version 93109) dispersion model (EPA, 1992b) was used to evaluate all pollutant emissions for this project. This model is contained in EPA's User's Network for Applied Modeling of Air Pollution (UNAMAP), Version 6 (EPA, 1988b). The ISCST2 model is applicable to sources located in either flat or rolling terrain where terrain heights do not exceed stack heights. The ISCST2 model is designed to calculate hourly concentrations based on hourly meteorological parameters (i.e., wind direction, wind speed, atmospheric stability, ambient temperature, and mixing heights). The hourly concentrations are processed into non-overlapping, short-term and annual averaging periods. For example, a 24-hour average concentration is based on twenty-four 1-hour averages calculated from midnight to midnight of each day. For each short-term averaging period selected, the highest and second-highest average concentrations are calculated for each receptor. As an option, a table of the 50 highest concentrations over the entire field of receptors can be produced.

Major features of the ISCST2 model are presented in Table 5-1. The ISCST2 model has both rural and urban mode options which affect the wind speed profile exponent law, dispersion rates, and mixing-height formulations used in calculating ground level concentrations. The criteria used to determine when the rural or urban mode is appropriate are based on land use near the source's surroundings (Auer, 1978). If the land use is classified as heavy industrial, light-moderate industrial, commercial, or compact residential for more than 50 percent of the area within a 3-km radius circle centered on the site location, the urban option should be selected. Otherwise, the rural option is more appropriate.

In this analysis, the EPA regulatory default options were used to predict all maximum impacts. The regulatory default options include:

1. Final plume rise at all receptor locations,
2. Stack-tip downwash,
3. Buoyancy-induced dispersion,
4. Default wind speed profile coefficients for rural or urban option,
5. Default vertical potential temperature gradients,
6. Calm wind processing, and
7. Reducing calculated SO_2 concentrations in urban areas by using a decay half-life of 4 hours.

In this analysis, the EPA regulatory options were used to address maximum impacts. Based on a review of the land use around G-P, the rural mode was selected based on the degree of residential, industrial, and commercial development within 3 km of the site.

5.3 METEOROLOGICAL DATA

Meteorological data used in the ISCST model to determine air quality impacts consisted of a concurrent 5-year period of hourly surface weather observations and twice-daily upper air soundings from the National Weather Service (NWS) station at Jacksonville International Airport. The 5-year period of meteorological data was from 1983 through 1987. The NWS station at Jacksonville, located approximately 91 km due north of the G-P site, was selected for use in the study because it is the closest primary weather station to the study area which is representative of the plant site.

The surface observations included wind direction, wind speed, temperature, cloud cover, and cloud ceiling. The wind speed, cloud cover, and cloud ceiling values were used in the ISCST meteorological preprocessor program to determine atmospheric stability using the Turner stability scheme. Based on the temperature measurements at morning and afternoon, mixing heights were calculated with the radiosonde data using the Holzworth (1972) approach. Hourly mixing heights were derived from the morning and afternoon mixing heights using the interpolation method developed by EPA (Holzworth, 1972).

The hourly surface data and mixing heights were used to develop a sequential series of hourly meteorological data (i.e., wind direction, wind speed, temperature, stability, and mixing heights). Because the observed hourly wind directions were classified into one of thirty-six 10-degree

sectors, the wind directions were randomized within each sector to account for the expected variability in air flow. These calculations were performed by using the EPA RAMMET meteorological preprocessor program.

5.4 BUILDING DOWNWASH CONSIDERATIONS

Many of the sources at G-P have stack heights below Good Engineering Practice. Therefore, according to EPA modeling guidelines, the potential effects of building downwash must be addressed in the modeling analysis. The potential for building downwash was evaluated for all source/structure combinations at the G-P facility. Those structures found to potentially cause downwash are presented in Table 5-2. A plot plan showing building and stack locations is presented in Figure 2-2. The EPA's Building Profile Input Program (BPIP, version 94074) was used to determine direction-specific building heights and widths for each G-P stack below GEP used in the modeling analysis.

5.5 SIGNIFICANT IMPACT ANALYSIS

5.5.1 METHODOLOGY

The proposed changes to RB4, LK4, SDT4, the TRS incinerator (TRS), and the tall oil plant (TOP) will result in an emission increase above significant emission levels for PM(TSP)/PM10, NO_x, CO, VOC, Be, and TRS (refer to Table 3-3). Proposed increases in SO_2 emissions are below significant emission rates and are not required to be addressed in this analysis.

Modeling was performed for applicable pollutants to determine if the proposed increase in emissions results in impacts greater than significant impact levels (Table 3-1). For those pollutants that are shown not to exceed significant impact levels, no further modeling is required. For those pollutants for which predicted concentrations exceed these impact levels, further modeling is required to determine the significant impact area and compliance with AAQS and PSD increments. VOC is a reactive pollutant and current techniques do not allow accurate modeling of VOC or impacts upon ozone concentrations.

5.5.2 SOURCE INVENTORY

The source inventory used in the significant impact analysis is presented in Tables 5-3 and 5-4. Current emission rates are derived from Table 2-1 and Attachment A, and stack parameters are based on recent stack tests of these emission units. Future maximum emission rates (refer to

Tables 2-3 through 2-7 and Attachment A) and stack parameters are based on maximum operation of all emission units. To determine the impacts caused by the increase in emissions from the affected emission units for applicable pollutants, current emissions were modeled as negative in the ISCST, with the future maximum emissions as positive.

5.5.3 RECEPTORS

G-P Plant Vicinity

A total of 380 receptors was used in the significant impact analysis. These receptors were placed along 36 polar radials spaced 10 degrees apart and centered on the TRS incinerator at G-P. The first receptor was located at the plant property boundary with subsequent receptors located at offsite distances of 700, 1,100, 1,500, 2,000, 2,500, 3,000, 3,500, 4,000, 4,500, 5,000, 10,000, 15,000, 20,000 and 25,000 m. The plant property receptors used in the significant impact analysis are presented in Table 5-5.

Class I Areas

Eleven receptors were used to predict maximum impacts in the PSD Class I areas. These 11 receptors include 1 receptor at Wolf Island and 10 around the southern and eastern edges of the Okeefenokee NWR. A list of these receptors is presented in Table 5-6.

5.5.4 RESULTS

Significant Impact Analysis

Results of the significant impact screening analyses for PM(TSP)/PM10, NO_x, and CO are summarized in Tables 5-7, 5-8, and 5-9, respectively. Based on the screening analysis results, refinements were performed. The refined modeling analysis results are compared to EPA significant impact levels in Table 5-10. The maximum annual and 24-hour PM(TSP)/PM10 impacts are 0.51 and 4.61 $\mu g/m^3$, respectively, which are below the significant impact levels of 1 and 5 $\mu g/m^3$, respectively. The maximum annual NO_x impact of 0.61 $\mu g/m^3$ is below the significant impact level of 1 $\mu g/m^3$. The maximum 8-hour and 1-hour CO impacts are 27 and 101 $\mu g/m^3$, respectively, which are below the significant impact levels of 500 and 2,000 $\mu g/m^3$, respectively. Based on these analyses, the impacts for these pollutants do not exceed the significant impact levels, and, therefore, AAQS and PSD Class II increment consumption analyses are not required.

Class I Areas

The maximum PM(TSP)/PM10 and NO_x impacts of the proposed project at the PSD Class I areas of Wolf Island and Okefenokee NWR are presented in Tables 5-11 and 5-12, respectively. The maximum annual and 24-hour PM(TSP)/PM10 impacts are 0.00015 and 0.0044 $\mu g/m^3$, respectively, which are below the proposed National Park Service (NPS) Class I significant impact levels of 0.1 and 0.33 $\mu g/m^3$, respectively, for those averaging times.

The maximum annual NO_x impact is 0.00031 $\mu g/m^3$, which is below the proposed NPS Class I significant impact level of 0.025. Because the PM(TSP)/PM10 and NO_x impacts due to the proposed project are below the NPS significant impact levels, a PSD Class I analysis is not required for these pollutants.

5.5.5 TOXIC POLLUTANT IMPACTS

The impacts of beryllium and TRS were determined for comparison to FDEP's Florida Air Reference Concentrations (FARCs). For this analysis, the total maximum impacts of the affected emissions units at Georgia-Pacific were analyzed, not just the net increase in impacts due to the modification.

Beryllium

Maximum predicted beryllium impacts due to all affected emissions units after the proposed modification are summarized in Table 5-13. The FDEP has developed FARCs for beryllium compounds: 0.00042 $\mu g/m^3$, annual average; 0.0048 $\mu g/m^3$, 24-hour average; and 0.02 $\mu g/m^3$, 8-hour average. The maximum beryllium impacts are 0.00001 $\mu g/m^3$ annual average; 0.00012 $\mu g/m^3$, 24-hour average; and 0.00027 $\mu g/m^3$, 8-hour average. These impacts are below the respective FARCs for this substance.

TRS

Maximum predicted TRS impacts due to all affected emissions units after the proposed modification are summarized in Table 5-14. The FDEP has developed FARCs for TRS compounds (as H_2S): 0.90 $\mu g/m^3$, annual average, 33.6 $\mu g/m^3$, 24-hour average; and 140 $\mu g/m^3$, 8-hour average. The maximum TRS impacts (as H_2S) are 0.34 $\mu g/m^3$, annual average; 3.4 $\mu g/m^3$, 24-hour average; and 4.6 $\mu g/m^3$, 8-hour average. These impacts are below the respective FARCs for this compound.

Table 5-1. Major Features of the ISCST2 Model

ISCST2 Model Features
• Polar or Cartesian coordinate systems for receptor locations
• Rural or one of three urban options which affect wind speed profile exponent, dispersion rates, and mixing height calculations
• Plume rise due to momentum and buoyancy as a function of downwind distance for stack emissions (Briggs, 1969, 1971, 1973, and 1975)
• Procedures suggested by Huber and Snyder (1976) and Huber (1977) for evaluating building wake effects
• Procedures suggested by Briggs (1974) for evaluating stack-tip downwash
• Separation of multiple point sources
• Consideration of the effects of gravitational settling and dry deposition on ambient particulate concentrations
• Capability of simulating point, line, volume and area sources
• Capability to calculate dry deposition
• Variation of wind speed with height (wind speed-profile exponent law)
• Concentration estimates for 1-hour to annual average times
• Terrain-adjustment procedures for elevated terrain including a terrain truncation algorithm
• Consideration of time-dependent exponential decay of pollutants
• The method of Pasquill (1976) to account for buoyancy-induced dispersion
• A regulatory default option to set various model options and parameters to EPA recommended values (see text for regulatory options used)
• Procedure for calm-wind processing
• Wind speeds less than 1 m/s are set to 1 m/s.

Note: ISCST2 = Industrial Source Complex Short-Term.

Source: EPA, 1992b.

Table 5-2. Structure Dimensions Used in the Georgia-Pacific Modeling Analysis

	Actual Building Dimensions					
	Height		Length		Width	
Structure	ft	m	ft	m	ft	m
RB4 Preciptator	85	25.9	118	36.0	58.5	17.8
RB4 Boiler Building	196	59.7	99.7	30.4	91.9	28.0
Power Plant Building	110	33.5	165	50.3	93	28.3

Table 5-3. Georgia-Pacific Source Emissions Used in the Modeling Analysis

Emission Unit	Emission Unit ID	Short-Term Emissions								Long-Term Emissions							
		PM(TSP)/PM10		CO		TRS		Be		PM(TSP)/PM10		NOx		TRS		Be	
		(lb/hr)	(g/s)	(lb/hr)	(g/s)	(lb/hr)	(g/s)	(lb/hr)	(g/s)	(TPY)	(g/s)	(TPY)	(g/s)	(TPY)	(g/s)	(TPY)	(g/s)
Current Actuals																	
Recovery Boiler No. 4	RB4	31.2	3.93	309.2	38.96	3.3	0.42	5.5E-04	6.9E-05	125.8	3.62	410.3	11.80	13.3	0.38	2.2E-03	6.3E-05
Lime Kiln No. 4	LK4	20.0	2.52	2.4	0.30	1.1	0.14	3.8E-04	4.8E-05	80.0	2.30	125.5	3.61	4.40	0.13	1.5E-03	4.3E-05
Smelt Dissolving Tank No. 4	SDT4	7.1	0.89	–	–	1.2	0.15	1.3E-05	1.6E-06	28.6	0.82	55.7	1.60	4.84	0.14	5.2E-05	1.5E-06
TRS Incinerator	TRS	5.3	0.67	0.18	0.02	0	0	–	–	23.2	0.67	1.76	0.05	0	0	–	–
Tall Oil Plant	TOP	–	–	–	–	0.073	0.01	–	–	–	–	–	–	0.32	0.01	–	–
Proposed Maximums																	
Recovery Boiler No. 4	RB4	83.2	10.48	1025.4	129.20	17.8	2.24	6.4E-04	8.1E-05	364.4	10.48	922.4	26.53	78.0	2.24	2.8E-03	8.1E-05
Lime Kiln No. 4	LK4	26.0	3.28	7.3	0.92	4.0	0.50	4.5E-04	5.7E-05	113.9	3.28	220.3	6.34	17.5	0.50	2.0E-03	5.8E-05
Smelt Dissolving Tank No. 4	SDT4	12.6	1.59	–	–	3.4	0.43	1.5E-05	1.9E-06	55.2	1.59	69.0	1.98	14.9	0.43	6.4E-05	1.9E-06
TRS Incinerator	TRS	5.5	0.69	0.24	0.03	0.120	0.02	–	–	24.1	0.69	7.60	0.22	0.53	0.02	–	–
Tall Oil Plant	TOP	–	–	–	–	0.23	0.03	–	–	–	–	–	–	0.50	0.01	–	–

Table 5-4. Georgia-Pacific Source Location and Operating Parmameters Used in the Modeling Analysis

Emission Unit	Emission Unit ID	Relative Location (a) X (ft)	X (m)	Y (ft)	Y (m)	Stack Parameters Height (ft)	Height (m)	Diameter (ft)	Diameter (m)	Operating Parameters Temperature (°F)	Temperature (°K)	Velocity (ft/s)	Velocity (m/s)
Current Actuals													
Recovery Blr No. 4	RB4	-370	-112.8	622	189.6	230	70.1	12.00	3.66	400	477.6	57.3	17.48
Lime Kiln No. 4	LK4	-123	-37.5	-310	-94.5	131	39.9	4.42	1.35	150	338.7	60.8	18.53
Smelt Dissolving Tank No 4	SDT4 (b)	-153	-46.6	639	194.8	206	62.8	5.00	1.52	160	344.3	20.0	6.10
TRS Incinerator	TRS	0	0.0	0	0.0	250	76.2	3.08	0.94	500	533.2	94.0	28.65
Tall Oil Plant	TOP	32	9.8	212	64.6	40	12.2	1.33	0.41	200	366.5	40.8	12.44
Proposed Maximums													
Recovery Blr No. 4	RB4	-370	-112.8	622	189.6	230	70.1	12.00	3.66	400	477.6	63.7	19.42
Lime Kiln No. 4	LK4	-123	-37.5	-310	-94.5	131	39.9	4.42	1.35	150	338.7	60.8	18.53
Smelt Dissolving Tank No 4	SDT4 (b)	-153	-46.6	639	194.8	206	62.8	5.00	1.52	160	344.3	21.2	6.46
TRS Incinerator	TRS	0	0.0	0	0.0	250	76.2	3.08	0.94	500	533.2	105.1	32.03
Tall Oil Plant	TOP	32	9.8	212	64.6	40	12.2	1.33	0.41	200	366.5	40.8	12.44

(a) Relative to TRS Incinerator stack location and true north
(b) Source has 2 stacks. Location is centroid.

Table 5-5. Summary of Direction-Specific Distances From the TRS Incinerator to G-P Plant Property Boundaries

Direction (Degrees)	Distance (m)	Direction (Degrees)	Distance (m)
10	5,000	190	750
20	4,500	200	1,829
30	2,500	210	1,829
40	2,500	220	1,981
50	1,500	230	2,134
60	1,500	240	2,438
70	1,500	250	2,896
80	838	260	3,048
90	686	270	3,658
100	533	280	3,962
110	457	290	4,572
120	457	300	5,182
130	457	310	4,801
140	457	320	4,875
150	457	330	6,000
160	488	340	5,500
170	533	350	5,250
180	610	360	5,125

Table 5-6. Wolf Island and Okeefenokee NWR Receptors Used in the Modeling Analysis

	UTM Coordinates	
PSD Class I Area	East (km)	North (km)
Wolf Island NWR	470.5	3459.0
Okefenokee NWR	391.0	3417.0
Okefenokee NWR	390.0	3410.0
Okefenokee NWR	392.0	3400.0
Okefenokee NWR	390.0	3395.0
Okefenokee NWR	391.0	3390.0
Okefenokee NWR	390.0	3384.0
Okefenokee NWR	383.0	3382.0
Okefenokee NWR	378.0	3382.0
Okefenokee NWR	374.0	3383.0
Okefenokee NWR	370.0	3383.0

Table 5-7. Maximum Predicted PM(TSP)/PM10 Concentrations for the Proposed Modification Only — Screening Analysis

Averaging Time	Concentration ($\mu g/m^3$)	Receptor Location[a] Direction (deg)	Receptor Location[a] Distance (m)	Period Ending (YYMMDDHH)
Annual				
	0.41	110.	457.	83123124
	0.42	110.	457.	84123124
	0.39	100.	533.	85123124
	0.43	100.	533.	86123124
	0.51	110.	457.	87123124
High 24-Hour				
	2.89	80.	838.	83031924
	4.43	180.	610.	84011524
	3.10	100.	533.	85070824
	3.80	180.	610.	86121524
	3.37	110.	457.	87050824

Note: YY = Year.
MM = Month.
DD = Day.
HH = Hour.

[a] All receptor coordinates are relative to the G-P TRS Incinerator Stack Location.

Table 5-8. Maximum Predicted NO_x Concentrations for the Proposed Modification Only — Screening Analysis

Averaging Time	Concentration ($\mu g/m^3$)	Receptor Location[a] Direction (deg)	Receptor Location[a] Distance (m)	Period Ending (YYMMDDHH)
Annual				
	0.46	120.	700.	83123124
	0.48	110.	700.	84123124
	0.47	90.	686.	85123124
	0.55	90.	686.	86123124
	0.59	130.	1100.	87123124

Note: YY = Year.
MM = Month.
DD = Day.
HH = Hour.

[a] All receptor coordinates are relative to the G-P TRS Incinerator Stack Location.

Table 5-9. Maximum Predicted CO Concentrations for the Proposed Modification Only — Screening Analysis

Averaging Time	Concentration ($\mu g/m^3$)	Receptor Location[a] Direction (deg)	Receptor Location[a] Distance (m)	Period Ending (YYMMDDHH)
8-Hour High				
	24	90.	3500.	83031916
	25	60.	2000.	84081216
	27	70.	2000.	85052916
	26	70.	2000.	86060816
	23	130.	2000.	87071416
1-Hour High				
	100	90.	686.	83071513
	86	210.	2000.	84082109
	94	90.	686.	85071111
	96	90.	686.	86071812
	101	90.	686.	87091713

Note: YY = Year.
MM = Month.
DD = Day.
HH = Hour.

[a] All receptor coordinates are relative to the G-P TRS Incinerator Stack Location.

Table 5-10. Maximum Predicted PM(TSP)/PM10, NO_x, and CO Concentrations for the Proposed Modification Only as Compared with Significant Impact Levels - Refined Analyis

Averaging Time	Concentration ($\mu g/m^3$)	Receptor Location[a] Direction (deg)	Receptor Location[a] Distance (m)	Period Ending (YYMMDDHH)	EPA Signficant Impact Levels ($\mu g/m^3$)
PM(TSP)/PM10					
Annual	0.51	110	457	87123124	1
24-Hour High	4.61	182	638	84011524	5
NO_x					
Annual	0.61	130	900	87123124	1
CO					
8-Hour High	27	70	2000	85052916	500
1-Hour High	101	90	686	87091713	2000

Note: YY = Year.
MM = Month.
DD = Day.
HH = Hour.

[a] All receptor coordinates are relative to the TRS Incinerator stack location.

Table 5-11. Maximum Predicted PM(TSP)/PM10 Concentrations for the Proposed Modification Only at the Wolf Island and Okeefenokee NWR Class I Areas

Averaging Time	Concentration ($\mu g/m^3$)	Receptor Location[a] UTM-E	UTM-N	Period Ending (YYMMDDHH)	NPS Recommended Significance Levels ($\mu g/m^3$)
Annual					
	0.00009	390000.	3384000.	83123124	0.1
	0.00013	370000.	3383000.	84123124	
	0.00015	370000.	3383000.	85123124	
	0.00011	470500.	3459000.	86123124	
	0.00011	470500.	3459000.	87123124	
24-Hour High					
	0.00355	370000.	3383000.	83051624	0.33
	0.00312	370000.	3383000.	84020324	
	0.00439	470500.	3459000.	85081724	
	0.00336	370000.	3383000.	86092424	
	0.00444	470500.	3459000.	87122624	

Note: YY = Year.
MM = Month.
DD = Day.
HH = Hour.

[a] All receptor coordinates are reported in Universal Transverse Mercator (UTM) Coordinates.

Table 5-12. Maximum Predicted NO_x Concentrations for the Proposed Modification Only at the Wolf Island and Okeefenokee NWR Class I Areas

Averaging Time	Concentration ($\mu g/m^3$)	Receptor Location[a] UTM-E	Receptor Location[a] UTM-N	Period Ending (YYMMDDHH)	NPS Recommended Significance Levels ($\mu g/m^3$)
Annual					
	0.00020	390000.	3384000.	83123124	0.025
	0.00027	370000.	3383000.	84123124	
	0.00031	370000.	3383000.	85123124	
	0.00024	470500.	3459000.	86123124	
	0.00023	470500.	3459000.	87123124	

Note: YY = Year.
MM = Month.
DD = Day.
HH = Hour.

[a] All receptor coordinates are reported in Universal Transverse Mercator (UTM) Coordinates.

Table 5-13. Maximum Predicted Beryllium Concentrations for the G-P Plant After the Proposed Modification

Averaging TIme	Concentration ($\mu g/m^3$)	Receptor Location[a] Direction (deg)	Receptor Location[a] Distance (m)	Period Ending (YYMMDDHH)	FDEP FARC ($\mu g/m^3$)
Annual					
	0.00001	130.	1100.	83123124	0.00042
	0.00001	130.	1100.	84123124	
	0.00001	100.	700.	85123124	
	0.00001	120.	700.	86123124	
	0.00001	130.	1100.	87123124	
24-Hour High					
	0.00010	100.	700.	83031924	0.0048
	0.00011	190.	1500.	84112124	
	0.00010	120.	700.	85070824	
	0.00012	130.	700.	86082424	
	0.00011	190.	1500.	87101124	
8-Hour High					
	0.00024	130.	457.	83082916	0.02
	0.00025	110.	457.	84081016	
	0.00025	130.	457.	85060216	
	0.00026	120.	457.	86060216	
	0.00027	140.	700.	87071416	

Note: YY = Year.
MM = Month.
DD = Day.
HH = Hour.
FARC = Florida Air Reference Concentration.

[a] All receptor coordinates are reported in Universal Transverse Mercator (UTM) Coordinates.

Table 5-14. Maximum Predicted TRS (as H_2S) Concentrations for the G-P Plant After the Proposed Modification

Averaging Time	Concentration ($\mu g/m^3$)	Receptor Location[a] Direction (deg)	Receptor Location[a] Distance (m)	Period Ending (YYMMDDHH)	FDEP FARC ($\mu g/m^3$)
Annual					
	0.28	110.	457.	83123124	0.90
	0.28	110.	457.	84123124	
	0.26	100.	533.	85123124	
	0.28	100.	533.	86123124	
	0.34	110.	457.	87123124	
24-Hour High					
	1.8	120.	457.	83110324	33.6
	3.4	180.	610.	84011524	
	2.0	100.	533.	85070824	
	2.8	180.	610.	86121524	
	2.2	120.	457.	87102724	
8-Hour High					
	4.0	170.	533.	83121908	140
	4.3	170.	533.	84011308	
	4.5	110.	457.	85071716	
	4.6	180.	610.	86121524	
	4.3	110.	457.	87050816	

Note: YY = Year.
MM = Month.
DD = Day.
HH = Hour.
FARC = Florida Air Reference Concentration.

[a] All receptor coordinates are relative to the TRS Incinerator stack location.

6.0 BEST AVAILABLE CONTROL TECHNOLOGY

6.1 REQUIREMENTS

The 1977 Clean Air Act Amendments established requirements for the approval of preconstruction permit applications under the PSD program. One of these requirements is that the best available control technology (BACT) be installed for applicable pollutants. BACT determinations must be made on a case-by-case basis considering technical, economic, energy, and environmental impacts for various BACT alternatives. To bring consistency to the BACT process, the EPA developed the so called "top-down" approach to BACT determinations. As mentioned previously, this approach has been challenged in court and a settlement agreement reached which requires EPA to initiate formal rulemaking on the top down approach. Nonetheless, in the absence of formal rules related to this approach, the "top-down" approach is followed in the G-P BACT analysis.

The first step in a top-down BACT analysis is to determine, for each applicable pollutant, the most stringent control alternative available for a similar source or source category. If it can be shown that this level of control is not feasible on the basis of technical, economic, energy, or environmental impacts for the source in question, then the next most stringent level of control is identified and similarly evaluated. This process continues until the BACT level under consideration cannot be eliminated by any technical, economic, energy, or environmental consideration.

In the case of the proposed modification at G-P, PM(TSP)/PM10, NO_x, CO, VOC, TRS and Be require BACT analysis. Only the digester system and the No. 4 Recovery Boiler (RB4) requires BACT analysis as these are the only emissions unit being physically modified as part of the project. The following sections present the BACT analysis for each applicable pollutant and for each emissions unit being modified.

6.2 DIGESTER SYSTEM

The digester system at G-P, as at all kraft pulp mills, produces TRS emissions which must be controlled. The new replacement digesters, Nos. 11 and 12, must meet federal NSPS, as described in Section 3.0. The NSPS require that non-condensible TRS gases be combusted in a recovery boiler meeting NSPS for TRS, a lime kiln meeting NSPS for TRS, or other combustion

device designed to achieve 1,200°F for at least 0.5 seconds residence time. As an alternative, a TRS scrubbing device may be selected if it achieves an outlet TRS concentration of 5 ppmvd.

G-P employs a TRS incinerator on the existing digester system which is designed to combust the TRS gases from the system at 1,200°F for at least 0.5 seconds. The new replacement digesters will utilize the existing non-condensible gas collection and incineration system. The only change will be that a TRS scrubber will be added prior to the incinerator in order to reduce the mass loading of TRS reaching the incinerator, thereby reducing potential SO_2 emissions from the incinerator (the sulfur in the TRS is converted to SO_2 in the incinerator). Therefore, the new digesters will meet the NSPS requirement.

Presented in Table 6-1 is a compilation of all BACT determinations for digester systems at kraft pulp mills during the last ten years. As indicated, all BACT determinations for new digesters have required incineration as the control method. G-P's proposed BACT is equivalent to these prior BACT determinations.

6.3 NO. 4 RECOVERY BOILER

6.3.1 PARTICULATE MATTER AND BERYLLIUM

RB4 is currently equipped with a high-efficiency electrostatic precipitator (ESP) for PM(TSP)/PM10 control. ESPs have been demonstrated in practice to be the best and most appropriate control device for PM(TSP) and PM10 emissions. RB4 underwent BACT review for PM(TSP)/PM10 in 1991, related to an increase in throughput rate and physical changes to the boiler. The resulting BACT determination was 0.033 gr/dscf at 8 percent O_2, and 83.2 lb/hr.

Beryllium in the exhaust gases of a recovery boiler will be in the form of particulate matter. In this context, control of PM(TSP)/PM10 emissions will also control Be emissions. Therefore, this discussion for PM(TSP)/PM10 will also apply for Be emissions.

Previous BACT determinations for PM emissions from kraft recovery boilers, issued within the past 5 years, are summarized in Table 6-2. This summary shows that all previous BACT determinations have been based on ESP control. Based on this fact, only the ESP control technology is considered further for BACT for PM(TSP)/PM10 emissions. Previous BACT

determinations have resulted in PM emission limits ranging from 0.021 gr/dscf to 0.033 gr/dscf at 8 percent O_2. Nearly all of these determinations have been for new recovery boilers.

PM test data from RB4 has shown the existing ESP achieves low levels of PM emissions (refer to Table 6-3). The last three PM compliance tests on RB4 have resulted in PM emissions for individual test runs ranging from 0.005 gr/dscf to 0.035 gr/dscf at 8 percent O_2. Corresponding mass emission rates ranged from 10.7 to 77.9 lb/hr.

Based on these test results, G-P is proposing a BACT emission level of 0.033 gr/dscf at 8 percent O_2 and 83.2 lb/hr. This emission rate is equal to the current emission limit, which was determined to be BACT in 1991. It has been shown through the compliance testing that the PM emissions from RB4 can be variable and can range up to the current emission limit. G-P's RB4 and associated ESP was constructed in 1976 and is now nearly 20 years old. The ESP was rebuilt in 1991, but is still an existing ESP. The recovery boiler/ESP and its age are important considerations in the BACT determination. The proposed BACT emission level will provide G-P with an adequate margin of safety above current actual emissions, which can reasonably be met at all times in the future. The existing ESP control is also proposed as BACT for beryllium emissions.

6.3.2 NITROGEN OXIDES

6.3.2.1 Pollutant Formation

NO_x is formed in the recovery boiler during the combustion process. Nitrogen is present in both the fuel and in the combustion air and combines with oxygen in the combustion air to form primarily nitric oxide (NO). A small fraction of the NO is further oxidized to form nitrogen dioxide (NO_2). NO_x formed from the fuel nitrogen is termed "fuel" NO_x, and that formed from the nitrogen in the combustion air is termed "thermal" NO_x.

Black liquor fired in recovery boilers has low nitrogen content, typically less than 0.1 percent. As a result, fuel NO_x is minimal from recovery boilers. Thermal NO_x is the primary emission from a recovery boiler.

In general, kraft recovery boilers have relatively low NO_x emissions. Low combustion temperatures and staged combustion (creating a reducing atmosphere in the lower portion of the

boiler) inhibit the formation of NO_x. The combustion temperature above the primary air injection is approximately 1,800°F. This relatively low combustion temperature is maintained by adjusting the furnace bed height and decreasing the primary air temperature.

Emission rates from different recovery boilers vary because of manufacturer differences, differences in firing configurations, and also because of different black liquor fuel qualities.

6.3.2.2 Alternative NO_x Control Technologies

Combustion control is the only control technology used on recovery boilers to date. All BACT/LAER determinations issued within the past 5 years for NO_x are summarized in Table 6-4. Review of this table shows that all determinations have been based on combustion control and boiler design and operation.

A potentially applicable combustion technique for recovery boilers is flue gas recirculation (FGR). In FGR, a portion of the combustion gases is recirculated back to the furnace burners or windbox. This has the effect of reducing available oxygen, thereby reducing the amount of oxygen that can combine with nitrogen to form NO_x. It also results in reducing the peak flame temperature by absorption of combustion heat by the essentially inert combustion gases.

FGR has not been applied to recovery boilers because of the high particulate loading in the combustion gases, which presents technical problems associated with erosion of fan blades and ductwork required with the FGR system. Based on these technical problems, and no demonstrated operating experience of FGR on a recovery boiler, this alternative was not considered further.

In addition to combustion controls, NO_x emissions potentially can be controlled by a post-combustion NO_x reduction system. This includes both selective catalytic reduction (SCR) and selective non-catalytic reduction (SNCR).

Performance of an SCR system downstream of a kraft recovery boiler is difficult to predict. Such a system is not known to have been applied to a recovery boiler. This NO_x reduction system uses a vanadium pentoxide catalyst to promote the reaction of ammonia with the NO_x. The presence of sodium compounds in the gas stream, however, is likely to cause catalyst fouling and plugging

problems. In addition, the formation of ammonia bisulfate as a result of sulfur compounds in the gas stream would lead to corrosion and plugging of downstream components, compounding the uncertainty associated with this NO_x reduction system.

An SNCR system does not rely on the use of a catalyst but relies mainly on the chemical/temperature reaction between ammonia and NO_x. A large amount of uncertainty is associated with the use of this NO_x reduction technology downstream of a recovery boiler. Ammonia bisulfate deposits downstream of the boiler still are likely with SNCR and would present operational and maintenance problems. In addition, there is serious concern that the catalytic effects in the presence of sodium compounds might have an adverse effect on the reaction efficiency of the chemical reduction process.

SCR and SNCR have not been applied to recovery boilers and are considered technically unproven and infeasible at this time. In addition, applying these technologies to the existing G-P recovery boiler would require extensive and costly retrofitting. NO_x emissions from recovery boilers generally are low. Based on these considerations, post-combustion control techniques for NO_x were not considered further.

6.3.2.3 Proposed BACT for NO_x

Combustion control is the only feasible NO_x control technique applicable to the existing G-P recovery boiler. RB4 underwent BACT review for NO_x in 1991, related to an increase in throughput rate and physical changes to the boiler. The resulting BACT determination was 100 ppmvd at 8 percent O_2 and 210.6 lb/hr. An NO_x emission limit of 100 ppmvd, corrected to 8 percent oxygen (210.6 lb/hr), on an annual average basis, is also proposed as BACT for the current modification.

Review of information contained in the BACT/LAER Clearinghouse documents (Table 6-4) indicates that previous NO_x BACT emission limits have ranged from 75 ppmvd to 120 ppmvd at 8 percent O_2. The most recent BACT determinations have been in the 110 to 115 ppmvd range. These determination have been for new recovery boilers, which can be designed to achieve lower NO_x levels.

NO_x test data from RB4 has shown the existing recovery boiler achieves low levels of NO_x emissions. The last three NO_x compliance tests on RB4 have resulted in NO_x emissions for individual test runs ranging from 43 to 67 ppmvd at 8 percent O_2 (refer to Table 6-3). Corresponding mass emission rates ranged from 72.0 to 128 lb/hr.

Based on these test results, G-P is proposing a BACT emission level of 100 ppmvd at 8 percent O_2 and 210.6 lb/hr. This emission rate is equal to the current emission limit, which was determined to be BACT in 1991. It has been shown through the compliance testing that the NO_x emissions from RB4 can be variable and can range near to the current emission limit. The proposed BACT emission level will provide G-P with an adequate margin of safety above current actual emissions, which can reasonably be met at all times in the future.

6.3.3 BACT FOR CO AND VOC

CO and VOC emissions are formed in a recovery boiler by incomplete combustion of the black liquor fuel. The black liquor is about 25 percent carbon. Organics in the black liquor that do not completely combust are emitted out the stack as VOC. Increasing combustion temperatures, increasing excess air and oxygen, and better fuel/air mixing during combustion minimize CO and VOC emissions.

Because of the mutually dependent formation characteristics of NO_x and CO/VOC emissions from recovery boilers, it is not possible to consider BACT for these emissions independently. Nitrogen oxides are formed by the oxidation of nitrogen contained in the fuel and in the combustion air. Nitrogen oxide emissions are reduced by lowering combustion temperatures, minimizing excess combustion air and excess oxygen, and by staging the combustion process. Therefore, limiting NO_x emissions by lowering combustion temperatures and excess combustion air are counterproductive relative to CO/VOC emissions.

The only feasible control of CO and VOC emissions from kraft recovery furnaces is through good combustion practices. These practices generally are geared towards control of NO_x, SO_2, and TRS, which are the primary pollutants emitted from recovery boilers.

RB4 underwent BACT review for NO_x in 1991, related to an increase in throughput rate and physical changes to the boiler. The resulting BACT determination for CO was 800 ppmvd,

1-hour average, and 400 ppmvd, annual average, at 8 percent O_2. These correspond to CO mass emission rates of 1,025.4 lb/hr, 1-hour average, and 512.7 lb/hr, annual average. For VOC, the resulting BACT determination in 1991 was 0.52 lb/ton of black liquor solids (BLS) fed to the recovery boiler, and 54.6 lb/hr. These existing BACT emission limits are proposed as BACT for the current modification.

Previous BACT/LAER determinations for CO and VOC emissions from recovery boilers are summarized in Tables 6-5 and 6-6. All previous determinations have been based on good combustion practices. As a result, no other control technologies for control of CO and VOC will be considered.

Previous BACT determinations for CO have ranged from 200 to 400 ppmvd at 8 percent O_2. No averaging times for these limits are specified in the BACT Clearinghouse information. Most of these are for new recovery boilers.

The proposed BACT for G-P's RB4 is good combustion practices to minimize CO and VOC, while emphasizing control of NO_x, SO_2, and TRS.

The last three CO compliance tests on RB4 have resulted in CO emissions for individual test runs ranging from 33 to 756 ppmvd at 8 percent O_2 (refer to Table 6-3). Corresponding mass emission rates ranged from 33 to 798 lb/hr. These data indicate the variability that can be experienced in actual CO emissions. G-P proposes a CO level of 400 ppmvd, at 8 percent O_2, on an annual average basis. The proposed maximum 1-hour emission level is 800 ppmvd at 8 percent O_2. These emission levels compare favorably with the previous BACT/LAER determinations, as well as with the actual test data from RB4.

Previous BACTs for VOC have been reported in various units. Most can be expressed in lb/MMBtu heat input. Determinations have ranged from 0.048 to 0.095 lb/MMBtu, and from 0.69 to 2.0 lb/ton ADUP. G-P's current VOC limit is equivalent to 0.043 lb/MMBtu and 0.71 lb/ton ADUP (based on 1,850 TPD ADUP). Actual emissions form RB4 have generally been very low (less than 5 lb/hr) based on EPA Method 25A testing. G-P proposes a VOC level of 0.52 lb/ton BLS or 0.043 lb/MMBtu (54.6 lb/hr), which compares favorably with the previous BACT/LAER determinations.

6.3.4 BACT FOR TRS

The TRS generated in recovery furnaces is dependent on several variables. These include the amount and distribution of combustion air, black liquor solids feed rate, sulfidity and heating value, spray pattern and droplet size of the black liquor nozzles, turbulence in the oxidation zone, and smelt bed disturbance.

RB4 received a construction permit in 1991 related to an increase in throughput rate and physical changes to the boiler. The changes included complete revamping of the combustion air system, including a new configuration for the primary and secondary air nozzles, and addition of tertiary air nozzles. Through these changes, G-P was able to agree to a lower TRS limit of 11.4 ppmvd @ 8 percent oxygen (previous limit was 17.5 ppmvd). A TRS emission limit of 11.4 ppmvd, corrected to 8 percent oxygen (17.8 lb/hr) is proposed as BACT for the current modification.

Review of information contained in the BACT/LAER Clearinghouse documents (Table 6-7) indicates that previous BACT emission limits for TRS have all been set at 5.0 ppmvd at 8 percent oxygen. TRS test data from RB4 has shown the existing recovery boiler achieves low levels of TRS emissions. The last three TRS compliance tests on RB4 have resulted in TRS emissions for individual test runs ranging from <0.2 to 4.2 ppmvd at 8 percent O_2 (refer to Table 6-3). Corresponding mass emission rates ranged from <0.3 to 5.9 lb/hr. Data from the continuous TRS monitor installed on RB4 showed that in 1994, the TRS emissions averaged 2.40 ppmvd with a maximum 12-hour average of 11.2 ppmvd.

Based on these test results, G-P is proposing a BACT emission level for TRS of 11.4 ppmvd at 8 percent O_2 and 17.8 lb/hr. This emission rate is equal to the current emission limit. The continuous TRS monitor data has shown that the TRS emissions from RB4 can be variable and can range up to the current emission limit. The proposed BACT emission level will provide G-P with an adequate margin of safety above current actual emissions, which can reasonably be met at all times in the future.

Table 6-1. Summary of BACT Determinations for TRS Emissions From Digester Systems in Pulp Mills

Company	State	Permit#	Permit Issue date	New Source? (a)	Throughput (Units)	Emission Limit	Ctrl Equip	Removal Eff (%)
Union Camp	SC	1900-0046	01-May-89	Yes	1463 ADP t/day	None	Incineration	—
Mead Coated Board	AL	211-0004	01-Oct-88	Yes	—	None	Incineration	—
Alabama River Pulp	AL	106-0010	22-Jan-90	—	5.5 MM lb BLS/day	None	Incineration	—

(a) Indicates if emission unit subject to BACT was new construction (yes) or a modification (no).

Source: BACT/RACT/LAER Clearinghouse Database, Feb. 1995.

Table 6-2. Summary of BACT Determinations for PM Emissions From Recovery Boilers in Pulp Mills.

Company	State	Permit#	Permit Issue date	New Source? (a)	Throughput (Units)	Emission Limit		Control Equipment	Removal Eff (%)
Penntech Papers Inc.	PA	24-306-003	09-Dec-92	No	630.00 ADP t/day	0.027	gr/dscf @ 8% O2	ESP	92.9
Leaf River Forest	MS	2200-00005	14-Jul-92	No	6.40 MM lb BLS/day	0.04	gr/dscf @ 8% O2	—	—
Boise Cascade	AL	102-0001	01-Jul-92	Yes	32600 lb BLS/day	0.0210	gr/dscf @ 8% O2	ESP	99.7
James River Corp	WA	PSD-88-3	26-Sep-91	Yes	523 MMBtu/hr	0.033	gr/dscf @ 8% O2	ESP + H/R scrubber	99.5
Georgia-Pacific	FL	PSD-FL-171	12-Jun-91	No	—	0.033	gr/dscf @ 8% O2	ESP	—
Gulf States Paper	AL	105-0001	12-Mar-91	Yes	3.3 MM lb BLS/day	0.025	gr/dscf @ 8% O2	ESP	99.7
Chesapeake Corp	VA	40126	01-Mar-91	No	62.5 ton BLS/hr	0.030	gr/dscf @ 8% O2	ESP	99.8
Riverwood International	GA	2631-011-10630	21-Dec-90	Yes	3.50 MM lb BLS/day	0.027	gr/dscf @ 8% O2	ESP	99.9
Longview Fibre	WA	X81-10A	27-Jul-90	—	1100 ADP t/day	0.027	gr/dscf @ 8% O2	ESP	99.8
Alabama River Pulp	AL	106-0010	22-Jan-90	—	5.5 MM lb BLS/day	0.025	gr/dscf @ 8% O2	ESP	99.6
Great Southern Paper	GA	2361-049-10296	08-Dec-89	—	63.56 ton BLS/hr	46	lb/hr	ESP	99.6

(a) Indicates if emission unit subject to BACT was new construction (yes) or a modification (no)

Source: BACT/RACT/LAER Clearinghouse Database, Feb. 1995.

Table 6-3. Summary of Source Test Data From No. 4 Recovery Boiler, Georgia-Pacific Palatka Mill

		Particulate Matter		Nitrogen Dioxide		Carbon Monoxide		VOC		TRS	
Test Date	Run #	gr/dscf @8% O2	lb/hr	ppmvd @8% O2	lb/hr	ppmvd @8% O2	lb/hr	ppmvd @8% O2	lb/hr	ppmvd @8% O2	lb/hr
02/15/94	1	0.007	15.0	59	104	440	472	<3	<1.0	2.6	3.2
02/15/94	2	0.006	13.6	58	101	756	798	<5	<1.7	3.7	4.8
02/15/94	3	0.007	14.7	62	109	404	428	<2	<0.7	0.7	0.9
	Average	0.007	14.4	60	105	533	566	<3	<1.1	2.3	3.0
02/19/93	1	0.007	16.1								
02/19/93	2	0.006	12.1								
02/19/93	3	0.005	10.7								
	Average	0.006	12.9								
02/17/93	1			43	72	193	197	<10	<4.4	<0.2	<0.2
02/17/93	2			50	84	33	33	<10	<4.4	<0.3	<0.3
02/17/93	3			43	72	80	82	<10	<4.4	<0.3	<0.3
02/17/93	4			45	76	102	104	<10	<4.4	<0.3	<0.3
	Average										
03/11/92	1	0.029	65.2	61	121			8.1	4.0	2.3	3.4
03/11/92	2	0.026	55.5	65	125			7.1	3.6	4.2	5.9
03/11/92	3	0.035	77.9	67	128			4.2	2.1	1.9	2.6
	Average	0.030	66.2	65	125			6.5	3.2	2.8	4.0
Allowable Limit		0.033	83.2	100	210.6	800	1,025.4	--	54.6	11.4	17.8

Source: KBN, 1995.

Table 6-4. Summary of BACT Determinations for NOx Emissions From Recovery Boilers in Pulp Mills.

Company	State	Permit#	Permit Issue date	New Source? (a)	Throughput (Units)	Emission Limit	Control Equipment
Penntech Papers Inc.	PA	24-306-003	09-Dec-92	No	630.00 ADP t/day	110 ppmvd @ 8% O2	Design
Leaf River Forest	MS	2200-00005	14-Jul-92	No	6.40 MM lb BLS/day	110 ppmvd @ 8% O2	Combustion Control
Boise Cascade	AL		01-Jul-92	Yes	32600 lb BLS/day	115 ppmvd @ 8% O2	—
James River Corp	WA	PSD-88-3	26-Sep-91	Yes	523 MMBtu/hr	2.13 lb/ ADUT	—
Georgia-Pacific	FL	PSD-FL-171	12-Jun-91	No	—	100 ppmvd @ 8% O2	—
Leaf River Forest	MS	2200-00005	09-Apr-91	No	6.00 MM lb BLS/day	80 ppmvd @ 8% O2	—
Gulf States Paper	AL	105-0001	12-Mar-91	Yes	3.3 MM lb BLS/day	90 ppmvd @ 8% O2	—
Chesapeake Corp	VA	40126	01-Mar-91	No	62.5 T/H BLS	112 ppmvd @ 8% O2	—
International Paper	LA		24-Feb-91	No	1117 ADP t/day	100 ppmvd @ 8% O2	—
Williamette Industries	LA	PSD-LA-562	04-Feb-91	No	1400 ADP t/day	206.1 lb/hr	—
Riverwood International	GA	2631-011-10630	21-Dec-90	Yes	3.50 MM lb BLS/day	120 ppm	—
James River Pennington	AL	101-0001 X024	16-Aug-90	—	5.4 MM lb BLS/day	115 ppmvd @ 8% O2	—
Longview Fibre	WA	X81-10A	27-Jul-90	—	1100 ADP t/day	95 ppmvd @ 8% O2	—
Alabama River Pulp	AL	106-0010	22-Jan-90	—	5.5 MM lb BLS/day	75 ppmvd @ 8% O2	—
Great Southern Paper	GA	2361-049-10296	08-Dec-89	—	3.05 MM lb BLS/day	120 lb/MMBtu	—

(a) Indicates if emission unit subject to BACT was new construction (yes) or a modification (no)

Source: BACT/RACT/LAER Clearinghouse Database, Feb. 1995.

Table 6-5. Summary of BACT Determinations for CO Emissions From Recovery Boilers in Pulp Mills.

Company	State	Permit#	Permit Issue date	New Source? (a)	Throughput (Units)	Emission Limit	Control Equipment
Penntech Papers Inc.	PA	24-306-003	09-Dec-92	No	630.00 ADP t/day	300 ppmvd @ 8% O2	Design
Leaf River Forest	MS	2200-00005	14-Jul-92	No	6.40 MM lb BLS/day	300 ppmvd @ 8% O2	Combustion Control
James River Corp	WA	PSD-88-3	26-Sep-91	Yes	523 MMBtu/hr	2755 TPY	—
Georgia-Pacific	FL	PSD-FL-171	12-Jun-91	No	—	400 ppmvd @ 8% O2	Combustion Control
Leaf River Forest	MS	2200-00005	09-Apr-91	No	6.00 MM lb BLS/day	300 ppmvd @ 8% O2	—
Gulf States Paper	AL	105-0001	12-Mar-91	Yes	3.3 MM lb BLS/day	300 ppmvd @ 8% O2	—
Chesapeake Corp	VA	40126	01-Mar-91	No	62.5 Tons/hr BLS	250 ppmvd @ 8% O2	—
International Paper	LA		24-Feb-91	No	1117 ADP t/day	250 ppmvd	—
Williamette Industries	LA	PSD-LA-562	04-Feb-91	No	1400 ADP t/day	350 lb/hr	—
Riverwood International	GA	2631-011-10630	21-Dec-90	Yes	3.50 MM lb BLS/day	146.5 lb/hr	—
Longview Fibre	WA	X81-10A	27-Jul-90	—	1100 ADP t/day	300 ppmvd @ 8% O2	—
Alabama River Pulp	AL	106-0010	22-Jan-90	—	5.5 MM lb BLS/day	200 ppmvd @ 8% O2	—
Great Southern Paper	GA	2361-049-10296	08-Dec-89	—	63.56 Tons/hr BLS	11 lb/ton ADP	—

(a) Indicates if emission unit subject to BACT was new construction (yes) or a modification (no)

Source: BACT/RACT/LAER Clearinghouse Database, Feb. 1995.

Table 6-6. Summary of BACT Determinations for VOC Emissions From Recovery Boilers in Pulp Mills.

Company	State	Permit#	Permit Issue date	New Source? (a)	Throughput (Units)	Emission Limit
Penntech Papers Inc.	PA	24-306-003	09-Dec-92	No	630.00 ADP t/day	18.2 lb/hr
James River Corp	WA	PSD-88-3	26-Sep-91	Yes	523 MMBtu/hr	219 TPY
Georgia-Pacific	FL	PSD-FL-171	12-Jun-91	No	—	0.5200 lb/ ton BLS
Gulf States Paper	AL	105-0001	12-Mar-91	Yes	3.3 MM lb BLS/day	0.048 lb/MMBtu
Chesapeake Corp	VA	40126	01-Mar-91	No	62.5 Tons/hr BLS	0.048 lb/MMBtu
International Paper	LA		24-Feb-91	No	1117 ADP t/day	50.0 ppmv
Williamette Industries	LA	PSD-LA-562	04-Feb-91	No	1400 ADP t/day	116.6 lb/hr
Longview Fibre	WA	X81-10A	27-Jul-90	—	1100 ADP t/day	1 T/day
Alabama River Pulp	AL	106-0010	22-Jan-90	—	5.5 MM lb BLS/day	0.048 lb/MMBtu

Note: (a) Indicates if emission unit subject to BACT was new construction (yes) or a modification (no)

Source: BACT/RACT/LAER Clearinghouse Database, Feb. 1995.

Table 6-7. Summary of BACT Determinations for TRS Emissions From Recovery Boilers in Pulp Mills.

Company	State	Permit#	Permit Issue date	New Source? (a)	Throughput (Units)	Emission Limit	Control Equipment
La Pacific	CA	NAC-263	18-Oct-93	Yes	—	5.0 ppm	Process Design
Penntech Papers Inc.	PA	24-306-003	09-Dec-92	No	630.00 ADP t/day	5.0 ppmvd @ 8% O2	—
Leaf River Forest	MS	2200-00005	14-Jul-92	No	6.40 MM lb BLS/day	5.0 ppm @ 8% O2	Combustion Control
James River Corp	WA	PSD-88-3	26-Sep-91	Yes	523 MMBtu/hr	5.0 ppm @ 8% O2	Caustic Liqour Scrubber
Gulf States Paper	AL	105-0001	12-Mar-91	Yes	3.3 MM lb BLS/day	5.0 ppm @ 8% O2	—
Chesapeake Corp	VA	40126	01-Mar-91	No	62.5 Tons/hr BLS	5.0 ppm @ 8% O2	—
International Paper	LA		24-Feb-91	No	1117 ADP t/day	5.0 ppm @ 8% O2	—
Riverwood International	GA	2631-011-10630	21-Dec-90	Yes	3.50 MM lb BLS/day	5.0 ppm	—
Longview Fibre	WA	X81-10A	27-Jul-90	—	1100 ADP t/day	3.0 ppm @ 8% O2	—
Alabama River Pulp	AL	106-0010	22-Jan-90	—	5.5 MM lb BLS/day	5.0 ppm @ 8% O2	—
Great Southern Paper	GA	2361-049-10296	08-Dec-89	—	63.56 Tons/hr BLS	4.74 lb/hr	—

(a) Indicates if emission unit subject to BACT was new construction (yes) or a modification (no)

Source: BACT/RACT/LAER Clearinghouse Database, Feb. 1995.

7.0 ADDITIONAL IMPACT ANALYSIS

7.1 INTRODUCTION

G-P is proposing to modify its existing facility in Palatka, Florida. The facility is subject to the PSD new source review requirements for PM(TSP)/PM10, NO_x, CO, VOC, TRS, and Be. The additional impact analysis and the Class I area analysis address these pollutants.

The analysis addresses the potential impacts on vegetation, soils, and wildlife of the surrounding area and the nearby Class I area due to G-P's proposed modification. The nearest Class I area is the Okefenokee National Wilderness Area (NWA), located in the Okefenokee National Wildlife Refuge located approximately 111 kilometers (km) northwest of the G-P Palatka plant. The next closest Class I area to G-P is Wolf Island, located approximately 150 km from G-P. Due to the distance from G-P, the Okefenokee Class I area would potentially receive much higher impacts than Wolf Island. Therefore, only the Okefenokee NWA is addressed in this analysis.

The analysis will demonstrate that the increase in impacts due to the proposed increase in emissions is extremely low. Regardless of the existing conditions in the vicinity of the site or in the Class I areas, the proposed project will not cause any adverse impacts due to the predicted low impacts upon these areas.

7.2 SOIL, VEGETATION, AND AQRV ANALYSIS METHODOLOGY

In the foregoing analysis, the maximum air quality impacts predicted to occur in the vicinity of the G-P plant and in the Class I area due to the increase in emissions are used. The Industrial Source Complex Short-Term (ISCST) model (Version 93109) was used to compute both maximum concentration and total deposition. Maximum impacts in the vicinity of the G-P plant and in the Class I areas were predicted at the same receptor grids as discussed in Section 5.0. Meteorological data used in the ISCST2 consisted of the same 5-year record used for the AAQS and PSD impact assessment, which consists of surface observations from Jacksonville and upper-air data from Waycross for the years 1983 to 1987. Emissions from the G-P plant and stack and operating data are provided in Section 5.0. Information on particle sizes was obtained from AP-42 and was included in the deposition modeling. The particle size distribution data used for the modeling analysis for the G-P sources are presented in Attachment D.

The analysis involved predicting worst-case maximum short- and long-term concentrations of pollutants in the vicinity of the plant and in the Class I areas and comparing the maximum predicted concentrations to lowest observed effect levels for AQRVs or analogous organisms. In conducting the assessment, several assumptions were made as to how pollutants interact with the different matrices, i.e., vegetation, soils, wildlife, and aquatic environment.

A screening approach was used to evaluate potential effects which compared the maximum predicted ambient concentrations of air pollutants of concern with effect threshold limits for both vegetation and wildlife as reported in the scientific literature. A literature search was conducted which specifically addressed the effects of air contaminants on plant species reported to occur in the vicinity of the plant and the Class I area. It was recognized that effects threshold information is not available for all species found in the Okefenokee NWA, although studies have been performed on a few of the common species and on other similar species which can be used as models. In conducting the assessment, both direct (fumigation) and indirect (soil accumulation/ uptake) exposures were considered for flora, and direct exposure (inhalation) was considered for wildlife.

For particulate pollutants, the annual deposition amount (in g/m^2) due to the proposed increase in emissions was assumed to partition into the soil to a depth of 10 cm (USDA, 1984). For the Okefenokee Class I area, a bulk soil density of 0.65 g/cc was assumed (USDA, 1984); for the G-P plant area, a bulk soil density of 1.40 g/cc was assumed (USDA, 1985). From this soil concentration, it was assumed that equal partitioning would ensue into dry plant matter. These values are considered to be quite conservative due to the assumption that all of the elements would be 100 percent available for plant uptake and would be internalized in plant tissue at a concentration equal to that of the soil.

7.3 IMPACTS TO SOILS, VEGETATION, AND VISIBILITY IN VICINITY OF G-P PLANT

7.3.1 PREDICTED AIR QUALITY IMPACTS

The results of the ambient air quality modeling for the proposed G-P modfication, in the vicinity of the plant, are presented in Table 7-1. Maximum predicted concentrations are presented for the annual, 24-hour, 8-hour, 3-hour, and 1-hour averaging times.

7.3.2 IMPACTS TO SOILS

Air contaminants can affect soils through fumigation by gaseous forms, accumulation of compounds transformed from the gaseous state, or by the direct deposition of particulate matter or particulate matter to which certain contaminants are absorbed. The soils in the vicinity of the G-P plant are generally a combination of sandy, poorly drained soils classified as Myakka-Zolfo-Immokalee and some organic soils classified as Terra Cecia-Shenks (USDA, 1985).

Beryllium toxicity in plants in the form of reduced growth has been reported in nutrient cultures of >2 ppm Be content. Beryllium concentrations in soils are reported to range from <1 to 7 ppm. However, only a small amount is actually available for absorption by plants (Gough *et al.*, 1979).

The maximum predicted Be deposition near the G-P site due to the proposed modification is 0.17 g/m^2. The maximum soil concentration is 1.96×10^{-5} ug Be/g. This predicted value is well below the threshold for plant effects.

7.3.3 IMPACTS TO VEGETATION

Vegetation Analysis

In general, the effects of air pollutants on vegetation occur primarily from SO_2, NO_2, O_3, and PM. Effects from minor air contaminants such as fluoride, chlorine, hydrogen chloride, ethylene, ammonia, hydrogen sulfide, CO, and pesticides have also been reported in the literature. The effects of air pollutants are dependent both on the concentration of the contaminant and the duration of the exposure. The term "injury," as opposed to damage, is commonly used to describe all plant responses to air contaminants and will be used in the context of this analysis. Air contaminants are thought to interact primarily with plant foliage which is considered to be the major pathway of exposure. For purposes of this analysis, it was assumed that 100 percent of each air contaminant of concern is accessible to the plants.

Injury to vegetation from exposure to various levels or air contaminants can be termed acute, physiological, or chronic. Acute injury occurs as a result of a short-term exposure to a high contaminant concentration and is typically manifested by visible injury symptoms ranging from chlorosis (discoloration) to necrosis (dead areas). Physiological or latent injury occurs as the result of a long-term exposure to contaminant concentrations below that which results in acute

injury symptoms. Chronic injury results from repeated exposure to low concentrations over extended periods of time, often without any visible symptoms, but with some effect on the overall growth and productivity of the plant. In this assessment, 100 percent of the particular air pollutant in the ambient air was assumed to interact with the vegetation. This is a conservative approach.

Nitrogen Dioxide

A review of the literature indicates great variability in NO_2 dose-response relationship in vegetation. Acute NO_2 injury symptoms are manifested as water-soaked lesions, which first appear on the upper surface, followed by rapid tissue collapse. Low-concentration, long-term exposures as frequently encountered in polluted atmospheres often do not induce the lesions associated with acute exposures but may still result in some growth suppression. Citrus trees exposed to 470 $\mu g/m^3$ of NO_2 for 290 days showed injury (Thompson *et al.*, 1970). Sphagnum exposed for 18 months at an average concentration of 11.7 $\mu g/m^3$ showed reduced growth (Press *et al.*, 1986)

The maximum ground-level NO_2 concentrations (1-hour and annual average) predicted to occur in the vicinity of the plant during the operation of the proposed project are 36.7 $\mu g/m^3$ and 0.61 $\mu g/m^3$, respectively (Table 7-1). These maximum predicted concentrations are well below reported effects levels.

Carbon Monoxide

Concentrations of CO even in polluted atmospheres are not detrimental to vegetation (EPA, 1976). CO has not been found to produce detrimental effects on plants at concentrations below 100 ppm (114,500 $\mu g/m^3$) for exposures from 1 to 3 weeks (EPA, 1976). The predicted maximum concentrations shown in Table 7-1 are well below levels reported to cause detrimental effects.

Particulates

The maximum predicted concentrations of PM (in the form of TSP) due to the proposed project are 4.61 $\mu g/m^3$ for 24-hour and 0.51 $\mu g/m^3$ annual average (see Table 7-1). By comparing predicted concentrations with the few injury threshold values reported in the literature (Darley,

1966; Krause and Kaiser, 1977), no potential effects on vegetation are predicted, because these concentrations are below the values reported to adversely affect plants.

7.3.4 IMPACTS UPON VISIBILITY

All air emission sources affected by the proposed modification are existing sources. No increase in permitted emissions is requested, although actual emissions are predicted to increase slightly. All these sources are in compliance with opacity regulations and should remain in compliance after the modification. As a result, no adverse impacts upon visibility are expected.

7.3.5 IMPACTS DUE TO ASSOCIATED POPULATION GROWTH

There will be a small, temporary increase in the number of workers during the construction period. There will be no significant increase in permanent employment at G-P as a result of the proposed project. Therefore, there will be no anticipated permanent impacts on air quality caused by associated population growth.

7.4 CLASS I AREA IMPACT ANALYSIS

7.4.1 DEFINITION OF AQRVS AND CRITERIA APPLIED TO OKEFENOKEE NWA

The Okefenokee NWA is classified as a Class I area by the U.S. Fish and Wildlife Service (USFWS) for purposes of PSD new source review. The U.S. Department of the Interior (National Park Service) in 1978 administratively defined air quality related values (AQRVs) for such areas as being:

> All those values possessed by an area except those that are not affected by changes in air quality and include all those assets of an area whose vitality, significance, or integrity is dependent in some way upon the air environment. These values include visibility and those scenic, cultural, biological, and recreational resources of an area that are affected by air quality.
>
> Important attributes of an area are those values or assets that make an area significant as a natural monument, preserve, or primitive area. They are the assets that are to be preserved if the area is to achieve the purposes for which it was set aside. (Federal Register, 1978)

7.4.2 AQRVS OF OKEFENOKEE NWA

To date, specific AQRVs other than visibility have not been defined by USFWS for the Okefenokee NWA (Ellen Porter, USFWS, Denver, CO, pers. comm., 1994). For this analysis, therefore, the AQRVs of this Class I area are defined as those important attributes of the

Okefenokee NWA which are dependent upon the air environment, including water, soil, vegetation resources, and wildlife resources. Important aquatic, vegetation, and wildlife attributes of these areas which make the Okefenokee NWA significant are presented in Table 7-2. All terrestrial vegetation, including threatened and endangered plant species of the Okefenokee NWA, are dependent upon the air environment and are considered AQRVs. Some terrestrial wildlife and endangered and threatened wildlife are also considered AQRVs for Okefenokee NWA . Threatened and endangered species associated with terrestrial habitats of the Okefenokee NWA are listed in Table 7-3.

7.4.3 REPORTED AIR QUALITY EFFECTS ON OKEFENOKEE NWA

No ecological effects to the attributes of the Okefenokee NWA have been reported to date (Sara Brown, USFWS, Folkston, GA; Robin Goodlow, USFWS, Brunswick, GA; and Ellen Porter, USFWS, Denver, CO, pers. comm., 1994). In 1991, a lichen study was completed (Wetmore, 1991) which did not find any damage to lichens from SO_2. The trace element content including Cd, Cr, and Pb in six species of lichens and Spanish moss were considered normal. The range in concentrations of these trace metals found in lichens and Spanish moss from the Okefenokee National Wildlife Refuge is presented in Table 7-4. In addition, the general concern regarding potential effects of mercury (Hg) were raised. (Ellen Porter, USFWS, Denver, CO, pers. comm., 1994). The reported general effects on aquatic, vegetation, and wildlife resources from significant degradation in air quality are described in Table 7-5.

7.4.4 PREDICTED AIR QUALITY IMPACTS IN THE CLASS I AREA

The results of the air quality modeling for the increase in emissions due to the G-P modification are presented in Table 7-6. Predicted air quality concentrations are presented for Okefenokee NWA for the annual, 24-hour, 8-hour, 3-hour, and 1-hour averaging times. These concentrations reflect only the increase in emissions due to the proposed project.

7.4.5 VEGETATION AQRVS ANALYSIS

In general, the effects of air pollutants on vegetation occur primarily from SO_2, NO_2, O_3, and PM. Effects from minor air contaminants such as fluoride, chlorine, hydrogen chloride, ethylene, ammonia, hydrogen sulfide, CO, and pesticides have been also reported in the literature. The effects of air pollutants are dependent both on the concentration of the contaminant and the duration of the exposure. The term "injury," as opposed to damage, is commonly used to

describe all plant responses to air contaminants and will be used in the context of this analysis. Air contaminants are thought to interact primarily with plant foliage which is considered to be the major pathway of exposure. For purposes of this analysis, it was assumed that 100 percent of each air contaminant of concern is accessible to the plants.

Injury to vegetation from exposure to various levels or air contaminants can be termed acute, physiological, or chronic. Acute injury occurs as a result of a short-term exposure to a high contaminant concentration and is typically manifested by visible injury symptoms ranging from chlorosis (discoloration) to necrosis (dead areas). Physiological or latent injury occurs as the result of a long-term exposure to contaminant concentrations below that which results in acute injury symptoms. Chronic injury results from repeated exposure to low concentrations over extended periods of time, often without any visible symptoms, but with some effect on the overall growth and productivity of the plant. In this assessment, 100 percent of the particular air pollutant in the ambient air was assumed to interact with the vegetation. This is a conservative approach.

Nitrogen Dioxide

A review of the literature indicates great variability in NO_x dose-response relationship in vegetation. Acute NO_2 injury symptoms are manifested as water-soaked lesions, which first appear on the upper surface, followed by rapid tissue collapse. Low-concentration, long-term exposures as frequently encountered in polluted atmospheres often do not induce the lesions associated with acute exposures but may still result in some growth suppression. Citrus trees exposed to 470 $\mu g/m^3$ for 290 days showed injury (Thompson *et al.*, 1970). Sphagnum moss exposed for 18 months at an average concentration of 11.7 $\mu g/m^3$ showed reduced growth (Press *et al.*, 1986).

The maximum ground-level NO_2 concentrations (1-hour and annual average) predicted to occur at the Class I area boundary due to the increase in emissions are 2.30 and 0.01 $\mu g/m^3$ respectively. These values are well below reported effect concentrations and no effects are predicted to occur.

Carbon Monoxide

Concentrations of CO even in polluted atmospheres are not detrimental to vegetation (EPA, 1976). CO has not been found to produce detrimental effects on plants at concentrations below

100 ppm (114,500 $\mu g/m^3$) for exposures from 1 to 3 weeks (EPA, 1976). The predicted increases in concentrations (Table 7-6) at the Class I area are well below values reported to cause detrimental effects.

Particulates

The maximum predicted increase in annual concentrations of PM (in the form of TSP) from the proposed project is 0.0047 $\mu g/m^3$ for Okefenokee NWA. No potential effects on vegetation are predicted, because these concentration are below the values reported to adversely affect plants (Darley, 1966; Krause and Kaiser, 1977).

7.4.6 SOILS AQRV ANALYSIS

Air contaminants can affect soils through fumigation by gaseous forms, accumulation of compounds transformed from the gaseous state, or by the direct deposition of particulate matter or particulate matter to which certain contaminants are absorbed. Gaseous fumigation of soils does not directly affect the soil but rather the organisms found in the soil. Concentrations several orders of magnitude higher than the predicted value are required before any adverse effects from fumigation are observed. It is more likely that effects on soils and the organisms (plants and animals) found in the soils could occur from the deposition of trace elements over the life of the project. Thus, this analysis of effects on soils specifically addresses the deposition of trace elements and potential pathways for movements into the vegetation.

Beryllium toxicity in plants in the form of reduced growth has been reported in nutrient cultures of >2 ppm Be content. Beryllium concentrations in soils are reported to range from <1 to 7 ppm. However, only a small amount is actually available for absorption by plants (Gough *et al.*, 1979). The maximum predicted deposition at the Class I Area due to the proposed project is $< 1 \times 10^{-6}$ g/m^2. This deposition is consider negligible, and no effects are predicted.

7.4.7 WILDLIFE AQRV ANALYSIS

Nitrogen Dioxide and Particulate Matter

The predicted NO_2 and particulate concentrations are also well below the lowest observed effects levels in animals (Table 7-7) poses no risk to wildlife AQRVs in the Class I area. Because predicted levels are below those known to cause effects to vegetation, there is also no risk to their habitat.

7.4.8 VISIBILITY IMPACTS

The visibility impacts of the proposed project's emission increase only are provided in Table 7-8. The impacts due to the total emissions from the affected emission units are provided in Table 7-9. The modeling results indicate that the maximum visibility impacts caused by either the proposed modification only or the total emissions do not exceed the screening criteria inside or outside the Class I area. As a result, the proposed project is predicted to have no adverse effects to visibility in the Class I area.

7.4.9 SUMMARY

In summary, it is apparent that very large margins of safety exist for all matrices examined with respect to the effects of the predicted increase in emissions on the Class I areas. No significant adverse effects will occur to the AQRVs in the Okefenokee NWA due to the modification of the G-P plant.

Table 7-1. Maximum Predicted Ambient Air Quality Concentrations From the Proposed Mofication Only in the Vicinity of the Georgia-Pacific Plant

Averaging Time	Concentration ($\mu g/m^3$)		
	NO_2	CO	PM
Highest 1-hour	36.7	100.74	—
Highest 3-hour	24.4	45.8	—
Highest 8-hour	—	26.6	—
Highest 24-hour	—	—	4.61
Annual	0.61	—	0.51

Table 7-2. Important Aquatic, Vegetational, and Wildlife Resource Attributes or AQRVs of Okefenokee NWA Dependent Upon the Air Environment

Attribute	Location
Aquatic	
Blackwater rivers, ponds, sloughs	Okefenokee NWA
Vegetation	
Ecological communities including:	
Cypress wetlands	Okefenokee NWA
Wet flatwoods	Okefenokee NWA
Bay-shrub bogs	Okefenokee NWA
Basin marshes	Okefenokee NWA
Mixed hardwood swamp	Okefenokee NWA
Unique ecological communities	
Old-growth cypress swamp	Okefenokee NWA
Unique plants	
Threatened and endangered species	Okefenokee NWA
Ephiphytic plants including orchids and bromeliads	Okefenokee NWA
Air quality bioindicators - lichens	Okefenokee NWA
Wildlife	
Birds, mammals, reptiles and amphibians	Okefenokee NWA
Threatened and endangered species (see Table 7-3)	Okefenokee NWA

Note: NWA = National Wilderness Area.

Source: KBN, 1995.

Table 7-3. Federal and State Listed Endangered and Threatened Animals in the Okefenokee NWA Dependent Upon the Air Environment

Species	Designated Status	
	State[a]	USFWS[b]
Florida Black Bear	S4	C2
Arctic Peregrine Falcon	S1	-
Bachman's Warbler	E	E
Bald Eagle	E	E
Piping Plover	S1/S2	T
Red-Cockaded Woodpecker	E	E
Wood Stork	S2	E
American Alligator	-	T(S/A)
Eastern Indigo Snake	S3	T

[a] State (Georgia) Status:
E = endangered.
S1 = regionally endangered.
S2 = regionally threatened.
S3 = regionally of concern.
S4 = regionally apparently secure.

[b] USFWS Status:
C2 = candidate for listing, with some evidence of vulnerability, but for which not enough data exist to support listing.
E = endangered.
T = threatened.
T(S/A) = threatened due to similarity of appearance.

Sources: U.S. Fish and Wildlife Service.
Georgia Freshwater Wetlands and Heritage Inventory Program.

Table 7-4. Reported Representative Trace Metal Concentrations in Lichens and Spanish Moss in Okefenokee National Wildlife Refuge

Species	Concentration (ppm dry weight)					
	Cd	Cr	Pb	Mn	Cu	Zn
Lichens						
Usnea baileyi[a]	ND — 0.3	ND — 0.3	2.6 — 4.9	12.3 — 50.7	1.0 — 1.6	16.3 — 29.7
Usnea mutabilis[a]	ND	0.2	4.9	55.1	1.8	20.7
Parmelia rampoddensis[a]	ND — 0.6	0.3 — 0.6	4.7 — 10.0	8.0 — 88.0	1.4 — 3.2	21.9 — 31.6
Parmelia tinctorum[a]	0.5	0.5	7.3	25.0	2.6	25.9
Cladina substygia[b]	ND	0.2 — 0.6	1.9 — 2.3	7.4 — 12.0	0.9 — 1.1	9.1 — 10.7
Cladina leporina[b]	ND	1.4 — 1.6	7.5 — 7.8	7.9 — 9.2	1.4 — 1.5	11.4 — 11.6
Spanish Moss						
Tillandsia usneoides	ND — 0.5	0.7 — 1.0	4.6 — 8.4	37.3 — 284.3	2.4 — 3.7	17.3 — 31.4

[a] Range in means.
[b] Range in single values.

Source: Wetmore, 1991.

Table 7-5. Reported General Effects on Aquatic, Vegetation, and Wildlife Resources From Significant Degradation in Air Quality

Attribute	Potential Effects and Associated Air Quality Change
Aquatic Resources	Acidification of waters and subsequent changes (loss and replacement) of ecological components; sensitive systems have low buffering capacity
Vegetation Resources	Most common effects include reduced growth, injury, and species replacement; species show specific sensitivity
Wildlife Resources	Potential effects include avoidance and increased body burdens of contaminants

Source: KBN, 1995.

Table 7-6. Predicted Increase in Maximum Concentrations at the Okefenokee Class I Area Due to the Proposed Modification

Averaging Time	Concentration ($\mu g/m^3$)		
	NO_2	CO	PM
Highest 1-hour	2.30	7.62	—
Highest 3-hour	1.14	4.23	—
Highest 8-hour	—	2.12	—
Highest 24-hour	—	—	0.105
Annual	0.01	—	0.0047

Table 7-7. Lowest Observed Effect Levels of NO_2 and Particulates in Animals

Pollutant	Reported Effect	Concentration ($\mu g/m^3$)	Exposure
Nitrogen Dioxide	Respiratory stress in mice	1,917	3 hours
	Respiratory stress in guinea pigs	95 to 950	8 hr/day for[a] 122 days
Particulates	Respiratory stress in rats	120 (PbO_3)	continually for 2 months
	Reduced defenses against respiratory disease in rats	100 ($NiCl_2$)	2 hours

[a] Used to compare as a range between 3-hour and 24-hour averaging times.
[b] Used to compare with annual averaging times.

Source: Adapted from Newman (1980) and Newman and Schreiber (1988).

TABLE 7-8
Visual Effects Screening Analysis for
Source: GA-PACIFIC PALATKA PROJECT ONLY
Class I Area: OKEFENOKEE NWR

*** Level-1 Screening ***

Input Emissions for

Particulates	8.63	G	/S
NOx (as NO2)	18.01	G	/S
Primary NO2	.00	G	/S
Soot	.00	G	/S
Primary SO4	.00	G	/S

**** Default Particle Characteristics Assumed

Transport Scenario Specifications:

Background Ozone:	.04 ppm
Background Visual Range:	40.00 km
Source-Observer Distance:	111.00 km
Min. Source-Class I Distance:	111.00 km
Max. Source-Class I Distance:	150.00 km
Plume-Source-Observer Angle:	11.25 degrees
Stability:	6
Wind Speed:	1.00 m/s

R E S U L T S

Asterisks (*) indicate plume impacts that exceed screening criteria

Maximum Visual Impacts INSIDE Class I Area
Screening Criteria ARE NOT Exceeded

					Delta E		Contrast	
Backgrnd	Theta	Azi	Distance	Alpha	Crit	Plume	Crit	Plume
SKY	10.	84.	111.0	84.	2.00	.152	.05	.001
SKY	140.	84.	111.0	84.	2.00	.029	.05	-.001
TERRAIN	10.	84.	111.0	84.	2.00	.026	.05	.000
TERRAIN	140.	84.	111.0	84.	2.00	.007	.05	.000

Maximum Visual Impacts OUTSIDE Class I Area
Screening Criteria ARE NOT Exceeded

					Delta E		Contrast	
Backgrnd	Theta	Azi	Distance	Alpha	Crit	Plume	Crit	Plume
SKY	10.	65.	103.6	104.	2.00	.160	.05	.001
SKY	140.	65.	103.6	104.	2.00	.030	.05	-.001
TERRAIN	10.	60.	101.5	109.	2.00	.034	.05	.000
TERRAIN	140.	60.	101.5	109.	2.00	.009	.05	.000

TABLE 7-9
Visual Effects Screening Analysis for
Source: GA-PACIFIC PALATKA TOTAL PLANT
Class I Area: OKEFENOKEE NWR

*** Level-1 Screening ***

Input Emissions for

Particulates	16.04	G	/S
NOx (as NO2)	35.07	G	/S
Primary NO2	.00	G	/S
Soot	.00	G	/S
Primary SO4	.00	G	/S

**** Default Particle Characteristics Assumed

Transport Scenario Specifications:

Background Ozone:	.04 ppm
Background Visual Range:	40.00 km
Source-Observer Distance:	111.00 km
Min. Source-Class I Distance:	111.00 km
Max. Source-Class I Distance:	150.00 km
Plume-Source-Observer Angle:	11.25 degrees
Stability: 6	
Wind Speed: 1.00 m/s	

R E S U L T S

Asterisks (*) indicate plume impacts that exceed screening criteria

Maximum Visual Impacts INSIDE Class I Area
Screening Criteria ARE NOT Exceeded

					Delta E		Contrast	
Backgrnd	Theta	Azi	Distance	Alpha	Crit	Plume	Crit	Plume
SKY	10.	84.	111.0	84.	2.00	.283	.05	.002
SKY	140.	84.	111.0	84.	2.00	.055	.05	-.002
TERRAIN	10.	84.	111.0	84.	2.00	.048	.05	.000
TERRAIN	140.	84.	111.0	84.	2.00	.012	.05	.000

Maximum Visual Impacts OUTSIDE Class I Area
Screening Criteria ARE NOT Exceeded

					Delta E		Contrast	
Backgrnd	Theta	Azi	Distance	Alpha	Crit	Plume	Crit	Plume
SKY	10.	70.	105.5	99.	2.00	.297	.05	.002
SKY	140.	70.	105.5	99.	2.00	.057	.05	-.003
TERRAIN	10.	60.	101.5	109.	2.00	.063	.05	.001
TERRAIN	140.	60.	101.5	109.	2.00	.016	.05	.001

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ATTACHMENT A

CURRENT ACTUAL AND FUTURE MAXIMUM EMISSIONS

NO. 4 RECOVERY BOILER

NO. 4 SMELT TANK

NO. 4 LIME KILN

TRS INCINERATOR

TALL OIL PLANT

CURRENT ACTUAL EMISSIONS

14379C
03/07/95

Table A–1. Current Actual Emissions from No. 4 Lime Kiln, Georgia–Pacific, Palatka Operations

Regulated Pollutant	No. 4 Lime Kiln (No. 6 Fuel Oil Fired) Emission Factor	Reference	Activity Factor[a]	Annual Emissions (TPY)
Particulate (TSP)	20 lb/hr	1	7,996 hr/yr	80.0
Particulate (PM10)	20 lb/hr	1	7,996 hr/yr	80.0
Sulfur dioxide	0.80 lb/hr	1	7,996 hr/yr	3.20
Nitrogen oxides	31.4 lb/hr	1	7,996 hr/yr	125.5
Carbon monoxide	2.4 lb/hr	1	7,996 hr/yr	9.60
Volatile Organic Compds.	0.8 lb/hr	1	7,996 hr/yr	3.20
Sulfuric acid mist	4 % of SO2 as SO3	2	--	0.16
Total reduced sulfur	1.1 lb/hr	3	7,996 hr/yr	4.40
Lead	530 lb/MMton CaO	4	128,000 TPY CaO	0.034
Mercury	5.8 lb/MMton CaO	4	128,000 TPY CaO	0.00037
Beryllium	23 lb/MMton CaO	4	128,000 TPY CaO	0.0015
Fluorides	-- --	--	--	--
Asbestos	-- --	--	--	--
Vinyl chloride	-- --	--	--	--

[a] Activity factor based on average of 1993 and 1994 operation.

References

1. Based on average of stack test results from 2/17/94, 2/20/93 and 2/4/92.
2. AP–42: Compilation of Air Pollutant Emission Factors, Table 1.3–2: SO3 is 4% of SO2 emissions.
3. From continuous TRS monitor, average of 5.6 ppm during 1993–1994 and permit limit (20 ppm = 4.0 lb/hr).
4. NCASI Technical Bulletin No. 650, June 1993. Data for lime kiln burning oil and gas with scrubber control.

Table A–2. Current Actual Emissions from No. 4 Recovery Boiler, Georgia–Pacific, Palatka Operations

	No. 4 Recovery Boiler			
Regulated Pollutant	Emission Factor	Reference	Activity Factor[a]	Annual Emissions (TPY)
Particulate (TSP)	31.2 lb/hr	1	8,061 hr/yr	125.8
Particulate (PM10)	31.2 lb/hr	1	8,061 hr/yr	125.8
Sulfur dioxide	15 lb/hr	2	8,061 hr/yr	58.8
Nitrogen oxides	101.8 lb/hr	1	8,061 hr/yr	410.3
Carbon monoxide	309.2 lb/hr	1	8,061 hr/yr	1,246.2
Volatile Organic Compds.	2.9 lb/hr	1	8,061 hr/yr	11.7
Sulfuric acid mist	1.9 lb/hr	1	8,061 hr/yr	7.66
Total reduced sulfur	3.3 lb/hr	3	8,061 hr/yr	13.3
Lead	16 lb/10^{12} Btu	4	8.74 10^{12} Btu/yr	0.070
Mercury	7 lb/10^{12} Btu	4	8.74 10^{12} Btu/yr	0.031
Beryllium	0.5 lb/10^{12} Btu	4	8.74 10^{12} Btu/yr	0.0022
Fluorides	ND	5	--	--
Asbestos	--	--	--	--
Vinyl Chloride	--	--	--	--

[a] Activity factor based on average of 1993 and 1994 operation.
ND= Non–detectable

References

1. Based on average of stack test results from 1992, 1993 and 1994.
2. From continuous SO2 monitor, avg. of 10.2 ppm during 1993 and 1994, and permit limit (75 ppmvd = 109.9 lb.hr)
3. From continuous TRS monitor, average of 2.1 ppm during 1993–1994, and permit limit (11.4 ppm = 17.8 lb/hr).
4. NCASI Bulletin No. 650, Table 11ED, non–direct contact evaporator.
5. From "Application of Combustion Modifications to Industrial Combustion Equipment" EPA–600/7–79–015a; one test from recovery boiler.

Table A–3. Current Actual Emissions from No. 4 Smelt Dissolving Tank, Georgia–Pacific, Palatka Operations

Regulated Pollutant	No. 4 Smelt Dissolving Tank			
	Emission Factor	Reference	Activity Factor[a]	Annual Emissions (TPY)
Particulate (TSP)	7.1 lb/hr	1	8,061 hr/yr	28.6
Particulate (PM10)	7.1 lb/hr	1	8,061 hr/yr	28.6
Sulfur dioxide	0.075 lb/ton BLS	2	742,500 tons BLS/yr	27.8
Nitrogen oxides	0.15 lb/ton BLS	2	742,500 tons BLS/yr	55.7
Carbon monoxide	--	--	--	--
Volatile Organic Compds.	0.192 lb/ton BLS	2	742,500 tons BLS/yr	71.3
Sulfuric acid mist	4 % of SO2 as SO3	3	--	1.36
Total reduced sulfur	1.2 lb/hr	1	8,061 hr/yr	4.84
Lead	45 lb/MMton BLS	4	742,500 tons BLS/yr	0.017
Mercury	0.18 lb/MMton BLS	4	742,500 tons BLS/yr	6.68E–05
Beryllium	0.14 lb/MMton BLS	4	742,500 tons BLS/yr	5.20E–05
Fluorides	--	--	--	--
Asbestos	--	--	--	--
Vinyl Chloride	--	--	--	--

[a] Activity factor based on average of 1993 and 1994 operation.

References

1. Based on average of stack test results from 1992, 1993 and 1994.
2. From NCASI Technical Bulletin No. 646 (February 1993), Tables 16, 17 and 18.
3. AP–42: Compilation of Air Pollutant Emission Factors, Table 1.3–2: SO3 is 4% of SO2 emissions.
4. From NCASI Technical Bulletin No. 650 (June 1993), Table 14B.

Table A–4. Current Actual Emissions from Tall Oil Plant, Georgia–Pacific, Palatka Operations

Regulated Pollutant	Tall Oil Plant			
	Emission Factor	Reference	Activity Factor[a]	Annual Emissions (TPY)
Particulate (TSP)	--	--	--	--
Particulate (PM10)	--	--	--	--
Sulfur dioxide	--	--	--	--
Nitrogen oxides	--	--	--	--
Carbon monoxide	--	--	--	--
Volatile Organic Compds.	2.9 lb/ton CTO	1	16,174 tons CTO/yr	23.5
Sulfuric acid mist	--	--	--	--
Total reduced sulfur	0.04 lb/ton CTO	2	16,174 tons CTO/yr	0.32
Lead	--	--	--	--
Mercury	--	--	--	--
Beryllium	--	--	--	--
Fluorides	--	--	--	--
Asbestos	--	--	--	--
Vinyl Chloride	--	--	--	--

[a] Activity factor based on average of 1993 and 1994 operation.
CTO= Crude Tall Oil

References

1. Emission factor from NCASI Technical Bulletin 677 (September 1994), Table XI. A. 3.
2. Based on stack test result of 7/23/92.

Table A–5. Current Actual Emissions from TRS Incinerator, Georgia–Pacific, Palatka Operations

	TRS Incinerator (Natural Gas Fired)				TRS Incinerator (Methanol Burning)				
Regulated Pollutant	Emission Factor	Reference	Activity Factor[a]	Annual Emissions (TPY)	Emission Factor	Reference	Activity Factor[a]	Annual Emissions (TPY)	Total Annual Emissions (TPY)
Particulate (TSP)	5.3 lb/hr	1	8,760 hr/yr	23.2					23.2
Particulate (PM10)	5.3 lb/hr	1	8,760 hr/yr	23.2					23.2
Sulfur dioxide	488 lb/hr	4	8,760 hr/yr	2,137.4					2,137.4
Nitrogen oxides	100 lb/MMscf gas	2	18.3 $MMft^3/yr$	0.92	14 lb/1000 gal	3	120 Mgal/yr	0.84	1.76
Carbon monoxide	20 lb/MMscf gas	2	18.3 $MMft^3/yr$	0.18	1.9 lb/1000 gal	3	120 Mgal/yr	0.11	0.30
Volatile Org. Compds.	8 lb/MMscf gas	2	18.3 $MMft^3/yr$	0.07	0.5 lb/1000 gal	3	120 Mgal/yr	0.03	0.10
Sulfuric acid mist	4 % of SO2 as SO3	--	--	104.7					104.7
Total reduced sulfur	0 lb/hr	1	8,760 hr/yr	0.00					0.00
Lead	--	--	--	--					--
Mercury	--	--	--	--					--
Beryllium	--	--	--	--					--
Fluorides	--	--	--	--					--
Asbestos	--	--	--	--					--
Vinyl Chloride	--	--	--	--					--

[a] Activity factor based on average of 1993 and 1994 operation.

References

1. Based on average of stack test results from 1/25/90 and 2/18/94.
2. From AP–42, Table 1.4–1, 1.4–2, and 1.4–3, for natural gas burning.
3. Emission factors for methanol burning are not published in USEPA AP–42, therefore factors for propane were used to estimate the emissions (AP–42, Table 1.5–1).
4. Based on average of stack test results from 1/25/90 and 2/18/94.

FUTURE MAXIMUM EMISSIONS

I. No. 4 Recovery Boiler

A. PM(TSP), PM10, NO_x, CO, VOC, TRS, SO_2, and H_2SO_4 mist
Maximum emissions based on permitted limits as follows:

	lb/hr	TPY
PM/PM10	83.2	364.4
SO_2	109.9	481.4
NO_x	210.6	922.4
CO	1,025.4	2,245.6
VOC	54.6	239.1
TRS	17.8	78.0
H_2SO_4 mist	3.2	14.2

B. Trace Metals

1. Fluorides
From "Application of Combustion Modifications to Industrial Combustion Equipment," EPA-600/7-79-015a. Represents one test from recovery boiler. Fluorides were found to be below detectable limits.

2. Lead, Mercury, and Beryllium
From NCASI Technical Bulletin No. 650, Table 11 ED, for a non-direct contact evaporator recovery boiler. Emission factors are as follows:

Lead - 16 lb/10^{12} Btu
Mercury - 7 lb/10^{12} Btu
Beryllium - 0.5 lb/10^{12} Btu

Example: 1,277.7 MMBtu/hr x 16 lb/10^{12} Btu = 0.020 lb/hr = 0.090 TPY

II. No. 4 Smelt Dissolving Tank

A. PM(TSP), PM10, and TRS based on permitted allowable limits as follows:

	lb/hr	TPY
PM(TSP)/PM10	12.6	55.2
TRS	3.4	14.9

B. SO_2, NO_x, and VOC
Factors from NCASI Technical Bulletin No. 646, Table 16, 17, and 18.
Factors are: SO_2 - 0.075 lb/ton black liquor solids (BLS)
NO_x - 0.15 lb/ton BLS
VOC - 0.192 lb/ton BLS

Examples for SO_2: 210,000 lb/hr BLS x 0.075 lb/ton = 7.9 lb/hr = 34.5 TPY

C. Sulfuric Acid Mist
From AP-42, Table 1.3-2 for fossil fuel combustion, SO_3 emissions represent approximately 4% of SO_2 emissions.

From II.B above, SO_2 emissions = 7.9 lb/hr
Sulfuric Acid = 7.9 lb/hr x 0.04 x 98/80 = 0.39 lb/hr
= 1.70 TPY

(MW sulfuric acid = 98; MW SO_3 = 80)

D. Lead, Mercury, Beryllium
Factors based on NCASI Technical Bulletin No. 650, Table 14B.
Factors are: Lead - 45 lb/MM ton BLS
Mercury - 0.18 lb/MM ton BLS
Beryllium - 0.14 lb/MM ton BLS

Example calculation for lead:
210,000 lb/hr BLS = 105 TPH BLS
105 TPH x 45 lb/MM tons = 0.0047 lb/hr
= 0.021 TPY

III. No. 4 Lime Kiln

A. PM(TSP), PM10, SO_2, TRS, NO_x, CO, VOC from permitted allowables:

	lb/hr	TPY
PM/PM10	26.0	113.9
SO_2	10.9	47.7
TRS	4.0	17.5
NO_x	50.3	220.3
CO	7.3	32.0
VOC	17.2	75.3

B. Sulfuric Acid Mist
From AP-42, Table 1.3-2 for fossil fuel combustion, SO_3 emissions represent approximately 4% of SO_2 emissions.

From II.B above, SO_2 emissions = 10.9 lb/hr
Sulfuric Acid = 10.9 lb/hr x 0.04 x 98/80 = 0.53 lb/hr = 2.34 TPY

C. Lead, Mercury, Beryllium
Factors based on NCASI Technical Bulletin No. 650.
Factors are: Lead - 530 lb/MM ton CaO
Mercury - 5.8 lb/MM ton CaO
Beryllium - 23 lb/MM ton CaO

Example calculation for lead:
19.44 TPH CaO x 530 lb/MM tons = 0.010 lb/hr = 0.045 TPY

IV. Tall Oil Plant

A. VOC

Factor from NCASI Technical Bulletin No. 677, Table X1.A.3.
Factor is 2.9 lb/ton crude tall oil.
4.58 tons/hr x 2.9 lb/ton = 13.3 lb/hr
20,020 TPY x 2.9 lb/ton ÷ 2,000 lb/ton = 29.0 TPY

B. TRS

Emissions based on permit allowable of 0.23 lb/hr and 0.50 TPY.

V. TRS Incinerator

A. PM(TSP)/PM10 and TRS

Emissions based on permitted allowables:
PM(TSP)/PM10 - 5.5 lb/hr, 24.1 TPY
TRS - 0.12 lb/hr, 0.53 TPY

B. SO_2

Maximum 3-hr emissions based upon permit allowable of 1,200 lb/hr.
Maximum 24-hr emissions based on permit application for TRS incinerator, which showed 784 lb/hr.
Maximum annual emissions based upon average of 388 lb/hr or 1,699.4 TPY.
This represents approximately 50% removal of TRS by the TRS scrubber prior to incineration.

C. NO_x, CO, VOC

Emissions based AP-42 factors for natural gas and methanol burning.

D. Sulfuric Acid Mist

As for RB4, SDT4, etc., sulfuric acid mist based on 4% of SO_2 as SO_3, and converting to H_2SO_4.

ATTACHMENT B

DESIGN INFORMATION FOR NEW TRS SCRUBBER

TRS Scrubber Design Data

Scrubber Type: Packed Tower

Scrubber Dimensions: 36 ft diameter with 14 feet packing depth

Construction: Stainless steel

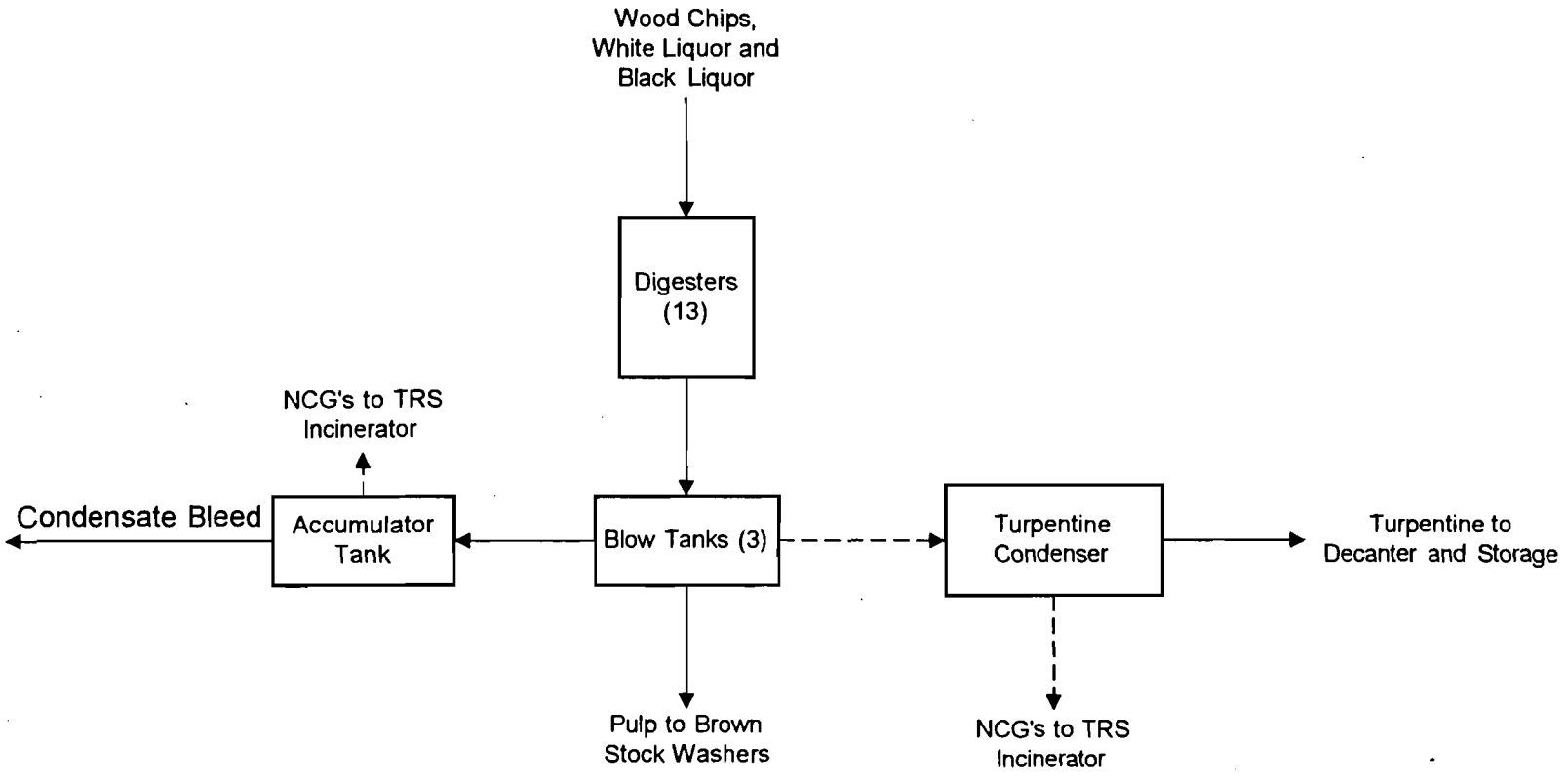
NCG Flow to Scrubber: 1,430 acfm @ 130°F

Scrubbing Liquor Flow Rate: 120 gpm (based on white liquor)

TRS Removal Efficiency: 50%

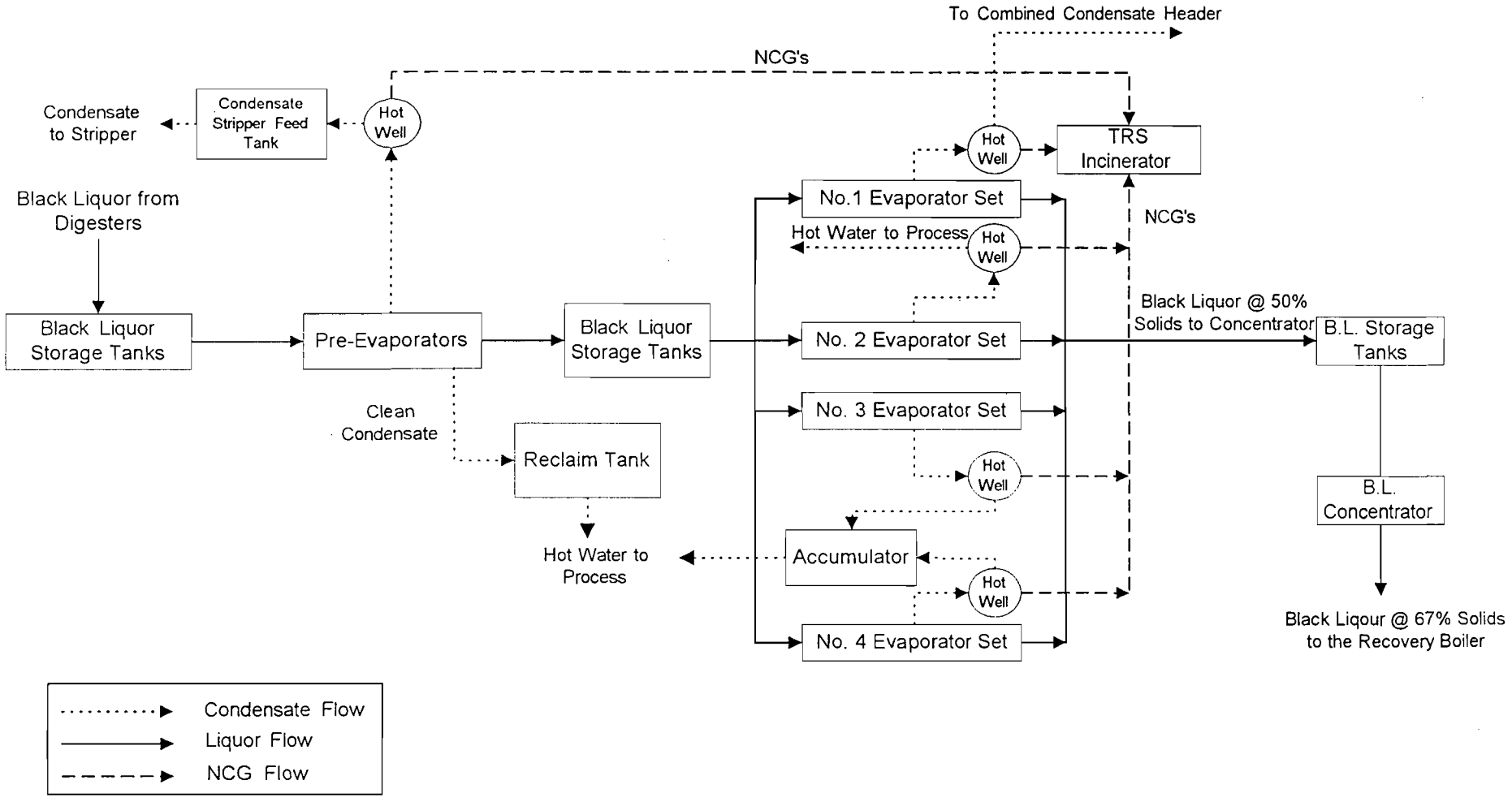
ATTACHMENT C

EMISSION UNIT FLOW DIAGRAMS



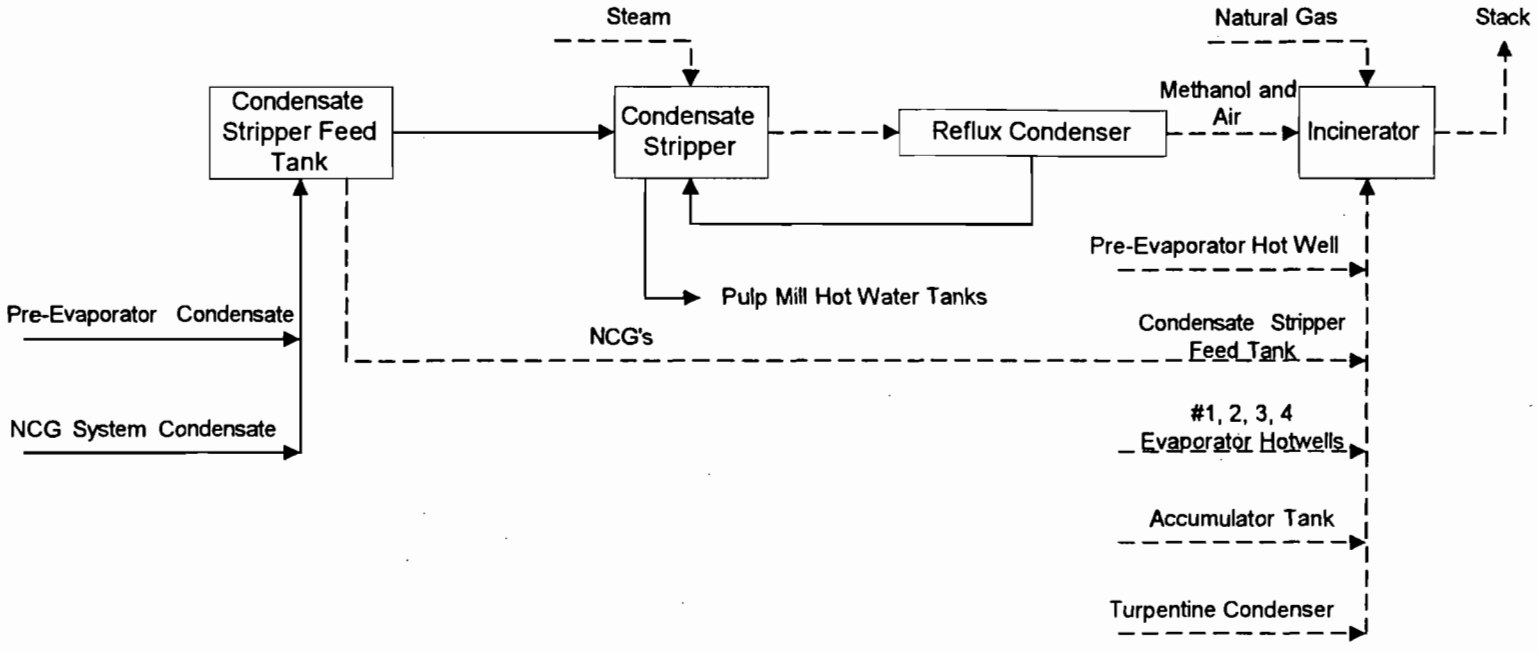
Flow Diagram of Digester System for Georgia Pacific

Process Area:	Chemical Recovery	Georgia Pacific	Revision: #3	File Name:NCG1.vsd
Emission Unit:	Digesters	Palatka	Date: 2/14	KBN Engineering



Flow Diagram of Multiple Effect Evaporator System, Georgia-Pacific Palatka Mill

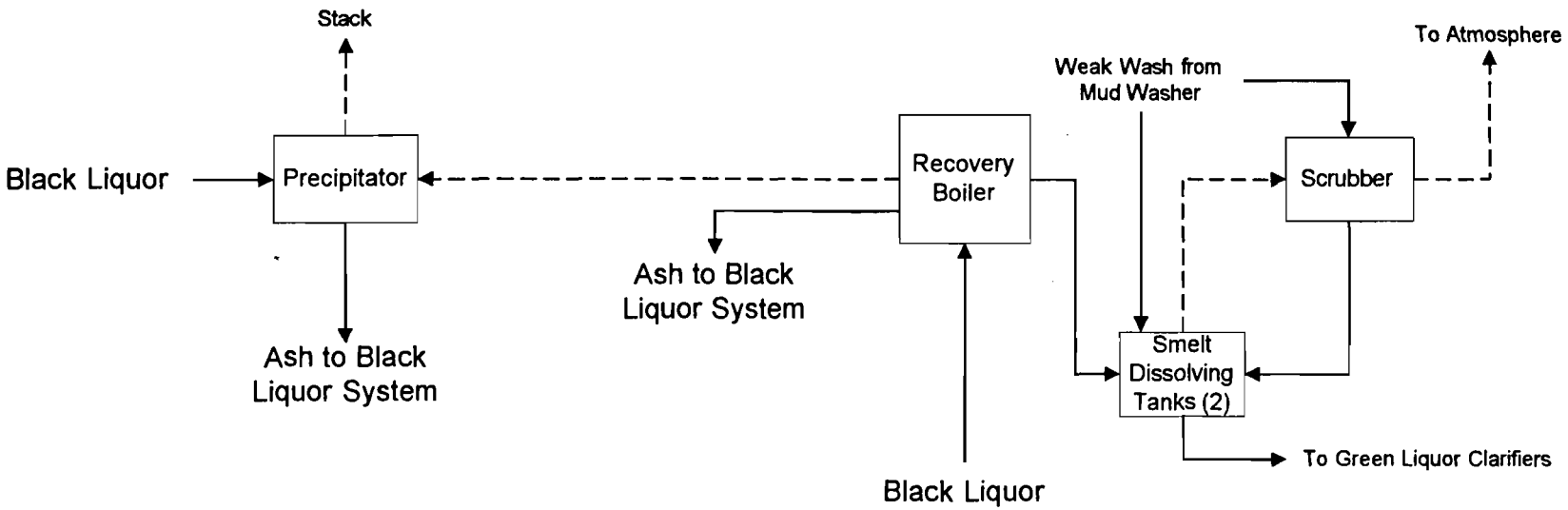
Process Area:	Chemical Recovery	Georgia Pacific	Revision: #4	File Name:evap1.vsd
Emission Unit:	Evaporators	Palatka	Date: 3/6	KBN Engineering



Solid/Liquid Flow
Gas Flow

Flow Diagram of Condensate Stripper System and TRS Incinerator, Georgia-Pacific Palatka Mill

Process Area: Chemical Recovery		Georgia Pacific	Revision: #3	File Name:NCG1.vsd
Emission Unit: TRS Insinerator, Condensate Stripper and NCG System		Palatka	Date: 2/14	KBN Engineering

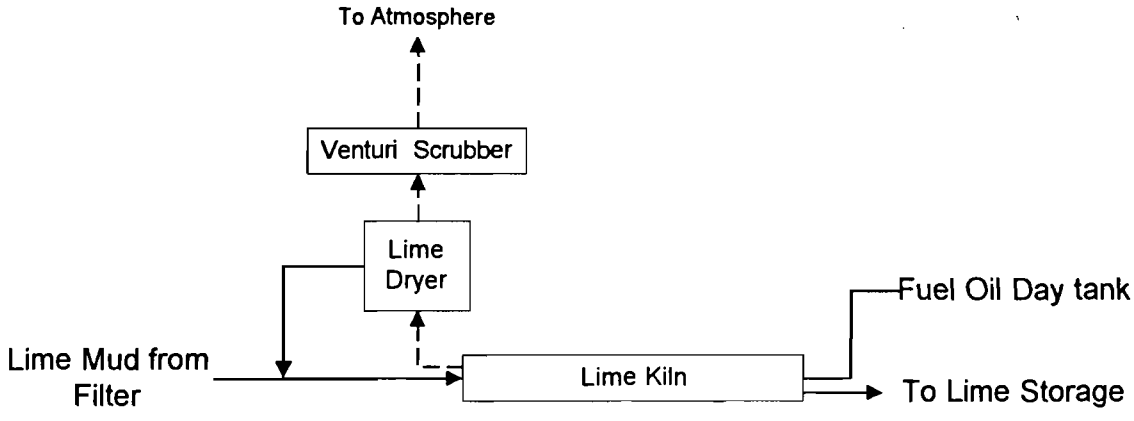


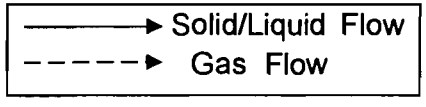
Solid/Liquid Flow

Gas Flow

Flow Diagram of No.4 Recovery Boiler and No.4 Smelt Dissolving Tanks, Georgia-Pacific Palatka Mill

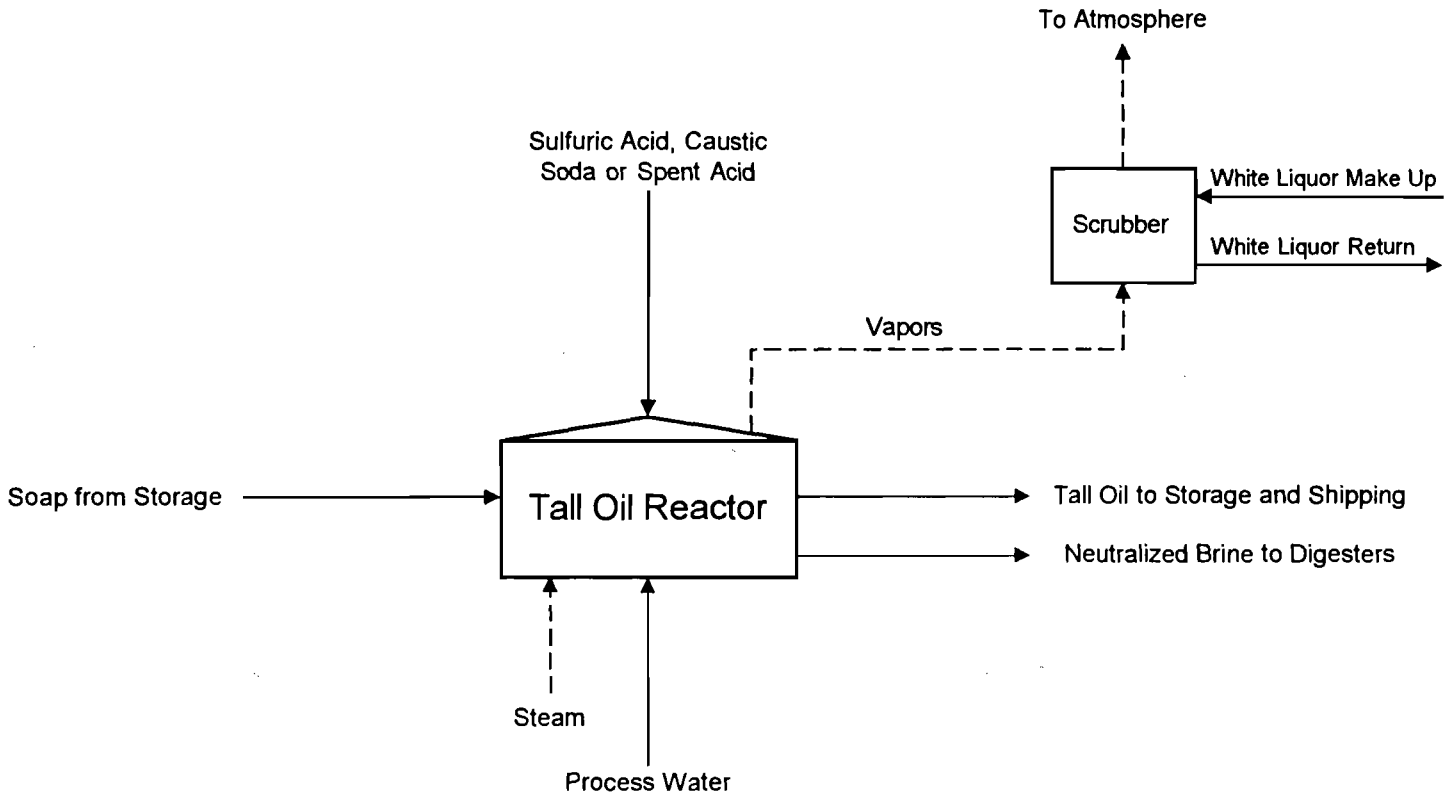
Process Area: Chemical Recovery	Georgia Pacific	Revision: #3	File Name: rec1.vsd
Emission Unit: Recovery Boiler	Palatka	Date: 2/14	KBN Engineering





Flow Diagram of Lime Kiln, Georgia-Pacific Palatka Mill

Process Area:	Chemical Recovery	Georgia Pacific	Revision: #3	File Name:Lime1.vsd
Emission Unit:	Lime Kiln	Palatka	Date: 2/14	KBN Engineering



Liquid Flow
Gas Flow

Flow Diagram of the Tall Oil System, Georgia-Pacific Palatka Mill

Process Area:	By-Products	Georgia Pacific	Revision: #3	File Name: rec1.vsd
Emission Unit:	Tall Oil	Palatka	Date: 2/14	KBN Engineering

ATTACHMENT D

PARTICLE SIZE DISTRIBUTIONS USED IN DEPOSITION MODELING

Particle Size Distribution for Recovery Boiler Used in the Deposition Analysis

Particle Diameter (um)			Test Results				
			Range % Mass	Cummulative % Mass	Settling Velocity		
Lower Limit	Upper Limit	Mean Mass	Average	Average	(cm/s)	(m/s)	Reflection Coefficient
0	0.625	0.394	0.296	0.296	0.000461	0.00000461	1.00
0.625	1	0.827	0.128	0.424	0.0020	0.00002	1.00
1	1.25	1.130	0.089	0.513	0.0038	0.00004	1.00
1.25	2.5	1.942	0.160	0.673	0.0112	0.00011	1.00
2.5	6	4.477	0.046	0.719	0.0596	0.00060	1.00
6	10	8.162	0.029	0.748	0.1982	0.00198	0.98
10	15	12.661	0.040	0.788	0.4769	0.00477	0.90
15	30	23.297	0.212	1.000	1.6147	0.01615	0.34

a. Particle size category percentages based on AP-42

Particle Size Distribution for Smelt Disolving Tank Used in the Deposition Analysis

Particle Diameter (um)			Test Results				
			Range % Mass	Cummulative % Mass	Settling Velocity		
Lower Limit	Upper Limit	Mean Mass	Average	Average	(cm/s)	(m/s)	Reflection Coefficient
0	0.625	0.394	0.387	0.387	0.000461	0.00000461	1.00
0.625	1	0.827	0.160	0.547	0.0020	0.00002	1.00
1	1.25	1.130	0.088	0.635	0.0038	0.00004	1.00
1.25	2.5	1.942	0.178	0.813	0.0112	0.00011	1.00
2.5	6	4.477	0.071	0.884	0.0596	0.00060	1.00
6	10	8.162	0.011	0.895	0.1982	0.00198	0.98
10	15	12.661	0.004	0.899	0.4769	0.00477	0.90
15	30	23.297	0.101	1.000	1.6147	0.01615	0.34

a. Particle size category percentages based on AP-42

Particle Size Distribution for Lime Kiln Used in the Deposition Analysis

Particle Diameter (um)			Test Results				
			Range % Mass	Cummulative % Mass	Settling Velocity		
Lower Limit	Upper Limit	Mean Mass	Average	Average	(cm/s)	(m/s)	Reflection Coefficient
0	0.625	0.394	0.543	0.543	0.000461	0.00000461	1.00
0.625	1	0.827	0.246	0.789	0.0020	0.00002	1.00
1	1.25	1.130	0.061	0.850	0.0038	0.00004	1.00
1.25	2.5	1.942	0.110	0.960	0.0112	0.00011	1.00
2.5	6	4.477	0.022	0.982	0.0596	0.00060	1.00
6	10	8.162	0.001	0.983	0.1982	0.00198	0.98
10	15	12.661	0.006	0.989	0.4769	0.00477	0.90
15	30	23.297	0.011	1.000	1.6147	0.01615	0.34

a. Particle size category percentages based on AP--42

P 339 251 138

US Postal Service
Receipt for Certified Mail
No Insurance Coverage Provided.
Do not use for International Mail *(See reverse)*

Sent to Myra Carpenter	
Street & Number Ga-Pacific Corp.	
Post Office, State, & ZIP Code Palatka, Fl	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
TOTAL Postage & Fees	$
Postmark or Date Palatka Mill 8-9-96	

PS Form **3800**, April 1995

Is your RETURN ADDRESS completed on the reverse side?

SENDER:
- Complete items 1 and/or 2 for additional services.
- Complete items 3, and 4a & b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "Return Receipt Requested" on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

I also wish to receive the following services (for an extra fee):
1. ☐ Addressee's Address
2. ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:
Myra Carpenter, Env. Supt.
Ga-Pacific Corp.
PO Box 919
Palatka, Fl
32178-0919

4a. Article Number P 339 251 138

4b. Service Type
☐ Registered ☐ Insured
☒ Certified ☐ COD
☐ Express Mail ☐ Return Receipt for Merchandise

7. Date of Delivery 8-14-96

5. Signature (Addressee)

6. Signature (Agent)

8. Addressee's Address (Only if requested and fee is paid)

Thank you for using Return Receipt Service.

PS Form **3811**, December 1991 ☆U.S. GPO: 1993—352-714 **DOMESTIC RETURN RECEIPT**

Best Available Copy

Is your RETURN ADDRESS completed on the reverse side?

SEND...

- Com...
- Co...
- Print ... and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "Return Receipt Requested" on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

...following services (... an extra fee):

1. ☐ Addressee's Address
2. ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:
Henry Hirschman, G.M.
GA-Pacific Corp
P O BOX 919
Palatka, Fl
32178-0919

4a. Article Number
Z 127 632 520

4b. Service Type
☐ Registered ☐ Insured
☒ Certified ☐ COD
☐ Express Mail ☐ Return Receipt for Merchandise

7. Date of Delivery
9-27-95

5. Signature (Addressee)

8. Addressee's Address (Only if requested and fee is paid)

6. Signature (Agent)
[signature]

PS Form **3811**, December 1991

Thank you for using Return Receipt Service.

Z 127 632 520

Receipt for Certified Mail

UNITED STATES POSTAL SERVICE

No Insurance Coverage Provided
Do not use for International Mail
(See Reverse)

Sent to Henry Hirschman	
Street and No. GA-Pacific	
P.O., State and ZIP Code Palatka, Fl	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, and Addressee's Address	
TOTAL Postage & Fees	$
Postmark or Date 9-21-95 AC54-266676 PSD-Fl-226	

PS Form **3800**, March 1993

PUBLIC NOTICE

STATE OF FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION NOTICE OF INTENT TO ISSUE PERMIT

AC 54-266676
PSD-FL-226

The Department of Environmental Protection (Department) gives notice of its intent to issue a construction permit, No. AC 54-266676/PSD-FL-226, to Georgia-Pacific Corporation for a modification of its Kraft pulp mill located in Palatka, Putnam County, Florida. The project is primarily a continuation of modernization and efficiency improvements at the plant rather than a major expansion of capacity. The modification consists of replacement of the last two of thirteen digesters with modern, larger units; installation of furnace screen tubes in the recovery boiler to cool combustion gases; installation of a new wood chip conditioner system; replacement of the white liquor heater; and installation of an automatic cleaning system on the lime mud filter. Although this permit does not authorize an increase in the allowable production, the mill, if operated at its the permitted production rate, has the potential to increase actual emissions by 300.0 tons per year (TPY) Particulate matter (PM/PM10), 36.1 TPY sulfur dioxide (SO2), 626.0 TPY nitrogen oxides (NOx), 1022.5 TPY carbon monoxide (CO), 322.2 TPY volatile organic compounds (VOC), 88.5 TPY total reduced sulfur (TRS), 0.04 TPY lead, 0.009 TPY mercury, and 0.0011 TPY beryllium (Be). Sulfuric acid mist (SAM) emissions will decrease by 12.4 TPY. The increase in the allowable emissions of PM/PM10, NOx, CO, VOC, TRS, and Be are above the significant emission rates and subjects the proposed modification to the Prevention of Significant Deterioration (PSD) new source review regulations. The allowable emissions of these pollutants are set by a Best Available Control Technology (BACT) determination.

The maximum predicted increases in particulate matter less than 10 microns (PM10) concentrations and nitrogen dioxide (NO2) concentrations due to the project are less than the respective PSD Class I and Class II significant impact levels. Thus, no PSD PM10 or NO2 increment consumption was calculated for this project.

A person whose substantial interests are affected by the Department's proposed permitting decision may petition for an administrative proceeding (hearing) in accordance with Section 120.57, Florida Statutes (F.S.). The petition must contain the information set forth below and must be filed (recieved) in the Office of General Counsel of the Department at 2600 Blair Stone Road, Tallahassee, Florida 32399-2400, within 14 days

Best Available Copy

STATE OF FLORIDA \
: SS:
County of Putnam /

The undersigned personally appeared before me, a Notary Public for the State of Florida, and deposes that the Daily News is a daily newspaper of general circulation, printed in the English Language and published in the City of Palatka, in said County and State: and that the attached order, notice, publication and/or advertisement:

Legal No. 29361
PUBLICNOTICESTATE OF FLORIDADEPARTMENT O

was published in said newspaper 1 time(s), said publication being made on the following dates:
8/8/95

The Daily News has been continuously published as a daily newspaper, and has been entered as second class matter at the post office at the City of Palatka. Putnam County, Florida, each for a period of more than one year next preceding the date of the first publication of the above described order, notice, publication and/or advertisement.

Mary Kaye Wells

Sworn to and subscribed before me this 08/08/95 by Mary Kaye Wells, Classified Advertising Manager of the Daily News, a Florida corporation, on behalf of the corporation.

Judy C. Bailey

Judy C. Bailey, Notary Public,
State of Florida

NOTARY SEAL
SEAL OF OFFICE:

_x_ Personally known to me, or
___ Produced Identification:
_____
_x_ Did take an oath

OFFICIAL NOTARY SEAL
JUDY C BAILEY
NOTARY PUBLIC STATE OF FLORIDA
COMMISSION NO. CC455296
MY COMMISSION EXP. MAY 3,1999

Ga-Pacific Corp.
AC54-266676 -PSD-FL-226

Rec'd 8/18

of publication of this notice. Petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. Failure to file a petition within this time period shall constitute a waiver of any right such person may have to request an administrative determination (hearing) under Section 120.57, F.S.

The Petition shall contain the following information; (a) The name, address, and telephone number of each petitioner, the applicant's name and address, the Department Permit File Number and the county in which the project is proposed; (b) A statement of how and when each petitioner received notice of the Department's action or proposed action; (c) A statement of how each petitioner's substantial interests are affected by the Department's action or proposed action; (d) A statement of the material facts disputed by Petitioner, if any; (e) A statement of facts which petitioner contends warrant reversal or modification of the Department's action or proposed action; (f) A statement of which rules or statutes petitioner contends require reversal or modification of the Department's action or proposed action; and, (g) A statement of the relief sought by petitioner, stating precisely the action petitioner wants the Department to take with respect to the Department's action or proposed action.

If a petition is filed, the administrative hearing process is designed to formulate agency action. Accordingly, the Department's final action may be different from the position taken by it in this Notice. Persons whose substantial interests will be affected by any decision of the Department with regard to the application have the right to petition to become a party to the proceeding. The petition must conform to the requirements specified above and be filed (received) within 14 days of publication of this notice in the Office of General Counsel at the above address of the Department. Failure to petition within the allowed time frame constitutes a waiver of any right such person has to request a hearing under Section 120.57, F.S., and to participate as a party to this proceeding. Any subsequent intervention will only be at the approval of the presiding officer upon motion filed pursuant to Rule 28-5.207, Florida Administrative Code.

The application is available for public inspection during normal business hours, 8:00 a.m. to 5:00 p.m., Monday through Friday, except legal holidays, at:

Department of
Environmental Protection
Bureau of Air Regulation
111 S. Magnolia Drive,
Suite 4
Tallahassee, Florida 32301.

Department of
Environmental Protection
Northeast District
7825 Baymeadows Way
Suite B200
Jacksonville, Florida
32256-7577

Any person may send written comments on the proposed action to Administrator, New Source Review, at the Department of Environmental Protection, Bureau of Air Regulation, Mail Station 5505, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400. All comments received within within 14 days of the publication of this notice will be considered in the Departments' final determination.

Further, a public hearing can be requested by any person(s). Such request must be submitted within 30 days of this notice.
8/8/95 Legal No. 29361

Z 392 979 014

Receipt for Certified Mail

No Insurance Coverage Provided
Do not use for International Mail
(See Reverse)

PS Form **3800**, March 1993

Sent to	Henry Hirschman
Street and No.	GA-Pacific
P.O., State and ZIP Code	Palatka Fl
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, and Addressee's Address	
TOTAL Postage & Fees	$
Postmark or Date	8-2-95

AC54-266676
PSD-FL-226

SENDER:

- Complete items 1 and/or 2 for additional services.
- Complete items 3, and 4a & b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "Return Receipt Requested" on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

I also wish to receive the following services (for an extra fee):

1. ☐ Addressee's Address
2. ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:
Henry Hirschman, G.M.
GA-Pacific Corp.
P O Box 919
Palatka, Fl 32178-0919

4a. Article Number
Z 392 979 014

4b. Service Type
☐ Registered ☐ Insured
☒ Certified ☐ COD
☐ Express Mail ☐ Return Receipt for Merchandise

7. Date of Delivery

5. Signature (Addressee)

8. Addressee's Address (Only if requested and fee is paid)

6. Signature (Agent)

PS Form **3811**, December 1991 ☆U.S. GPO: 1993—352-714 **DOMESTIC RETURN RECEIPT**

Is your RETURN ADDRESS completed on the reverse side?

Thank you for using Return Receipt Service.

Z 311 902 912

Receipt for Certified Mail

No Insurance Coverage Provided
Do not use for International Mail
(See Reverse)

UNITED STATES POSTAL SERVICE

PS Form **3800**, March 1993

Sent to	Myra Carpenter
Street and No.	Ga-Pacific
P.O., State and ZIP Code	Palatka, Fl
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, and Addressee's Address	
TOTAL Postage & Fees	$
Postmark or Date	4-13-95
	AC 54-166676/PSD-Fl-226

[redacted] envelope to the

SENDER:
- Complete items 1 and/or 2 for additional services.
- Complete items 3, and 4a & b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "Return Receipt Requested" on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

I also wish to receive the following services (for an extra fee):

1. ☐ Addressee's Address
2. ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:
Myra Carpenter
Superintendent of Env. Affairs
Ga-Pacific Corp.
P O Box 919
Palatka, Fl 32178-0919

4a. Article Number
Z 311 902 912

4b. Service Type
☐ Registered ☐ Insured
☒ Certified ☐ COD
☐ Express Mail ☐ Return Receipt for Merchandise

7. Date of Delivery
4-17-95

5. Signature (Addressee)

6. Signature (Agent)
[signature]

8. Addressee's Address (Only if requested and fee is paid)

Is your RETURN ADDRESS completed on the reverse side?

Thank you for using Return Receipt Service.

PS Form **3811**, December 1991 ☆U.S. GPO: 1993—352-714 **DOMESTIC RETURN RECEIPT**

Is your RETURN ADDRESS completed on the reverse side?

SENDER:
- Complete items 1 and/or 2 for additional services.
- Complete items 3, and 4a & b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "Return Receipt Requested" on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

I also wish to receive the following services (for an extra fee):
1. ☐ Addressee's Address
2. ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:
Ms. Myra Carpenter
Superintendent of Environmental Affairs
Georgia-Pacific Corp.
P. O. Box 919
Palatka, FL 32178-0919

4a. Article Number
P 872 563 676

4b. Service Type
☐ Registered ☐ Insured
☒ Certified ☐ COD
☐ Express Mail ☐ Return Receipt for Merchandise

7. Date of Delivery
4-3-95

5. Signature (Addressee)

8. Addressee's Address (Only if requested and fee is paid)

6. Signature (Agent)
[signature]

PS Form **3811**, December 1991 ☆U.S. GPO: 1992—323-402 **DOMESTIC RETURN RECEIPT**

Thank you for using Return Receipt Service.

P 872 563 676

UNITED STATES POSTAL SERVICE

Receipt for Certified Mail
No Insurance Coverage Provided
Do not use for International Mail
(See Reverse)

Sent to: Ms. Myra Carpenter, GA-Pac	
Street and No. P. O. Box 919	
P.O., State and ZIP Code Palatka, FL 32178-0919	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, and Addressee's Address	
TOTAL Postage & Fees	$
Postmark or Date Mailed: 3-29-95 Permit: AC 54-266676 PSD-FL-226	

PS Form **3800**, JUNE 1991

Check Sheet

Company Name: Georgia Pacific
Permit Number: AC54-266676
PSD Number: PSD-226
Permit Engineer: _____

Application:

- [x] Initial Application
  - [x] Incompleteness Letters
  - [x] Responses
  - [ ] Waiver of Department Action
  - [ ] Department Response
  - [x] Other

Cross References:
- [ ]
- [ ]
- [ ]

Intent:

- [x] Intent to Issue
- [x] Notice of Intent to Issue
- [x] Technical Evaluation
- [x] BACT or LAER Determination
- [x] Unsigned Permit

  Correspondence with:
  - [ ] EPA
  - [ ] Park Services
  - [ ] Other
- [x] Proof of Publication
  - [ ] Petitions - (Related to extensions, hearings, etc.)
  - [ ] Waiver of Department Action
  - [ ] Other

Final Determination:

- [x] Final Determination
- [x] Signed Permit
- [x] BACT or LAER Determination
  - [ ] Other

Post Permit Correspondence:

- [ ] Extensions/Amendments/Modifications
- [x] Other