



Florida Department of Environmental Regulation

Twin Towers Office Bldg. • 2600 Blair Stone Road • Tallahassee, Florida 32399-2400

Bob Martinez, Governor

Dale Twachtmann, Secretary

John Shearer, Assistant Secretary

November 30, 1989

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. C. S. Aiken
Plant Manager
The Procter & Gamble Cellulose Company
Route 3, Box 260
Perry, Florida 32347

Dear Mr. Aiken:

Re: Amendments to the Construction Permit
AC 62-168453: Tall Oil Plant

The Department has considered the comments made by Mr. Jim Farmer on November 16, 1989, via a phone call, which related to two specific conditions in the construction permit. Each comment is stated below and the Department's response follows:

Comment:

1. In Specific Condition No. 2, a decimal was used instead of a comma in a number used to reflect the process input rate of sulfuric acid.

Response:

The Department acknowledges that this was a typographical error and the following will be changed:

Specific Condition No. 2:

From: The maximum production rate shall not exceed 20,000 lbs/hr of tall oil (dry and based on a total process input rate of 36,800 lbs/hr soap and black liquor and 12.345 lbs/hr Sulfuric Acid).

To: The maximum production rate shall not exceed 20,000 lbs/hr of tall oil (dry and based on a total process input rate of 36,800 lbs/hr soap and black liquor and 12,345 lbs/hr sulfuric acid).

Mr. C. S. Aiken
Page Two
November 30, 1989

Comment:

2. In Specific Condition No. 9, a question was raised about the rule citing and its corresponding rule number.

Response:

Due to the renumbering of F.A.C. Chapter 17-2, the specific rule number will be revised to reference only the general section.


Specific Condition No. 9:

From: The DER's Northeast District office shall be notified in writing 15 days prior to source testing pursuant to F.A.C. Rule 17-2.700(2)(a)5. Written reports of the tests shall be submitted to the DER's Northeast District office within 45 days of test completion pursuant to F.A.C. Rule 17-2.700(7).

To: The DER's Northeast District office shall be notified in writing 15 days prior to source testing pursuant to F.A.C. Rule 17-2.700(2)(a). Written reports of the tests shall be submitted to the DER's Northeast District office within 45 days of test completion pursuant to F.A.C. Rule 17-2.700(7).

This letter must be attached to the construction permit, AC 62-168453, and shall become a part of the permit.

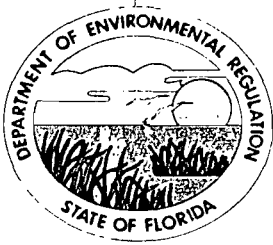
Sincerely,



Dale Twachtman
Secretary

DT/kt

cc: A. Kutyna, NE District
R. Andreu, P & GCC
G. Nevin, P.E., WE & C



Florida Department of Environmental Regulation

Twin Towers Office Bldg. • 2600 Blair Stone Road • Tallahassee, Florida 32399-2400

Bob Martinez, Governor

Dale Twachmann, Secretary

John Shearer, Assistant Secretary

STATE OF FLORIDA DEPARTMENT OF ENVIRONMENTAL REGULATION NOTICE OF PERMIT

Mr. C. S. Aiken, Plant Manager
The Proctor & Gamble Cellulose Company
Rt. 3, Box 260
Perry, Florida 32347

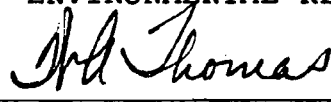
November 7, 1989

Enclosed is construction permit No. AC 62-168453 for The Proctor & Gamble Cellulose Company to increase the maximum allowable tall oil production rate from 7.3 tons/hr to 10.0 tons/hr at the existing Tall Oil Plant at the company's facility in Perry, Taylor County, Florida. This permit is issued pursuant to Section 403, Florida Statutes.

Any party to this permit has the right to seek judicial review of the permit pursuant to Section 120.68, Florida Statutes, by the 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 30 days from the date this permit is filed with the Clerk of the Department.

Executed in Tallahassee, Florida.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION

for 

C. H. Fancy, P.E.
Chief

Bureau of Air Regulation

Copy furnished to:

M. Benjamin, NE District
R. Andreu, P & GCC
G. Nevin, P.E.

CERTIFICATE OF SERVICE

The undersigned duly designated deputy clerk hereby certifies that this NOTICE OF PERMIT and all copies were mailed before the close of business on 11-8-89.

FILING AND ACKNOWLEDGEMENT
FILED, on this date, pursuant to
§120.52(9), Florida Statutes, with
the designated Department Clerk,
receipt of which is hereby
acknowledged.

Keri Ober
Clerk

11-8-89
Date

Final Determination

**Proctor & Gamble Cellulose Company
Taylor County
Perry, Florida**

**Construction Permit Number
AC 62-168453**

**Florida Department of Environmental Regulation
Division of Air Resources Management
Bureau of Regulation**

November 3, 1989

Final Determination

The construction permit application has been reviewed by the Department. Public Notice of the Department's Intent to Issue was published in the Perry News-Herald on October 6, 1989. The Technical Evaluation and Preliminary Determination (TE & PD) were available for public inspection at the DER's Northeast District and Division of Air Resources Management offices.

One comment was received via phone from Mr. Jim Farmer, who is with Proctor & Gamble Cellulose Company, on October 4, 1989. The comment related to an incorrect SIC code displayed in the TE & PD; specifically, the SIC code is displayed as 2621 and should be 2611. The SIC code is 2611 in the draft construction permit. Since the issue is not of significance, there will be no change made to the TE & PD, but the comment is acknowledged. Therefore, it is recommended that the proposed construction permit be issued as drafted.

THE PROCTER & GAMBLE CELLULOSE COMPANY
C&S FOLEY

Nov 24 1989
10 02 11

October 12, 1989

Mr. Clair H. Fancy
Deputy Chief BAQM
Florida Department of
Environmental Regulation
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, FL 32399-2400

RECEIVED

OCT 17 1989

DER-BAQM

Dear Mr. Fancy:

This is to provide the required notice, pursuant to Section 403.815, FS & DER Rule 17-103.150, FAC, that The Procter and Gamble Cellulose Corporation has published the Notice of Proposed Agency Action on permit application AC 62-168453. The proof of publication is enclosed.

Very truly yours,

THE PROCTER & GAMBLE
CELLULOSE CORPORATION



Ray Andreu
Environmental Control
Manager

RA/mlt

THE PERRY NEWS-HERALD
Published Weekly in City of Perry
County of Taylor
State of Florida

STATE OF FLORIDA,
COUNTY OF TAYLOR

AFFIDAVIT OF PUBLICATION

Before me, the undersigned authority,
personally appeared DONALD D.
LINCOLN, who on oath says that he is the
PUBLISHER of the Perry News-Herald,
weekly newspaper published in Perry,
Taylor County, Florida, that the attached
copy of advertisement being a notice to ap-
pear in re: *Notice of Intent*

.....
was published in said newspaper in the
issues of: *10/6/89*

.....
Affiant says further that the said Perry
News-Herald is a newspaper published at
Perry in said Taylor County, Florida, and
that the said newspaper has heretofore been
continuously published in said Taylor Coun-
ty, Florida, each week; has been entered as
second class mail matter at the Post Office
in Perry, Florida, in said Taylor County,
Florida for a period of one year next
preceding the first publication of the attach-
ed copy of notice to appear; and affiant fur-
ther says that he has neither paid nor pro-
mised any person, firm or corporation any
discount, rebate, commission or refund for
the purpose of securing this advertisement
for publication in said newspaper.

Donald D. Lincoln
Donald D. Lincoln, Publisher

Sworn to and subscribed before me this
..... day of *Oct* 19 *89*

Patricia G. Galt
Notary Public

NOTARY PUBLIC, STATE OF FLORIDA
MY COMMISSION EXPIRES JAN. 24, 1991
BONDED THROUGH THE TRAVELERS

Department of Environmental Regulation
Notice of Intent to Issue
The Department of Environmental
Regulation hereby gives notice of its
intent to issue a permit to Proctor and
Gamble Cellulose Company, Rt. 3 Box
260, Perry, Florida, 32347, to increase the
maximum allowable production rate
from 7.29 tons/hr to 10.0 tons/hr at the
Proctor & Gamble Cellulose Company's
Tall Oil Plant in Taylor County, Florida. A
determination of Best Available Control
Technology (BACT) was not required.
The Department is issuing this intent to
issue for the reasons stated in the
Technical Evaluation and Preliminary
Determination.

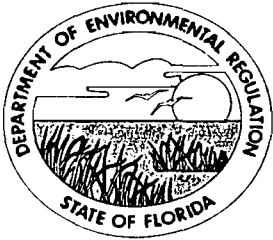
A person whose substantial interests are
affected by the Department's proposed
permitting decision may petition for an
administrative proceeding (hearing) in
accordance with Section 120.57, Florida
Statutes. The petition must contain the
information set forth below and must be
filed (received) in the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

The application is available for public
inspection during business hours, 8 a.
m. to 5 p.m. Monday through Friday,
except legal holidays, at:
Department of Environmental Regulation
Bureau of Air Regulation
2600 Blair Stone Road
Tallahassee, Florida 32399-2400
Department of Environmental Regulation
Northeast District
13426 Bits Road
Jacksonville, Florida 32207
Any person may send written comment
on the proposed action to Mr. E.
Thompson at the Department
Tallahassee address. All commen-
tation within 14 days of the publication
of this notice will be considered in the
Department's final determination.



Florida Department of Environmental Regulation

Twin Towers Office Bldg. • 2600 Blair Stone Road • Tallahassee, Florida 32399-2400

Bob Martinez, Governor

Dale Twachtmann, Secretary

John Shearer, Assistant Secretary

PERMITTEE:

Procter & Gamble
Cellulose Co.
Rt. 3, Box 260
Perry, FL 32347-9512

Permit Number: AC 62-168453
Expiration Date: January 31, 1990
County: Taylor
Latitude/Longitude: 30°03'59"N
83°33'12"W

Project: Tall Oil Plant and
Control System

This permit is issued under the provisions of Chapter 403, Florida Statutes, and Florida Administrative Code Chapters 17-2 and 17-4. The above named permittee is hereby authorized to 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 modification of the Tall Oil Plant, which has an associated wet scrubber control system to control pollutant emissions from the centrifugal feed tank, weir tank, degasifier tank, basket strainer and degasifier condenser. The scrubber system will use an alkaline solution as the absorbing medium. The location of the project will be at the permittee's existing facility. The UTM coordinates are Zone 17, 256.7 km East and 3328.7 km North.

The Standard Industrial Codes are: Industry No. 2611-Pulp Mills
The Standard Classification Codes are: Pulp & Paper Industry
Major Group 26: Sulfate (kraft) Pulping
o Tall Oil Plant 3-07-001-99 Tons ADUP

The source shall be 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. Procter & Gamble Cellulose's application package dated July 27, 1989 and received August 1, 1989.
2. Technical Evaluation and Preliminary Determination dated September 25, 1989.

PERMITTEE:
Procter & Gamble
Cellulose Co.

Permit Number: AC 62-168453
Expiration Date: January 31, 1990

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, Florida Statutes. 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), Florida Statutes, 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.
4. This permit conveys no title to land or water, does not constitute State recognition or acknowledgement 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 Florida Statutes and Department rules, unless specifically authorized by an order from the Department.

PERMITTEE:
Procter & Gamble
Cellulose Co.

Permit Number: AC 62-168453
Expiration Date: January 31, 1990

GENERAL CONDITIONS:

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 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.

PERMITTEE:
Procter & Gamble
Cellulose Co.

Permit Number: AC 62-168453
Expiration Date: January 31, 1990

GENERAL CONDITIONS:

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 Florida Statutes or Department rules, except where such use is proscribed by Sections 403.73 and 403.111, Florida Statutes. 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 Florida Statutes after a reasonable time for compliance, provided, however, the permittee does not waive any other rights granted by Florida Statutes or Department rules.

11. This permit is transferable only upon Department approval in accordance with Florida Administrative Code Rules 17-4.120 and 17-30.300, 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. 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.

PERMITTEE:
Procter & Gamble
Cellulose Co.

Permit Number: AC 62-168453
Expiration Date: January 31, 1990

GENERAL CONDITIONS:

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.

14. 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:

1. The Tall Oil Plant may operate continuously, i.e., 8,760 hrs/yr.

2. The maximum production rate shall not exceed 20,000 lbs/hr of tall oil (dry and based on a total process input rate of 36,800 lbs/hr soap and black liquor and 12.345 lbs/hr Sulfuric Acid).

3. In accordance with Florida Administrative Code (F.A.C.) Rule 17-2.600(4)(c)2., total reduced sulfur (TRS) emissions from the Tall Oil Plant shall not exceed 0.05 lb/ton crude tall oil produced as a 12-hour average (0.50 lb/hr, 2.2 TPY). A scrubber shall be used to control TRS emissions continuously.

4. Compliance tests shall be conducted using EPA Method 16 or 16A, Determination of TRS emissions from Stationary Sources, pursuant to F.A.C. Rule 17-2.700 and 40 CFR 60, Appendix A.

5. Objectionable odors shall not be allowed off plant property in accordance with F.A.C. Rule 17-2.620(2).

6. The project shall comply with all applicable provisions of F.A.C. Chapters 17-2 and 17-4.

7. Pursuant to F.A.C. Rule 17-2.600(4)(c)2.b., the Tall Oil Plant is subject to the provisions of F.A.C. Rule 17-2.710, Continuous Monitoring Requirements, which includes F.A.C. Rules 17-2.710(3), General Requirements and Establishing Specific Surrogate Parameters, and 17-2.710(4), Quarterly Reporting Requirements.

PERMITTEE:
Procter & Gamble
Cellulose Co.

Permit Number: AC 62-168453
Expiration Date: January 31, 1990

SPECIFIC CONDITIONS:

8. The project is subject to the provisions of F.A.C. Rules 17-2.240: Circumvention; 17-2.250: Excess Emissions; and, 17-4.130: Plant Operation-Problems.

9. The DER's Northeast District office shall be notified in writing 15 days prior to source testing pursuant to F.A.C. Rule 17-2.700(2)(a)5. Written reports of the tests shall be submitted to the DER's Northeast District office within 45 days of test completion pursuant to F.A.C. Rule 17-2.700(7).

10. Any change in the method of operation, raw materials and chemicals processed, equipment, or operating hours pursuant to F.A.C. Rule 17-2.100(119), Modification, shall be submitted for approval to the DER's Bureau of Air Regulation (BAR) office and Northeast District office.

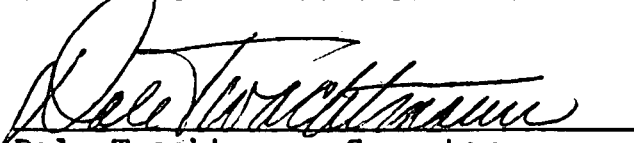
11. The Tall Oil Plant is subject to the provisions of F.A.C. Rule 17-2.971(2)(c), Compliance Schedules for Continuous Monitoring Requirements,

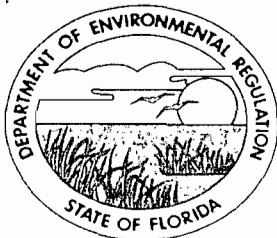
12. The permittee, for good cause, may request that this construction permit be extended. Such a request shall be submitted to the BAR prior to 60 days before the expiration of the permit (F.A.C. Rule 17-4.090).

13. An application for an operation permit must be submitted to the DER's Northeast District office at least 90 days prior to the expiration date of this construction permit or within 45 days after completion of compliance testing, whichever occurs first. To properly apply for an operation permit, the applicant shall submit the appropriate application form, fee, certification that construction was completed noting any deviations from the conditions in the construction permit, and compliance test reports as required by this permit (F.A.C. Rule 17-4.220).

Issued this 3 day
of Nov., 1989

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION


Dale Twachtmann, Secretary



Florida Department of Environmental Regulation

Twin Towers Office Bldg. • 2600 Blair Stone Road • Tallahassee, Florida 32399-2400

Bob Martinez, Governor

Dale Twachtmann, Secretary

John Shearer, Assistant Secretary

September 25, 1989

CERTIFIED MAIL-RETURN RECEIPT REQUESTED

Mr. C. S. Aiken
Plant Manager
The Procter & Gamble Cellulose Company
Perry, Florida 32347

Dear Mr. Aiken:

Attached is one copy of the Technical Evaluation and Preliminary Determination and proposed permit for a modification to the existing Tall Oil Plant at your facility in Taylor County, Florida.

Please submit any written comments you wish to have considered concerning the Department's proposed action to Mr. Bill Thomas of the Bureau of Air Regulation.

Sincerely,

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

CHF/BM/t

Attachments

cc: M. Benjamin, NE District
G. Nevin, P.E., WE & C
R. Andreu, P & GCC

BEFORE THE STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

In the Matter of
Application for Permit by:

Procter & Gamble Cellulose Co.
Route 3, Box 260
Perry, Florida 32347

DER File No. AC 62-168453

INTENT TO ISSUE

The Department of Environmental Regulation hereby gives notice of its intent to issue a permit (copy attached) for the proposed project as detailed in the application specified above. The Department is issuing this Intent to Issue for the reasons stated in the attached Technical Evaluation and Preliminary Determination.

The applicant, Procter & Gamble Cellulose Company, applied on August 1, 1989, to the Department of Environmental Regulation for a permit to increase the maximum allowable production rate from 7.29 tons/hr to 10.0 tons/hr at the existing Tall Oil Plant at the company's facility in Taylor County, Florida.

The Department has permitting jurisdiction under Chapter 403, Florida Statutes, and Florida Administrative Code Rules 17-2 and 17-4. The project is not exempt from permitting procedures. The Department has determined that an air construction permit is required for the proposed work.

Pursuant to Section 403.815, F.S. 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. The applicant shall provide proof of publication to the Department, at the address specified 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, Florida Statutes. 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 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, Florida Statutes.

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

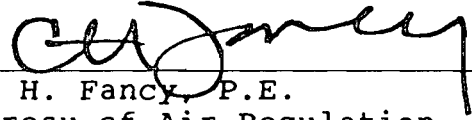
(g) A statement of the relief sought by petitioner, stating precisely the action petitioner wants the Department to take with respect to the Department's action or proposed action.

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(s) 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 in 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 REGULATION



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

Copies furnished to:

M. Benjamin, NE District
G. Nevin, P.E., WE & C
R. Andreu, P & GCC

CERTIFICATE OF SERVICE

The undersigned duly designated deputy clerk hereby certifies that this NOTICE OF INTENT TO ISSUE and all copies were mailed before the close of business on 10/2/89.

FILING AND ACKNOWLEDGEMENT
FILED, on this date, pursuant to
§120.52(9), Florida Statutes, with
the designated Department Clerk,
receipt of which is hereby
acknowledged.

Kimi Jones
Clerk

10/2/89
Date

State of Florida
Department of Environmental Regulation
Notice of Intent to Issue

The Department of Environmental Regulation hereby gives notice of its intent to issue a permit to Procter & Gamble Cellulose Company, Route 3, Box 260, Perry, Florida 32347, to increase the maximum allowable production rate from 7.29 tons/hr to 10.0 tons/hr at the Procter & Gamble Cellulose Company's Tall Oil Plant in Taylor County, Florida. A determination of Best Available Control Technology (BACT) was not required. The Department is issuing this Intent to Issue for the reasons stated in the Technical Evaluation and Preliminary Determination.

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. 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 fourteen (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, Florida Statutes.

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

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, F.A.C.

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

Department of Environmental Regulation
Bureau of Air Regulation
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Department of Environmental Regulation
Northeast District
3426 Bills Road
Jacksonville, Florida 32207

Any person may send written comments on the proposed action to Mr. Bill Thomas at the Department's Tallahassee address. All comments mailed within 14 days of the publication of this notice will be considered in the Department's final determination.

Technical Evaluation
and
Preliminary Determination

Procter & Gamble Cellulose Company
Taylor County
Perry, Florida

Construction Permit No. AC 62-168453.

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

September 25, 1989

I. Application

A. Applicant

Procter & Gamble Cellulose
Route 3, Box 260
Perry, Florida 32347-9512

B. Project and Location

The applicant has applied for a modification to the existing Tall Oil Plant. The request is to increase the maximum allowable production rate from 7.29 tons/hr to 10.0 tons/hr.

The existing facility is located southeast of Perry on County Road 30. The UTM coordinates are Zone 17, 256.74 km East and 3328.70 km North.

C. Process and Controls

In the Tall Oil Plant, soap from the soap tanks is sent to an acidulator, where acid and steam are added to produce lignin and tall oil. The mixture is sent through a degasifier, a basket-strainer, cyclones, a centrifuge feed tank, and a centrifuge, where the tall oil is separated from the lignin solution. The tall oil is sent to storage tank(s) and the lignin solution is dispensed into a weir tank and eventually recycled back to the mill. TRS emissions will be collected from the vents of the centrifugal feed tank, the weir tank, the degasifier tank, the basket-strainer, and the degasifier condenser, and conveyed to the new alkaline scrubber. The scrubber medium will be white liquor from the digester systems and will be recycled after passing through the scrubber.

D. General

1. The Standard Industrial Codes are:
 - o No. 2621 - Paper Mills

2. The Standard Classification Codes are: Paper and Pulp Industry

Major Group 26: Sulfate (kraft) Pulping
o Tall Oil Plant 3-07-001-99 Tons ADUP

II. Rule Applicability

The proposed project is subject to preconstruction review under the provisions of Chapter 403, Florida Statutes, and Florida Administrative Code (F.A.C.) Chapters 17-2 and 17-4.

The application package was deemed complete on August 1, 1989.

Taylor County is an area designated attainment for all pollutants.

The existing mill is a major emitting facility in accordance with F.A.C. Rule 17-2.100(112) for the pollutants particulate matter (PM), sulfur dioxide (SO₂), nitrogen oxides (NO_x), carbon monoxide (CO), total reduced sulfur (TRS), and volatile organic compounds (VOC). The facility is a kraft pulp mill, which is one of the major facility categories listed in Table 500-1, F.A.C. Rule 17-2.

The modification request is for a 0.58 TPY increase in TRS emissions (from 1.62 TPY to 2.20 TPY). Therefore, the potential TRS emissions from the modification are subject to review in accordance with F.A.C. Rule 17-2.520, Sources Not Subject to Prevention of Significant Deterioration or Nonattainment Requirements.

In accordance with F.A.C. Rule 17-2.600(4)(c)2., TRS emissions from the Tall Oil Plant operation shall not exceed 0.05 lb/ton crude tall oil produced as a 12-hour average. Compliance shall be demonstrated using EPA Method 16 or 16A pursuant to F.A.C. Rule 17-2.700 and 40 CFR 60, Appendix A.

Pursuant to F.A.C. Rule 17-2.600(4)(c)2.b., the Tall Oil Plant is subject to the requirements of F.A.C. Rule 17-2.710, which includes F.A.C. Rule 17-2.710(3), General Requirements and Establishing Specific Surrogate Parameters.

The Tall Oil Plant is subject to the provisions of F.A.C. Rules 17-2.240: Circumvention; 17-2.250: Excess Emissions; and, 17-4.130: Plant Operations-Problems. Any notification requirement should be made or sent to the DER's Northeast District office.

The Tall Oil Plant is subject to the provisions of F.A.C. Rule 17-2.700(4), Quarterly Reporting Requirements.

In accordance with F.A.C. Rule 17-2.620(2), objectionable odors shall not be allowed off plant property.

A meter shall be installed to measure the scrubbing liquid supply pressure on the Tall Oil Plant operations scrubber, and the pressure sensor or tap is to be located close to the scrubber liquid discharge point. The monitoring device is to be certified by the manufacturer to be accurate within ± 15 percent of design scrubbing liquid supply pressure.

III. Summary of Emissions and Air Quality Analysis

A. Emission Limitations

The regulated pollutant emissions from the Tall Oil Plant are TRS. The following Table will reflect the maximum allowable emissions limits and standard applicable to the Tall Oil Plant:

Table 1

Source	Pollutant	Max. Allow. Emissions Stand/Limit
Tall Oil Plant	TRS	Not to exceed 0.05 lb/ton crude tall oil produced, 12-hr average (0.50 lb/hr, 2.2 TPY)

Note: o hours of operation at 8,760
o product weight: 20,000 lbs/hr tall oil (dry)

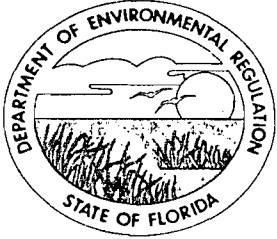
B. Air Quality Impact

From the technical review of the application package, an air quality analysis was not required.

IV. Conclusion

Based on the information provided by Procter & Gamble Cellulose Company, the Department has reasonable assurance that the modification of the existing Tall Oil Plant, as described in this evaluation, and subject to the conditions proposed herein, will not cause or contribute to a violation of any air quality standard, PSD increment, or any other technical provision of Chapter 17-2 of the Florida Administrative Code.

J. H. Thomas
9/29/89



Florida Department of Environmental Regulation

Twin Towers Office Bldg. • 2600 Blair Stone Road • Tallahassee, Florida 32399-2400

Bob Martinez, Governor

Dale Twachtmann, Secretary

John Shearer, Assistant Secretary

PERMITTEE:
Procter & Gamble
Cellulose Co.
Rt. 3, Box 260
Perry, FL 32347-9512

Permit Number: AC 62-168453
Expiration Date: January 31, 1990
County: Taylor
Latitude/Longitude: 30°03'59"N
83°33'12"W
Project: Tall Oil Plant and
Control System

This permit is issued under the provisions of Chapter 403, Florida Statutes, and Florida Administrative Code Chapters 17-2 and 17-4. The above named permittee is hereby authorized to 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 modification of the Tall Oil Plant, which has an associated wet scrubber control system to control pollutant emissions from the centrifugal feed tank, weir tank, degasifier tank, basket strainer and degasifier condenser. The scrubber system will use an alkaline solution as the absorbing medium. The location of the project will be at the permittee's existing facility. The UTM coordinates are Zone 17, 256.7 km East and 3328.7 km North.

The Standard Industrial Codes are: Industry No. 2611-Pulp Mills
The Standard Classification Codes are: Pulp & Paper Industry
Major Group 26: Sulfate (kraft) Pulping
o Tall Oil Plant 3-07-001-99 Tons ADUP

The source shall be 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. Procter & Gamble Cellulose's application package dated July 27, 1989 and received August 1, 1989.
2. Technical Evaluation and Preliminary Determination dated September 25, 1989.

PERMITTEE:
Procter & Gamble
Cellulose Co.

Permit Number: AC 62-168453
Expiration Date: January 31, 1990

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, Florida Statutes. 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), Florida Statutes, 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.

4. This permit conveys no title to land or water, does not constitute State recognition or acknowledgement 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 Florida Statutes and Department rules, unless specifically authorized by an order from the Department.

PERMITTEE:
Procter & Gamble
Cellulose Co.

Permit Number: AC 62-168453
Expiration Date: January 31, 1990

GENERAL CONDITIONS:

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 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.

PERMITTEE:
Procter & Gamble
Cellulose Co.

Permit Number: AC 62-168453
Expiration Date: January 31, 1990

GENERAL CONDITIONS:

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 Florida Statutes or Department rules, except where such use is proscribed by Sections 403.73 and 403.111, Florida Statutes. 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 Florida Statutes after a reasonable time for compliance, provided, however, the permittee does not waive any other rights granted by Florida Statutes or Department rules.

11. This permit is transferable only upon Department approval in accordance with Florida Administrative Code Rules 17-4.120 and 17-30.300, 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. 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.

PERMITTEE:
Procter & Gamble
Cellulose Co.

Permit Number: AC 62-168453
Expiration Date: January 31, 1990

GENERAL CONDITIONS:

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.

14. 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:

1. The Tall Oil Plant may operate continuously, i.e., 8,760 hrs/yr.

2. The maximum production rate shall not exceed 20,000 lbs/hr of tall oil (dry and based on a total process input rate of 36,800 lbs/hr soap and black liquor and 12.345 lbs/hr Sulfuric Acid).

3. In accordance with Florida Administrative Code (F.A.C.) Rule 17-2.600(4)(c)2., total reduced sulfur (TRS) emissions from the Tall Oil Plant shall not exceed 0.05 lb/ton crude tall oil produced as a 12-hour average (0.50 lb/hr, 2.2 TPY). A scrubber shall be used to control TRS emissions continuously.

4. Compliance tests shall be conducted using EPA Method 16 or 16A, Determination of TRS emissions from Stationary Sources, pursuant to F.A.C. Rule 17-2.700 and 40 CFR 60, Appendix A.

5. Objectionable odors shall not be allowed off plant property in accordance with F.A.C. Rule 17-2.620(2).

6. The project shall comply with all applicable provisions of F.A.C. Chapters 17-2 and 17-4.

7. Pursuant to F.A.C. Rule 17-2.600(4)(c)2.b., the Tall Oil Plant is subject to the provisions of F.A.C. Rule 17-2.710, Continuous Monitoring Requirements, which includes F.A.C. Rules 17-2.710(3), General Requirements and Establishing Specific Surrogate Parameters, and 17-2.710(4), Quarterly Reporting Requirements.

PERMITTEE:
Procter & Gamble
Cellulose Co.

Permit Number: AC 62-168453
Expiration Date: January 31, 1990

SPECIFIC CONDITIONS:

8. The project is subject to the provisions of F.A.C. Rules 17-2.240: Circumvention; 17-2.250: Excess Emissions; and, 17-4.130: Plant Operation-Problems.

9. The DER's Northeast District office shall be notified in writing 15 days^a prior to source testing pursuant to F.A.C. Rule 17-2.700(2)(a)~~5~~. Written reports of the tests shall be submitted to the DER's Northeast District office within 45 days of test completion pursuant to F.A.C. Rule 17-2.700(7).

10. Any change in the method of operation, raw materials and chemicals processed, equipment, or operating hours pursuant to F.A.C. Rule 17-2.100(119), Modification, shall be submitted for approval to the DER's Bureau of Air Regulation (BAR) office and Northeast District office.

11. The Tall Oil Plant is subject to the provisions of F.A.C. Rule 17-2.971(2)(c), Compliance Schedules for Continuous Monitoring Requirements.

12. The permittee, for good cause, may request that this construction permit be extended. Such a request shall be submitted to the BAR prior to 60 days before the expiration of the permit (F.A.C. Rule 17-4.090).

13. An application for an operation permit must be submitted to the DER's Northeast District office at least 90 days prior to the expiration date of this construction permit or within 45 days after completion of compliance testing, whichever occurs first. To properly apply for an operation permit, the applicant shall submit the appropriate application form, fee, certification that construction was completed noting any deviations from the conditions in the construction permit, and compliance test reports as required by this permit (F.A.C. Rule 17-4.220).

Issued this _____ day
of _____, 1989

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION

Dale Twachtman, Secretary



**PROCTER & GAMBLE
CELLULOSE**

THE PROCTER & GAMBLE CELLULOSE COMPANY
RT. 3, BOX 260
PERRY, FLORIDA 32347-9512
PHONE: (904) 584-0121

July 27, 1989

RECEIVED

AUG 02 1989

DER-BAQM

Mr. Clair H. Fancy, Deputy Chief
Bureau of Air Quality Management
Florida Department of
Environmental Regulation
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Re: Tall Oil Plant Construction Permit Modification Request

Dear Mr. Fancy:

This is to request a change in the maximum allowable production rate in the tall oil plant construction permit from 7.29 tons/hr to 10 tons/hr.

The interim operating permit for this source was originally filed with a 10 ton/hr production rate. Subsequent to that, the original construction permit was submitted with a rate of 7.29 tons/hr, due to our lack of confidence in the maximum achievable rate. However, during the recent compliance verification tests, we realized that the 10 tons/hr rate was within the capability of the source. In fact, the average production rate during the tests averaged 9.7 tons/hr. The TRS emissions at this rate were 31% of the allowable emissions.

The construction permit application and the results of the recent compliance tests are attached. Also attached is a check in the amount of \$200 for the permit fee.

We appreciate your consideration of this request. If there are any additional questions, please call me at (904) 584-0347.

Very truly yours,

THE PROCTER & GAMBLE CELLULOSE COMPANY

R. Andreu
Environmental Control Manager

RA:msw
TallOil
Attachments

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

#200 pd.
8-1-89
Receipt # 117642

NORTHEAST DISTRICT

3426 BILLS ROAD
JACKSONVILLE, FLORIDA 32207
(904) 396-6959



AC 62-164453

BOB GRAHAM
GOVERNOR
VICTORIA J. TSCHINKEL
SECRETARY
ERNEST E. FREY
DISTRICT MANAGER

APPLICATION TO OPERATE/CONSTRUCT AIR POLLUTION SOURCES

SOURCE TYPE: Kraft Pulp & Paper [] New¹ [X] Existing¹
APPLICATION TYPE: [X] Construction [] Operation [X] Modification
COMPANY NAME: The Procter & Gamble Cellulose Company COUNTY: Taylor
Identify the specific emission point source(s) addressed in this application (i.e. Lime
Kiln No. 4 with Venturi Scrubber; Peaking Unit No. 2, Gas Fired) Tall Oil System
SOURCE LOCATION: Street 5 to 6 Miles Southeast of Perry City Perry
UTM: East 256,740 North 3,328,700
Latitude 30° 03' 59" N Longitude 83° 33' 12" W
APPLICANT NAME AND TITLE: C. S. Aiken, Plant Manager
APPLICANT ADDRESS: Route 3, Box 260; Perry, Florida 32347

SECTION I: STATEMENTS BY APPLICANT AND ENGINEER

A. APPLICANT

I am the undersigned owner or authorized representative* of Procter & Gamble Cellulose

I certify that the statements made in this application for a construction permit are true, correct and complete to the best of my knowledge and belief. Further, I agree to maintain and operate the pollution control source and pollution control facilities in such a manner as to comply with the provision of Chapter 403, Florida Statutes, and all the rules and regulations of the department and revisions thereof. I also understand that a permit, if granted by the department, will be non-transferable and I will promptly notify the department upon sale or legal transfer of the permitted establishment.

*Attach letter of authorization

Signed: C. S. Aiken

C. S. Aiken, Plant Manager
Name and Title (Please Type)

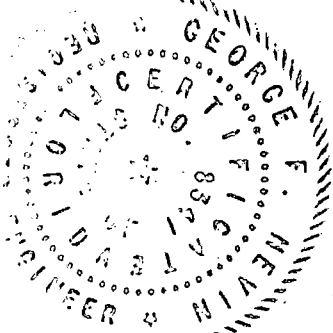
Date: 7/31/89 Telephone No. 904/584-0128

B. PROFESSIONAL ENGINEER REGISTERED IN FLORIDA (where required by Chapter 471, F.S.)

This is to certify that the engineering features of this pollution control project have been designed/examined by me and found to be in conformity with modern engineering principles applicable to the treatment and disposal of pollutants characterized in the permit application. There is reasonable assurance, in my professional judgment, that

¹ See Florida Administrative Code Rule 17-2.100(57) and (104)

the pollution control facilities, when properly maintained and operated, will discharge an effluent that complies with all applicable statutes of the State of Florida and the rules and regulations of the department. It is also agreed that the undersigned will furnish, if authorized by the owner, the applicant a set of instructions for the proper maintenance and operation of the pollution control facilities and, if applicable, pollution sources.



Signed George F. Nevin

George F. Nevin
Name (Please Type)

Watkins Engineers & Constructors
Company Name (Please Type)

P.O. Box 2194 Tallahassee, FL 32316
Mailing Address (Please Type)

Florida Registration No. 8341 Date: 7/28/89 Telephone No. 904/576-7181

SECTION II: GENERAL PROJECT INFORMATION

A. Describe the nature and extent of the project. Refer to pollution control equipment, and expected improvements in source performance as a result of installation. State whether the project will result in full compliance. Attach additional sheet if necessary.

A new scrubber will be added in the tall oil plant. The scrubber will use an alkaline solution as a scrubbing medium. This will result in lower TRS emissions and in full compliance with DER Rule 17-2.600(4)(c)2., FAC, for tall oil plants.

B. Schedule of project covered in this application (Construction Permit Application Only)

Start of Construction June, 1988 Completion of Construction April, 1989

C. Costs of pollution control system(s): (Note: Show breakdown of estimated costs only for individual components/units of the project serving pollution control purposes. Information on actual costs shall be furnished with the application for operation permit.)

Cost of overall TRS compliance project \$16,000,000 (approximately)

D. Indicate any previous DER permits, orders and notices associated with the emission point, including permit issuance and expiration dates.

The system is subject to DER Permit No. A062-113892, dated July 8, 1986, and amended April 7, 1987, and November 2, 1987, (expiration date August 10, 1989) based on

application dated December 19, 1985, and additional information submitted March 20, 1986,
DER Form 17-1.202(1) and April 14, 1986, and September 15, 1987, and AC62-141922 dated 5/27/88 expires 9/24/89
Effective October 31, 1982 Page 2 of 12

E. Requested permitted equipment operating time: hrs/day 24; days/wk 7; wks/yr 52; if power plant, hrs/yr _____; if seasonal, describe: _____
Not Applicable

F. If this is a new source or major modification, answer the following questions. (Yes or No) NOT APPLICABLE

1. Is this source in a non-attainment area for a particular pollutant? _____
 - a. If yes, has "offset" been applied? _____
 - b. If yes, has "Lowest Achievable Emission Rate" been applied? _____
 - c. If yes, list non-attainment pollutants. _____
2. Does best available control technology (BACT) apply to this source? If yes, see Section VI. _____
3. Does the State "Prevention of Significant Deterioration" (PSD) requirement apply to this source? If yes, see Sections VI and VII. _____
4. Do "Standards of Performance for New Stationary Sources" (NSPS) apply to this source? _____
5. Do "National Emission Standards for Hazardous Air Pollutants" (NESHAP) apply to this source? _____

H. Do "Reasonably Available Control Technology" (RACT) requirements apply to this source? No

- a. If yes, for what pollutants? Not Applicable
- b. If yes, in addition to the information required in this form, any information requested in Rule 17-2.650 must be submitted.

Attach all supportive information related to any answer of "Yes". Attach any justification for any answer of "No" that might be considered questionable.

SECTION III: AIR POLLUTION SOURCES & CONTROL DEVICES (Other than Incinerators)

A. Raw Materials and Chemicals Used in your Process, if applicable:

Description	Contaminants		Utilization Rate - lbs/hr	Relate to Flow Diagram
	Type	% Wt		
Soap & Black Liquor			36,800	
Sulfuric Acid			12,345	
(H ₂ SO ₄)				

B. Process Rate, if applicable: (See Section V, Item 1) 36,800 lb/hr soap+black liquor+

1. Total Process Input Rate (lbs/hr): 12,345 lb/hr H₂SO₄ (dry)

2. Product Weight (lbs/hr): 20,000 lb/hr tall oil (dry)

C. Airborne Contaminants Emitted: (Information in this table must be submitted for each emission point, use additional sheets as necessary)

Name of Contaminant	* Emission ¹		Allowed ² Emission Rate per Rule 17-2	Allowable ³ Emission lbs/hr	Potential ⁴ Emission		Relate to Flow Diagram
	Maximum lbs/hr	Actual T/yr			lbs/yr	T/yr	
TRS	0.500	2.2	0.05 lb.	0.500	No Factor	---	New
			per ton Crude		Limited Information		Scrubber
			12-hr avg.				discharge
			17-2.600(4)				
			(c)2.a.				

¹See Section V, Item 2.

²Reference applicable emission standards and units (e.g. Rule 17-2.600(5)(b)2. Table II, E. (1) - 0.1 pounds per million BTU heat input)

³Calculated from operating rate and applicable standard.

⁴Emission, if source operated without control (See Section V, Item 3).

* Data from TRS compliance tests 6/15/89, actual emissions 0.15 lb/hr, allowable emissions 0.49 lb/hr.

D. Control Devices: (See Section V, Item 4)

Name and Type (Model & Serial No.)	Contaminant	Efficiency	Range of Particles Size Collected (in microns) (If applicable)	Basis for Efficiency (Section V Item 5)
Anderson 2000 Inc. Two stage packed tower Model No. M-2.6-2 S/N S-4889-833	TRS	99.9	Not Applicable	Design

E. Fuels

Type (Be Specific)	Consumption*		Maximum Heat Input (MMBTU/hr)
	avg/hr	max./hr	
Not Applicable			

*Units: Natural Gas--MMCF/hr; Fuel Oils--gallons/hr; Coal, wood, refuse, other--lbs/hr.

Fuel Analysis:

Percent Sulfur: _____ Percent Ash: _____
 Density: _____ lbs/gal Typical Percent Nitrogen: _____
 Heat Capacity: _____ BTU/lb _____ BTU/gal
 Other Fuel Contaminants (which may cause air pollution): _____

F. If applicable, indicate the percent of fuel used for space heating.

Annual Average _____ Maximum _____

G. Indicate liquid or solid wastes generated and method of disposal.

All liquid wastes will be recycled or sewerred to the NPDES waste water treatment system.
 All solid wastes will be landfilled on site.

H. Emission Stack Geometry and Flow Characteristics (Provide data for each stack):

Stack Height: 50 ft. Stack Diameter: 1' 2" ft.
 Gas Flow Rate: 2100 ACFM 1200 DSCFM Gas Exit Temperature: 165 °F.
 Water Vapor Content: Saturated 40 % Velocity: 32 FPS

SECTION IV: INCINERATOR INFORMATION

Type of Waste	Type 0 (Plastics)	Type I (Rubbish)	Type II (Refuse)	Type III (Garbage)	Type IV (Pathological)	Type V (Liq. & Gas By-prod.)	Type VI (Solid By-prod.)
Actual lb/hr Incinerated							
Uncontrolled (lbs/hr)							

Description of Waste _____

Total Weight Incinerated (lbs/hr) _____ Design Capacity (lbs/hr) _____

Approximate Number of Hours of Operation per day _____ day/wk _____ wks/yr. _____

Manufacturer _____

Date Constructed _____ Model No. _____

	Volume (ft) ³	Heat Release (BTU/hr)	Fuel		Temperature (°F)
			Type	BTU/hr	
Primary Chamber					
Secondary Chamber					

Stack Height: _____ ft. Stack Diameter: _____ Stack Temp. _____

Gas Flow Rate: _____ ACFM _____ DSCFM* Velocity: _____ FPS

*If 50 or more tons per day design capacity, submit the emissions rate in grains per standard cubic foot dry gas corrected to 50% excess air.

Type of pollution control device: Cyclone Wet Scrubber Afterburner
 Other (specify) _____

Brief description of operating characteristics of control devices: _____

Not Applicable

Ultimate disposal of any effluent other than that emitted from the stack (scrubber water, ash, etc.):

Not Applicable

NOTE: Items 2, 3, 4, 6, 7, 8, and 10 in Section V must be included where applicable.

SECTION V: SUPPLEMENTAL REQUIREMENTS

Please provide the following supplements where required for this application.

1. Total process input rate and product weight -- show derivation [Rule 17-2.100(127)]
2. To a construction application, attach basis of emission estimate (e.g., design calculations, design drawings, pertinent manufacturer's test data, etc.) and attach proposed methods (e.g., FR Part 60 Methods 1, 2, 3, 4, 5) to show proof of compliance with applicable standards. To an operation application, attach test results or methods used to show proof of compliance. Information provided when applying for an operation permit from a construction permit shall be indicative of the time at which the test was made.
3. Attach basis of potential discharge (e.g., emission factor, that is, AP42 test).
4. With construction permit application, include design details for all air pollution control systems (e.g., for baghouse include cloth to air ratio; for scrubber include cross-section sketch, design pressure drop, etc.)
5. With construction permit application, attach derivation of control device(s) efficiency. Include test or design data. Items 2, 3 and 5 should be consistent: actual emissions = potential (1-efficiency).
6. An 8 1/2" x 11" flow diagram which will, without revealing trade secrets, identify the individual operations and/or processes. Indicate where raw materials enter, where solid and liquid waste exit, where gaseous emissions and/or airborne particles are evolved and where finished products are obtained.
7. An 8 1/2" x 11" plot plan showing the location of the establishment, and points of airborne emissions, in relation to the surrounding area, residences and other permanent structures and roadways (Example: Copy of relevant portion of USGS topographic map).
8. An 8 1/2" x 11" plot plan of facility showing the location of manufacturing processes and outlets for airborne emissions. Relate all flows to the flow diagram.

9. The appropriate application fee in accordance with Rule 17-4.05. The check should be made payable to the Department of Environmental Regulation.
10. With an application for operation permit, attach a Certificate of Completion of Construction indicating that the source was constructed as shown in the construction permit.

SECTION VI: BEST AVAILABLE CONTROL TECHNOLOGY
NOT APPLICABLE

A. Are standards of performance for new stationary sources pursuant to 40 C.F.R. Part 60 applicable to the source?

Yes No

Contaminant	Rate or Concentration
_____	_____
_____	_____
_____	_____
_____	_____

B. Has EPA declared the best available control technology for this class of sources (If yes, attach copy)

Yes No

Contaminant	Rate or Concentration
_____	_____
_____	_____
_____	_____
_____	_____

C. What emission levels do you propose as best available control technology?

Contaminant	Rate or Concentration
_____	_____
_____	_____
_____	_____
_____	_____

D. Describe the existing control and treatment technology (if any).

- | | |
|---------------------------|--------------------------|
| 1. Control Device/System: | 2. Operating Principles: |
| 3. Efficiency:* | 4. Capital Costs: |

*Explain method of determining

NOT APPLICABLE

5. Useful Life:

6. Operating Costs:

7. Energy:

8. Maintenance Cost:

9. Emissions:

Contaminant

Rate, or Concentration

Contaminant	Rate, or Concentration

10. Stack Parameters

a. Height:

ft.

b. Diameter:

ft.

c. Flow Rate:

ACFM

d. Temperature:

°F.

e. Velocity:

FPS

E. Describe the control and treatment technology available (As many types as applicable, use additional pages if necessary).

1.

a. Control Device:

b. Operating Principles:

c. Efficiency:¹

d. Capital Cost:

e. Useful Life:

f. Operating Cost:

g. Energy:²

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

2.

a. Control Device:

b. Operating Principles:

c. Efficiency:¹

d. Capital Cost:

e. Useful Life:

f. Operating Cost:

g. Energy:²

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

¹Explain method of determining efficiency.

²Energy to be reported in units of electrical power - KWH design rate.

NOT APPLICABLE

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

3.

a. Control Device:

b. Operating Principles:

c. Efficiency:¹

d. Capital Cost:

e. Useful Life:

f. Operating Cost:

g. Energy:²

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

4.

a. Control Device:

b. Operating Principles:

c. Efficiency:¹

d. Capital Costs:

e. Useful Life:

f. Operating Cost:

g. Energy:²

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

F. Describe the control technology selected:

1. Control Device:

2. Efficiency:¹

3. Capital Cost:

4. Useful Life:

5. Operating Cost:

6. Energy:²

7. Maintenance Cost:

8. Manufacturer:

9. Other locations where employed on similar processes:

a. (1) Company:

(2) Mailing Address:

(3) City:

(4) State:

¹Explain method of determining efficiency.

²Energy to be reported in units of electrical power - KWH design rate.

NOT APPLICABLE

(5) Environmental Manager:

(6) Telephone No.:

(7) Emissions:¹

Contaminant

Rate or Concentration

Contaminant	Rate or Concentration

(8) Process Rate:¹

b. (1) Company:

(2) Mailing Address:

(3) City:

(4) State:

(5) Environmental Manager:

(6) Telephone No.:

(7) Emissions:¹

Contaminant

Rate or Concentration

Contaminant	Rate or Concentration

(8) Process Rate:¹

10. Reason for selection and description of systems:

¹Applicant must provide this information when available. Should this information not be available, applicant must state the reason(s) why.

SECTION VII - PREVENTION OF SIGNIFICANT DETERIORATION

NOT APPLICABLE

A. Company Monitored Data

1. _____ no. sites _____ TSP _____ () SO₂* _____ Wind spd/dir

Period of Monitoring _____ / _____ / _____ to _____ / _____ / _____
month day year month day year

Other data recorded _____

Attach all data or statistical summaries to this application.

*Specify bubbler (B) or continuous (C).

NOT APPLICABLE

2. Instrumentation, Field and Laboratory

a. Was instrumentation EPA referenced or its equivalent? [] Yes [] No

b. Was instrumentation calibrated in accordance with Department procedures?
[] Yes [] No [] Unknown

B. Meteorological Data Used for Air Quality Modeling

1. _____ Year(s) of data from _____ / _____ / _____ to _____ / _____ / _____
month day year month day year

2. Surface data obtained from (location) _____

3. Upper air (mixing height) data obtained from (location) _____

4. Stability wind rose (STAR) data obtained from (location) _____

C. Computer Models Used

1. _____ Modified? If yes, attach description.

2. _____ Modified? If yes, attach description.

3. _____ Modified? If yes, attach description.

4. _____ Modified? If yes, attach description.

Attach copies of all final model runs showing input data, receptor locations, and principle output tables.

D. Applicants Maximum Allowable Emission Data

Pollutant	Emission Rate
TSP	_____ grams/sec
SO ²	_____ grams/sec

E. Emission Data Used in Modeling

Attach list of emission sources. Emission data required is source name, description of point source (on NEDS point number), UTM coordinates, stack data, allowable emissions, and normal operating time.

F. Attach all other information supportive to the PSD review.

G. Discuss the social and economic impact of the selected technology versus other applicable technologies (i.e., jobs, payroll, production, taxes, energy, etc.). Include assessment of the environmental impact of the sources.

H. Attach scientific, engineering, and technical material, reports, publications, journals, and other competent relevant information describing the theory and application of the requested best available control technology.

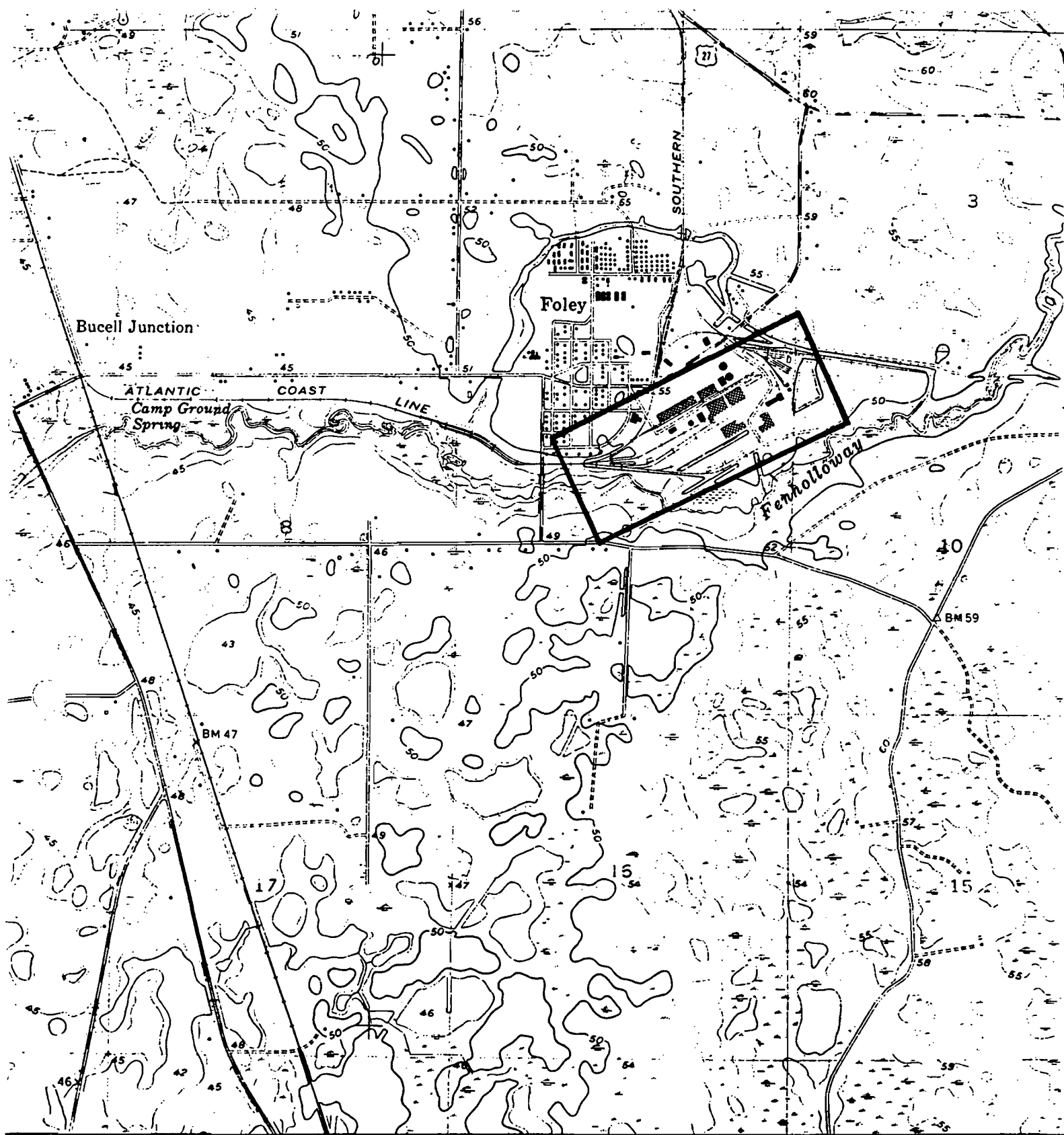
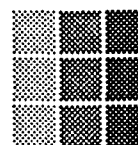


FIGURE IV-1

USGS LOCATION MAP

BUCKEYE CELLULOSE CORPORATION
 FOLEY PLANT, PERRY, FLORIDA



SIRRINE
 ENVIRONMENTAL
 CONSULTANTS

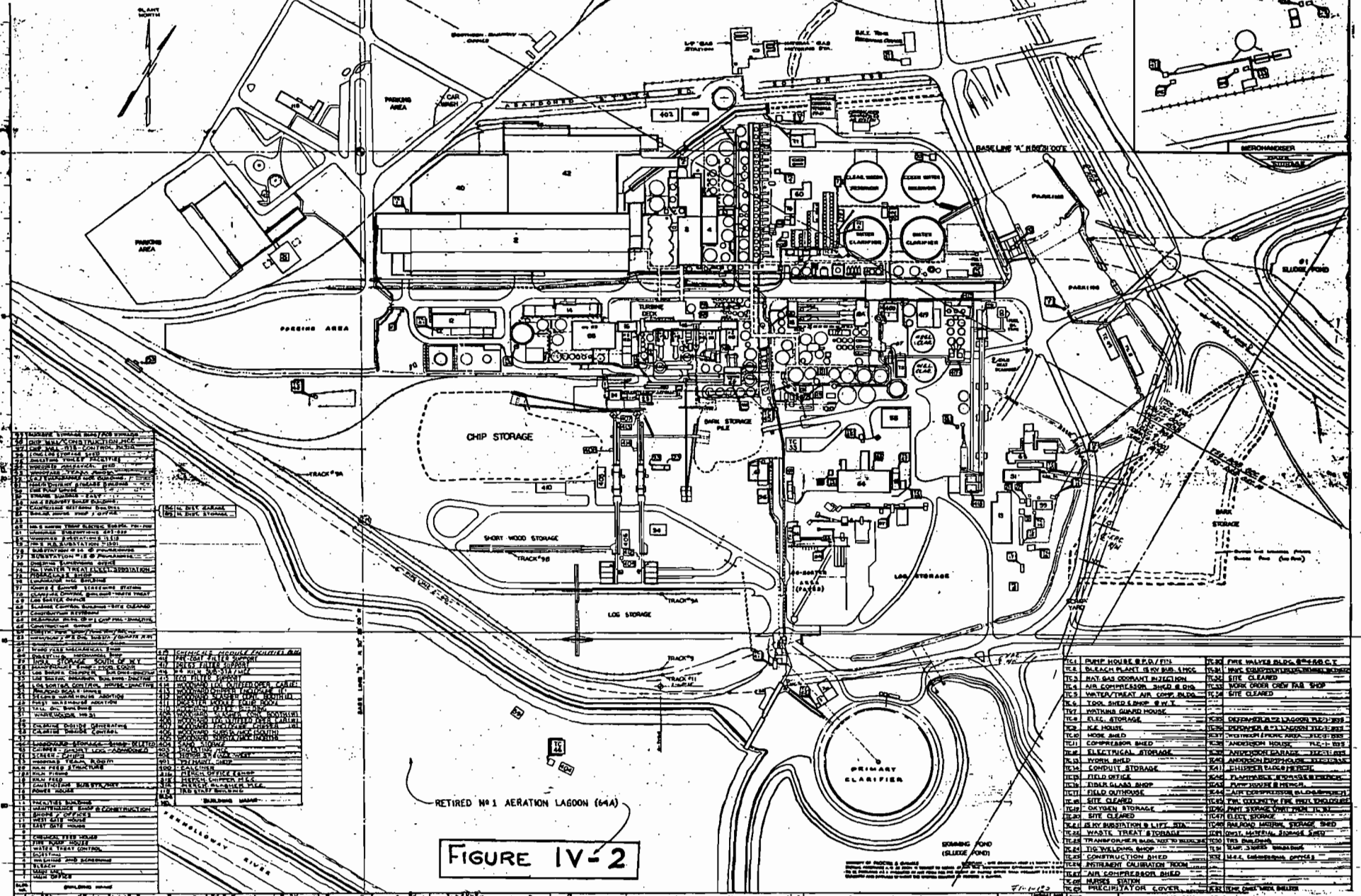


FIGURE IV-2

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THE SUGGESTED CELLULOSE CORP.
 81 EAST 8th STREET
 SALT LAKE CITY, UTAH

— EXISTING
 - - - NEW

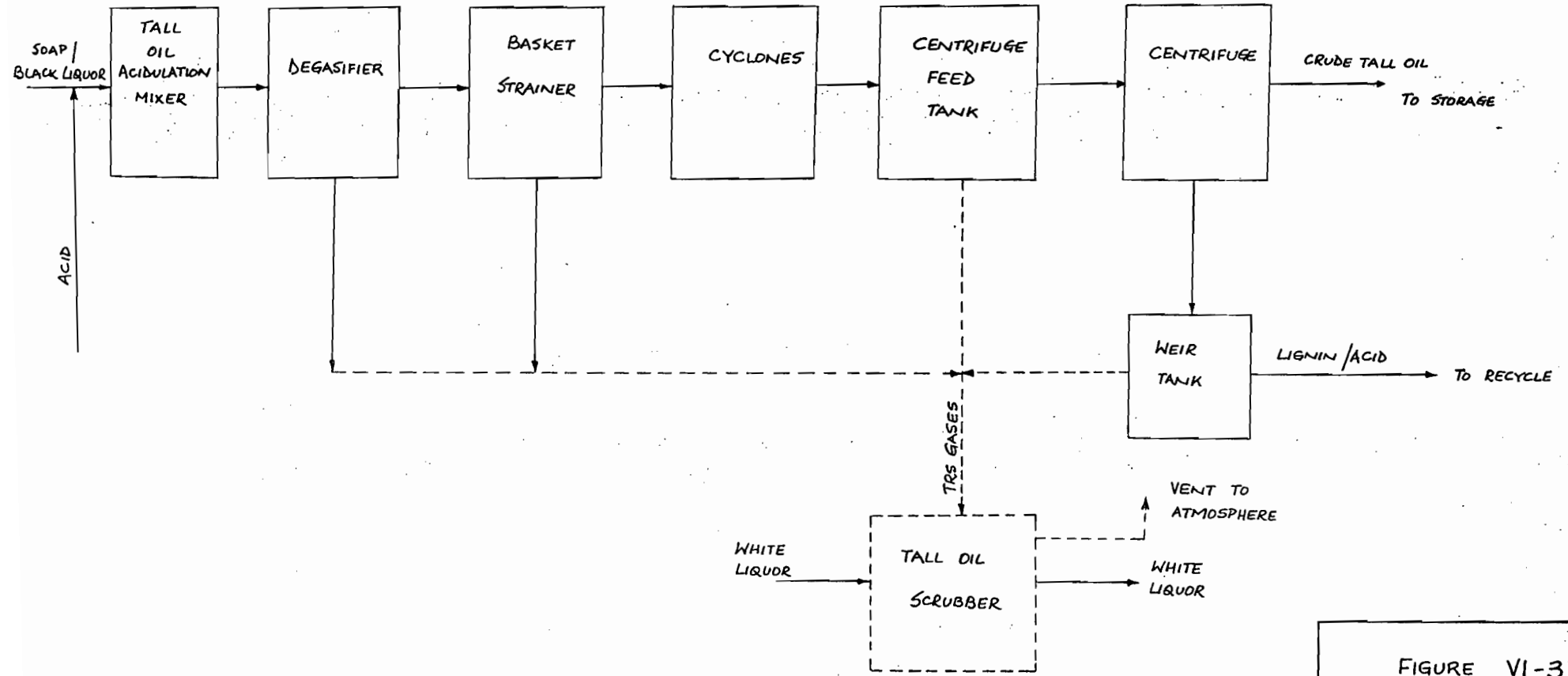


FIGURE VI-3
 TALL OIL PLANT
 BUCKEYE CELLULOSE CORPORATION
 FOLEY PLANT, PERRY, FLORIDA



ANDERSEN 2000 INC.
REDUCED SULFUR COMPOUND SCRUBBING SYSTEM
TO CONTROL ODORS FROM
TALL OIL PRODUCTION FACILITY AT
BUCKEYE CELLULOSE CORPORATION

ENGINEERING MANUAL
WITH
OPERATING AND
MAINTENANCE
INSTRUCTIONS

FOR

BUCKEYE CELLULOSE CORPORATION
ROUTE #3, BOX 260
PERRY, FLORIDA 32347

PACKED TOWER MODEL NO.: M-2.6-2 (TWO STAGE)
SERIAL NO.: S-4889-833

AE	<u>6493</u>
JOB FILE	<u>F1-17-023</u>
EQUIP. NO.	<u>17-028</u>
P. O. NO.	<u>FL 89838</u>

I. EQUIPMENT DESCRIPTION

A. Packed Tower

The Model M-2.6-2 two stage packed tower vessel is constructed of 3/16" thick Type 316 L S.S. The overall height of the vessel is 50'-0" with an inside diameter of 36". The vessel is supplied with a 14" I.D. flanged inlet connection and a 14" I.D. flanged outlet connection with a 11'-4" tall exhaust stack. Reference Drawing 833-100 for flange dimensions, bolt circle dimensions, and number/size of bolts per flange. The vessel is also supplied with an integral recirculation tank, chimney tray, stage #1 and #2 multi-beam packing support plates, 85 ft³ of 2" polypropylene saddle packing per each stage (each stage packing height is 12'-0"), and stage #1 and stage #2 liquid distributors.

There are six, 24" manways for easy access to the above mentioned vessel internals. Reference Drawings 833-100 and 833-200 for overall dimensions and internal details.

Stage #1 liquid is fed to its respective liquid distributor through a 2 1/2"-150# flanged connection from the recirculation pump (supplied by customer). Stage #2 liquid is also fed to its respective liquid distributor through a 2 1/2"-150# flanged connection. Stage #2 discharge liquid is drained from a 4" flange connection at the base of the chimney tray to the integral recirculation tank at the bottom of the tower.

The packing may be cleaned in place by flushing with clear water. If the packing has been "caked" over with solids, flushing will not be effective and the packing will have to be removed, washed by hand, or replaced and dumped back into the tower. The plastic packing you have been supplied can be "dumped" into the vessel without harm. Tamping or shaking the packing is not necessary and, in fact, is not recommended since it will alter the characteristics of the packed bed, and will affect performance.

V. ANDERSEN 2000 INC.
PACKED TOWER SCRUBBER AND AUXILIARY EQUIPMENT
DATA SHEET

A. PACKED TOWER (STAGE #1)

1. Gas Flow Rate: 2635.5 acfm 15.097 psia
2. Static Pressure: +10 " W.G.
3. Inlet Temperature: 140 °F
4. Design Differential Pressure: 3.0 " W.G.
5. Materials of Construction: 3/16" LType 316 L S.S.
6. Type of Packing: 2" Polypropylene Intalox Saddles
7. Depth of Packing: 12'-0"
8. Support Plate Materials of Construction: Type 316 L S.S.
9. Liquid Distributor Materials of Construction: Type 316 L S.S.
10. Liquid Feed Rate: 82 gpm
11. Vessel Design Pressure: +50 psig , -0.25" Hg

B. CHIMNEY TRAY

1. Gas Flow Rate: 2600 acfm @ 14.949 psia
2. Static Pressure: +7" w.g.
3. Inlet Temperature: 138.6 °F
4. Design Differential Pressure: 1" w.g.
5. Materials of Construction: 11 Ga. Type 316 L S.S.
6. Cylinder Diameter: 24" I.D.
7. Height of Cylinder: 7
8. Cylinder to Disc Height: 5"
9. Disc Diameter: 23 5/8" O.D.
10. Drain Size: 4" Sch. 40 Pipe

C. PACKED TOWER (STAGE #2)

1. Gas Flow Rate: 2606 acfm 14.913 psia
2. Static Pressure: +6" W.G.
3. Inlet Temperature: 138.6 °F
4. Design Differential Pressure: 3.0 " W.G.
5. Materials of Construction: 3/16" Type 316 L S.S.
6. Type of Packing: 2" Polypropylene Intalox Saddles
7. Depth of Packing: 12'-0"
8. Support Plate Materials of Construction: Type 316 L S.S.
9. Liquid Distributor Materials of Construction: Type 316 L S.S.
10. Liquid Feed Rate: 82 gpm
11. Vessel Design Pressure: +50 psig, -0.25" Hg

D. MIST ELIMINATOR

1. Diameter: 36"
2. Ledge Width: 2"
3. Elective Area: 5.5851 ft²
4. Gas Flow Rate: 2625 acfm, 14.8043 psia
5. Velocity: 470 fpm, 7.83 fps
6. Design Pressure Drop: 0.6 " w.g.
7. Materials of Construction: Type 316 S.S.

Note: Total pressure drop = 10" w.g. which includes 2.4" w.g. safety allowance for pluggage, etc.

TRS Certification Tests

Tall Oil Plant

Allowed TRS 0.05 lb TRS / Ton @ TO produced
 Tall oil rate measured by inches/hour
 2500 lb tall oil / inch

Run 1

7.7 inches/hr CTO produced $\times 2500 \text{ lb/in} \div 2000 \text{ lb/ton} = 9.6$
 CTO rate 9.6 T/hr $\times 0.05 \text{ lb TRS/Ton CTO} = 0.48 \text{ lb TRS/hr Allowed}$

$$\text{TRS test lb/hr} = \frac{(14.7 \text{ ppm TRS}) (34)^{\text{MW}} (1156 \text{ SDCFM}) (60 \text{ min/hr})}{385.1 \times 10^6}$$

$$= 0.09 \text{ lb/hr TRS}$$

Run 2

7.7 inches/hr CTO produced $\times 2500 \text{ lb/in} \div 2000 \text{ lb/ton} = 9.6$
 CTO rate 9.6 T/hr $\times 0.05 \text{ lb TRS/Ton CTO} = 0.48 \text{ lb TRS/hr Allowed}$

$$\text{TRS test lb/hr} = \frac{(18.07 \text{ ppm TRS}) (34)^{\text{MW}} (1156 \text{ SDCFM}) (60 \text{ min/hr})}{385.1 \times 10^6}$$

$$= 0.11 \text{ lb/hr TRS}$$

Run 3

8 inches/hr CTO produced $\times 2500 \text{ lb/in} \div 2000 \text{ lb/ton} = 10$
 CTO rate 10 T/hr $\times 0.05 \text{ lb TRS/Ton CTO} = 0.50 \text{ lb TRS/hr Allowed}$

$$\text{TRS test lb/hr} = \frac{(41.81 \text{ ppm TRS}) (34)^{\text{MW}} (1156 \text{ SDCFM}) (60 \text{ min/hr})}{385.1 \times 10^6}$$

$$= 0.26 \text{ lb/hr TRS}$$

Tall Oil Plant Scrubber
Caustic Addition Calculations

50% Caustic

Has 1.525 specific gravity = 12.7 lb/gal

Let: X = fraction of solution that is H₂O

(1-X) = fraction of solution that is NaOH

y = lb/gal of pure (100%) NaOH

$$8.33 (X) = 1/2 (12.7)$$

$$X = 0.762 \text{ \& } (1-X) = 0.238$$

$$\text{and } 12.7 = 8.33 X + (1-X)y$$

$$12.7 = 8.33 (0.762) + (0.238)y$$

$$y = 26.68 \text{ lb/gal}$$

3% Caustic

Let: X¹ = fraction of solution that is H₂O

(1-X¹) = fraction of solution that is NaOH

y = lb/gal of 3% caustic solution

$$1) (X^1) 8.33 + (1-X^1) 26.68 = y$$

$$2) (1-X^1) 26.68 = 0.03y$$

Combining

$$(X^1) 8.33 + (1-X^1) 26.68 = (1-X^1) 889.33$$

$$8.33 X^1 + 26.68 - 26.68 X^1 = 889.33 - 889.33 X^1$$

$$870 X^1 = 862.65$$

$$X^1 = 0.9916$$

$$(1-X^1) = 0.0084$$

$$y = 8.484$$

During TRS Test

We used 10 gpm of 3% caustic

(10 gpm) (0.0084) fraction of solution that is NaOH = 0.08 gpm 100% NaOH
or approximately 0.1 gpm 100% NaOH in aqueous solution.

(0.1 gpm) (26.68 lb/gal) = 2.7 lb/min of 100% NaOH in aqueous solution.

Procter + Gamble Cellulose - Perry, FL 32347

Source: Tall Oil Plant

Date: 6/15/89

Method: EPA 16A

Run # 1
 $V_m = 13.514 \text{ ft}^3$
 $T_m = 551 \text{ }^\circ\text{R}$
 $P_{bar} = 29.93 \text{ in. Hg}$
 $V_{soln} = 100 \text{ ml}$
 $V_a = 25 \text{ ml}$
 $N_{BaCl_2} = 0.01$
 $\text{ml BaCl}_2 = 10.94$

Recovery Check
 $V_m = 2.868 \text{ ft}^3$
 $T_m = 551 \text{ }^\circ\text{R}$
 $P_{bar} = 29.92 \text{ in. Hg}$
 $V_{soln} = 100 \text{ ml}$
 $V_a = 25 \text{ ml}$
 $N_{BaCl_2} = 0.01$
 $\text{ml BaCl}_2 = 0.97$
Gas Conc = 6.04 ppm H_2S

Run # 1
 $V_m(\text{std}) = (17.64)(13.514)(0.976)(29.93) / (551)$
 $V_m(\text{std}) = (12.638 \text{ ft}^3)(28.32 \text{ Liters/ft}^3) = 357.92 \text{ Liters}$

$\text{CTRS}(\text{ppm}) = (12025)(0.01)(10.94) \left(\frac{100}{25}\right) / (357.92)$
 $\text{CTRS}(\text{ppm}) = 14.70 \text{ ppm}$

Recovery Check

$V_m(\text{std}) = (17.64)(2.868)(0.976)(29.92) / (551)$
 $V_m(\text{std}) = (2.681 \text{ ft}^3)(28.32 \text{ Liters/ft}^3) = 75.93 \text{ Liters}$

$\text{CTRS}(\text{ppm}) = (12025)(0.01)(0.97) \left(\frac{100}{25}\right) / (75.93)$
 $\text{CTRS}(\text{ppm}) = 6.14$
 $\text{Rec} = \left[\frac{(6.14)}{(6.04)} \right] \times 100 = 101.7 \%$

DATE 6/15/89RUN # 1 contSOURCE Tall Oil Plant

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TIME	DGM cubic feet	DGM Temp degrees F	PRESSURE inches Hg	ROTOMETER % spin	IMPINGER DIT Temp degrees F	Combustion Furnace	Probe Sensor	Pro Fil
1735	265.47	92°F	29.92	120%	34°F	1600°F	251°F	12
1740	265.84	92°F	29.92	120	34	1600	250	12
1745	266.21	92	29.93	120	34	1600	253	12
1750	266.58	92	29.92	120	34	1600	254	12
1755	266.86	92	29.91	120	34	1600	253	12
1800	267.34	92	29.91	120	34	1600	253	12
1805	267.72	91	29.91	120	34	1600	252	12
	267.814	Leak check good at			24" Hg			
	Vm	Tm	Pbar					
	13.514	551	29.93					
	Sample Train Recovery Check							
	267.814	Leak check			good at 24" Hg			
1820	267.90	91°F	29.92	120%	44	1660	255	124
1825	268.29	91	29.92	120	39	1625	253	124
1830	268.67	91	29.92	120	38	1620	246	124
1835	269.05	91	29.92	120	36	1610	237	124
1840	269.44	91	29.92	120	35	1600	231	124
1845	269.82	90	29.92	120	35	1600	223	124
1850	270.20	90	29.92	120	35	1600	222	124
1855	270.58	90	29.92	120	35	1600	222	124
	270.682	Leak check good at			24" Hg			
	Vm	Tm	Pbar					
	2.868	551	29.92					

POST TEST SAMPLE RECOVERY EPA METHOD 16A

DATE: 6/15/89

RUN: 1

COMBUSTION AIR FLOW

SECONDS	ML
<u>11.00</u>	<u>250</u>
<u>11.00</u>	
<u>10.94</u>	

AVG 10.98

HYDROGEN SULFIDE FLOW

SECONDS	ML
<u>11.04</u>	<u>250</u>
<u>11.00</u>	
<u>11.00</u>	

AVG 11.01

COMBUSTION AIR FLOW = $(250 \text{ ML} \cdot 60 \text{ SEC} / \text{MIN}) / 10.98 \text{ SEC} = 1366 \text{ ML} / \text{MIN}$

H2S FLOW = $(250 \text{ ML} \cdot 60 \text{ SEC} / \text{MIN}) / 11.01 \text{ SEC} = 1362 \text{ ML} / \text{MIN}$

GAS CYLINDER# SG-0050NB CONC. 12.09 PPM H2S

CAL GAS CONC = $(\text{CONC H2S} \cdot \text{ML} / \text{MIN H2S}) / \text{TOTAL ML} / \text{MIN}$

CAL GAS CONC =

$(12.09)(1362) / 2728 = 6.04 \text{ ppm}$

1366
1362
<u>2728</u>

LABORATORY DATA SHEET
ANALYSIS PER EPA METHOD 6

LOCATION Procter + Gamble Cellulose

SOURCE Tall Oil Plant DATE 6/15/89

RUN# 1 + Rec Check ANALYST Ray Perry

NORMALITY barium chloride 0.010 date 5/27/89

~~Rec Check~~
total sample volume 100 ml sample aliquot 25 ml

titration # Rec Check 100 ml
volume titrant ml 25 ml

1 10.0 + 0.94 = 10.94 0.94

2 10.0 + 0.94 = 10.94 1.94 - 0.94 = 1.00

3

blank 0.00 0.00

average 10.94 ml 0.97 Rec Check

Signature of analyst Ray Perry

Procter + Gamble Cellulose - Perry, FL 32347

Source: Tall Oil Plant

Date: 6/16/89

Method: EPA 16A

Run # 2

$$V_m = 13.614 \text{ ft}^3$$

$$T_m = 542^\circ \text{R}$$

$$P_{bar} = 29.98 \text{ In. Hg}$$

$$V_{soln} = 100 \text{ ml}$$

$$V_a = 25 \text{ ml}$$

$$N_{BaCl_2} = 0.01$$

$$\text{ml BaCl}_2 = 13.79$$

Recovery Check

$$V_m = 2.806 \text{ ft}^3$$

$$T_m = 547^\circ \text{R}$$

$$P_{bar} = 29.97 \text{ In. Hg}$$

$$V_{soln} = 100 \text{ ml}$$

$$V_a = 25 \text{ ml}$$

$$N_{BaCl_2} = 0.01$$

$$\text{ml BaCl}_2 = 1.10$$

$$\text{Gas Conc} = 6.02 \text{ ppm H}_2\text{S}$$

Run # 2

$$V_m(\text{std}) = (17.64)(0.976)(13.614)(29.98) / (542)$$

$$V_m(\text{std}) = (12.965 \text{ ft}^3)(28.32 \text{ Liters/ft}^3) = 367.16 \text{ Liters}$$

$$CTR(\text{ppm}) = (12.025)(0.01)(13.79) \left(\frac{100}{25} \right) / (367.16)$$

$$CTR(\text{ppm}) = 18.07 \text{ ppm}$$

Recovery Check

$$V_m(\text{std}) = (17.64)(0.976)(2.806)(29.97) / (547)$$

$$V_m(\text{std}) = (2.647 \text{ ft}^3)(28.32 \text{ Liters/ft}^3) = 74.96 \text{ Liters}$$

$$CTR(\text{ppm}) = (12.025)(0.01)(1.10) \left(\frac{100}{25} \right) / (74.96)$$

$$CTR(\text{ppm}) = 7.06 \text{ ppm}$$

$$\text{Rec} = \left[(7.06) / (6.02) \right] \times 100 = 117.3\%$$

DATE 6/10/87 RUN # 5SOURCE Tall Oil Plant

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TIME	DGM cubic feet	DGM Temp degrees F	PRESSURE inches Hg	ROTOMETER % output	UPDGER EXIT Temp degrees F	Combustion Flux	Probe Sensor	Pro Fl
	270.686	leak check		good	at 24" H ₂ O			
1300	270.84	74°F	29.99	120%	35°F	1610°F	248°F	124
1305	271.20	75	29.98	120	35	1610	254	124
1310	271.57	75	29.97	120	35	1600	254	124
1315	271.94	76	29.97	120	35	1600	261	124
1320	272.31	77	29.97	120	35	1600	264	124
1325	272.68	77	29.97	120	35	1600	263	124
1330	273.06	77	29.97	120	35	1600	255	124
1335	273.43	77	29.97	120	35	1600	256	124
1340	273.80	78	29.97	120	35	1610	263	124
1345	274.18	78	29.97	120	35	1610	262	125
1350	274.56	80	29.97	120	35	1610	261	125
1355	274.94	81	29.97	120	34	1610	262	125
1400	275.31	82	29.97	120	34	1610	263	125
1405	275.68	82	29.97	120	34	1610	265	125
1410	276.06	83	29.97	120	33	1610	267	125
1415	276.43	83	29.97	120	33	1610	265	128
1420	276.80	84	29.97	120	33	1610	265	128
1425	277.16	84	30.00	120	33	1610	266	128
1430	277.36	85	30.00	120	33	1610	263	128
1435	277.91	85	30.00	120	33	1610	258	128
1440	278.27	85	30.00	120	33	1610	255	128
1445	278.65	84	30.00	120	34	1610	257	128
1450	279.02	84	30.00	120	34	1610	257	128
1455	279.39	84	30.00	120	35	1610	258	126
1500	279.65	84	30.00	120	35	1610	259	126
1505	280.12	85	29.98	120	35	1610	259	126
1510	280.50	85	29.98	120	35	1610	252	126
1515	280.87	85	29.98	120	35	1610	253	126
1520	281.24	85	29.98	120	35	1610	254	125
1525	281.61	85	29.98	120	35	1610	251	125
1530	281.98	85	29.98	120	37	1610	246	125

DATE 6/16/89

RUN # 2 Cont

SOURCE Tall Oil Plant

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Probe Sensor

Impinger Ex

TIME	DGM cubic feet	DGM Temp degrees F	PRESSURE inches Hg	ROTOMETER % spin	UPPER DGT Temp degrees F	Combustion Furnace	Probe Sensor	Pro Fil
1535	282.35	85	30.00	120	246	1610	41	12
1540	282.73	85	29.98	120	249	1610	43	12
1545	283.09	85	29.98	120	250	1610	45	12
1550	283.44	85	29.98	120	248	1610	44	12
1555	283.82	85	29.98	120	244	1610	43	12
1600	284.21	85	29.98	120	243	1610	43	12
	284.300	Leak check		ok at	24" Hg			
	Vm	Tm	Pbar					
	13.614	542	29.98					
	Sample Train Recovery check							
	284.300	Leak check		good at	24" Hg		Probe Sensor	
1615	284.38	85°F	29.98	120%	42°F	1660°F	256°F	12
1620	284.70	86°F	29.98	120	39	1650	253	12
1625	285.08	85	29.98	120	39	1650	248	12
1630	285.46	86	29.98	120	38	1630	243	12
1635	285.85	87	29.96	120	36	1625	239	12
1640	286.22	88	29.97	120	35	1620	237	12
1645	286.61	88	29.97	120	35	1620	234	12
1650	286.99	88	29.97	120	35	1620	230	12
	287.106	Leak check		good at	24" Hg			
	Vm	Tm	Pbar					
	2.806	547	29.57					

POST TEST SAMPLE RECOVERY EPA METHOD 16A

DATE: 6/16/89

RUN: 2

COMBUSTION AIR FLOW

SECONDS	ML
<u>11.00</u>	<u>250</u>
<u>11.03</u>	
<u>11.03</u>	

AVG 11.02

HYDROGEN SULFIDE FLOW

SECONDS	ML
<u>11.09</u>	<u>250</u>
<u>11.09</u>	
<u>11.15</u>	

AVG 11.11

COMBUSTION AIR FLOW = $(250 \text{ ML} \cdot 60 \text{ SEC} / \text{MIN}) / 11.02 \text{ SEC} = 1361 \text{ ML} / \text{MIN}$

H₂S FLOW = $(250 \text{ ML} \cdot 60 \text{ SEC} / \text{MIN}) / 11.11 \text{ SEC} = 1350 \text{ ML} / \text{MIN}$

GAS CYLINDER# SG 0050NB CONC. 12.09 PPM H₂S

CAL GAS CONC = $(\text{CONC H}_2\text{S} \cdot \text{ML} / \text{MIN H}_2\text{S}) / \text{TOTAL ML} / \text{MIN}$

CAL GAS CONC =

$(12.09)(1350) / 2711 = 6.02 \text{ ppm}$

1350
1361
2711

LABORATORY DATA SHEET
ANALYSIS PER EPA METHOD 6

LOCATION Procter + Gamble, Cellulose

SOURCE Tall Oil Plant DATE 6/16/89

RUN# 2 ANALYST Ray Perry

NORMALITY barium chloride 0.01 date 5/27/89

total sample volume 100 ml sample aliquot 25 ml
Rec Check 100 ml 25 ml

titration # volume titrant ml
Rec Check

1 10.00 + 3.80 1.10

2 10.00 + 3.78 2.20 - 1.10 = 1.10

3

blank 0.00 0.00

average 13.79 ml avg 1.10

Signature of analyst Ray Perry

Procter + Gamble Cellulose - Perry, FL 32347
Source: Tall Oil Plant

Date: 6/12/89

Method: EPA 16A

Run # 3

$$V_m = 13.603 \text{ ft}^3$$

$$T_m = 540 \text{ }^\circ\text{R}$$

$$P_{bar} = 30.11 \text{ In. Hg}$$

$$V_{soln} = 100 \text{ ml}$$

$$V_a = 25 \text{ ml}$$

$$N_{BaCl_2} = 0.01$$

$$\text{ml BaCl}_2 = 32.15$$

Recovery Check

$$V_m = 3.003 \text{ ft}^3$$

$$T_m = 547 \text{ }^\circ\text{R}$$

$$P_{bar} = 30.11 \text{ In. Hg}$$

$$V_{soln} = 100 \text{ ml}$$

$$V_a = 25 \text{ ml}$$

$$N_{BaCl_2} = 0.01$$

$$\text{ml BaCl}_2 = 1.22$$

$$\text{Gas Conc} = 6.03 \text{ ppm H}_2\text{S}$$

Run # 3

$$V_m(\text{std}) = (17.64)(0.976)(13.603)(30.11) / (540)$$

$$V_m(\text{std}) = (13.059 \text{ ft}^3)(28.32 \text{ Liters/ft}^3) = 369.82 \text{ Liters}$$

$$CTRS(\text{ppm}) = (12025)(0.01)(32.15) \left(\frac{100}{25} \right) / (369.82)$$

$$CTRS(\text{ppm}) = 41.81 \text{ ppm}$$

Recovery Check

$$V_m(\text{std}) = (17.64)(0.976)(3.003)(30.11) / (547)$$

$$V_m(\text{std}) = (2.846 \text{ ft}^3)(28.32 \text{ Liters/ft}^3) = 80.60 \text{ Liters}$$

$$CTRS(\text{ppm}) = (12025)(0.01)(1.22) \left(\frac{100}{25} \right) / (80.60)$$

$$CTRS(\text{ppm}) = 7.28 \text{ ppm}$$

$$\text{Rec} = \left[(7.28) / (6.03) \right] \times 100 = 120.7 \%$$

DATE 4/11/07

RUN # 2 low

SOURCE Tell Oil Plant

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TIME	DGM cubic feet	DGM Temp degrees F	PRESSURE inches Hg	ROTOMETER % spin	DPPER DOT Temp degrees F	Combustion Furnace	Probe Sensor	Pro Fil
1200	298.38	84°F	30.11	120%	33°F	1610°F	251°F	12
1205	298.75	84°F	30.11	120	33	1610	252	12
1210	299.13	84	30.11	120	33	1610	252	12
1215	299.50	84	30.11	120	33	1610	253	12
1220	299.88	85	30.11	120	33	1610	255	12
1225	300.25	85	30.11	120	33	1610	254	12
1230	300.62	86	30.11	120	33	1610	255	12
	300.733		leakcheck good at 24" Hg					
	Vm	Tm	Pbar					
	13.603	540	30.11					
Sample Train Recovery Check								
	301.101		Leakcheck good at 24" Hg					
1250	301.19	86	30.11	120	38	1650	254	12
1255	301.57	86	30.11	120	35	1640	247	12
1300	301.96	87	30.11	120	34	1620	237	12
1305	302.36	87	30.11	120	33	1610	233	12
1310	302.75	87	30.10	120	33	1610	230	12
1315	303.13	87	30.10	120	33	1610	227	12
1320	303.53	87	30.10	120	33	1600	227	12
1325	303.93	87	30.10	120	33	1600	227	12
	304.104		leakcheck good at 24" Hg					
	Vm	Tm	Pbar					
	3.003	547	30.11					

POST TEST SAMPLE RECOVERY EPA METHOD 16A

DATE: 6/17/89

RUN: 3

COMBUSTION AIR FLOW

SECONDS	ML
<u>11.03</u>	<u>250</u>
<u>10.94</u>	
<u>11.00</u>	

AVG 10.99

HYDROGEN SULFIDE FLOW

SECONDS	ML
<u>11.00</u>	<u>250</u>
<u>11.06</u>	
<u>11.04</u>	

AVG 11.03

COMBUSTION AIR FLOW = $(250 \text{ ML} \cdot 60 \text{ SEC/MIN}) / 10.99 \text{ SEC} = 1365 \text{ ML/MIN}$

H2S FLOW = $(250 \text{ ML} \cdot 60 \text{ SEC/MIN}) / 11.03 \text{ SEC} = 1360 \text{ ML/MIN}$

GAS CYLINDER# SG 0050 NB CONC. 12.09 PPM H2S

CAL GAS CONC = $(\text{CONC H2S} \cdot \text{ML/MIN H2S}) / \text{TOTAL ML/MIN}$

CAL GAS CONC =

$(12.09)(1360) / 2725 = 6.03 \text{ ppm}$

$$\begin{array}{r} 1360 \\ 1365 \\ \hline 2725 \end{array}$$

LABORATORY DATA SHEET
ANALYSIS PER EPA METHOD 6

LOCATION Procter + Gamble Cellulose

SOURCE Tall Oil Plant DATE 6/17/89

RUN# 3 ANALYST Ray Perry

NORMALITY barium chloride 0.01 date 5/27/89

total sample volume 100 ml sample aliquot 25 ml

titration # Rec Check 100 volume titrant ml 25
Rec Check

1	$10.0 + 10.0 + 10.0 + 2.10$	1.24
2	$10.0 + 10.0 + 10.0 + 2.20$	$2.44 - 1.24 = 1.20$
3		

blank 0.00 0.00

average 32.15 ml 1.22

Signature of analyst Ray Perry

Date 4/15/19

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Time _____

Analyst AM

GC Calibration

Dilution factors:

$$\frac{66}{42.74} \times 100 = \frac{250}{390} = 0.64 \quad / \quad \frac{66}{23.57} \times 100 = \frac{250}{565} = 0.56 \quad / \quad \frac{66}{1134} \times 100 = \frac{250}{779} = 0.32$$

H ₂ S Conc.	<u>14.56</u> ppm	<u>11.36</u> ppm	<u>7.29</u> ppm
GC Response	<u>3163418</u>	<u>2440177</u>	<u>1066652</u>
(±5%)	<u>3867968</u>	<u>2489151</u>	<u>1670118</u>
	<u>3164935</u>	<u>2430461</u>	<u>1062390</u>
Avg.	<u>3165946</u> <u>14.50</u>	<u>2433243</u> <u>11.32</u>	<u>1066388</u> <u>7.27</u>

Calibration Curve Check

Curve	Actual ppm	Curve ppm	% diff. (±2)
Slope (m) <u>0.5352</u>	<u>14.56</u>	<u>14.50</u>	<u>0.41</u>
Intercept (b) <u>-2.3686</u>	<u>11.36</u>	<u>11.32</u>	<u>0.35</u>
Correlation (r) <u>0.9999</u>	<u>7.29</u>	<u>7.27</u>	<u>0.27</u>

Cylinder Gas Verification

Cylinder # 5604040 Mfg. Conc. 10.0 ppm

GC Response	<u>2736697</u>
(±5%)	<u>2736633</u>
	<u>2738271</u>
Avg.	<u>2737200</u> <u>12.05</u> (C _{est})

Check Point Gas (±20% of cylinder gas)

GC Response	<u>2440177</u>	Calibration Curve
(±5%)	<u>2429151</u>	<u>11.32</u> ppm (C _e)
	<u>2430461</u>	
Avg.	<u>2433243</u> <u>11.36</u> (C _t)	C _t /C _e <u>1.004</u> (1 ± 0.04)

C_{true} = C_{est} (C_t/C_e) = 12.09 ppm

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5/27/89

Audit Sample Analysis

25 ml Aliquot + 100 ml Isopropyl Alcohol + Indicator

A04146

Blank 0.00 ml

ml BaCl₂ @ 0.010 N

I	II	Avg
28.10	28.10	28.10

A01147

Blank 0.00 ml

25 ml Aliquot + 100 ml Isopropyl Alcohol + Indicator

I	II	Avg
11.76	11.78	11.77

A04146

$$C_{SO_2} = (32.03) \overset{(0.01)}{\downarrow} (28.10) \left(\frac{100}{25}\right) / 21 \times 10^{-3} = 1714.4 \text{ mg/DSCM}$$

~~# A04~~ A01147

$$C_{SO_2} = (32.03) (0.01) (11.77) \left(\frac{100}{25}\right) / 21 \times 10^{-3} = 718.1 \text{ mg/DSCM}$$

2/10/89 NaOH #16A-2 vs H₂SO₄ #16A-1

Pipette 20 ml of H₂SO₄ into flask add 20 ml distilled H₂O and Phenolphthalein Indicator.

I	II	III	Blank
20.3 ml	20.4 ml	20.3 ml	0.1 ml

$$I N_{H_2SO_4} = \frac{(20.3 - 0.1) \times 0.0098}{20} = 0.0099$$

$$II N_{H_2SO_4} = \frac{(20.4 - 0.1) \times 0.0098}{20} = 0.0099$$

$$III N_{H_2SO_4} = \frac{(20.3 - 0.1) \times 0.0098}{20} = 0.0099$$

Normality H₂SO₄ Batch # 16A-1 = 0.0099

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POSTTEST DRY GAS METER CALIBRATION DATA FORM (English units)

Test numbers TR5/302 Date 1-13-89 Meter box number NA Plant Procter & Gamble
 Barometric pressure, $P_b =$ 30.3 in. Hg. Dry gas meter number 69180 Pretest Y 0.976

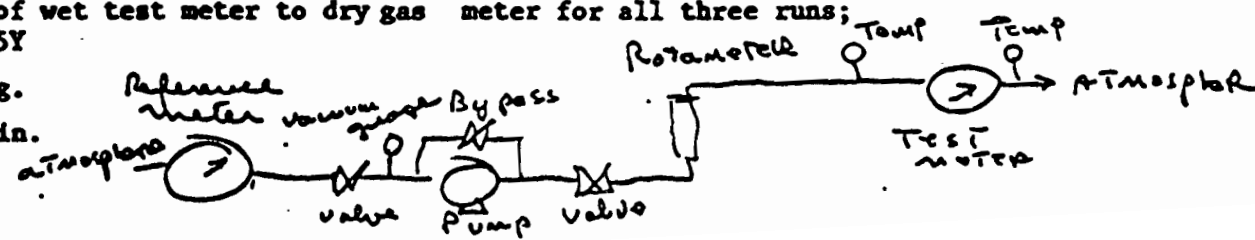
Orifice manometer setting, (mm) <u>Rotameter</u>	Gas volume		Temperature				Time (θ), min	Vacuum setting, in. Hg	Y_i	Y_i	$V_w P_b (t_d + 460)$
	Wet test meter (V_w), ft ³	Dry gas meter (V_d), ft ³	Wet test meter (t_w), °F	Dry gas meter							
				Inlet (t_{d_i}), °F	Outlet (t_{d_o}), °F	Average (t_d), °F					
110	105	5.116	77/78	74/74	74/74	74.0	71.3	5.0	0.971	5.116 x 30.3 x 534 5.116 x 30.3 x 537.5	
110	105	5.086	78/78	76/76	74/75	75.2	71.4	5.0	0.978	5.086 x 30.3 x 538 5.086 x 30.3 x 538	
110	105	5.090	78/78	74/76	74/76	76.0	71.3	5.0	0.979	5.090 x 30.3 x 538 5.090 x 30.3 x 538	
										$Y = 0.976$	

* If there is only one thermometer on the dry gas meter, record the temperature under t_d .

- V_w = Gas volume passing through the wet test meter, ft³.
- V_d = Gas volume passing through the dry gas meter, ft³.
- t_w = Temperature of the gas in the wet test meter, °F.
- t_{d_i} = Temperature of the inlet gas of the dry gas meter, °F.
- t_{d_o} = Temperature of the outlet gas of the dry gas meter, °F.

- t_d = Average temperature of the gas in the dry gas meter, obtained by the average of t_{d_i} and t_{d_o} , °F.
- ΔH = Pressure differential across orifice, in H₂O.
- Y_i = Ratio of accuracy of wet test meter to dry gas meter for each run.
- Y = Average ratio of accuracy of wet test meter to dry gas meter for all three runs; tolerance = pretest Y \pm 0.05Y
- P_b = Barometric pressure, in. Hg.
- θ = Time of calibration run, min.

OK
EXETER ENGINEERING
 P.O. BOX 123
 MELROSE, FL 32666
 (904) 475-2463



5/27/89

Standardize BaCl_2 vs H_2SO_4 Batch # 16A-1
pipette 20ml of H_2SO_4 into flask, add 100ml
isopropyl alcohol + 5 drops thoria indicator
Volume BaCl_2 used to titrate:

I	II	Avg
19.80	19.90	19.85

$$N_{\text{BaCl}_2} = \frac{(20.0)(0.0099)}{19.85} = 0.00997 = 0.010$$

Normality BaCl_2 Solution 16A-2 = 0.010 at 5/27/89

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2/10/89 (grams)	KHP vs I (Spilled)	II	III	IV
Tare Wt	1.62087	1.84912	1.65392	1.5537
<u>Tare+KHP</u>	<u>1.67200</u>	<u>1.89830</u>	<u>1.69445</u>	<u>1.5901</u>
KHP	0.05113	0.04918	0.04053	0.0364

Dissolved each KHP sample in 100 ml distilled H₂O
added several drops of Phenolphthalein Indicator

	II	III	IV	Blank
ml NaOH	24.6	20.4	18.5	0.2 ml
	(24.4)	(20.2)	(18.3)	

$$N_{\text{NaOH}} = \frac{\text{mg KHP}}{\text{ml NaOH} \times 204.23}$$

$$\text{II } N_{\text{NaOH}} = \frac{49.18 \text{ mg}}{(24.6 - 0.2) \times 204.23} = 0.00987$$

$$\text{III } N_{\text{NaOH}} = \frac{40.53 \text{ mg}}{(20.4 - 0.2) \times 204.23} = 0.00982$$

$$\text{IV } N_{\text{NaOH}} = \frac{36.41}{(18.5 - 0.2) \times 204.23} = 0.00974$$

$$\text{Avg} = 0.00981$$

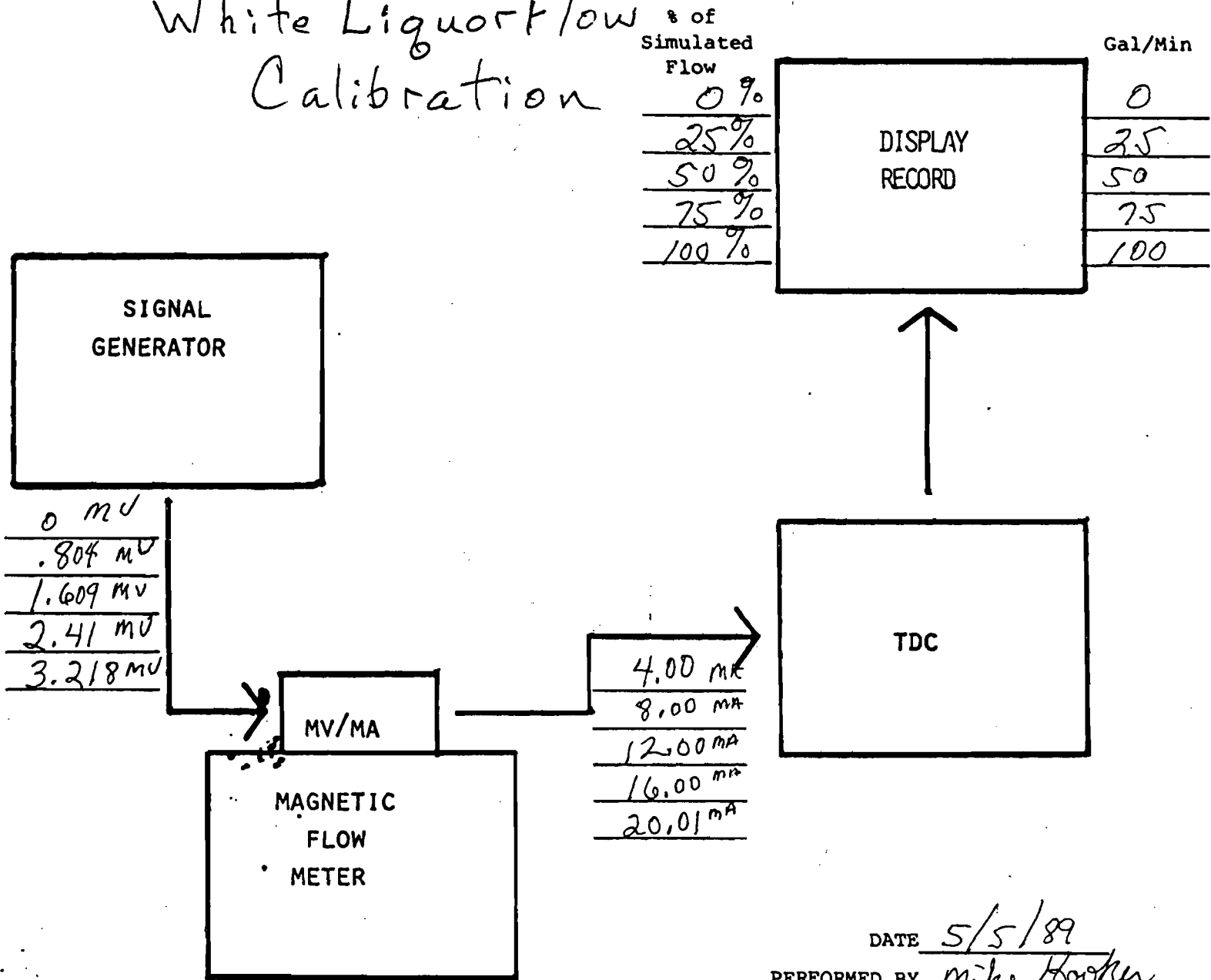
Normality of NaOH Batch 16A-2 = 0.0098

Pump Leak check → hold 10.5" Vacuum Mercury for
 Several minutes. No change after 120 sec

4/4/89 Rotameter Check 75°F @ 30.14" Hg

<u>Bubble tube</u>		vs	<u>Rotameter 2</u> 0-150%
<u>ml</u>	<u>Sec</u>	<u>Flow</u>	<u>% Scale</u>
250	9.03	1661 ml/min	100
250	9.09	1650 ml/min	100
250	9.09	1650 ml/min	100
<hr/>			
250	8.19	1832 ml/min	110
250	8.22	1825 ml/min	110
250	8.19	1832 ml/min	110
<hr/>			
250	7.47	2008 ml/min	120
250	7.47	2008 ml/min	120
250	7.50	2000 ml/min	120
<hr/>			
250	7.16 6.87	2183 ml/min	130
250	6.84	2193 ml/min	130
150	6.85	2190 ml/min	130

CTO White Liquor Flow Calibration



DATE 5/5/89
PERFORMED BY Mike Hooker