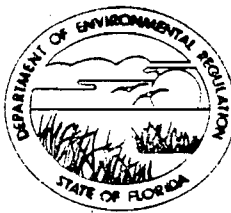


TWIN TOWERS OFFICE BUILDING  
2600 BLAIR STONE ROAD  
TALLAHASSEE, FLORIDA 32301



BOB GRAHAM  
GOVERNOR

JACOB D. VARN  
SECRETARY

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

November 12, 1980

Mr. Zane G. Turley  
Works Manager  
United States Gypsum Company  
6825 Evergreen Avenue  
Jacksonville, Florida 32206

Dear Mr. Turley:

AC 16-33883

Enclosed is Permit Numbers AC 16-33884, dated November 10, 1980  
to United States Gypsum Company  
issued pursuant to Section 403, Florida Statutes.

Acceptance of the permit constitutes notice and agreement that the Department will periodically review this permit for compliance, including site inspections where applicable, and may initiate enforcement actions for violation of the conditions and requirements thereof.

Sincerely,

*for Steve Smallwood*

Steve Smallwood, Chief  
Bureau of Air Quality Management

Final Determination

United States Gypsum Company  
Raymond Mill & Calciner Kettle  
Board Plant No. 3

Construction Permit

Application Number:

AC 16-33883

AC 16-33884

Florida Department of Environmental Regulation

Bureau of Air Quality Management

Central Air Permitting

November 7, 1980

United States Gypsum Co., Duval County

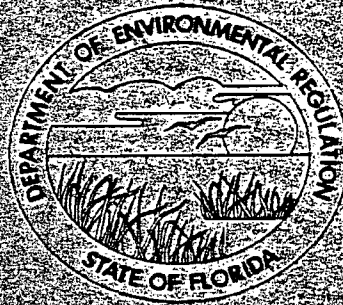
Raymond Mill & Calciner Kettle

Board Plant No. 3

The construction applications have been reviewed by the Department. Public notice of the Department's intent to issue was published in the Florida Times-Union on October 7, 1980. The preliminary determination and technical evaluation were available for public inspection at the Duval County Department of Health, Welfare and Bio-Environmental Services, the DER St. Johns River Subdistrict and the Bureau of Air Quality Management.

No comments or additional inputs were received nor were any modifications made.

It is recommended that the construction permits be issued as drafted.



STATE OF FLORIDA  
DEPARTMENT OF  
ENVIRONMENTAL REGULATION

CONSTRUCTION  
PERMIT

NO. AC 16-33884

UNITED STATES GYPSUM COMPANY  
JACKSONVILLE, FLORIDA  
BOARD PLANT No. 3

DATE OF ISSUANCE

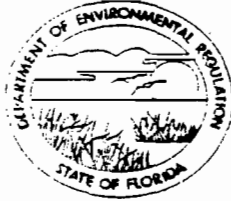
10<sup>th</sup> NOVEMBER 1980

DATE OF EXPIRATION

OCTOBER 1, 1982

*Jacob D. Varn*  
JACOB D. VARN  
SECRETARY

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



BOB GRAHAM  
GOVERNOR  
JACOB D. VARN  
SECRETARY

STATE OF FLORIDA  
DEPARTMENT OF ENVIRONMENTAL REGULATION

APPLICANT: United States Gypsum Company  
6825 Evergreen Avenue  
Jacksonville, Florida 32206

PERMIT/CERTIFICATION  
NO. AC 16-33884

COUNTY: Duval

PROJECT: Board Plant No.3

This permit is issued under the provisions of Chapter 403, Florida Statutes, and Chapter 17-2 and 17-4, Florida Administrative Code. The above named applicant, hereinafter called Permittee, is hereby authorized to perform the work or operate the facility shown on the approved drawing(s), plans, documents, and specifications attached hereto and made a part hereof and specifically described as follows:

For the construction of Number 3 Wallboard Production facility at the United States Gypsum Company plant. Particulates are to be controlled with fabric filter baghouses. This plant is located at 6825 Evergreen Avenue, Jacksonville, Florida 32206. The Universal Transverse Mercator and latitude, longitude coordinates are: UTM Zone 17, 438.9E, 3361.2N and 30°22'52"N by 81°38'01"W: respectively.

Attachments:

1. Application to Construct Air Pollution Sources-DER Forom 17-1.122(16)
2. Letter of Supplementary Information from U.S.G., Sept. 2, 1980
3. Cover Letter and Construction Schedule from U.S.G., August 14, 1980.

GENERAL CONDITIONS:

1. The terms, conditions, requirements, limitations, and restrictions set forth herein are "Permit Conditions", and as such are binding upon the permittee and enforceable pursuant to the authority of Section 403.161(1), Florida Statutes. Permittee is hereby placed

PERMIT NO.: AC 16-33884  
APPLICANT: U. S. Gypsum Company

on notice that the department will review this permit periodically and may initiate court action for any violation of the "Permit Conditions" by the permittee, its agents, employees, servants or representatives.

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

3. 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 notify and provide the department with the following information: (a) a description of and cause of non-compliance; and (b) the period of non-compliance, including exact dates and times; or, if not corrected, the anticipated time the non-compliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the non-compliance. The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the department for penalties or revocation of this permit.

4. As provided in subsection 403.087(6), Florida Statutes, the issuance of this permit does not convey any vested rights or any exclusive privileges. Nor 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.

5. This permit is required to be posted in a conspicuous location at the work site or source during the entire period of construction or operation.

6. 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 arising under the Florida Statutes or department rules, except where such use is proscribed by Section 403.111, F.S.

7. In the case of an operation permit, 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.

8. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, plant, or aquatic life or property and penalties therefore caused by the construction or operation of this permitted source, nor does it allow the permittee to cause pollution in contravention of Florida Statutes and department rules, except where specifically authorized by an order from the department granting a variance or exception from department rules or state statutes.

9. This permit is not transferable. Upon sale or legal transfer of the property or facility covered by this permit, the permittee shall notify the department within thirty (30) days. The new owner must apply for a permit transfer within thirty (30) days. The permittee shall be liable for any non-compliance of the permitted source until the transferee applies for and receives a transfer of permit.

10. The permittee, by acceptance of this permit, specifically agrees to allow access to permitted source at reasonable times by department personnel presenting credentials for the purposes of inspection and testing to determine compliance with this permit and department rules.

11. This permit does not indicate a waiver of or approval of any other department permit that may be required for other aspects of the total project.

12. This permit conveys no title to land or water, nor constitutes state recognition or acknowledgement of title, and does not constitute authority for the reclamation 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.

13. This permit also constitutes:

- Determination of Best Available Control Technology (BACT)
- Determination of Prevention of Significant Deterioration (PSD)
- Certification of Compliance with State Water Quality Standards (Section 401, PL 92-500)

SPECIFIC CONDITIONS:

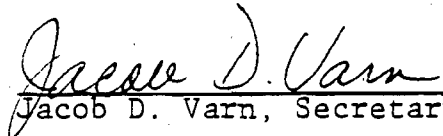
PERMIT NO.: AC 16-33884  
APPLICANT: U.S. Gypsum Company  
6825 Evergreen Avenue  
Jacksonville, Florida 32206

Specific Conditions

1. The maximum allowable particulate emissions from each individual baghouse controlling a particular function in the No. 3 Board Mill shall be as follows:

<u>Source</u>	<u>ID</u>	<u>lb/hr.</u>	<u>TPY</u>	<u>Input Rate - lb/hr.</u>
Additive Feed System	BG-1	0.429	1.79	109,200
Starch Storage Bin	BG-2	0.028	0.12	40,000
Starch Feed Bin	BH-3	0.028	0.12	720
HRA Feed bin	BG-4	0.028	0.12	1,140
Landplaster feed bin	BG-5	0.028	0.12	1,140
End Saws	BG-6	0.737	3.07	333
Stucco Feed Bin	BG-7	0.441	1.83	160,000
Vermiculite Feed Bin	BG-8	0.028	0.12	5,700
Vermiculite Storage Bin	BG-9	0.028	0.12	40,000

2. There will be no visible emissions from Baghouse discharge stacks.
3. The plant shall operate 24 hours per day, 6.67 days per week, 52 weeks per year or 8,324 hours per year.
4. The 127 MMBTU/hr. maximum heat input wallboard drying kiln shall burn natural gas or propane gas.
5. There will be a thirty (30) day shakedown period during which time No. 1 Board plant may also operate, after 30 days No. 1 Board plant will be shut down and dismantled.
6. Emissions tests for particulates and visible emissions shall be conducted for the bag collector emission point in accordance with Methods 1 through 5, 40 CFR, Appendix A and Method 9, 40 CFR 60 Appendix A. The results shall be submitted to the Bureau of Air Quality Management for determination of compliance with applicable state rules regarding visible and particulate emission and the conditions of this permit.

  
\_\_\_\_\_  
Jacob D. Varn, Secretary

Expiration Date:

October 1, 1982

Issued this 10<sup>th</sup> day of NOVEMBER, 19 80.

STATE OF FLORIDA  
DEPARTMENT OF ENVIRONMENTAL REGULATION





STATE OF FLORIDA  
DEPARTMENT OF  
ENVIRONMENTAL REGULATION

CONSTRUCTION  
PERMIT

NO. AC 16-33883

UNITED STATES GYPSUM COMPANY  
JACKSONVILLE, FLORIDA  
RAYMOND MILL & CALCINER KETTLE

DATE OF ISSUANCE

16<sup>th</sup> NOVEMBER 1980

DATE OF EXPIRATION

OCTOBER 1, 1982



JACOB D. VARN  
SECRETARY



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



BOB GRAHAM  
GOVERNOR  
JACOB D. VARN  
SECRETARY

STATE OF FLORIDA

## DEPARTMENT OF ENVIRONMENTAL REGULATION

APPLICANT: United States Gypsum Company  
6825 Evergreen Avenue  
Jacksonville, Florida 32206

PERMIT/CERTIFICATION  
NO. AC 16-33883

COUNTY: Duval

PROJECT: Raymond Mill #5  
Calciner Kettle #7

This permit is issued under the provisions of Chapter 403, Florida Statutes, and Chapter 17-2 & 17-4, Florida Administrative Code. The above named applicant, hereinafter called Permittee, is hereby authorized to perform the work or operate the facility shown on the approved drawing(s), plans, documents, and specifications attached hereto and made a part hereof and specifically described as follows:

For the construction of a Raymond Mill and Calciner Kettle with auxilliary support equipment at the United States Gypsum Company plant. Particulates are to be controlled with fabric filter baghouses. This plant is located at 6825 Evergreen Avenue, Jacksonville, Florida, 32206. The Universal Transverse mercator and latitude, longitude coordinates are: UTM Zone 17, 438.9E 3361.2N and 30°22'52"N by 81°38'01"W: respectively.

### Attachments:

1. Application to construct Air Pollution Sources - DER Form 17-1.122(16).
2. Letter of Supplementary Information from U.S.G., Sept. 2, 1980.
3. Cover letter and Construction Schedule from U.S.G., August 14, 1980.

### GENERAL CONDITIONS:

1. The terms, conditions, requirements, limitations, and restrictions set forth herein are "Permit Conditions", and as such are binding upon the permittee and enforceable pursuant to the authority of Section 403.161(1), Florida Statutes. Permittee is hereby placed

PERMIT NO.: AC 16-33883

APPLICANT: United States Gypsum Company

on notice that the department will review this permit periodically and may initiate court action for any violation of the "Permit Conditions" by the permittee, its agents, employees, servants or representatives.

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

3. 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 notify and provide the department with the following information: (a) a description of and cause of non-compliance; and (b) the period of non-compliance, including exact dates and times; or, if not corrected, the anticipated time the non-compliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the non-compliance. The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the department for penalties or revocation of this permit.

4. As provided in subsection 403.087(6), Florida Statutes, the issuance of this permit does not convey any vested rights or any exclusive privileges. Nor 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.

5. This permit is required to be posted in a conspicuous location at the work site or source during the entire period of construction or operation.

6. 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 arising under the Florida Statutes or department rules, except where such use is proscribed by Section 403.111, F.S.

7. In the case of an operation permit, 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.

8. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, plant, or aquatic life or property and penalties therefore caused by the construction or operation of this permitted source, nor does it allow the permittee to cause pollution in contravention of Florida Statutes and department rules, except where specifically authorized by an order from the department granting a variance or exception from department rules or state statutes.

9. This permit is not transferable. Upon sale or legal transfer of the property or facility covered by this permit, the permittee shall notify the department within thirty (30) days. The new owner must apply for a permit transfer within thirty (30) days. The permittee shall be liable for any non-compliance of the permitted source until the transferee applies for and receives a transfer of permit.

10. The permittee, by acceptance of this permit, specifically agrees to allow access to permitted source at reasonable times by department personnel presenting credentials for the purposes of inspection and testing to determine compliance with this permit and department rules.

11. This permit does not indicate a waiver of or approval of any other department permit that may be required for other aspects of the total project.

12. This permit conveys no title to land or water, nor constitutes state recognition or acknowledgement of title, and does not constitute authority for the reclamation 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.

13. This permit also constitutes:

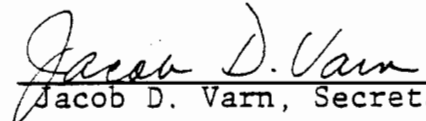
- Determination of Best Available Control Technology (BACT)
- Determination of Prevention of Significant Deterioration (PSD)
- Certification of Compliance with State Water Quality Standards (Section 401, PL 92-500)

SPECIFIC CONDITIONS:

PERMIT NO.: AC 16-33883  
APPLICANT: United States Gypsum Company

Specific Conditions

1. The maximum allowable particulate emissions from the No. 5 Raymond Mill baghouse BH-2 shall be 0.429 lb/hr and 1.78 tons per year (TPY). The maximum raw material to the Raymond Mill shall be 35 tons per hour.
2. The maximum allowable particulate emissions from No. 7 Calciner kettle baghouse BH-4 shall be 1.03 lb/hr and 4.28 TPY. The maximum raw material input to the kettle shall be 50 tons per hour.
3. The maximum allowable particulate emissions from No. 7 kettle product storage vent Baghouse BH-5 shall be 0.343 lb/hr and 1.43 TPY at a maximum stucco transfer rate of 40 tons per hour.
4. The Research-Cottrell Electrostatic precipitator (C-3) shall be converted to a fabric filter baghouse BH-3 controlling particulate emissions from No. 5 and 6 kettles. Maximum allowable emissions shall be 0.857 lb/hr and 3.57 TPY. Maximum combined raw material input to both kettles shall be 25 tons per hour.
5. The maximum allowable particulate emissions from No. 4 Raymond Mill and Rock Dryer baghouse BH-1 shall be 2.14 lb/hr. or 8.92 TPY. Maximum raw material input to No. 4 Raymond Mill and Rock Dryer shall be 20 and 125 tons per hour respectively.
6. There will be no visible emissions from baghouse discharge stacks.
7. The 30 MMBTU/hr. heat input furnace for No. 7 kettle will use natural gas when available. If unavailable No. 6 oil will be used containing a maximum sulfur content of 1.5%.
8. The plant shall operate 24 hours per day, 6.67 days per week, 52 weeks per year or 8,324 hours per year.
9. Emissions tests for particulates and visible emissions shall be conducted for the bag collector emission point in accordance with Methods 1 through 5, 40 CFR 60, Appendix A and Method 9, 40 CFR 60 Appendix A. The results shall be submitted to the Bureau of Air Quality Management for determination of compliance with applicable state rules regarding visible and particulate emission and the conditions of this permit.

  
Jacob D. Varn, Secretary

Expiration Date: October 1, 1982

Issued this 10<sup>th</sup> day of NOVEMBER, 1980

STATE OF FLORIDA  
DEPARTMENT OF ENVIRONMENTAL REGULATION

Check Sheet

Company Name: United States Gypsum Company  
Permit Number: AL16-033883,-033884U  
PSD Number: \_\_\_\_\_  
Permit Engineer: \_\_\_\_\_

**Application:**

- Initial Application
- Incompleteness Letters
- Responses
- Waiver of Department Action
- Department Response
- Other

**Cross References:**

- Confidential
- 
- 

**Intent:**

- Intent to Issue
- Notice of Intent to Issue
- Technical Evaluation
- BACT or LAER Determination
- Unsigned Permit
- Correspondence with:
  - EPA
  - Park Services
  - Other
- Proof of Publication
  - Petitions - (Related to extensions, hearings, etc.)
  - Waiver of Department Action
  - Other

**Final**

**Determination:**

- Final Determination
- Signed Permit
- BACT or LAER Determination
- Other

**Post Permit Correspondence:**

- Extensions/Amendments/Modifications
- Other



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

**Folder Name:** United States Gypsum Company

**Permit(s) Numbered:**

AC	16	-	033883
AC	16	-	033884

Period during  
which document  
was received:

Detailed Description

Period during which document was received:		Detailed Description
APPLICATION 18 AUG 1980	1.	24"×36" BLUEPRINT: MILL FLOW DIAGRAM (DRAWING NUMBER: 505-J)
	2.	24"×36" BLUEPRINT: AIR POLLURTION SOURCES (DRAWING NUMBER: 511-J)

PM  
Hand Delivered @ 9:16 a.m.  
5-24-88

File Copy

## HOPPING BOYD GREEN & SAMS

ATTORNEYS AND COUNSELORS  
SUITE 420, FIRST FLORIDA BANK BUILDING  
POST OFFICE BOX 6526  
TALLAHASSEE, FLORIDA 32314  
(904) 222-7500

CARLOS ALVAREZ  
BRIAN H. BIBEAU  
ELIZABETH C. BOWMAN  
WILLIAM L. BOYD, IV  
RICHARD S. BRIGHTMAN  
PETER C. CUNNINGHAM  
WILLIAM H. GREEN  
WADE L. HOPPING  
FRANK E. MATTHEWS  
RICHARD D. MELSON  
WILLIAM D. PRESTON  
CAROLYN S. RAEPPLE  
GARY P. SAMS  
ROBERT P. SMITH, JR.

JAMES S. ALVES  
KATHLEEN BLIZZARD  
ANNE W. CLAUSSEN  
THOMAS M. DEPOSE  
ELEANOR M. HUNTER  
DAVID L. POWELL  
CHERYL G. STUART

OF COUNSEL  
W. ROBERT FOKES

May 23, 1988

BY HAND DELIVERY

Dale H. Twachtmann, Secretary  
c/o Office of General Counsel  
Florida Department of Environmental  
Regulation  
2600 Blair Stone Road, Room 654  
Tallahassee, Florida 32399-2400

RECEIVED

MAY 24 1988

DER-BAQM

Re: United States Gypsum Company  
No. 1 through 7 Calcining Kettle Burners  
File No. A016-143140

Dear Secretary Twachtmann:

On or about May 9, 1988 United States Gypsum Company, received the Department's Intent to Deny renewal of the air operation permit for No. 1 through No. 7 Calcining Kettle Burners at its Jacksonville plant. The Intent to Deny was signed by Ernest E. Frey, Manager of the Department's Northeast District Office, and James L. Manning, Deputy Director of the City of Jacksonville's Bio-Environmental Services Division. Pursuant to Florida Administrative Code Rule 17-103.155, U. S. Gypsum has until May 23, 1988 to file a petition for administrative proceedings regarding the Department's proposed agency action.

I am writing on behalf of United States Gypsum Company to request an extension of thirty (30) days, to and including June 22, 1988, in which to file a petition for administrative proceedings regarding the Department's proposed agency action. This request is made pursuant to Florida Administrative Code Rule 17-103.070, which provides that a timely request for extension of time shall toll the running of the time period in which to file an appropriate petition. As good cause for granting the requested extension of time, U. S. Gypsum would show the following:

HOPPING BOYD GREEN & SAMS

POST OFFICE BOX 6526

TALLAHASSEE, FLORIDA 32314

RECEIVED

MAY 24 1988

DER-BAQM.

*Hand delivered  
at 9:16 am*

Clair Fancy, P.E.  
Deputy Bureau Chief  
Bureau of Air Quality Management  
Florida Department of Environmental  
Regulation  
2600 Blair Stone Road, Room 338  
Tallahassee, Florida 32399-2400

Dale H. Twachtmann, Secretary  
May 23, 1988  
Page 2

1. The basis stated by the Department for its Intent to Deny renewal of the subject air operation permit involves the results of highly sophisticated and complex air quality dispersion modeling.

2. U. S. Gypsum has recently engaged in discussions with representatives of the Department and other affected industries regarding predicted air quality impacts in the Jacksonville area. These discussions are ongoing at present.


3. Undersigned counsel has very recently been retained by U. S. Gypsum in connection with this matter. Additional time is required to allow the undersigned to review relevant file materials and otherwise familiarize himself with pertinent circumstances regarding this case in order to adequately represent U. S. Gypsum.

4. Grant of this request will allow the parties an opportunity to fully discuss the Department's proposed action and to evaluate alternative courses of action that may lead to a mutually acceptable resolution of this matter without the need for initiation of formal administrative proceedings.

I hereby certify that I have spoken with Carol Forthman, Deputy General Counsel for the Department, and that she does not object to the grant of this request.

Accordingly, I respectfully request that you formally extend the time for filing of a petition for administrative proceedings in regard to the Department's proposed agency action on File No. A016-143140 to and including June 22, 1988.

Sincerely,

  
Peter C. Cunningham

PCC/gb

cc: Carol Forthman, Esquire  
Mark Zilberberg, Esquire  
Clair Fancy, P.E. ✓  
Ernest E. Frey  
James L. Manning, P.E.

CHF/AT } 5-24-88 RAN  
B. Pittman }



STATE OF FLORIDA  
DEPARTMENT OF ENVIRONMENTAL REGULATION



NORTHEAST DISTRICT

3426 BILLS ROAD  
JACKSONVILLE, FLORIDA 32207  
904/798-4200

BOB MARTINEZ  
GOVERNOR  
DALE TWACHTMANN  
SECRETARY  
ERNEST E. FREY  
DISTRICT MANAGER  
GARY L. SHAFFER  
ASSISTANT DISTRICT MANAGER

CERTIFIED MAIL  
RETURN RECEIPT REQUESTED

May 6, 1988

RECEIVED

MAY 10 1988

Mr. E. A. Cerny, Plant Manager  
United States Gypsum Company  
6825 Evergreen Avenue  
Jacksonville, FL 32208

Re: Duval County - AP  
No. 1 through No. 7 Calcining Kettle Burners, United States Gypsum Company  
Jacksonville, FL  
File No. A016-143140

Dear Mr. Cerny:

Pursuant to Section 403.815, Florida Statutes (FS), and Section 17-103.150, Florida Administrative Code (FAC), you are required to publish (at your expense) the attached Notice of Proposed Agency Action on Permit Application. ~~This notice should be published,~~ one time only, in the legal advertisement section of a major newspaper in your area within 30 days of receipt of the enclosed intent.

The Department of Environmental Regulation (DER), in accordance with Section 17-103.150, FAC, is required to have proof that the public notice was given. Therefore, please have the newspaper prepare an affidavit of publication to submit to the DER, 3426 Bills Road, Jacksonville, FL 32207; and the Bio-Environmental Services Division, Towncentre-Suite 412, 421 West Church Street, Jacksonville, FL 32202. The application will be held in abeyance until fourteen days after receipt (by the Department and BESD) of proof of publication.

Attached is a Notice of Proposed Agency Action on Permit Application denying a permit to operate Calcining Kettle Burners No. 1 through No. 7.

If there are any questions concerning this matter, please contact the undersigned at (904) 630-3666.

Very truly yours,

City of Jacksonville  
Department of Health, Welfare, and  
Bio-Environmental Services  
Bio-Environmental Services Division

State of Florida  
Department of Environmental Regulation

*James L. Manning*  
James L. Manning, P.E., Deputy Director

*Ernest E. Frey*  
Ernest E. Frey, District Manager

JLM/EEF/bgm

cc: Mr. Bill Stewart, P.E., DER  
Mr. Clair Fancy, P.E., DER  
BESD Air Permitting File  
BESD File 2370 Q

Disc: ITD 1, 12

10/15/77  
10/15/77  
10/15/77

Patty,  
This should be inserted into the  
permitting files for U.S. Gypsum.  
It's a very important document which  
may be needed from time to time.  
Wanted you to be aware.

Thanks,

Tom

**NOTICE OF PROPOSED AGENCY ACTION  
ON PERMIT APPLICATION**

The Department Of Environmental Regulation gives notice of its intent to deny a permit to United States Gypsum Company to operate Nos. 1 through 7 Calcining Kettle Burners located at 6825 Evergreen Avenue, Jacksonville, FL 32208. These burners are sources of air pollution.

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 (FS). The petition must conform to the requirements of Chapters 17-103 and 28-5, Florida Administrative Code (FAC), and must be filed (received) in the Office of General Counsel of the Department at 2600 Blair Stone Road, Twin Towers Office Building, Tallahassee, Florida 32301, within fourteen (14) days of publication of this notice. Failure to file a request for hearing 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, FS.

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 preliminary statement. Persons whose substantial interests will be affected by any decision of the Department have the right to intervene in the proceeding. A petition for intervention must be filed pursuant to Rule 28-5.207, FAC, at least five (5) days before the final hearing and be filed with the hearing officer if one has been assigned at the Division of Administrative Hearings, Department of Administration, 2009 Apalachee Parkway, Tallahassee, Florida 32301. If no hearing officer has been assigned, the petition is to be filed with the Department's Office of General Counsel, 2600 Blair Stone Road, Tallahassee, Florida 32301. Failure to petition to intervene within the allowed time frame constitutes a waiver of any right such person has to request a hearing under Section 120.57, FS.

The application is available for public inspection during normal business hours, 8:00 a.m. to 5:00 P.M., Monday through Friday, except legal holidays, at Bio-Environmental Services Division, Towncentre-Suite 412, 421 West Church Street, Jacksonville, Florida 32202; and at the Florida Department of Environmental Regulation, Northeast District Office, 3426 Bilis Road, Jacksonville, FL 32207.

INTENT TO DENY  
BEFORE THE STATE OF FLORIDA  
DEPARTMENT OF ENVIRONMENTAL REGULATION

In the Matter of an  
Application for Permit by:

Mr. E. A. Cerney, Plant Manager  
United States Gypsum Company  
6825 Evergreen Avenue  
Jacksonville, FL 32208

DER File No. A016-143140

INTENT TO DENY

The Division of Environmental Permitting hereby gives notice of its intent to deny a permit for the proposed project as detailed in the application specified above. The Division is issuing this Intent to Deny for the reasons stated below:

The applicant, Mr. E. A. Cerney, Plant Manager, United States Gypsum Company, applied on November 30, 1987 to the Department for a renewal permit to operate Nos. 1 through 7 Calcining Kettle Burners at the United States Gypsum Company facility located at 6825 Evergreen Avenue, Jacksonville, Duval County, Florida 32208. The applicant has failed to provide the Department with reasonable assurance that operation of the Nos. 1 through 7 Calcining Kettle Burners, in conjunction with other United States Gypsum Company fuel burning sources at this location (6825 Evergreen Avenue), shall be in continued compliance with Jacksonville Environmental Protection Board (JEPB) Rule 2, Chapter 17-2 and 17-4, Florida Administrative Code (FAC); and Chapter 403, Florida Statutes (FS). This decision is based upon review of the application submitted (DER File No. A016-143140); additional information received on December 11, 1987, and February 9, 1987, from United States Gypsum Company and information received from the Department of Environmental Regulation (DER) dated February 9, 1988, which indicate that:

Sulfur Dioxide (SO<sub>2</sub>) emissions from the operation of Nos. 1 through 7 Calcining Kettle Burners in conjunction with SO<sub>2</sub> emissions from other United States Gypsum Company fuel burning sources cause a projected exceedance of SO<sub>2</sub> ambient air quality standards (Modeled 24 hour concentrations).

The applicable rules are more specifically set forth as follows:

Section 403.087, FS, Permits: General

- (4) The department shall issue permits to construct, operate, maintain, expand, or modify an installation which may reasonably be expected to be a source of pollution only when it determines that the installation is provided or equipped with pollution control facilities that will abate or prevent pollution to the degree that will comply with the standards or rules promulgated by the Department, except as provided in s. 403.088, and which will comply with the prohibitions in 40 CFR s. 124.41.



**Rule 17-4.030, FAC, General Prohibition.** Any stationary installation which will reasonably be expected to be a source of pollution shall not be operated, maintained, constructed, expanded, or modified without an appropriate and currently valid permit issued by the Department, unless the source is exempted by Department rule. The Department may issue such permit only after it is assured that the installation will not cause pollution in violation of any of the provisions of Chapter 403, FS, or the rules and regulations promulgated thereunder.

**Rule 17-4.070, FAC, Standards for Issuing or Denying Permits; Issuance; Denial.**

- (1) A permit may be issued to the applicant upon such conditions as the Department may direct, only if the applicant affirmatively provides the Department with reasonable assurance based on plans, test results, and other information, that the construction, expansion, modification, operation, or activity of the installation will not discharge, emit, or cause pollution in contravention of the Department standards or rules.
- (2) The Department shall issue permits to construct, operate, maintain, expand, or modify an installation which may reasonably be expected to be a source of pollution only when it determines that the installation is provided or equipped with pollution control facilities that will abate or prevent pollution to the degree that will comply with the standards or rules promulgated by the Department except as provided in Chapter 403.088, FS.
- (3) If, after review of the application and all the information, the Department determines that the construction, modification, expansion, or operation of the installation will not be in accord with applicable laws, rules, or regulations, including rules and regulations of approved local programs, the Department shall deny the permit.

**Rule 2.106, JEPB, Permits Required.** Section 17-2.210, FAC, is adopted and incorporated in this rule by reference as the City's air pollution permitting requirements.

**Rule 17-2.210, FAC, Permits Required.**

- (2) Air Operation Permits - Upon expiration of the air operation permit for an existing source or subsequent to construction or modification and compliance testing of a new or modified source, the owner or operator of such source shall obtain an air operation permit (or, in the case of modification of a source authorized to operate under a facility-wide or multiple-source permit, an appropriate revision of the existing air operation permit to address the source as modified) in accordance with Chapter 17-2 and Chapter 17-4, FAC. At a minimum, a permit issued pursuant to this provision shall:
  - (a) Specify the manner, nature, volume, and frequency of the emission permitted, and the applicable emission limiting standard or performance standard, if any; provided, however, that no standard or restriction contained in such permit shall be less stringent than any applicable provision of this rule or of the approved State Implementation Plan.

**Rule 2.301, JEPB, Ambient Air Quality Standards.** Section 17-2.300, FAC, is adopted and incorporated in this rule by reference as the City's ambient air quality standards.

Rule 17-2.300, FAC, Ambient Air Quality Standards.

(2) Prohibitions and Restrictions. Except as provided in Rules 17-2.510 and 17-2.650, no person shall build, erect, construct, or implant any new source; operate, modify, or rebuild any existing source; or by any other means release or take action which would result in the release of an air pollutant into the atmosphere which would cause or contribute to a pollutant concentration in the ambient air greater than an ambient air quality standard established under Rule 17-2.300(3). Ambient air quality monitors used to establish a violation of an ambient air quality standard shall meet the requirements of 40 CFR Part 58. A copy of the above-referenced document is available from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC, and may be inspected at the Department's Tallahassee Office.

(3) Ambient Air Quality Standards Established.

(a) Sulfur Dioxide.

1. Maximum three hour concentration not to be exceeded more than once per year - 1300 micrograms per cubic meter (0.5 ppm).

2. Maximum 24-hour concentration not to be exceeded more than once per year - 260 micrograms per cubic meter (0.1 ppm).

3. Annual arithmetic mean - 60 micrograms per cubic meter (0.02 ppm).

The Department has permitting jurisdiction under Chapter 403, Florida Statutes (FS), and Sections 17-4.050 and 17-4.070, Florida Administrative Code (FAC). The project is not exempt from permitting procedures. The Department has determined that an operation permit is required for the sources.

Pursuant to Section 403.815, FS, and DER Rule 17-103.150, FAC, you, the applicant, are required to publish at your own expense the enclosed Notice of Proposed Agency Action on Permit Application. The notice must be published one time only in a section of a major newspaper of general circulation in the county in which the project is located and within thirty (30) days from receipt of this intent. Proof of publication must be provided to the Department within seven (7) days of publication of the notice. Failure to publish the notice and provide proof of publication within the allotted time may result in denial of the permit.

The Department will deny the permit in accordance with the grounds herein unless petition for an administrative proceeding (hearing) is filed pursuant to the provisions of Section 120.57, FS. 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, FS. Petitions must comply with the requirement of FAC Rules 17-103.155 and 28-5.201 (copies enclosed) and be filed with the Office of General Counsel of the Department at 2600 Blair Stone Road, Tallahassee, Florida 32301-8241. Petitions filed by the permit applicant must be filed within fourteen (14) days of the public notice or within fourteen (14) days of receipt of this intent, whichever first occurs. 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, FS, concerning the subject permit application. Petitions which are not filed in accordance with the above provisions will be dismissed.

Executed this 6 day of May, 1988 in Jacksonville, Florida.

City of Jacksonville  
Department of Health, Welfare, and  
Bio-Environmental Services  
Bio-Environmental Services Division

State of Florida  
Department of Environmental Regulation

*James L. Manning*

James L. Manning, P.E., Deputy Director  
Towncentre-Suite 412  
421 West Church Street  
Jacksonville, FL 32202  
Telephone: (904) 630-3666

*Ernest E. Frey*

Ernest E. Frey, NE District Manager  
3426 Bills Road  
Jacksonville, FL 32207  
Telephone: (904) 798-4200

cc: Mr. Bill Stewart, P.E., DER  
Mr. Clair Fancy, P.E., DER  
BESD File 2370 Q

EEF/JLM/JEW/bgm

CERTIFICATE OF SERVICES

The undersigned duly designated deputy clerk hereby certifies that this NOTICE OF INTENT TO DENY and all copies were mailed before the close of business on 5/6/88 to the listed person.

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

*W. J. Kelly* 5/6/88  
Date Date

RULES OF ADMINISTRATIVE PROCEDURE - FINAL AGENCY ACTION  
(NON-RULEMAKING) AND APPEAL

DER 17-103.150(5)(a)

5/84

PART I: DECISIONS (ADJUDICATORY) DETERMINING  
SUBSTANTIAL INTERESTS OF AFFECTED PERSONS

published.

(b) The notices required by this rule may be combined with other notices required by the Department pursuant to Chapter 403, 376, or 253, F.S., or Chapter 17, FAC.

(c) The provisions of this section shall also apply to the permitting of hazardous waste facilities, but only to the extent it is consistent with Chapter 17-30, Part IV, FAC. Whenever Chapter 17-30, Part IV, FAC, provides for a different time or notice procedure than that set forth in this section the time and notice provisions of Chapter 17-30 shall govern.

(6) Failure to publish any notice of application, notice of proposed agency action, or notice of agency action required by the Department shall be an independent basis for the denial of a permit.

Specific Authority: 120.53, 403.0876, 403.815, F.S.

Law Implemented: 120.53, F.S.

History: New 9-20-79; Amended 4-28-81; Transferred from 17-1.62 and Amended 6-1-84.

17-103.155 Petition for Administrative Hearing; Waiver of Right to Administrative Proceeding.

(1) (a) Any person whose substantial interests may be affected by proposed or final agency action may file a petition for administrative proceeding. A petition shall be in the form required by this Chapter and Chapter 28-5, FAC, and shall be filed (received) in the Office of General Counsel of the Department within fourteen (14) days of receipt of notice of proposed agency action or within fourteen (14) days of receipt of notice of agency action whenever there is no public notice of proposed agency action. In addition to the requirements of Rule 28-5.201, FAC, the Petition must specify the county in which the project is or will be located.

(b) Failure to file a petition within fourteen (14) days of receipt of notice of agency action or fourteen (14) days of receipt of notice of proposed agency action, whichever notice first occurs, shall constitute a waiver of any right to request an administrative proceeding under Chapter 120, F.S.

(c) When there has been no publication of notice of agency action or notice of proposed agency action as prescribed in Rule 17-103.150, FAC, a person who has actual knowledge of the agency action or has knowledge which would lead a reasonable person to conclude that the Department has taken final agency action, has a

PART I: DECISIONS (ADJUDICATORY) DETERMINING  
SUBSTANTIAL INTERESTS OF AFFECTED PERSONS

duty to make further inquiry within fourteen (14) days of obtaining such knowledge by contacting the Department to ascertain whether action has occurred. The Department shall upon receipt of such an inquiry, if agency action has occurred, promptly provide the person with notice as prescribed by Rule 17-103.150, FAC. Failure of the person to make inquiry with the Department within fourteen (14) days after obtaining such knowledge may estop the person from obtaining an administrative proceeding on the agency action.

(2) (a) "Receipt of notice of agency action" means receipt of written notice of final agency action, as prescribed by Department rule, or the publication, pursuant to Department rule, of notice of final agency action, whichever first occurs.

(b) "Receipt of notice of proposed agency action" means receipt of written notice (such as a letter of intent) that the Department proposes to take certain action, or the publication pursuant to Department rule of notice of proposed agency action, whichever first occurs.

(3) Notwithstanding any other provision in this Chapter, should a substantially affected person who fails to timely request a hearing under Section 120.57, F.S., administratively appeal the final Department action or order, the record on appeal should be limited to:

(a) the application, and accompanying documentation submitted by the applicant prior to the issuance of the agency's intent to issue or deny the requested permit.

(b) the materials and information relied upon by the agency in determining the final agency action or order;

(c) any notices issued or published; and

(d) the final agency action or order entered concerning the permit application.

(4) In such cases where persons do not timely exercise their rights accorded by Section 120.57(1), Florida Statutes, the allegations of fact contained in or incorporated by the final agency action shall be deemed uncontested and true, and appellants may not dispute the truth of such allegations upon subsequent appeal.

(5) Any applicant may challenge the Department's request for additional information by filing with the Office of General Counsel an appropriate petition for administrative proceeding pursuant to Section 120.60, F.S., following receipt by the applicant of the Department's notification, pursuant to Section 403.0876, F.S., that additional information is required.

RULES OF ADMINISTRATIVE PROCEDURE - FINAL AGENCY ACTION  
(NON-RULEMAKING) AND APPEAL

DER 17-103.155 History

5/84

PART I: DECISIONS (ADJUDICATORY) DETERMINING  
SUBSTANTIAL INTERESTS OF AFFECTED PERSONS

Specific Authority: 120.53, 403.0876, 403.815, F.S.

Law Implemented: 120.53, F.S.

History: New 9-20-79, Amended 4-28-81, Transferred from 17-1.62 and Amended 6-1-84.

17-103.160 Uniformity in Approval and Denial of Applications for Department Permits and Certifications. To the extent possible and consistent with the public interest, the Department approves and denies applications for permits and certifications on a uniform and consistent basis. Final Department actions on applications for permits and certifications shall be consistent with prior Department actions, unless deviation therefrom is explained by the department in writing or the hearing officer who submits a recommended order to the Department for final agency action in accordance with Section 120.57, Florida Statutes.

Specific Authority: 120.53(1), F.S.

Law Implemented: 120.53(1), 120.68(12), F.S.

History: New 2-6-78, Transferred from 17-1.63, 6-1-84.

17-103.170 Designation, Preparation and Transmittal of Record for Administrative Appeals. When any Department action or order is the subject of an administrative appeal under Chapter 17-103, Part II, FAC, the following requirements shall apply:

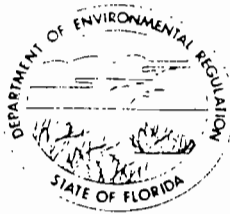
(1) Designation of Record. Within fifteen (15) days of rendition of the Department's final order, the appellant shall designate to the Department, in writing, with copies to other parties, those documents or things under the control of or in the possession of the Department which the appellant desires to have included in the record, and which were received or considered in the Department proceeding below. If a proceeding was reported by mechanical recording devices, the appellant shall designate those portions of the proceeding for which it requires written transcription or tapes for transcription. Any other party may designate other portions of the record in the manner provided herein. Such cross-designation shall be filed with the Department, with copies provided other parties, within seven (7) days after receipt of the designation by the appellant.

(2) Original Record. The Department shall thereupon include in the record all of the designated portions of the original papers and exhibits in the proceedings or matter from which administrative appeal is taken, together with a copy of any such parts of the proceedings as were stenographically reported or transcribed from tapes, and as have been designated by the parties and certified by a notary public, the reporter, or other officer for inclusion in the record on appeal or review, and certified copies of the order, if any, of which review is sought. The



STATE OF FLORIDA  
DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING  
2600 BLAIR STONE ROAD  
TALLAHASSEE, FLORIDA 32399-2400



BOB MARTINEZ  
GOVERNOR  
DALE TWACHTMANN  
SECRETARY

February 9, 1988

Mr. Ed Cerny  
Plant Manager  
U.S. Gypsum Co.  
P.O. Box 9579  
Jacksonville, Florida 32208

Dear Mr. Cerny:

Re: Modeled Sulfur Dioxide Violations in Jacksonville

We have received an application for a permit pursuant to Rule 17-2.500, FAC, Prevention of Significant Deterioration. The application was submitted by a company in Jacksonville. Both the company's and the Department's ambient air quality modeling data indicate a number of violations of the state and federal ambient air quality standards for sulfur dioxide. We have been unable to issue the requested permit because of the modeled violations.

The continued existence of the modeled violations can result in serious consequences. The most serious consequence is the indication that sulfur dioxide concentrations may pose a threat to public health and welfare in Jacksonville. An equally serious consequence is the Department's inability to issue any construction permit involving an increase in sulfur dioxide emissions to any of the contributing facilities or, potentially, to any proposed new facility in the area. This situation could have an adverse effect on industrial growth and development in Jacksonville.

There are a number of legal options that the Department and the Environmental Protection Agency could pursue in order to deal with the modeled violations.

We would prefer to work with the affected companies to obtain a fair and equitable solution. This solution should be one that eliminates any real or modeled violations. The solution also should ensure the existence of a margin of safety that will allow

future industrial growth and development. As a starting point, I have enclosed a copy of our current emission inventory of major sources of sulfur dioxide that were modeled as well as a copy of our modeling summary.

We would like to meet with you and the other affected industries in the Department of Environmental Regulation Northwest District Office Conference Rooms A&B, located at 3426 Bills Road, Jacksonville, Florida, on March 10, 1988, to begin work on a mutually acceptable solution. The meeting is scheduled to begin at 1:00 PM and be over by 6:00 PM.

Please notify me in writing as to whether or not you will be able to attend at the scheduled date and time. If you have any questions, please call me at (904)488-1344 or Mark Zilberberg at (904)488-9730.

Sincerely,



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

CHF/MH/s

cc: S. Smallwood  
B. Thomas  
M. Zilberberg  
B. Pittman  
L. George

J. Brown  
B. Stewart  
K. Mehta

Jacksonville Emission Inventory

Facility/ Source	SO <sub>2</sub> Emission Rate (g/s)	Stack Hgt. (m)	Exit Temp. (K)	Exit Vel. (m/s)	Stack Dia. (m)	Modeled Source Numb
Sem. Kraft						
P. Boiler #1	54.6	32.3	433	20.12	1.83	54
P. Boiler #2	72.7	32.3	450	21.34	2.13	54
P. Boiler #3	72.7	32.3	450	22.86	2.13	54
Bark Boiler #1-2	114.0	41.5	329	13.72	2.44	53
Rec. Boiler #1	11.0	38.4	344	17.68	2.59	55
Rec. Boiler #2	14.1	38.4	344	17.98	2.74	55
Rec. Boiler #3	14.1	38.4	344	16.76	2.74	55
Lime Kiln #1	0.5	21.0	344	5.18	1.80	51
Lime Kiln #2	0.5	22.9	339	7.62	1.43	51
Lime Kiln #3	0.5	22.9	339	10.36	1.13	51
SDT #1	0.2	36.6	344	3.96	1.07	52
SDT #2	0.3	37.8	344	4.27	1.22	52
SDT #3	0.3	37.8	347	4.27	1.22	52
Anheuser Busch						
P. Boiler #1-4	72.8	30.5	415	19.51	1.78	181
G. Dryer #1	8.7	21.3	322	8.23	1.68	185
G. Dryer #2	11.1	21.3	328	8.84	2.07	185

Jacksonville Emission Inventory

Facility/ Source	SO <sub>2</sub> Emission Rate (g/s)	Stack Hgt. (m)	Exit Temp. (K)	Exit Vel. (m/s)	Stack Dia. (m)	Modeled Source Number
Jeff. Smurfit						
R. Boiler #9	28.5	53.3	411	9.97	3.20	992
Lime Kiln #1	0.6	15.8	333	4.27	1.52	995
Lime Kiln #2	0.6	15.8	347	8.23	1.37	995
Lime Kiln #3	1.0	64.0	346	10.60	1.37	994
SDT	0.6	53.3	366	3.96	1.65	993
B. Boiler #10	36.5	61.0	335	10.67	3.05	991
U.S. Gypsum						
Board Kiln #2	11.8	13.7	422	20.04	1.07	252
DT Heater	1.2	20.7	644	6.61	0.91	255
R. Dryer	12.7	26.8	339	16.82	0.47	257
Cal. Kettle #7	5.97	24.4	478	3.05	1.23	256
Cal. Kettle #1-6	11.5	28.2	505	0.98	1.07	253
Boiler #1-4	19.2	18.3	533	3.35	0.91	254
Container Corp.						
Rec. Boiler #4	222.9	80.8	493	18.84	3.51	61
Rec. Boiler #5	222.9	88.1	493	9.48	5.49	62
P. Boiler #4	128.8	75.6	485	14.41	2.44	63
P. Boiler #5	273.5	75.6	480	16.20	3.35	64
P. Boiler #7	154.4	103.6	441	12.90	4.51	65

Modeled 24-Hour SO<sub>2</sub> Concentrations (ug/m<sup>3</sup>)

\*Receptor Location and Date (Day/Year)

<u>Source</u>	<u>(-2600,-5800) 356/1971</u>	<u>(-2600,-5800) 336/1971</u>
JEA - SJRPP	5.4	0.9
JEA - N. Side	58.8	16.4
JEA - S. Side	589.3	605.9
JEA - Kennedy	19.4	3.7
Sem. Kraft	12.7	2.5
Jeff. Smurfit	6.7	0.4
Total	692.3	629.8

\* Coordinates in meters with point (0,0) corresponding to UTM coordinates 439.9 km East and 3359.3 km North.

Modeled 24-Hour SO<sub>2</sub> Concentrations (ug/m<sup>3</sup>)

\*Receptor Location and Date (Day/Year)

<u>Source</u>	<u>(-1300,1300) 34/1971</u>	<u>(-1300,1300) 339/1971</u>	<u>(-1600,1500) 163/1972</u>	<u>(-1600,1500) 276/1972</u>
JEA - N. Side	0.0	0.0	69.2	52.2
JEA - Kennedy	0.0	14.2	0.0	0.0
Sem. Kraft	63.2	31.2	9.4	32.8
Container Corp.	13.3	7.0	0.0	0.0
Jeff. Smurfit	0.0	8.2	0.0	0.0
U.S. Gypsum	419.3	311.9	357.1	304.6
Anheuser Busch	0.0	0.0	0.0	13.3
<b>Total</b>	<u>495.8</u>	<u>372.5</u>	<u>435.7</u>	<u>402.9</u>

\* Coordinates in meters with point (0,0) corresponding to UTM coordinates 439.9 km East and 3359.3 km North.

## BEST AVAILABLE COPY

Jacksonville Emission Inventory

Facility/ Source	SO <sub>2</sub> Emission Rate (g/s)	Stack Hgt. (m)	Exit Temp. (K)	Exit Vel. (m/s)	Stack Dia. (m)	Modeled Source Number
JEA - SJRPP						
Boiler #1	929.0	195.1	341	21.28	10.97	11
JEA - N. Side						
Boiler #1	690.3	76.2	401	20.12	5.03	21
Boiler #2	586.8	88.4	408	16.15	5.03	22
Boiler #3	1255.6	106.7	410	20.40	7.01	23
Comb. Turb. #3-6	227.2	10.1	780	18.30	6.56	24
JEA - S. Side						
Boiler #1	52.7	40.7	460	16.15	2.44	31
Boiler #2	52.7	40.7	446	15.54	2.44	31
Boiler #3	79.8	40.7	406	10.25	3.05	32
Boiler #4	110.3	43.7	412	17.14	3.25	33
Boiler #5	207.9	44.2	425	20.60	2.96	34
JEA - Kennedy						
Boiler #8-9	150.0	45.7	443	13.56	3.20	41
Boiler #10	185.0	41.5	424	22.66	2.74	42
Comb. Turb. 3-6	187.6	13.7	714	8.79	5.84	43
SCM						
Boiler #4	21.8	12.2	405	21.40	1.13	211
Boiler #5	19.7	15.2	536	25.66	1.13	212
Boiler #6	23.0	15.2	514	21.00	1.22	213
Boiler #7	10.2	13.7	450	5.70	1.22	214



STATE OF FLORIDA  
DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING  
2600 BLAIR STONE ROAD  
TALLAHASSEE, FLORIDA 32399-2400



BOB MARTINEZ  
GOVERNOR  
DALE TWACHTMANN  
SECRETARY

March 22, 1988

Mr. Ed Cerny  
Plant Manager  
U.S. Gypsum Co.  
P.O. Box 9579  
Jacksonville, Florida 32208

Dear Mr. Cerny:

As a result of our meeting in Jacksonville on March 10, 1988, the Bureau of Air Quality Management has developed the following list of possible strategies to be employed to resolve the modeled SO<sub>2</sub> violations of the state's 24-hour ambient air quality standard of 260 ug/m<sup>3</sup> in the Jacksonville area.

1. Raising stacks as necessary (consistent with Rule 17-2.270, F.A.C.).
2. Lowering sulfur content of oil burned.
3. Switching to alternative fuels.
4. Adjusting hourly or daily operating conditions, including possible shutdowns.

Any combination of the above may be employed to resolve the modeled violations. Please indicate your response to the solutions presented, noting what is acceptable or unacceptable.

There appear to be three general approaches for implementing whatever strategies are deemed most appropriate to solve the problem.

1. The various industries can work together to produce a comprehensive attainment plan to be approved by the department and implemented through requested permit modifications;

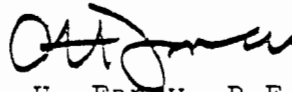
2. The industries can provide support to the department to produce a comprehensive attainment plan to be implemented through requested or imposed permit modifications; or
3. The department, acting alone, can produce an attainment strategy to be implemented through imposed permit modifications or, if necessary, declaration of a nonattainment area. This approach will require the department to seek new funding to carry out the necessary modeling.

In order to determine industry's preferences in solving this problem, please let us know which approach you find most acceptable. Also, if the industries act in concert, who would you recommend to act as industry coordinator?

Until the violations are resolved, the department's policy will be to (1) not issue any construction permit involving a new or modified major facility unless the applicant shows that there is no significant increase in modeled impacts or there are no modeled violations within their significant impact area and (2) not renew any operation permit involving SO<sub>2</sub> emissions at a facility which in and of itself would cause a modeled violation.

It is the department's desire to resolve these problems in a fair and timely manner. Therefore, we respectfully request that you respond to this letter within 30 days of receipt. If you have any questions please contact me at (904) 488-1344.

Sincerely,

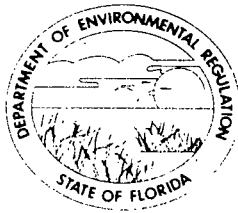


C. H. Fancy, P.E.  
Deputy Chief  
Bureau of Air Quality  
Management

CF/ML/ss

STATE OF FLORIDA  
DEPARTMENT OF ENVIRONMENTAL REGULATION

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



BOB GRAHAM  
GOVERNOR

VICTORIA J. TSCHINKEL  
SECRETARY

July 27, 1982

Mr. Chris Lawson  
U. S. Gypsum Company  
P. O. Box 3197  
Jacksonville, Florida 32206

Dear Mr. Lawson:

U.S. Gypsum Company  
Modification of Conditions

We are in receipt of your request for a modification of the permit conditions. The conditions are changed as follows:

<u>Expiration Date</u>	<u>From</u>	<u>To</u>
AC 16-33883	October 1, 1982	December 30, 1982
AC 16-33884	October 1, 1982	December 30, 1982

This letter must be attached to each affected permit and becomes a part of that permit.

Sincerely,

Victoria J. Tschinkel  
Secretary

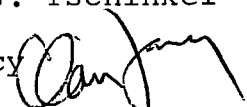
VJT/bjm

cc: Doug Dutton, DER St. Johns River Subdistrict  
Jerry Woosley, Duval County Dept. of Health, Welfare  
and Bio-Environmental Services

State of Florida  
DEPARTMENT OF ENVIRONMENTAL REGULATION

**INTEROFFICE MEMORANDUM**

For Routing To District Offices And/Or To Other Than The Addressee		
To: _____	Loctn.: _____	
To: _____	Loctn.: _____	
To: _____	Loctn.: _____	
From: _____	Date: _____	
Reply Optional [ ]	Reply Required [ ]	Info. Only [ ]
Date Due: _____	Date Due: _____	

TO: Victoria J. Tschinkel  
FROM: Clair Fancy   
DATE: July 27, 1982  
SUBJECT: United States Gypsum Company  
Request for Time Extension

**RECEIVED**

JUL 28 1982

Office of the Secretary

Attached is a letter authorizing a 90-day time extension to United States Gypsum Company for permits AC 16-33883 and AC 16-33884.

The Bureau recommends your approval and signature.

CF:PA:ras

# UNITED STATES GYPSUM COMPANY //

Post Office Box 3197 / Jacksonville, Florida 32206

July 21, 1982

*Pattn-  
plea of  
handke*

Mr. Claire Fancy  
Bureau of Air Quality Management  
Department of Environmental Regulation  
2600 Blair Stone Road  
Twin Towers Office Building  
Tallahassee, Florida 32301

DER  
JUL 26 1982  
BAQM

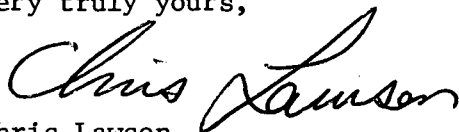
Dear Mr. Fancy:

Construction permits AC16-33883 and AC16-33884 were issued on 11/10/80 for the expansion of the Jacksonville plant. The expiration dates of these permits are 10/1/82. Particulate tests, required for issuance for the operating permits, were conducted 5/27/82 through 6/3/82. Due to tight restrictions on grain loading requirements and to possible construction, two of the units tested failed to meet minimum deficiencies requirements.

We request a 90-day extension be granted on these construction permits to allow re-testing of the appropriate emission sources. This will provide sufficient time to test, calculate and submit the results required for the completion of the operating permit applications.

Your attention in this matter is greatly appreciated.

Very truly yours,



Chris Lawson  
Project Engineer

CL:jw

U.S. Gypsum.

STATE OF FLORIDA  
**DEPARTMENT OF ENVIRONMENTAL REGULATION**

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



BOB GRAHAM  
GOVERNOR  
VICTORIA J. TSCHINKEL  
SECRETARY

August 26, 1981

Mr. L.A. Pursell, Manager  
Corporate Environment and Energy Services  
The United States Gypsum Co.  
101 S. Wacker Drive  
Chicago, Illinois 60606

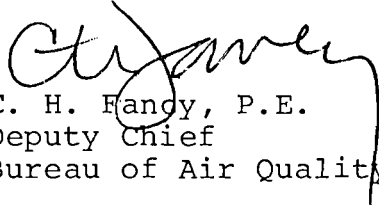
RE: PSD Applicability Determination - U.S. Gypsum, Jacksonville  
(Florida Permit Numbers AC 16-33883 and AC 16-33884)

Dear Mr. Pursell:

We apologize for our delay in responding in writing to your letter of February 16, 1981, requesting a PSD applicability determination for the modification of your gypsum products plant in Jacksonville. As we told you earlier, the project, as permitted at the State level, is not subject to PSD review under federal regulation 40 CFR 52.21. This determination is based on information contained in your letter which indicates that, at the portion of the plant under SIC major group 32, there would be no significant net emissions increase of any pollutant.

If you have any questions on this determination, please direct them to Larry George of this office at (904) 488-1344.

Sincerely,

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

CF:LG:caa

cc: Local Programs  
District Offices

CERTIFIED MAIL

**UNITED STATES GYPSUM COMPANY** //  
101 South Wacker Drive/Chicago, Illinois 60606

February 16, 1981

Mr. William A. Thomas, Engineer  
Department of Environmental Regulation  
Bureau of Air Quality Management  
2600 Blair Stone Road  
Tallahassee, Florida 32301

RE: U.S. Gypsum-Jacksonville, Florida Permit Nos. AC16-33883  
AC16-33884  
November 10, 1980

Dear Mr. Thomas:

Pursuant to our discussion in your offices on February 13, 1981, the material accompanying this letter is submitted for a PSD applicability determination, covering the modification of a gypsum products plant in Jacksonville, owned and operated by the United States Gypsum Company.

This construction is the subject of Florida Permits AC16-33883 and AC16-33884 issued on November 10, 1980.

The project consists of upgrading particulate collecting equipment in the calcining mill, the installation of a new 30,000,000 BTU per hour calcining kettle and the construction of a new gypsum wallboard production line with 127,000,000 BTU per hour drying kiln. An existing wallboard line will be shutdown and dismantled.

The prime fuel is natural gas. Standby fuels will be No. 6 oil at 1.5 percent sulfur for the kettle and propane for the board dryer.

The attachments to this letter include calculations of total plant actual emissions representative of 1979 and 1980 production and calculations of expected emissions after the modification using the same operating conditions.

Since the area is classified as non-attainment for particulate and oxidants, we understand these two pollutants are not involved in the determination of applicability.



Mr. William A. Thomas  
Page Two  
February 16, 1981

While particulate emissions have been off-set and oxidants are not involved in the modification, actual particulate emission calculations have been included for the existing plant, should such data be required to determine the "major source" status of the present operation.

The existing plant includes industries covered by three SIC codes. SIC 1492 covers raw gypsum handling from receiving and stockpiling through grinding. SIC 2632 represents a papermill, producing paper-board from recycled fiber and SIC 3275 covers gypsum products manufacturing. The modification is entirely within code 3275. Emissions from all three codes have been included for review.

The procedures used in determining the various emission levels are detailed under the heading "Basis for Emission Calculations".

As reported in a letter to you dated January 21, 1981, no process in the plant, present or proposed uses any raw material based on lead or any of the non-criteria pollutants.

Should further information be required, it will be promptly provided.

Sincerely,

UNITED STATES GYPSUM COMPANY



L. A. Pursell  
Manager, Corporate  
Environment & Energy Services

LAP/cp

Enclosures

PSD COMPLETENESS DATA SUMMARY/REVIEW WORKSHEET

COMPANY NAME: United States Gypsum Co. REVIEW DATE: \_\_\_\_\_  
 PSD NUMBER: \_\_\_\_\_ NMS or MM (circle one) REVIEWER: \_\_\_\_\_  
 BRIEF PROJECT DESCRIPTION Shutdown No. 1 Board line, construct one calcining kettle and No. 3 Board line.

I. DETERMINATION OF APPLICABILITY

For Proposed Construction, PSD Review - Applies - Does Not Apply - Undetermined\* (Circle One)

\*The following information is needed to complete the determination: \_\_\_\_\_

REVIEW REQUIREMENTS ARE AS FOLLOWS (if subject to review):

Pollutant	BACT	Monitoring	AQ	Add'l Impacts	Net Emissions Increase (T/yr)
PM	Non Attainment - Off sets provided				
SO <sub>2</sub>	Propane standby - New Kiln				-2.95
NO <sub>x</sub>	Low NO <sub>x</sub> Burner - New Kiln				-1.09
CO <sup>x</sup>	None				+9.66
O <sub>3</sub> (VOC)	N/A Non Attainment				
Other					
Other	None				

SIGNATURE OF REVIEWER: \_\_\_\_\_

1. POTENTIAL EMISSIONS DATA SUMMARY FOR THE SOURCE (proposed new source or the existing source for a proposed modification):

Pollutant	PE <sup>a</sup> (T/yr)	Emission Units	Basis for Estimates <sup>b</sup>			Emissions Factor	Actual <sup>c</sup> (T/yr)	Allowable <sup>c</sup> (T/yr)
			hrs/day	hrs/yr	% Capacity			
PM	22,271	Tons	24	8760	100	Test	158.31	195
SO <sub>2</sub>	1,809	Tons	24	8760	100	AP42	96.86	1809
NO <sub>x</sub>	-	Tons	24	8760	100	AP42	165.35	-
CO <sup>x</sup>	-	Tons	24	8760	100	AP42	-23.76	-
O <sub>3</sub> (VOC)	-	-	-	-	-	-	-	-
Other								
Other								

- The source is a 28-listed source or is a X non-28-listed source (100/250 major emissions criteria respectively).
- If less than 8760 hrs/yr and 100%, do enforceable restrictions exist? yes no.
- If PE, actual and allowable are not equal, explain why: Particulate - cloth collector control; SO<sub>2</sub> - Allowable based on 100% curtailment and No. 6 oil; actual curtailment 1979, 17.8 days; 1980, 15 days. Gas Prime fuel.

2. NET CHANGES IN ACTUAL EMISSIONS? (for modifications only).

Describe modification including previous or planned emissions changes:

Modification: up-grade existing collectors; shut down No.1 board line No. 6 oil standby; construct one new calcining kettle - No. 6 oil standby; construct No. 3 board line - propane standby.

Pollutant	New & Mod. Units (T/yr)	Creditable Contemp. Increases (T/yr)	Creditable Contemp. Decreases <sup>a</sup> (T/yr)	Net Change in actual (T/yr)	Significance Criteria <sup>d</sup> (T/yr)
PM	Non Attainment - Off Sets Provided				25
SO <sub>2</sub>	17.26	-	20.21	-2.95	40
NO <sub>x</sub>	28.19	-	29.28	-1.09	40
CO <sup>x</sup>	14.82	-	5.16	+9.66	100
O <sub>3</sub> (VOC)	N/A Non Attainment				40 (VOC)
Other					
Other	None				

- Are decreases ensured by enforceable restrictions? Xyes no.
- Is the source within 10 km of any Class I area? yes Xno. If so, is maximum air impact (discussed below)  $\geq 1 \mu\text{g}/\text{m}^3$  (24-hr)? yes no.
- The baseline date(s) for this area are: 1974.
- Do claimed emissions changes occur: 1) after 1/6/75 Xyes no; 2) after baseline date Xyes no (Note: Prebaseline changes must be due to construction at a MSS).
- The area is designated non-attainment for what pollutants? TSP & Voc

UNITED STATES GYPSUM COMPANY  
SIC 1492 - 2632 - 3275  
Jacksonville

PRIME FUEL - NATURAL GAS  
STANDBY - NO. 3 BOARD - PROPANE  
DRYER - NO. 2 OIL  
ALL OTHERS - NO. 6 OIL 1.5% S  
EXPECTED - CURTAILED 17.8 DAYS

LAP  
2/81

8760 Hours  
Actual - 1979 Curtailed 17.8 Days 1980 Curtailed 15 days

Emissions in Tons Per Year

Source	TSP	SO <sub>2</sub>	CO	NO <sub>x</sub>	H/C as C/H <sub>4</sub>					TSP	SO <sub>2</sub>	CO	NO <sub>x</sub>	H/C as CH <sub>4</sub>
Stock Pile Fugitive (F) (SIC 1492)	68.50	0	0	0	0						0	0	0	
Paper Mill (Boilers) (C) (SIC 2632) 80 x 10 <sup>6</sup> BTU/Hr.	7.70 (P) 0	27.88 0	6.14 0	65.39 0	1.35 0						27.88 0	6.14 0	65.39 0	
6 Kettles (C) (SIC 3275) 60 x 10 <sup>6</sup> BTU/Hr. (R. Mills & Convey Included)	5.77 (P) 50.89	20.90 0	5.34 0	30.29 0	2.25 0						20.90 0	5.34 0	30.29 0	
No. 1 Board (C) (SIC 3275) 50 x 10 <sup>6</sup> BTU/Hr.	4.82 (P) 1.11	17.42 0	4.45 0	25.25 0	1.88 0	Shut Down Source					0 0	0 0	0 0	
No. 2 Board (C) (SIC 3275) 60 x 10 <sup>6</sup> BTU/Hr.	5.77 (P) 3.07	20.90 0	5.34 0	30.29 0	2.25 0						20.9	5.34	30.29	
Rock Dryer (C) (SIC 3275) 8.0 x 10 <sup>6</sup> BTU/Hr.	0.71 (P) 8.04	2.79 0	0.71 0	4.03 0	0.29 0	Modified Source Increase to 20.0 x 10 <sup>6</sup> BTU/Hr. Permit Limited - 8324 Hrs.					6.62	1.68	9.57	
No. 7 Kettle (C) (SIC 3275) 30 x 10 <sup>6</sup> BTU/Hr.	0 (P) 0	0 0	0 0	0 0	0 0	New Source Permit Limited - 8324 Hrs.					10.32	2.55	14.5	
No. 3 Board (C) (SIC 3275) 127 x 10 <sup>6</sup> BTU/Hr.	0 (P) 0	0 0	0 0	0 0	0 0	New Source Permit Limited - 8324 Hrs.					0.32	10.59	4.12	
DOWTHERM (C) (SIC 3275) 20 x 10 <sup>6</sup> BTU/Hr.	1.93 (P) 0	6.97 0	1.78 0	10.10 0	0.75 0						6.97	1.78	10.10	
SUB-TOTALS	(F) 68.50 (C) 26.70 (P) 63.11													
TOTAL PLANT	158.31	96.86 ✓	23.76 ✓	165.35 ✓	8.77 ✓						93.91 ✓	33.42 ✓	164.26 ✓	
						NET CHANGE					-2.95	+9.66	-1.09	

NON - ATTAINMENT - OFF SETS PROVIDED (PERMIT ISSUED)

NON - ATTAINMENT FOR VOC (PERMIT ISSUED)

(F) = Fugitive  
(C) = Combustion  
(P) = Process

Basis for Emission Calculations

Actual: 1979 - 1980

Operation: 8760 hours; gas curtailed 17.8 days in 1979 and 15 days in 1980. Gas firing - 8332.8 hrs.; No. 6 oil at 1.5% S fired 427.2 hrs.

Combustion: U.S. EPA AP42 factors for natural gas and No. 6 oil at 1.5% S. BTU/hr. in-put from burner max. ratings.

Particulate: Calculations for placing, traffic, loading - out and (Stockpile) wind erosion from EPA IPFPE factors for lime stone piles using 1979-80 stock pile inventory and through - put volumes. Limestone values were used since it approaches gypsum in dusting properties and the manual contains no gypsum data.

Particulate: From state emissions inventories as submitted and accepted (Process) for Florida permits AC-33883 and AC-33884 but increased from 8324 to 8760 annual hours.

Expected - After Modification

Operation: 8324 annual hours for new sources - permit limited. Curtailed 17.8 days. Remaining existing sources - 8760 hours. Curtailed 17.8 days.

Combustion: U.S. EPA AP42 factors for natural gas, propane and No. 6 oil at 1.5% S, except for board kiln NO<sub>x</sub>. Warranted low NO<sub>x</sub> burners will be installed with the kiln. The NO<sub>x</sub> factor of .0078 lbs./10<sup>6</sup> BTU is from the 10/14/80 Maxon letter, submitted with the vendor's test data on 1/21/81.

Particulate: Not calculated nor displayed, since this is a non-attainment pollutant and off-sets have been proposed and accepted.

Photo Oxidants: Not involved.

Factor Derivation - AP 42 to lbs./10<sup>6</sup> BTU

Industrial Boilers - AP 42 Emission Factors

1000 BTU/SCF

TSP Gas - 15 lbs./1000,000 cu' = 15 lbs./1,000,000,000 BTU

= .015 lbs./10<sup>6</sup> BTU ✓

SO<sub>2</sub> 0.6 #/10<sup>9</sup> BTU

= .0006 #/10<sup>6</sup> BTU ✓

CO 17 lbs./10<sup>9</sup>

= .017 #/10<sup>6</sup> ✓

NO<sub>x</sub> 175#/10<sup>9</sup>

= .175#/10<sup>6</sup> ✓

H/C 3#/10<sup>9</sup>

= .003#/10<sup>6</sup> ✓

No. 6 Oil 145,000 BTU/Gal 1.5%S

TSP 23 lbs./1000 Gals. = 23#/145,000,000 BTU

<sup>.124</sup>  
= 0.159 lbs./10<sup>6</sup> BTU

SO<sub>2</sub> 157 S/1000 Gals. = 157 x 1.5 or 235.5 #/145 x 10<sup>6</sup> BTU

= 1.62 lbs./10<sup>6</sup> BTU ✓

CO 4 lbs./145 x 10<sup>6</sup> BTU

= .028 lbs./10<sup>6</sup> BTU ✓

NO<sub>x</sub> 60 lbs./145 x 10<sup>6</sup> BTU

= .414 lbs./10<sup>6</sup> BTU ✓

H/C(CH<sub>4</sub>) 3 lbs./145 x 10<sup>6</sup> BTU

= .021 lbs./10<sup>6</sup> BTU ✓

10 + 1.5 + 3 = 18

Industrial Air Heaters - AP 42

Natural Gas

TSP - Same as boilers  
.015 lbs./10<sup>6</sup> BTU

SO<sub>2</sub> - Same as boilers  
.0006 lbs./10<sup>6</sup> BTU

CO - 20 lbs./10<sup>9</sup>  
.020 #/10<sup>6</sup> BTU

NO<sub>x</sub> - 100 lbs./10<sup>9</sup> BTU  
0.10 #/10<sup>6</sup> BTU

H/C  
(CH<sub>4</sub>) - 8 lbs./10<sup>9</sup> BTU  
.008 lbs./10<sup>6</sup> BTU

Oil same as Ind. Boilers

Stock Pile Fugitive DustU.S. EPA 1PFPE FactorsSIC 1492

## Storage Pile Fugitive Emissions

Ship unload

Primary crushed gypsum rock size: -8".

-200 mesh = 1.5% (est.) = S

Use K factors &amp; calculations for limestone

K<sub>1</sub> = K<sub>2</sub> = K<sub>3</sub> = 1. Rock Placed wet

PE for Jax. = 99      D = 365

$$\text{Loading on pile: } EF_1 \text{ in lbs./Ton} = \frac{(0.04)(K_1)(S + 1.5)}{\text{Loaded on } (PE + 100)^2}$$

$$\text{Vehicle Traffic: } EF_2 \text{ in lbs./Ton} = \frac{(0.13)(K_2)(S + 1.5)}{\text{Stored } (PE + 100)^2}$$

$$\text{Loading Out: } EF_3 \text{ in lbs./Ton} = \frac{(0.055)(K_3)(S + 1.5)}{\text{Loaded Out } (PE + 100)^2}$$

$$\text{Wind Erosion: } EF_4 \text{ in lbs./Ton} = \frac{(0.11)(S + 1.5)}{\text{Stored } (PE + 100)^2} \left( \frac{D}{90} \right)$$

Tons Stored - Present 160,000 Tons  
 Proposed 160,000 Tons

Tons Loaded on & Out - Present 450,000 Tons/Yr.  
 Proposed 650,000 Tons/Yr.

$$EF_1 = \frac{(0.04)(1)(1.5 + 1.5)}{(99 + 100)^2} = \frac{.04}{.98} = \underline{.041 \text{ lbs./T}} \text{ Loaded On } \checkmark$$

$$EF_2 = \frac{(0.13)(1)(1.5 + 1.5)}{(99 + 100)^2} = \frac{.13}{.98} = \underline{.133 \text{ lbs./T}} \text{ Stored } \checkmark$$

$$EF_3 = \frac{(0.055)(1)(1.5 + 1.5)}{(99 + 100)^2} = \frac{.055}{.98} = \underline{.056 \text{ lbs./T}} \text{ Loaded Out } \checkmark$$

$$EF_4 = \frac{(0.11)(1.5 + 1.5)}{(99 + 100)^2} \left(\frac{365}{90}\right) = \left(\frac{.11}{.98}\right)(4.05) = \underline{.45 \text{ lbs./T}} \text{ Stored } \checkmark$$

Present Emissions - No control except natural wet suppression

Loading on  $.041 \times 450,000 + 2,000 = 9.22 \text{ Tons/Yr. } \checkmark$

Traffic  $.133 \times 160,000 + 2,000 = 10.64 \text{ Tons/Yr. } \checkmark$

Loading Out  $.056 \times 450,000 + 2,000 = 12.60 \text{ Tons/Yr. } \checkmark$

Wind Erosion  $.45 \times 160,000 + 2,000 = 36.00 \text{ Tons/Yr. } \checkmark$

Total: 68.46 TPY



Existing Combustion Emissions

Paper Mill Boilers SIC 2632

Use 8760 hrs. - 17.8 Days Curtailed

Gas - 8332.8 hrs.

No. 6 oil - 427.2 hrs. 1.5%

Paper Mill Boilers--Rated  $80 \times 10^6$  BTU/hr. - Total

Gas TSP =  $.015 \times 80 \times 8332.8 \div 2000 = 4.99$  TPY ✓

Oil TSP =  $.150 \times 80 \times 427.2 \div 2000 = 2.71$  TPY 256

TOTAL TSP 7.70 TPY 755

Gas SO<sub>2</sub> =  $.0006 \times 80 \times 8332.8 \div 2000 = 0.20$  TPY ✓

Oil SO<sub>2</sub> =  $1.62 \times 80 \times 427.2 \div 2000 = 27.68$  TPY ✓

TOTAL SO<sub>2</sub> 27.88 TPY ✓

Gas CO =  $.017 \times 80 \times 8332.8 \div 2000 = 5.67$  TPY ✓

Oil CO =  $.028 \times 80 \times 427.2 \div 2000 = .47$  TPY ✓

TOTAL CO 6.14 TPY ✓

Gas NO<sub>x</sub> =  $.175 \times 80 \times 8332.8 \div 2000 = 58.32$  TPY ✓

Oil NO<sub>x</sub> =  $.414 \times 80 \times 427.2 \div 2000 = 7.07$  TPY ✓

TOTAL NO<sub>x</sub> 65.39 TPY ✓

Gas H/C as CH<sub>4</sub> =  $.003 \times 80 \times 8332.8 \div 2000 = 1.00$  TPY ✓

Oil H/C as CH<sub>4</sub> =  $.021 \times 80 \times 427.2 \div 2000 = .35$  TPY ✓

TOTAL H/C as CH<sub>4</sub> 1.35 TPY

Expected - No change - Not involed in modification

Existing Combustion Emissions  
Six Kettles SIC 3275

6 - Rated  $10 \times 10^6$  BTU/hr. ea. - Total  $60 \times 10^6$  BTU/hr.

Gas TSP =  $.015 \times 60 \times 8332.8 \div 2000 = 3.74$  TPY ✓

Oil TSP =  $.159 \times 60 \times 427.2 \div 2000 = 2.03$  TPY ✓

TOTAL TSP 5.77 TPY ✓

Gas SO<sub>2</sub> =  $.0006 \times 60 \times 8332.8 \div 2000 = .15$  TPY ✓

Oil SO<sub>2</sub> =  $1.62 \times 60 \times 427.2 \div 2000 = 20.75$  TPY ✓

TOTAL SO<sub>2</sub> 20.90 TPY

Gas CO =  $.02 \times 60 \times 8332.8 \div 2000 = 4.99$  TPY ✓

Oil CO =  $.028 \times 60 \times 427.2 \div 2000 = .35$  TPY ✓

TOTAL CO 5.34 TPY

Gas NO<sub>x</sub> =  $0.1 \times 60 \times 8332.8 \div 2000 = 24.99$  TPY ✓

Oil NO<sub>x</sub> =  $.414 \times 60 \times 427.2 \div 2000 = 5.30$  TPY ✓

TOTAL NO<sub>x</sub> 30.29 TPY ✓

Gas H/C as CH<sub>4</sub> =  $.008 \times 60 \times 8332.8 \div 2000 = 1.99$  TPY ✓

Oil H/C as CH<sub>4</sub> =  $.021 \times 60 \times 427.2 \div 2000 = .26$  TPY ✓

TOTAL H/C as CH<sub>4</sub> 2.25 TPY

Expected Emissions - after modification - no change

Existing Combustion Emissions  
No. 1 Board SIC 3275

Rated  $50 \times 10^6$  BTU/Hr.

Gas TSP =  $.015 \times 50 \times 8332.8 \div 2000 =$  3.12 TPY ✓

Oil TSP =  $.159 \times 50 \times 427.2 \div 2000 =$  1.70 TPY ✓

TOTAL TSP 4.82 TPY ✓

Gas SO<sub>2</sub> =  $.0006 \times 50 \times 8332.8 \div 2000 =$  .12 TPY ✓

Oil SO<sub>2</sub> =  $1.62 \times 50 \times 427.2 \div 2000 =$  17.30 TPY ✓

TOTAL SO<sub>2</sub> 17.42 TPY ✓

Gas CO =  $.02 \times 50 \times 8332.8 \div 2000 =$  4.16 TPY ✓

Oil CO =  $.028 \times 50 \times 427.2 \div 2000 =$  .29 TPY ✓

TOTAL CO 4.45 TPY

Gas NO<sub>x</sub> =  $0.1 \times 50 \times 8332.8 \div 2000 =$  20.83 TPY ✓

Oil NO<sub>x</sub> =  $.414 \times 50 \times 427.2 \div 2000 =$  4.42 TPY ✓

TOTAL NO<sub>x</sub> 25.25 TPY ✓

Gas H/C as CH<sub>4</sub> =  $.008 \times 50 \times 8332.8 \div 2000 =$  1.66 TPY ✓

Oil H/C as CH<sub>4</sub> =  $.021 \times 50 \times 427.2 \div 2000 =$  .22 TPY ✓

TOTAL CH<sub>4</sub> 1.88 TPY ✓

Expected - after modification - zero-unit to be shut down and dismantled.

Existing Combustion Emissions

No. 2 Board SIC 3275

All Combustion Emissions - Same as 6 Kettles - Same BTU/Hr.

Expected - after modification - No change

Existing Combustion Emissions

Rock Dryer SIC 3275

Rated  $8.0 \times 10^6$  BTU/Hr.

Gas TSP =  $.015 \times 8 \times 8332.8 \div 2000 = 0.49$  TPY ✓

Oil TSP =  $.129 \times 8 \times 427.2 \div 2000 = 0.22$  TPY ✓

TOTAL TSP .71 TPY ✓

Gas SO<sub>2</sub> =  $.0006 \times 8 \times 8332.8 \div 2000 = 0.02$  TPY ✓

Oil SO<sub>2</sub> =  $1.62 \times 8 \times 427.2 \div 2000 = 2.77$  TPY ✓

TOTAL SO<sub>2</sub> 2.79 TPY ✓

Gas CO =  $.02 \times 8 \times 8332.8 \div 2000 = 0.66$  TPY ✓

Oil CO =  $.028 \times 8 \times 427.2 \div 2000 = 0.05$  TPY ✓

TOTAL CO 0.71 TPY ✓

Gas NO<sub>x</sub> =  $0.1 \times 8 \times 8332.8 \div 2000 = 3.33$  TPY ✓

Oil NO<sub>x</sub> =  $.414 \times 8 \times 427.2 \div 2000 = 0.70$  TPY ✓

TOTAL NO<sub>x</sub> 4.03 TPY ✓

Gas CH<sub>4</sub> =  $.008 \times 8 \times 8332.8 \div 2000 = 0.26$  TPY ✓

Oil CH<sub>4</sub> =  $.021 \times 8 \times 427.2 \div 2000 = 0.03$  TPY ✓

TOTAL CH<sub>4</sub> 0.29 TPY ✓

Expected - after modification - raise burner rating from  $8.0 \times 10^6$  BTU/Hr. to  $20 \times 10^6$ . Increase each emission by  $20 \div 8 = 2.5$  times; Decrease annual hours from 8760 to 8324 - (Permit limited) Decrease emissions by  $8324 \div 8760 = .95$  times.

Expected Combustion Emissions

No. 7 Kettle-New Source SIC 3275

Rated  $30 \times 10^6$  BTU/hr. Gas/No. 6 Oil

Annual Hours 8324 - Curtailed 17.8 Days

Gas SO<sub>2</sub>:  $.0006 \times 30 \times 7896.8 \div 2000 =$  0.07 TPY ✓

Oil SO<sub>2</sub>:  $1.6 \times 30 \times 427.2 \div 2000 =$  10.25 TPY ✓

TOTAL SO<sub>2</sub> 10.32 TPY ✓

Gas CO:  $.02 \times 30 \times 7896.8 \div 2000 =$  2.37 TPY ✓

Oil CO:  $.028 \times 30 \times 427.2 \div 2000 =$  0.18 TPY ✓

TOTAL CO 2.55 TPY ✓

Gas NO<sub>x</sub>:  $0.1 \times 30 \times 7806.8 \div 2000 =$  11.84 TPY ✓

Oil NO<sub>x</sub>:  $.414 \times 30 \times 427.2 \div 2000 =$  2.65 TPY ✓

TOTAL NO<sub>x</sub> 14.49 TPY ✓

Expected Combustion Emissions

No. 3 Board Plant - New Source SIC 3275

Permit Limited Annual Hours - 8324 - Curtailed 17.8 days

Gas SO<sub>2</sub> = .0006 x 127 x 7896.8 ÷ 2000 = 0.30 TPY ✓

Propane SO<sub>2</sub> = .0006 x 127 x 427.2 ÷ 2000 = 0.02 TPY ✓

TOTAL SO<sub>2</sub> 0.32 TPY ✓

Gas CO = .02 x 127 x 7896.8 ÷ 2000 = 10.02 TPY ✓

Propane CO = .021 x 127 x 427.2 ÷ 2000 = 0.57 TPY ✓

TOTAL CO 10.58 TPY ✓

Gas NO<sub>x</sub> = .0078 x 127 x 7896.8 ÷ 2000 = 3.91 TPY ✓

Propane NO<sub>x</sub> = .0078 x 127 x 427.2 ÷ 2000 = 0.21 TPY ✓

TOTAL NO<sub>x</sub> 4.12 TPY ✓

Existing Combustion Emissions

DOWTHERM - SIC 3275

Rated  $20 \times 10^6$  BTU/Hr.

Gas TSP =  $.015 \times 20 \times 8332.8 \div 2000 =$  1.25 TPY ✓

Oil TSP =  $.159 \times 20 \times 427.2 \div 2000 =$  .68 TPY ✓

TOTAL TPY 1.93 TPY ✓

Gas SO<sub>2</sub> =  $.0006 \times 20 \times 8332.8 \div 2000 =$  .05 TPY ✓

Oil SO<sub>2</sub> =  $1.62 \times 60 \times 427.2 \div 2000 =$  6.92 TPY ✓

TOTAL SO<sub>2</sub> 6.97 TPY ✓

Gas CO =  $.02 \times 20 \times 8332.8 \div 2000 =$  1.66 TPY ✓

Oil CO =  $.028 \times 20 \times 427.2 \div 2000 =$  .12 TPY ✓

TOTAL CO 1.78 TPY ✓

Gas NO<sub>x</sub> =  $0.1 \times 20 \times 8332.8 \div 2000 =$  8.33 TPY ✓

Oil NO<sub>x</sub> =  $.414 \times 20 \times 427.2 \div 2000 =$  1.77 TPY ✓

TOTAL NO<sub>x</sub> 10.10 TPY ✓

Gas CH<sub>4</sub> =  $.008 \times 20 \times 8332.8 \div 2000 =$  .66 TPY ✓

Oil CH<sub>4</sub> =  $.021 \times 20 \times 427.2 \div 2000 =$  .09 TPY ✓

TOTAL CH<sub>4</sub> .75 TPY ✓

Expected - after modification - no change



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



BOB GRAHA  
GOVERNOR  
JACOB D. VAF  
SECRETARY

STATE OF FLORIDA

## DEPARTMENT OF ENVIRONMENTAL REGULATION

February 2, 1981

Mr. L.A. Pursell, Manager  
United States Gypsum Company  
101 South Wacker Drive  
Chicago, Illinois 60606

Dear Mr. Pursell:

The data you submitted pertains to the modification only and does not include the source, as defined. Before your visit this month I suggest the PSD Completeness Data Summary/Review worksheet on the next to the last page of the PSD workshop manual be completed, following the guidelines in the manual.

This information is required before PSD applicability can be determined.

When determining applicability for a Federal Prevention-of-significant-deterioration (PSD) review it is important to understand the PSD definition of a source; "all emission units in the same industrial grouping located in contiguous or adjacent properties and under common ownership or control". The "major groups" or two-digit codes contained in the Standard Industrial Classification (SIC) manual define industrial groupings.

The next step is to determine if the source is a major or minor source. This determination is made on the basis of the source's potential to emit pollutants that are regulated by the Act. This is explained on page 1-A-3 section A.3 in the PSD workshop manual sent to you. Fugitive emissions from gypsum rock storage facilities, where quantifiable, are included in the accounting procedures.

Secondary emissions emitted by ships delivering gypsum rock are excluded from potential emissions estimates, but are considered in PSD analysis once a PSD review is determined to be required.

If any regulated pollutant equals or exceeds 250 tons per year, the source is designated as a major stationary source.

Whether a significant emissions increase will result from a proposed modification is determined by the net change in actual emissions. Changes occurring from retiring equipment or other

Mr. Pursell  
February 2, 1981  
Page Two

methods of emission reductions generally will be credited on the basis of the difference in the emission units actual emissions before and after the reduction. This is detailed in section A.4.3.2. in the workshop manual.

There are restrictions on the contemporaneous emissions changes that can be credited in determining net increases. This is explained in section A.4.3.2.1 page I-A-15 of the workshop manual.

If you have additional questions, please call me at (904) 488-1344.

Sincerely,



William A. Thomas, Engineer  
Department of Environmental Regulation  
Bureau of Air Quality Management

WAT:dav

**UNITED STATES GYPSUM COMPANY** //  
101 South Wacker Drive/Chicago, Illinois 60606

January 21, 1981

Mr. William A. Thomas, Engineer  
Department of Environmental Regulation  
Bureau of Air Quality Management  
2600 Blair Stone Road  
Tallahassee, Florida 32301

RE: U.S. Gypsum - Jacksonville  
Florida Permit Nos. AC 16-33883  
AC 16-33884  
Nov. 10, 1980

Dear Mr. Thomas:

Your letter of January 9, 1981, refers to an analysis of the expected net emissions increase, from the construction referenced by the above numbered permits, to determine PSD applicability.

This submission is intended to provide data for such an analysis which hopefully, will substantiate our conclusion that no de minimus values are exceeded.

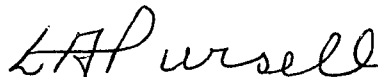
Attached is a summary of the expected emissions compared with significant limits or de minimus values.

If appropriate, I will be available for a conference in your offices early in the week of February 9. I will call you on February 5 to make any convenient arrangements.

Following receipt of the Florida permits, site work and building construction are in progress, since discussions with the EPA in Atlanta led us to the conclusions expressed in my letter of 12/23/80.

Sincerely,

UNITED STATES GYPSUM COMPANY



L. A. Pursell  
Manager, Corporate  
Environment & Energy Services

LAP/cp

Attachment

U.S. GYPSUM - JACKSONVILLE

## Expected Net Emissions Changes

Florida Permits AC 16-33883  
AC 16-338848324 Hrs./Yr.

<u>Pollutant</u>	<u>Net Change</u>	<u>Deminimus Limit</u>	<u>Comments</u>
<u>Criteria Pollutants</u>			
TSP	-5.12 TPY	+25 TPY	Off-sets provided - accepted by Florida DER pr. AC permits.
SO <sub>2</sub>	-25.80 TPY	+40 TPY	Reduction from shutdown of No. 1 Board Line - heavy oil stand-by and using Nat. gas - propane stand-by for new line. Accepted by Florida DER pr. AC permits.
CO	+9.76 TPY	+100 TPY	Calculations attached.
NO <sub>x</sub>	+33.07 TPY	+40 TPY	Control by manufacturers' warranted "Low NO <sub>x</sub> " burner. (Maxon) Calculations and test data attached.
H/C as CH <sub>4</sub>	+3.34 TPY	+40 (as VOC)	(No VOC expected.) Calculations for H/C as CH <sub>4</sub> attached.

Non-Criteria Pollutants (NESHAP)

Asbestos  
Lead  
Beryllium  
Mercury  
Vinyl Chloride  
Fluorides  
H<sub>2</sub>SO<sub>4</sub> Mist  
Reduced S (Total)  
Reduced S  
(Compounds)

No Particulate Emission Sources serve any process which uses any raw materials based on any non-criteria pollutant. All Combustion sources are oxidizing atmospheres, hence no sulfur compounds.

Since no significant emission rate is exceeded, we conclude PSD does not apply.

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



BOB GRAHAM  
GOVERNOR  
JACOB D. VARN  
SECRETARY

STATE OF FLORIDA

**DEPARTMENT OF ENVIRONMENTAL REGULATION**

January 9, 1981

Mr. L.A. Pursell  
Manager, Corporate  
Environmental & Energy Services  
Corporate Technical Services  
United States Gypsum Company  
101 South Wacker Drive  
Chicago, IL 60606

Ref: Your letter of December 23, 1980, - PSD Applicability

Dear Mr. Pursell:

The Bureau of Air Quality Management, Florida DER now reviews PSD Applications pertaining to the requirements of the Federal Regulations. There are review requirements that must be met to determine applicability. The modification at the Jacksonville plant must be analyzed to determine if the change would result in a significant net emissions increase of any pollutant subject to regulations under the ACT.

Jacksonville is classified non-attainment for the pollutants; particulates and ozone. A PSD permit is not required for these pollutants. The modification is potentially subject to PSD review only for the remaining 13 regulated pollutants.

A copy of the workshop manual "Prevention of Significant Deterioration" is enclosed, which provides guidance to meet the requirements of the 1980 regulations found in 40 CFR 52.21.

If you have any questions, please contact me at (904) 488-1344.

Sincerely,

William A. Thomas, Engineer  
Department of Environmental Regulation  
Bureau of Air Quality Management

WAT:dav

attachment: PSD Workshop Manual

5/26/82

from J. Woosley - BES

US Gypsum

applied for 2-Turbines

$\text{NO}_x \rightarrow 250?$

said some shut downs expected

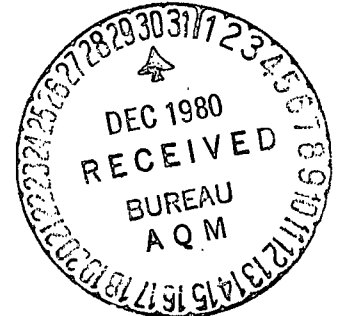
but does not know  
what units! or emissions?

Requested op. permit files  
to be copied.

# UNITED STATES GYPSUM COMPANY

101 South Wacker Drive/Chicago, Illinois 60606

December 23, 1980



Mr. Bill Thomas  
Bureau of Air  
Quality Management  
Department of  
Environmental Regulation  
2600 Blair Stone Road  
Twin Towers Office Bldg.  
Tallahassee, Florida 32301

RE: Permit Nos. AC 16-33883 and 33834 - PSD Applicability

Dear Mr. Thomas:

During the time that your office was in the process of reviewing and approving our application for permits to construct, covering modifications to a gypsum plant in Jacksonville, we were working with the U.S. EPA Region IV in Atlanta to determine PSD applicability.

During a first conference with the agency in Atlanta, it was determined that nitrogen oxides, carbon monoxide and hydrocarbons were the only pollutants in question.

We have developed data for expected increases in the emissions in all these parameters, and find that none exceeds the deminimus value requiring PSD review.

The attached file presents all correspondence with Region IV in this matter.

The major item is the location and proposal to use a low nitrogen oxide burner for the board dryer which results in a nitrogen oxide emission increase comfortably below the 40 ton per year deminimus value for this pollutant.

The last letter from the Region, dated December 17, advises that Florida now has PSD review authority. This letter also indicates that particulate emissions are not below PSD deminimus values.

Apparently, the Region has overlooked early data submitted showing a net decrease in particulate emissions. These data were part of the complete application originally filed with your office, and were given to Region IV on September 25, 1980.

Mr. Bill Thomas  
Page Two  
December 23, 1980

The Region also indicates that it would be in our best interest to notify you of our concern in relation to PSD construction permitting.

Hopefully, you will reach a conclusion similar to ours and determine that PSD requirements are not applicable.

Sincerely,

UNITED STATES GYPSUM COMPANY



L. A. Pursell  
Manager, Corporate  
Environment & Energy Services

LAP/cp

Attachment

cc: Mr. Michael Brandon  
U.S. Environmental Protection Agency  
345 Courtland N.E.  
Atlanta, GA  
Air Facilities Branch



# UNITED STATES GYPSUM COMPANY

101 South Wacker Drive/Chicago, Illinois 60606

September 3, 1980

The United States  
Environmental Protection Agency  
345 Courtland N.E.  
Atlanta, Georgia 30308

Attention: Mr. K. Williams - Air Permits

Dear Mr. Williams:

Confirming our telephone conversation on 9/3/80, the United States Gypsum Company proposes a modification to its Gypsum products plant (SIC-3275) located on Evergreen Avenue in Jacksonville, Florida.

The proposed work consists of:

- Item I The shutdown and removal of existing wallboard production line and natural gas fired drying kiln with low sulfur No. 6 oil as standby fuel.
- Item II The construction of a modern high speed wallboard machine with a natural gas fired kiln using propane as the standby fuel.
- Item III The construction of one gypsum calcining kettle, natural gas fired with No. 6 oil as standby.
- Item IV The conversion of an existing electrostatic precipitator to a cloth collector as the main particulate control device for the calcining mill.

Using U.S. EPA AP-42 factors for combustion emissions and plant emissions inventory data for particulate loadings, the net emission effect will be a reduction for particulate and sulfur oxides, with an increase for nitrogen oxides.

An application for a permit for this work has been filed with the state of Florida, and a complete copy is submitted for your preliminary review.

As agreed, I will visit your offices during the morning of September 25 to discuss the project and determine what further data may be required by the Federal permitting process.

Sincerely,

UNITED STATES GYPSUM COMPANY

A handwritten signature in cursive script that reads "LAPursell". The signature is written in dark ink and is positioned above the typed name.

L. A. Pursell  
Manager, Corporate  
Environment and Energy Services

LAP/cp

# UNITED STATES GYPSUM COMPANY

101 South Wacker Drive/Chicago, Illinois 60606

December 1, 1980

The United States  
Environmental Protection Agency  
345 Courtland N.E.  
Atlanta, Georgia 30308

Attention: Mr. K. Williams - Air Permits

Dear Mr. Williams:

Pursuant to discussions in your offices on September 25, and subsequent telephone conversations, we understand that the applicability of PSD regulations to a plant modification by United States Gypsum Company in Jacksonville, Florida, would be contingent upon expected nitrogen oxide emission increases. We also understand that you require calculated emissions, as expected for carbon monoxide and hydrocarbons as methane.

We have determined that through the use of a burner configuration for the board dryer, as supplied by Maxon Corporation, nitrogen oxide emissions will be substantially below those shown in the EPA - AP - 42 Factors. The enclosed letter from Maxon indicates a willingness to warrant this burner at .0078 lbs. NO<sub>x</sub> per million BTU's fired.

This value is further substantiated by actual tests conducted on November 7, at a Maxon facility which shows NO<sub>x</sub> formation across the burner to be substantially below the .0078 figure which we will require in a warranty at the time burners are purchased.

The attached calculations show that the three pollutants in question, namely nitrogen oxides, carbon monoxide and hydrocarbons as methane are significantly below the deminimus established as the starting point for PSD requirements.

Values for these emissions are increases of 33.07, 9.76, and 3.34 tons per year respectively.

All calculations were made using actual emissions for 1979 in the case of the shut down source, with 17.8 days curtailment.

Mr. K. Williams  
Page Two  
December 1, 1980

For expected emissions, the worse case condition was used, which would be 100 percent curtailment. The emission factor used for nitrogen oxide calculations was the high number.

Copies of the Florida state permits issued on November 10, 1980, are also attached for your information.

From the above information, we conclude that PSD requirements do not apply to the modification covered by the Florida permits.

Sincerely,

UNITED STATES GYPSUM COMPANY



L. A. Pursell  
Manager, Corporate  
Environment & Energy Services  
Corporate Technical Services

LAP/cp

Attachments

## UNITED STATES GYPSUM

Jacksonville, Florida

Net Emissions ChangeSummary - NO<sub>x</sub>, CO, and H/C as CH<sub>4</sub>

<u>New Sources</u>	<u>Tons Per Year</u>		
	<u>NO<sub>x</sub></u>	<u>CO</u>	<u>H/C</u>
No. 3 Bd. Kiln (Propane-Gas)	4.5	9.85	1.66
No. 7 Kettle (No. 6 Oil & Gas)	52.54	3.50	2.49
TOTAL - New Sources	57.04	13.35	4.15
 <u>Shut Down Source</u>			
No. 1 Bd. Kiln-Gas/Oil	23.97	3.59	0.81
Gas 329.70/Oil 17.80			
Days Days			
 <u>Net Change - Increase</u>			
Total Plant	33.07	9.76	3.34

33.07 &lt; 40; 9.76 &lt; 100 &amp; 3.34 &lt; 40, ∴ PSD does not apply

UNITED STATES GYPSUM - JACKSONVILLE, FLORIDA

Emission Calculations

CO & H/C as CH<sub>4</sub>

U.S. EPA AP 42 Factors

8340 hrs. - 347.5 Days/Year

Given: Shut Down Source - No. 1 Board Kiln  
49.34 x 10<sup>6</sup> BTU/hr. - Gas Fired; No. 6 Oil Stand-by  
Gas Curtailment days 1979 = 17.8

New Sources - No. 3 Board Kiln

Max. Rating - 140 x 10<sup>6</sup> BTU/hr. - Gas Fired; Propane stand-by  
(127 x 10<sup>6</sup> BTU/hr. - Max. Operation)

No.7 Calcining Kettle

30 x 10<sup>6</sup> BTU/hr. - Gas Fired; No. 6 oil stand-by

Actual Emissions (Shut down source)

No. 1 Board Kiln

Gas - CO = 17 lbs./10<sup>6</sup> cu. ft. = 17 lbs./10<sup>9</sup> BTU = .017 lbs./10<sup>6</sup> BTU  
.017 x 49.34 x 24 = 20 lbs./day for 329.7 days = 3.30 Tons/yr.

No. 6 Oil - CO = 4 lbs./10<sup>3</sup> Gals. = 4 lbs./144 x 10<sup>6</sup> BTU = .028 lbs./10<sup>6</sup> BTU  
.028 x 49.34 x 24 = 33.16 lbs./day for 17.8 days = 0.29 tons/yr.

Total Actual CO 1979

3.59 tons/yr.

Gas H/C as CH<sub>4</sub> = 3 lbs/10<sup>6</sup> cu. ft. = 3 lbs./10<sup>9</sup> BTU = .003 lbs/10<sup>6</sup> BTU  
.003 x 49.34 x 24 = 3.56 lbs/day for 329.7 days = 0.59 tons/yr.

No. 6 Oil H/C as CH<sub>4</sub> = 3 lbs/10<sup>3</sup> Gals = 3 lbs/144 x 10<sup>6</sup> BTU = .021 lbs/10<sup>6</sup> BTU  
.021 x 49.34 x 24 = 24.8 lbs/day for 17.8 days = 0.22 tons/yr.

Total Actual H/C 1979

0.81 tons/yr.

Expected Emissions

New Sources CO

No. 3 Board Kiln

Gas Fired - Propane stand-by  
Assume 100% Curtailment - Worst Case

Propane CO - 1.5 lbs./1000 Gals @ 90,500 BTU/Gal = 1.5 lbs./90.5 x 10<sup>6</sup> BTU =  
.017 lbs./10<sup>6</sup> BTU  
.017 x 140 x 24 = 57.12 lbs./Day for 347.5 days = 9.85 tons/yr.

No. 7 Kettle

Gas Fired - No. 6 Oil Stand-By  
Assume 100% Curtailment - Worst Case

No. 6 Oil CO - 4.0 lbs./1000 Gals. = 4.0 lbs./144 x 10<sup>6</sup> BTU = .028 lbs./10<sup>6</sup> BTU  
.028 x 30 x 24 = 20.16 lbs./day for 347.5 days = 3.50 tons/yr.

Total Expected CO                      13.35 tons/yr.

CO Net change; expected less actual shutdown:

13.35 - 3.59 = 9.76 tons/yr. increase

9.76 < 100 ∴ PSD does not apply for CO

Expected Emissions - New Sources - H/C as CH<sub>4</sub>

No. 3 Board Kiln

Propane H/C 0.3 lbs./1000 Gals = .003 lbs./10<sup>6</sup> BTU  
.003 x 140 x 24 = 10.08 Pounds per day for 329.7 days = 1.66 tons/yr.

No. 7 Kettle

No. 6 Oil H/C 3 lbs./10<sup>3</sup> Gals. = 3 lbs./144 x 10<sup>6</sup> BTU  
.021 x 30 x 24 = 15.12 pounds per day for 329.7 days = 2.49 tons/yr.

Total Expected H/C as CH<sub>4</sub> = 4.15 tons/yr.

H/C net change; expected less actual shut down:

4.15 - 0.81 = 3.34 Tons/yr. increase

3.34 < 40 ∴ PSD does not apply to H/C

UNITED STATES GYPSUM

Jacksonville, Florida

Net Emissions Change

NO<sub>x</sub>

New Sources - Expected Emissions

No. 3 Board Kiln - Gas/Propane 347.5 days/yr. -  $140 \times 10^6$  BTU/Hr.  
NO<sub>x</sub> Emission rate .0078 lbs./ $10^6$  BTU - Per Maxon  
letter dated 10/14/80 verified by test on 11/7/80  
 $.0078 \times 140 \times 24 \div 2000 = .013$  TPD  $\times 347.5 = 4.5$  TPY

No. 7 Kettle - Gas/No. 6 Oil 347.5 Days/yr.  $30 \times 10^6$  BTU/Hr.  
Assume 100% curtailment - worst case  
US U.S. EPA AP 42 Factor for Residual Oil  
NO<sub>x</sub> Emission rate 60 lbs./M Gals.  
 $60 \text{ lbs./M Gals} = 60 \text{ lbs./}144 \times 10^6 \text{ BTU} = 0.42 \text{ lbs./}10^6 \text{ BTU}$   
 $0.42 \times 30 \times 24 \div 2000 = 0.15$  TPD  $\times 347.5 = 52.54$  TPY

Total expected - New sources

$$4.5 + 52.54 = \underline{57.04 \text{ TPY}}$$

Shut Down Source - 1979 Actual - No. 1 Bd. Kiln  $49.34 \times 10^6$  BTU/Hr.  
329.7 Days Gas; 17.8 Days No. 6 oil

NO<sub>x</sub> from gas  $100 \text{ lbs./}10^6 \text{ Cu. Ft.} = 100 \text{ lbs./}10^9 \text{ BTU}$  or  $0.10 \text{ lbs./}10^6 \text{ BTU}$   
 $.10 \times 49.34 \times 24 \div 2000 = 0.06$  TPD  $\times 329.7 = 19.52$  TPY

NO<sub>x</sub> from oil  $60 \text{ lbs./M Gals} = 0.42 \text{ lbs./}10^6 \text{ BTU}$

$$0.42 \times 49.34 \times 24 \div 2000 = 0.25 \text{ TPD} \times 17.8 = 4.45 \text{ TPY}$$

$$\text{Total - Actual NO}_x \text{ Shut Down } 19.52 + 4.45 = \underline{23.97 \text{ TPY}}$$

$$\text{Expected NO}_x \text{ increase: } 57.04 - 23.97 = \underline{33.07 \text{ TPY}}$$



# MAXON CORPORATION

MUNCIE, INDIANA 47302  
TEL. (317) 284-3304 - TELEX 27-392



*Industrial Combustion Equipment and Valves*

October 14, 1980

Address reply to:  
80 RIVER OAKS, SUITE 204  
CALUMET CITY, ILLINOIS 60409  
Chicago Phone (312) 264-8511  
Telex 253-165

U. S. Gypsum Company  
101 South Wacker Drive  
Chicago, Illinois 60606

Attention: Mr. Herb Martin

SUBJECT: NO<sub>x</sub> ESTIMATES

Reference: Your Jacksonville, Florida Board Dryer

Dear Mr. Martin:

We appreciate this opportunity to work with you regarding combustion equipment with low NO<sub>x</sub> generation.

As we've discussed, in reference to the Jacksonville application; although we have no control over your total system NO<sub>x</sub> discharge, we feel the AIRFLO burner will yield no more than 10 ppm differential NO<sub>x</sub> (NO<sub>x</sub> across the burner, or added by the burner). This, of course, is largely dependent on proper burner installation, adjustment and operation.

If my figures correlate with those we discussed during our last meeting, this would amount to approximately .0078 lbs. NO<sub>x</sub> per one million BTU.

Thanks again for this opportunity to be of service.

Sincerely,

MAXON CORPORATION

  
RICH RUBLE

RR:jn

TO: #176-2, L. A. Pursell

November 26, 1980

FROM: #176-2, D. E. Williams

SUBJECT: Maxon Burner Demonstration (11-7-80)

---

On Friday, November 7, an investigation of the Maxon low NO<sub>x</sub> line burner was conducted by Messrs. J. S. Oberlander, A. K. Kingston and the writer with the assistance of the people of Maxon. Their facilities are the best kept manufacturing facilities in which I have ever been.

A lab test (simulating a board drier) was set up for our inspection by Mr. E. Johann. The test was operated with a line burner at 350,000 BTU per Linear Foot of burner, premixed with 120 percent stoichiometric air, 12 inches of mixing pressure and humidity ratio of approximately 30 percent. With these operating conditions in mind please refer to the attached results.

In reviewing these results, it was determined that no further information was required at that time. If the present letter from Maxon fulfills Mr. Pursell's permit requirement needs neither a second letter of guarantee regarding Maxon's Low NO<sub>x</sub> Burners nor further testing will be provided.

DEW/cp

Attachment

*Dale E. Williams*

Comments	Sample Conditions	NO <sub>x</sub> Parts Per Billion	LBS NO <sub>x</sub> Per MMBTU	CO Parts Per Million	Room Temperature °F	Air Temperature Before Burner °F	Air Temperature After Burner °F
	Sample Positions						
	Before Burner	1636.3		2.64	82.0	427.0	438.8
	After Burner	2807.0	.00130	2.91	81.2	424.0	433.9
	Before Burner	2054.4		1.89	85.9	455.6	459.4
	After Burner	3020.1	.00173	2.62	82.9	457.5	467.2

#### Tests Conditions

1. Date - 11/7/80
2. Site - Muncie, Indiana (Maxon Laboratory Facilities)
3. Equipment - Low NO<sub>x</sub> Burner
4. Equipment Firing Rate - 350,000 BTU/Linear Ft. of Burner (3' Used)
5. 120% of stoichiometric combustion air pre-mixed
6. 12 inches of mixing pressure (fuel-air)
7. 30% Absolute Humidity
8. Recirculation was kept at a maximum

1107	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16
100	..NOX...	..NO...	..CO...	..CO...	..CO...	..AIR STRM. TEMP.	..AIR STRM. TEMP.	..AIR STRM. TEMP.	.....S.Y.S.T.E.M.....	.....T.E.M.P.E.R.A.T.U.R.E.S...	.....T.E.M.P.E.R.A.T.U.R.E.S...	.....T.E.M.P.E.R.A.T.U.R.E.S...	.....T.E.M.P.E.R.A.T.U.R.E.S...	.....T.E.M.P.E.R.A.T.U.R.E.S...	.....T.E.M.P.E.R.A.T.U.R.E.S...	.....T.E.M.P.E.R.A.T.U.R.E.S...
200	..NOX...	..NO...	..CO...	..CO...	..CO...	..AIR STRM. TEMP.	..AIR STRM. TEMP.	..AIR STRM. TEMP.	.....S.Y.S.T.E.M.....	.....T.E.M.P.E.R.A.T.U.R.E.S...	.....T.E.M.P.E.R.A.T.U.R.E.S...	.....T.E.M.P.E.R.A.T.U.R.E.S...	.....T.E.M.P.E.R.A.T.U.R.E.S...	.....T.E.M.P.E.R.A.T.U.R.E.S...	.....T.E.M.P.E.R.A.T.U.R.E.S...	.....T.E.M.P.E.R.A.T.U.R.E.S...
300	..NOX...	..NO...	..CO...	..CO...	..CO...	..AIR STRM. TEMP.	..AIR STRM. TEMP.	..AIR STRM. TEMP.	.....S.Y.S.T.E.M.....	.....T.E.M.P.E.R.A.T.U.R.E.S...	.....T.E.M.P.E.R.A.T.U.R.E.S...	.....T.E.M.P.E.R.A.T.U.R.E.S...	.....T.E.M.P.E.R.A.T.U.R.E.S...	.....T.E.M.P.E.R.A.T.U.R.E.S...	.....T.E.M.P.E.R.A.T.U.R.E.S...	.....T.E.M.P.E.R.A.T.U.R.E.S...
08:26:54	4031.8M	4000.5M		0.46P		302.6F	306.5F		75.5F		232.5F	333.4F		151.9F	30.6F	77.8F
2 10:04:52	4836.1M	4771.8M		0.55P		327.9F	335.4F		84.0F		233.3F	342.9F		189.8F	36.7F	87.3F
5 10:28:12	6266.7M	6246.1M		0.46P		426.3F	449.6F		84.7F		235.4F	344.1F		215.2F	41.5F	91.8F
4 10:37:41	4967.7M	4988.3M		0.38P		451.8F	472.1F		83.2F		233.2F	337.5F		140.1F	48.2F	100.1F
5 11:06:23	1626.8M	1612.9M		2.47P		425.6F	434.2F		81.0F		234.5F	353.1F		97.3F	38.1F	104.6F
2 11:11:24	1671.0M	1648.6M		2.46P		424.4F	429.7F		80.8F		233.9F	337.7F		95.9F	38.1F	104.6F
<i>Went to 450°F and Full Recirculation</i>																
7 11:17:30	1636.3M	1647.2M	BEFORE	2.64P		427.0F	438.8F		82.0F		236.3F	341.7F		178.4F	33.0F	95.7F
8 11:24:29	2807.0M	2791.7M	AFTER	2.91P		424.0F	433.9F		81.2F		233.4F	346.8F		194.3F	31.1F	90.8F
9 11:32:59	888.6M	913.9M	BEFORE	2.53P		429.9F	443.7F		83.0F		232.6F	342.0F		196.3F	33.8F	88.7F
10 13:08:32	2111.0M	2162.4M	AFTER	2.39P		457.8F	470.5F		83.1F		235.0F	336.2F		168.8F	35.2F	88.5F

1107 ...U S GYPSUM...MAXON CORPORATION.....LONOX TESTS.....  
 100 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16  
 200 ..NOX.....NO... ..CO... ..AIR STRM TEMP. ....S.Y.S.T.E.M.....T.E.M.P.E.R.A.T.U.R.E.S...DEGREES.F.....  
 300 ...PPM... ..UP.....DWI... ..ROOM.....GAP, ITR, MAN, PAN.....C.A.L.D:T:P:A:P.....  
 ..INLET....BATH...OUTLET.

	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16
1 13:35:09	2068.1M	2084.1M	AFTER	2.66P		456.8F	465.0F		83.5F		232.5F	343.9F		191.8F	36.0F	95.8F
2 13:39:00	2094.2M	2093.2M	BEFORE	1.93P		456.7F	472.1F		85.7F		234.8F	336.1F		195.2F	34.9F	94.0F
3 13:45:16	3020.1M	2986.2M	AFTER	2.62P		457.5F	467.2F		82.9F		230.1F	334.9F		198.6F	34.1F	91.6F
4 13:50:47	2054.4M	2072.5M	BEFORE	1.89P		455.6F	459.4F		85.9F		234.8F	344.7F		197.6F	33.9F	90.8F
5 13:58:20	5240.7M	5298.0M	CALIBRATE	0.52P		106.5F	116.6F		84.9F		205.3F	332.8F		198.8F	33.7F	90.0F



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV

345 COURTLAND STREET  
ATLANTA, GEORGIA 30365

DEC 17 1980

REF: 4AH-AF

Mr. L. A. Pursell  
Manager, Corporate  
Environmental and Energy Services  
Corporate Technical Services  
United States Gypsum Company  
101 South Wacker Drive  
Chicago, IL 60606

Dear Mr. Pursell:

We have reviewed your letter of December 1, 1980 addressing nitrous oxide, carbon monoxide and hydrocarbon pollutant increases for your proposed plant modifications in Jacksonville, Florida.

Based on the information provided, we are not able to make a PSD applicability determination. Although emission factors for NO<sub>x</sub> and CO emissions may be acceptable based on previous emission tests and total emissions for the three pollutants are below de minimus amounts for PSD applicability, it appears from Florida State permits that particulate emissions are not. - Part. 13 Non attainment  
off-sts provided

The State of Florida has recently received technical review authority for the PSD program. As the State also holds pertinent information regarding your facilities for a full review of all regulated pollutants, it is in your best interest to notify them of your concerns in relation to PSD construction permitting. Florida will make an applicability determination and notify you directly.

If you have any questions, please contact Michael Brandon of my staff at 404/881-4552.

Sincerely yours,

*Tommie A. Gibbs*

Tommie A. Gibbs  
Chief  
Air Facilities Branch

cc: FL DER

11-7-80  
Traxon Facility  
Purdue, Indiana

Sample lines are needed  
Tests before and after burner  
Burner is ~~is~~ called a low NOx Burner  
" is a Line Burner  
Samples were done on a wet basis

P might want to run an exhaust value  
Install in two banks for Turndown

11-12 Air-Fuel Ratio  
mix Press. .5 inches diff. before after  
Turn down 5 to 1  
500,000 BTU per Lineal Foot  
Air Pressure 12 inches of mix pressure

- 2 20 MMBTU Bank
- 2 50 MMBTU Bank

Propane NOx P

DEPARTMENT OF ENVIRONMENTAL REGULATION

INTEROFFICE MEMORANDUM

For Routing To District Offices And/Or To Other Than The Addressee	
To: _____	Loctn.: _____
To: _____	Loctn.: _____
To: _____	Loctn.: _____
From: _____	Date: _____

TO: Jacob D. Varn, Secretary, FDER  
 FROM: Steve Smallwood, Chief, BAQM  
 DATE: November 7, 1980  
 SUBJ: Approval and Signature of Attached Air Construction Permits.

The two (2) attached Air Construction Permits for United States Gypsum Company, Jakcosville, Duval County, Florida are for the construction of a Raymond Mill and Calciner Kettle (AC 16-33883) and Board Plant No. 3 (AC 33884). Both installations to be located at 6825 Evergreen Avenue.

Day 90, after which the permit would be issued by default is November 16, 1980.

The Bureau recommends your approval and signature.

*for*   
 Steve Smallwood, Chief  
 Bureau of Air Quality Management





FLORIDA PUBLISHING COMPANY

Publishers

JACKSONVILLE, DUVAL COUNTY, FLORIDA

STATE OF FLORIDA }
COUNTY OF DUVAL }

Before the undersigned authority personally appeared .....

Ronald W. Keeler, who on oath says that he is

Advertising Manager of The Florida Times-Union, and

Jacksonville Journal, daily newspapers published at Jacksonville in Duval County,

Florida; that the attached copy of advertisement, being a .....

Legal Notice

in the matter of Installation of a Raymond Mill, Calciner and

No. 3 Board Plant

in the ..... Court,

was published in The Florida Times-Union,

in the issues of October 7, 1980

Affiant further says that the said The Florida Times-Union and Jacksonville Journal are each newspapers published at Jacksonville, in said Duval County, Florida, and that the said newspapers have each heretofore been continuously published in said Duval County, Florida, The Florida Times-Union each day, and Jacksonville Journal each day except Sundays, and each has been entered as second class mail matter at the postoffice in Jacksonville, in said Duval County, Florida, for a period of one year next preceding the first publication of the attached copy of advertisement; and affiant further says that he has neither paid nor promised any person, firm or corporation any discount, rebate, commission or refund for the purpose of securing this advertisement for publication in said newspaper.

Sworn to and subscribed before me this 7th day of October A.D. 19 80

Notary Public, State of Florida at Large.

Ronald W Keeler

John Svec

My Commission Expires

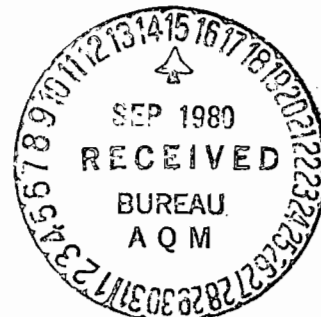
Notary Public, State of Florida at Large
My Commission Expires July 9, 1982
Bonded By American Fire & Casualty Company.

The Department of Environmental Regulation (DER) has received applications from and intends to issue construction permits to U.S. Gypsum Company for the installation of a Raymond Mill, Calciner and No. 3 Board Plant to be located at 6825 Evergreen Ave., Jacksonville, Duval County. A Determination of Best Available Control Technology was not required. Copies of the applications, Technical Evaluation, and DER intent are available for inspection at the following offices: St. Johns River Subdistrict 3426 Billis Road, Jacksonville Duval County Dept. of Health, Welfare & Bio-Env. Serv. 515 West 6th Street, Jacksonville DER, Bureau of Air Quality Mgmt. 2600 Blair Stone Road, Tallahassee 32301 Comments on this action shall be submitted in writing to John Svec of the Tallahassee office, within 30 days of this notice.

# UNITED STATES GYPSUM COMPANY //

Post Office Box 3197 / Jacksonville, Florida 32206

September 11, 1980



Mr. Edward Palagyi  
Bureau of Air Quality Management  
Department of Environmental Regulation  
2600 Blair Stone Road  
Twin Towers Office Building  
Tallahassee, FL 32301

Re: Supplementary information for application for Permit to Construct  
Air Pollution Sources for No.3 Board Plant

Dear Mr. Palagyi:

Enclosed is the information you requested by telephone September 8, 1980.  
Please replace pages 3 and 4 of the #3 Board Plant application with those  
attached.

Very truly yours,

UNITED STATES GYPSUM CO.

A handwritten signature in cursive script that reads "S. M. Neas".

S. M. Neas  
Project Engineer

SMN:jw

Encls.

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

A. Raw Materials and Chemicals Used in your Process, if applicable: (Fuel is also used.)

Description	Contaminants		Utilization Rate - lbs/hr	Relate to Flow Diagram
	Type	% Wt		
CaSO <sub>4</sub> ·2H <sub>2</sub> O (Gypsum)	Particulate	.002	1140	
CaSO <sub>4</sub> ·½H <sub>2</sub> O (Stucco)	"	.0004	101640	
Starch	"	.004	720	
Vermiculite	"	.0005	5700	

B. Process Rate, if applicable: (See Section V, Item 1) (See addendum for calculations)

1. Total Process Input Rate (lbs/hr): 182130

2. Product Weight (lbs/hr): 128130

C. Airborne Contaminants Emitted: Total emissions - see addendum for individual units and calculations.

Name of Contaminant	Emission <sup>1</sup>		Allowed Emission <sup>2</sup> Rate per Ch. 17-2, F.A.C.	Allowable <sup>3</sup> Emission lbs/hr	Potential Emission <sup>4</sup>		Relate to Flow Diagram
	Maximum lbs/hr	Actual T/yr			lbs/hr	T/yr	
Particulate	1.205	5.013			2406	10012	See addendum
* Sulfur Oxides	0.151	0.628			0.151	0.628	BD-5
Nitrogen Oxides	22.57	93.9			22.57	93.9	BD-5
* None with propane							

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

Name and Type (Model & Serial No.)	Contaminant	Efficiency	Range of Particles <sup>5</sup> Size Collected (in microns)	Basis for Efficiency (Sec. V, It <sup>5</sup> *)
BG-1 Baghouse, 5000 CFM	Stucco	99.95		Design
BG-2 Baghouse, 325 CFM	Starch	99.95		Design
BG-3 Baghouse, 325 CFM	Starch	99.95		Design
BG-4 Baghouse, 325 CFM	Gypsum	99.95		Design
BG-5 Baghouse, 325 CFM	Gypsum	99.95		Design
BG-6 Baghouse, 8600 CFM	Gypsum	99.95		Design
BG-7 Baghouse, 5140 CFM	Gypsum	99.95		Design
BG-8 Baghouse 325 CFM	Vermiculite	99.95		Design
BG-9 Baghouse 325 CFM	Vermiculite	99.95		Design

<sup>1</sup>See Section V, Item 2. \*EPA Method 5 to be used to confirm actual emissions after construction

<sup>2</sup>Reference applicable emission standards and units (e.g., Section 17-2.05(6) Table II, E. (1), F.A.C. - 0.1 pounds per million BTU heat input)

<sup>3</sup>Calculated from operating rate and applicable standard

<sup>4</sup>Emission, if source operated without control (See Section V, Item 3)

<sup>5</sup>If Applicable

ADDENDUM

BG-3, Starch Receiver Dust Collector:

Emissions rate same as BG-2.

Process Weight Vented:

720 lb./hr. starch

BG-4, HRA Bin Dust Collector:

Emission rate same as BG-2.

Process Weight Vented:

1140 lb./hr. gypsum.

BG-5, Land Plaster Receiver Dust Collector:

Emissions rate same as BG-2.

Process Weight Vented:

1140 lb./hr. gypsum

BG-6, End Saw Dust Collector:

Process Weight Vented:

End sawing process removes approx. 3/8" from typical 12'-3/8" board.

$0.375"/144.375" \times 100\% = 0.260\%$  of input process rate (128,130 lb./hr.) removed as dust.

$0.260\% \times 128,130 \text{ lb./hr.} = 333 \text{ lb./hr.}$

Process Weight Vented = 333 lb./hr. dust.

Potential Emissions:

Same as process weight vented - 333 lb./hr.

$333 \text{ lb./hr.} \times 8324 \text{ hr./yr.} \times \text{ton}/2000 \text{ lb.} = \underline{1386 \text{ ton/yr.}}$

Actual Emissions:

$\frac{(100 - 99.95)\%}{100\%} \times 333 \text{ lb./hr.} = \underline{0.167 \text{ lb./hr.}}$

$0.167 \text{ lb./hr.} \times 8324 \text{ hr./yr.} \times \text{ton}/2000 \text{ lb.} = \underline{0.693 \text{ ton/yr.}}$

ADDENDUM

BG-7, Stucco Storage Bin Dust Collector:

Actual Emissions:

$$5140 \text{ ft.}^3/\text{min.} \times 60 \text{ min./hr.} \times 0.01 \text{ grain/ft.}^3 \times \text{lb./7000 grain} = \underline{0.441 \text{ lb./hr.}}$$

$$0.441 \times 8324 \text{ hr./yr.} \times \text{ton/2000 lb.} = \underline{1.83 \text{ ton/yr.}}$$

Potential Emissions:

$$0.441 \text{ lb./hr.} \times 100\% \text{ (100-99.95)\%} = \underline{882 \text{ lb./hr.}}$$

$$882 \text{ lb./hr.} \times 8324 \text{ hr./yr.} \times \text{ton/2000 lb.} = \underline{3667 \text{ ton/yr.}}$$

Process Weight Vented:

Stucco conveyed from Rock Mill at 160,000 lb./hr.

BG-8, Vermiculite Receiver Dust Collector:

Emissions rate same as BG-2.

Process Weight Vented:

5700 lb./hr. vermiculite

BG-9, Vermiculite Bin Dust Collector:

Emissions rate same as BG-2.

Process Weight Vented:

Vermiculite unloaded from truck into bin at 20 ton/hr.

Total Particulates Emitted:

Actual Emissions:

$$0.429 \text{ lb./hr.} + (0.028 \times 6) + 0.167 + 0.441 = \underline{1.205 \text{ lb./hr.}}$$

$$1.79 \text{ ton/yr.} + (0.116 \times 6) + 0.693 + 1.83 = \underline{5.013 \text{ ton/yr.}}$$

Potential Emissions:

$$857 \text{ lb./hr.} + (55.7 \times 6) + 333 + 882 = \underline{2406 \text{ lb./hr.}}$$

$$3567 \text{ ton/yr.} + (232 \times 6) + 1386 + 3667 = \underline{10,012 \text{ ton/yr.}}$$

SUMMARY OF PROPOSED SOURCES (OVER 1974 BASELINE)

SOURCE NAME	ACTUAL EMISSIONS		POTENTIAL EMISSIONS	
	Lb/Hr.	Ton/Yr.	lb/Hr.	Ton/Yr.
B1-D *	0.881	3.074	881	3074
B1-A *	0.190	0.771	19	77.1
B-1 *	0.550	2.210	550	2211
B1-C *	1.400	5.628	1400	5628
B1-B *	1.475	5.980	1475	5983
B1-E *	0.080	0.068	80	68
B1-F, B1-G + B1-H, B1-I	2.930	12.80	2930	12798
BH-1	2.140	8.92	4286	17837
BH-2	0.429	1.78	857	3567
BH-3	0.857	3.57	1714	7135
BH-4	1.030	4.28	2057	8562
BH-5	0.343	1.43	686	2854
BG-1	0.429	1.79	857	3567
BG-2	0.028	0.116	55.7	232
BG-3	0.028	0.116	55.7	232
BG-4	0.028	0.116	55.7	232
BG-5	0.028	0.116	55.7	232
BG-6	0.737	3.07	1474	6136
BG-7	0.441	1.83	882	3667
BG-8	0.028	0.116	55.7	232
BG-9	0.028	0.116	55.7	232
<b>TOTAL</b>	<b>13.51</b>	<b>55.52</b>	<b>20482</b>	<b>84556</b>

\* No Changes

+ Existing Collectors

OVERALL SUMMARY OF PROPOSED VS. 1974

BASE LINE

Note: Combustion products based on secondary fuel, #6 fuel oil, #2 fuel oil or propane.

<u>Contaminant</u>	(Worst Case) <u>Existing 1974</u> (lb./hr.)	<u>Proposed</u> (lb./hr)
Particulate (Dust)	14.74	13.51
Ash (Fuel Oil)	<u>32.54</u>	<u>32.54</u>
Total Particulate	47.28	46.05
Decrease: $47.28 - 46.62 = \underline{1.23 \text{ lb./hr.}}$		
Sulfur Oxides (SO <sub>2</sub> )	434.8	428.6
Decrease: $434.8 - 428.6 = \underline{6.2 \text{ lb./hr.}}$		
Nitrogen Oxides (NO <sub>2</sub> )	104.9	126.5
Increase: $126.5 - 104.9 = \underline{21.6 \text{ lb./hr.}}$		

Technical Evaluation  
and  
Preliminary Determination

United States Gypsum Co.  
Jacksonville, Florida

Construction Permit  
Application Numbers:

AC 16-33883  
AC 16-33884

Florida Department of Environmental Regulation  
Bureau of Air Quality Management  
Central Air Permitting  
September 10, 1980



I. PROPOSED DEPARTMENT ACTION:

The Department intends to issue the requested construction permits to United States Gypsum Company to install a new Raymond Mill, Calciner Kettle and Wallboard production facility at the plant located at 6825 Evergreen Avenue, Jacksonville, Florida, subject to public comment received as a result of this notice.

Any person wishing to file comments on this proposed action, may do so by submitting such comments in writing to:

Mr. John Svec.  
Florida Department of Environmental  
Regulation  
Twin Towers Office Building  
2600 Blair Stone Road  
Tallahassee, Florida 32301

Any comments received within thirty days after publication of this notice will be considered and noted in the Department's final determination.

Any person whose substantial interests would be affected by the issuance or denial of this permit may request an administrative hearing by filing a petition for hearing as set forth in Section 28-5.15 (copy attached). Such petition must be filed within 14 days of the date of this notice. Such petition is to be filed with:

Mary Clark  
Office of General Counsel  
Florida Department of Environmental  
Regulation  
Twin Towers Office Building  
Tallahassee, Florida 32301

II. SUMMARY OF EMISSION AIR QUALITY ANALYSIS:

a. The proposed location, Jacksonville, is in that section of Duval County which is classified "Nonattainment" for the criteria pollutants particulate matter and ozone.

b. The significant source of pollutants for the application are gypsum dust and the products of combustion from natural gas, No. 6 oil and propane gas, the latter two being reserve fuels.

c. Particulate emission offsets will be the result of converting an ineffective Research-Cottrell Electrostatic Precipitator to a high efficiency baghouse and the shut-down of the plants No. 1 wallboard production facility.

### III. SYNOPSIS OF APPLICATION:

a. Name and address of applicant:

United States Gypsum Company  
P. O. Box 3197  
Jacksonville, Florida 32206

b. Description of Project and Controls:

This project is the construction of a new higher speed wallboard production facility, a Raymond Mill and Calciner kettle. The latter two units will provide the increased raw material increment required by the new wallboard plant. All construction will be at the existing Jacksonville plant. Dust emissions will be controlled with high efficiency (99.95%) fabric filter baghouses designed for a maximum effluent of 0.01 grains particulate per actual cubic feet.

c. Process and Emission Flow Network:

The proposed (No.5) Raymond Mill installation pulverizes gypsum rock to plus 100 Tyler mesh discharging into a (landplaster) storage bin at a throughput rate of 35 tons per hour. Emissions will be controlled by a fabric filter baghouse (BH-2) with a designed maximum discharge of 0.01 grains per actual cubic feet. This translates to an allowed emission of 0.429 lb/hr. or 1.78 TPY (tons per year).

The proposed (No. 7) calciner kettle cooks the landplaster until 75% of the gypsum water of hydration is removed, producing "stucco" (plaster of paris). The kettle throughput rate will be 50 tons per hour yielding 40 tons per hour of product stucco and 10 tons per hour of water vapor containing gypsum dust particulates. The dust laden emissions will be controlled by a fabric filter baghouse (BH-4) designed for a maximum effluent of 0.01 gr/ACF. This translates to an allowed emission rate of 1.03 lb/hr or 4.28 TPY. Both the Raymond Mill and kettle are scheduled to operate 8,324 hours per year.

The product (stucco) will be transferred by a pneumatic conveyor system to a storage bin at 40 tons per hour. Venting emissions from the storage bin will be controlled by a fabric filter baghouse (BH-5) designed for a maximum effluent of 0.01 gr/ACF. This translates to an allowed emission rate of 0.343 lb/hr or 1.43 TPY.

The heat for the proposed kettle required to remove the gypsum water of hydration will be supplied by a furnace with a maximum heat input of 30 MMBTU/hr. The combustion gases will be vented to the atmosphere. The predominate fuel is natural gas with No. 6 oil in reserve. Emissions when using either 100% gas or 100% oil will be:

<u>Emission</u>	<u>lb/hr</u>	<u>TPY</u>	<u>lb/hr</u>	<u>TPY</u>
Particulate	-	-	3.74	15.60
SO <sub>2</sub>	0.02	0.10	49.30	205.00
NO <sub>x</sub>	2.49	10.40	12.5	51.9

The stucco is pneumatically transferred from storage to a bin at the proposed wallboard production facility. The stucco plus other additives are mixed with an amount of water equal to the water of hydration removed in the calciner plus an excess to form a slurry. The slurry is pressed between two continuous layers of paper to the required thickness, allowed to set up and then cut to required lengths. The board passes through a kiln where the excess water is removed. Each dried board passes between and saws that removes approximately 0.1875 inch from each end.

Emissions from the proposed wallboard production facility will be particulates from the additive feed and storage bins, end saws and the kiln combustion gases. Particulate emissions will be controlled with fabric filter baghouses designed with a maximum effluent of 0.01 gr/ACF which translates to allowable emissions as follows:

<u>Identification</u>	<u>lb/hr</u>	<u>TPY</u>	<u>Rate-lb/hr.</u>
Additive feed system (BG-1)	0.429	1.79	109,200
Starch Storage Bin (BG-2)	0.028	0.12	40,000
Starch Feed Bin (BG-3)	0.028	0.12	720
HRA feed bin (BG-4)	0.028	0.12	1,140
Landplaster feed bin (BG-5)	0.028	0.12	1,140
End Saws (BG-6)	0.737	3.07	333
Stucco feed bin (BG-7)	0.441	1.83	160,000
Vermiculite feed bin (BG-8)	0.028	0.12	5,700
Vermiculite storage bin (BG-9)	0.028	0.12	40,000
TOTAL	1.775	7.41	

The heat for the kiln will be supplied by a furnace with a maximum heat input of 127 MMBTU/hr. The combustion gases will be discharged to the atmosphere. The predominate fuel will be natural gas with propane gas in reserve. Emissions when using either 100% natural or 100% propane gas will be:

<u>Emission</u>	<u>lb/hr</u>	<u>TPY</u>	<u>lb/hr</u>	<u>TPY</u>
Particulates	0	0	0	0
SO <sub>2</sub>	0.15	0.63	0	0
NO <sub>x</sub>	22.57	93.90	22.57	93.90

d. Emission Offset Analysis:

The Research-Cottrell Electrostatic precipitator was originally installed to control emissions from the Rock Dryer, No. 4 Raymond Mill and Calciner kettles No. 5 and 6. The unit was permitted for allowable particulate emissions of 9.9 lb/hr and 6.58 lb/hr SO<sub>2</sub>. (AO 16-2456). The precipitator after being converted to a fabric filter baghouse (BH-3) will only control the emissions from No. 5 and 6 kettles. The baghouse will be designed at a maximum effluent of 0.01 gr/ACF. This translates to an allowed emission rate of 0.857 lb/hr or 3.57 TPY.

The emissions from No. 4 Raymond Mill and the rock dryer will be controlled by a new fabric filter baghouse (BH-1) designed for a maximum effluent of 0.01 gr/ACF. This translates to an allowed emission rate of 2.14 lb/hr or 8.92 TPY.

The proposed No. 3 wallboard production facility will replace the No. 1 unit, which is to be dismantled. The No. 1 unit kiln has a 49.34 MMBTU/hr input furnace, which minus the proposed calciner furnace results in a reduction of 19.34 MMBTU/hr heat input capable of using No. 6 oil. The proposed board mill uses natural gas or propane gas, the adjusted emissions amount to a decrease of 31.65 lb/hr (132 TPY) SO<sub>2</sub> and an increase of 14.53 lb/hr (60 TPY) NO<sub>x</sub>.

e. Particulate Emissions Summary:

<u>Proposed</u>	<u>lb/hr</u>	<u>TPY</u>
BH-1	2.140	8.92
BH-2	0.429	1.78
BH-3	0.857	3.57
BH-4	1.030	4.28
BH-5	0.343	1.43
BG-1	0.429	1.79
BG-2	0.028	0.12
BG-3	0.028	0.12
BG-4	0.028	0.12
BG-5	0.028	0.12
BG-6	0.737	3.07
BG-7	0.441	1.83
BG-8	0.028	0.12
BG-9	0.028	0.12
TOTAL	<u>6.574</u>	27.39 Particulates

<u>Retired</u>	<u>lb/hr</u>	<u>TPY</u>
C-3	<u>9.9</u>	41.2
No. 1 Saws	<u>.3</u>	1.2
	<u>10.2</u>	42.4

Net decrease in particulate emissions 3.6 lb/hr (15 TPY)

f. Fuel Combustion Emission Summary:

Proposed No. 7 kettle - 30 MMBTU/hr. input  
 Retired No. 1 Board Mill - 49 MMBTU/hr. input  
 Net decrease 19.34 MMBTU/hr. input capable of burning No. 6 oil.

Proposed No. 3 Board Mill - 127 MMBTU/hr. input fuel requirements, reserve fuel is propane considered a clean fuel with no visible emissions (AP-42:1.5-1).

<u>Fuel</u>	<u>Particulates lb/hr</u>	<u>SO<sub>2</sub> lb/hr</u>	<u>NO<sub>x</sub> lb/hr</u>
No. 6 oil	-2.41	-31.18	-8.04
Natural gas	-	0.2	22.57
TOTAL	<u>-2.41</u>	<u>-31.6</u>	<u>+14.53</u>

Particulates discharged to the atmosphere will decrease 2.41 lb/hr. (10 TPY), SO<sub>2</sub>-31.6 lb/hr. (132 TPY) and NO<sub>x</sub> increase 14.53 lb/hr (60 TPY).

IV. RULE APPLICABILITY:

The proposed project is located in Duval County ozone non-attainment area. Since no volatile organic compounds (VOC) emissions are produced by this process, the project is exempt from the provisions of the nonattainment rules for VOC emissions.

The proposed project is located in Duval County particulate nonattainment area and is exempt from the modeling requirements of the Prevention of Significant (PSD) rule and the requirements for a Best Available Control Technology (BACT) determination. The proposed project shall comply with F.A.C. 17-2.17(4) which requires all new sources to use the best and latest technology applicable to the source.

V. FINDINGS:

1. Based upon the information presented on the applications the allowable particulate emissions from the designated Baghouses are:

<u>Unit</u>	<u>lb/hr</u>	<u>TPY</u>	<u>Unit</u>	<u>lb/hr</u>	<u>TPY</u>
BH-1	2.140	8.92	BG-3	0.028	0.12
BH-2	0.429	1.78	BG-4	0.028	0.12
BH-3	0.857	3.57	BG-5	0.028	0.12
BH-4	1.030	4.28	BG-6	0.737	3.07
BH-5	0.343	1.43	BG-7	0.441	1.83
BG-1	0.429	1.79	BG-8	0.028	0.12
BG-2	0.028	0.12	BG-9	0.028	0.12

2. Maximum raw material input to the equipment controlled by the designated baghouse is:

<u>Baghouse</u>	<u>Equipment Description</u>	<u>lb/hr</u>	<u>TPY</u>
BH-1	No. 4 Raymond Mill	40,000	0.1 x 10 <sup>6</sup>
BH-1	Rock Dryer	250,000	1.04 x 10 <sup>8</sup>
BH-2	No. 5 Raymond Mill	70,000	0.3 x 10 <sup>6</sup>
BH-3	No. 5 & 6 Kettles	50,000	0.21 x 10 <sup>6</sup>
BH-4	No. 7 Kettle	100,000	0.42 x 10 <sup>6</sup>
BH-5	No. 7 Stucco Conveyor	80,000	0.33 x 10 <sup>6</sup>
BG-1	Additive Feed System	109,200	0.45 x 10 <sup>6</sup>
BG-2	Starch Storage Bin	40,000	0.1 x 10 <sup>6</sup>
BG-3	Starch Feed Bin	720	2,997
BG-4	HRA Feed Bin	1,140	4,745
BG-5	Landplaster Feed Bin	1,140	4,745
BG-6	End Saws	333	1,386
BG-7	Stucco Feed Bin	160,000	0.67 x 10 <sup>6</sup>
BG-8	Vermiculite Feed Bin	5,700	23,723
BG-9	Vermiculite Storage Bin	40,000	0.1 x 10 <sup>6</sup>

3. The predominate fuel for the proposed No. 6 Calciner 30 MMBTU/hr. furnace will be natural gas with No.6 oil in reserve. The predominate fuel for the proposed board kiln 127 MMBTU/hr. furnace will be natural gas with propane gas in reserve. Allowable emissions are:

Particulates	3.74 lb/hr	15.60 TPY
SO <sub>2</sub>	49.45 lb/hr	205.81 TPY
NO <sub>x</sub>	35.37 lb/hr	147.20 TPY

4. The sulfur content of No. 6 Oil will be 1.5% or less.

5. Maximum operating schedule will be 24 hours per day, 6.67 days per week, 52 weeks per year or 8,324 hours per year.

6. Although no emission offset was required a reduction in particulate emissions will result when the Research-Cottrell electrostatic precipitator (C-3), I.D. No. 2437, owned by the applicant per Operating Permit AO 16-2456 issued July 10, 1975 will be converted to a fabric filter baghouse (BH-3)

7. The fourteen baghouses have a design efficiency of 99.95% with an effluent maximum loading of 0.01 grains per actual cubic foot. This exceeds the proposed New Source Performance Standards for non-metallic mineral processing plants of 0.02 grains per dry standard cubic feet.

8. Construction shall commence and be completed within a reasonable time based on the projections included in the application and reasonably conform to the plans submitted.

9. The actual particulate emissions from each baghouse emission point shall be verified by test using standard test methods prior to issuance of an operating permit.

10. Upon obtaining an operating permit, the applicant shall submit annual reports on the actual operation of the facility.

11. All material collected in the baghouses will be recycled.

12. There will be no visible emissions from No. 7 Calciner or No. 3 Board Mill kiln stacks. Test Method 9 EPA Reference 40 CFR Part 60.

13. Both No. 1 Board Mill and the proposed No. 3 Board Mill will operate concurrently during a thirty (30) day shakedown period after which the operation of No. 1 Board Mill will be secured and the facilities dismantled.



STATE OF FLORIDA

**DEPARTMENT OF ENVIRONMENTAL REGULATION**

APPLICANT: United States Gypsum Company  
6825 Evergreen Avenue  
Jacksonville, Florida 32206

PERMIT/CERTIFICATION  
NO. AC 16-33883

COUNTY: Duval

PROJECT: Raymond Mill #5  
Calciner Kettle #7

This permit is issued under the provisions of Chapter 403, Florida Statutes, and Chapter 17-2 & 17-4, Florida Administrative Code. The above named applicant, hereinafter called Permittee, is hereby authorized to perform the work or operate the facility shown on the approved drawing(s), plans, documents, and specifications attached hereto and made a part hereof and specifically described as follows:

For the construction of a Raymond Mill and Calciner Kettle with auxilliary support equipment at the United States Gypsum Company plant. Particulates are to be controlled with fabric filter baghouses. This plant is located at 6825 Evergreen Avenue, Jacksonville, Florida, 32206. The Universal Transverse mercator and latitude, longitude coordinates are: UTM Zone 17, 438.9E 3361.2N and 30°22'52"N by 81°38'01"W: respectively.

Attachments:

1. Application to construct Air Pollution Sources - DER Form 17-1.122(16).
2. Letter of Supplementary Information from U.S.G., Sept. 2, 1980.
3. Cover letter and Construction Schedule from U.S.G., August 14, 1980.

GENERAL CONDITIONS:

1. The terms, conditions, requirements, limitations, and restrictions set forth herein are "Permit Conditions", and as such are binding upon the permittee and enforceable pursuant to the authority of Section 403.161(1), Florida Statutes. Permittee is hereby placed



PERMIT NO.: AC 16-33883

APPLICANT: United States Gypsum Company

on notice that the department will review this permit periodically and may initiate court action for any violation of the "Permit Conditions" by the permittee, its agents, employees, servants or representatives.

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

3. 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 notify and provide the department with the following information: (a) a description of and cause of non-compliance; and (b) the period of non-compliance, including exact dates and times; or, if not corrected, the anticipated time the non-compliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the non-compliance. The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the department for penalties or revocation of this permit.

4. As provided in subsection 403.087(6), Florida Statutes, the issuance of this permit does not convey any vested rights or any exclusive privileges. Nor 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.

5. This permit is required to be posted in a conspicuous location at the work site or source during the entire period of construction or operation.

6. 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 arising under the Florida Statutes or department rules, except where such use is proscribed by Section 403.111, F.S.

7. In the case of an operation permit, 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.

8. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, plant, or aquatic life or property and penalties therefore caused by the construction or operation of this permitted source, nor does it allow the permittee to cause pollution in contravention of Florida Statutes and department rules, except where specifically authorized by an order from the department granting a variance or exception from department rules or state statutes.

9. This permit is not transferable. Upon sale or legal transfer of the property or facility covered by this permit, the permittee shall notify the department within thirty (30) days. The new owner must apply for a permit transfer within thirty (30) days. The permittee shall be liable for any non-compliance of the permitted source until the transferee applies for and receives a transfer of permit.

10. The permittee, by acceptance of this permit, specifically agrees to allow access to permitted source at reasonable times by department personnel presenting credentials for the purposes of inspection and testing to determine compliance with this permit and department rules.

11. This permit does not indicate a waiver of or approval of any other department permit that may be required for other aspects of the total project.

12. This permit conveys no title to land or water, nor constitutes state recognition or acknowledgement of title, and does not constitute authority for the reclamation 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.

13. This permit also constitutes:

- Determination of Best Available Control Technology (BACT)
- Determination of Prevention of Significant Deterioration (PSD)
- Certification of Compliance with State Water Quality Standards (Section 401, PL 92-500)

SPECIFIC CONDITIONS:

PERMIT NO.: AC 16-33883  
APPLICANT: United States Gypsum Company

on notice that the department will review this permit periodically and may initiate court action for any violation of the "Permit Conditions" by the permittee, its agents, employees, servants or representatives.

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

3. 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 notify and provide the department with the following information: (a) a description of and cause of non-compliance; and (b) the period of non-compliance, including exact dates and times; or, if not corrected, the anticipated time the non-compliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the non-compliance. The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the department for penalties or revocation of this permit.

4. As provided in subsection 403.087(6), Florida Statutes, the issuance of this permit does not convey any vested rights or any exclusive privileges. Nor 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.

5. This permit is required to be posted in a conspicuous location at the work site or source during the entire period of construction or operation.

6. 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 arising under the Florida Statutes or department rules, except where such use is proscribed by Section 403.111, F.S.

7. In the case of an operation permit, 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.

8. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, plant, or aquatic life or property and penalties therefore caused by the construction or operation of this permitted source, nor does it allow the permittee to cause pollution in contravention of Florida Statutes and department rules, except where specifically authorized by an order from the department granting a variance or exception from department rules or state statutes.

9. This permit is not transferable. Upon sale or legal transfer of the property or facility covered by this permit, the permittee shall notify the department within thirty (30) days. The new owner must apply for a permit transfer within thirty (30) days. The permittee shall be liable for any non-compliance of the permitted source until the transferee applies for and receives a transfer of permit.

10. The permittee, by acceptance of this permit, specifically agrees to allow access to permitted source at reasonable times by department personnel presenting credentials for the purposes of inspection and testing to determine compliance with this permit and department rules.

11. This permit does not indicate a waiver of or approval of any other department permit that may be required for other aspects of the total project.

12. This permit conveys no title to land or water, nor constitutes state recognition or acknowledgement of title, and does not constitute authority for the reclamation 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.

13. This permit also constitutes:

- Determination of Best Available Control Technology (BACT)
- Determination of Prevention of Significant Deterioration (PSD)
- Certification of Compliance with State Water Quality Standards (Section 401, PL 92-500)

SPECIFIC CONDITIONS:

PERMIT NO.: AC 16-33883

APPLICANT: United States Gypsum Company

Specific Conditions

1. The maximum allowable particulate emissions from the No. 5 Raymond Mill baghouse BH-2 shall be 0.429 lb/hr and 1.78 tons per year (TPY). The maximum raw material to the Raymond Mill shall be 35 tons per hour.
2. The maximum allowable particulate emissions from No. 7 Calciner kettle baghouse BH-4 shall be 1.03 lb/hr and 4.28 TPY. The maximum raw material input to the kettle shall be 50 tons per hour.
3. The maximum allowable particulate emissions from No. 7 kettle product storage vent Baghouse BH-5 shall be 0.343 lb/hr and 1.43 TPY at a maximum stucco transfer rate of 40 tons per hour.
4. The Research-Cottrell Electrostatic precipitator (C-3) shall be converted to a fabric filter baghouse BH-3 controlling particulate emissions from No. 5 and 6 kettles. Maximum allowable emissions shall be 0.857 lb/hr and 3.57 TPY. Maximum combined raw material input to both kettles shall be 25 tons per hour.
5. The maximum allowable particulate emissions from No. 4 Raymond Mill and Rock Dryer baghouse BH-1 shall be 2.14 lb/hr. or 8.92 TPY. Maximum raw material input to No. 4 Raymond Mill and Rock Dryer shall be 20 and 125 tons per hour respectively.
6. There will be no visible emissions from baghouse discharge stacks.
7. The 30 MMBTU/hr. heat input furnace for No. 7 kettle will use natural gas when available. If unavailable No. 6 oil will be used containing a maximum sulfur content of 1.5%.
8. The plant shall operate 24 hours per day, 6.67 days per week, 52 weeks per year or 8,324 hours per year.
9. Emissions tests for particulates and visible emissions shall be conducted for the bag collector emission point in accordance with Methods 1 through 5, 40 CFR 60, Appendix A and Method 9, 40 CFR 60 Appendix A. The results shall be submitted to the Bureau of Air Quality Management for determination of compliance with applicable state rules regarding visible and particulate emission and the conditions of this permit.

\_\_\_\_\_  
Jacob D. Varn, Secretary

Expiration Date:

Issued this \_\_\_\_\_ day of \_\_\_\_\_, 19 \_\_\_\_\_.

STATE OF FLORIDA  
DEPARTMENT OF ENVIRONMENTAL REGULATION



STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

APPLICANT: United States Gypsum Company  
6825 Evergreen Avenue  
Jacksonville, Florida 32206

PERMIT/CERTIFICATION  
NO. AC 16-33884

COUNTY: Duval

PROJECT: Board Plant No.3

This permit is issued under the provisions of Chapter 403, Florida Statutes, and Chapter 17-2 and 17-4, Florida Administrative Code. The above named applicant, hereinafter called Permittee, is hereby authorized to perform the work or operate the facility shown on the approved drawing(s), plans, documents, and specifications attached hereto and made a part hereof and specifically described as follows:

For the construction of Number 3 Wallboard Production facility at the United States Gypsum Company plant. Particulates are to be controlled with fabric filter baghouses. This plant is located at 6825 Evergreen Avenue, Jacksonville, Florida 32206. The Universal Transverse Mercator and latitude, longitude coordinates are: UTM Zone 17, 438.9E, 3361.2N and 30°22'52"N by 81°38'01"W: respectively.

Attachments:

1. Application to Construct Air Pollution Sources-DER Form 17-1.122(16)
2. Letter of Supplementary Information from U.S.G., Sept. 2, 1980
3. Cover Letter and Construction Schedule from U.S.G., August 14, 1980.

GENERAL CONDITIONS:

1. The terms, conditions, requirements, limitations, and restrictions set forth herein are "Permit Conditions", and as such are binding upon the permittee and enforceable pursuant to the authority of Section 403.161(1), Florida Statutes. Permittee is hereby placed

PERMIT NO.: AC 16-33884  
APPLICANT: U.S. Gypsum Company

on notice that the department will review this permit periodically and may initiate court action for any violation of the "Permit Conditions" by the permittee, its agents, employees, servants or representatives.

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

3. 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 notify and provide the department with the following information: (a) a description of and cause of non-compliance; and (b) the period of non-compliance, including exact dates and times; or, if not corrected, the anticipated time the non-compliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the non-compliance. The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the department for penalties or revocation of this permit.

4. As provided in subsection 403.087(6), Florida Statutes, the issuance of this permit does not convey any vested rights or any exclusive privileges. Nor 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.

5. This permit is required to be posted in a conspicuous location at the work site or source during the entire period of construction or operation.

6. 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 arising under the Florida Statutes or department rules, except where such use is proscribed by Section 403.111, F.S.

7. In the case of an operation permit, 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.

8. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, plant, or aquatic life or property and penalties therefore caused by the construction or operation of this permitted source, nor does it allow the permittee to cause pollution in contravention of Florida Statutes and department rules, except where specifically authorized by an order from the department granting a variance or exception from department rules or state statutes.

9. This permit is not transferable. Upon sale or legal transfer of the property or facility covered by this permit, the permittee shall notify the department within thirty (30) days. The new owner must apply for a permit transfer within thirty (30) days. The permittee shall be liable for any non-compliance of the permitted source until the transferee applies for and receives a transfer of permit.

10. The permittee, by acceptance of this permit, specifically agrees to allow access to permitted source at reasonable times by department personnel presenting credentials for the purposes of inspection and testing to determine compliance with this permit and department rules.

11. This permit does not indicate a waiver of or approval of any other department permit that may be required for other aspects of the total project.

12. This permit conveys no title to land or water, nor constitutes state recognition or acknowledgement of title, and does not constitute authority for the reclamation 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.

13. This permit also constitutes:

- Determination of Best Available Control Technology (BACT)
- Determination of Prevention of Significant Deterioration (PSD)
- Certification of Compliance with State Water Quality Standards (Section 401, PL 92-500)

SPECIFIC CONDITIONS:

ADDENDUM TO PERMIT APPLICATION

FOR

AIR POLLUTION SOURCE

GYPSUM ROCK MILL:

Estimated Cost of Control Equipment:

<u>BAGHOUSE NO.</u>	<u>NAME</u>	<u>CFM RATING</u>	<u>ESTIMATED COST</u>
BH-1	#4 Raymond Mill & Rock Dryer D.C.	25,000	\$150,000
BH-2	#5 Raymond Mill D.C.	5,000	40,000
BH-3	Modified Cottrell	10,000	110,000
BH-4	#7 Kettle D.C.	12,000	110,000
BH-5	#7 Hot Pit Conveyor D.C.	4,000	25,000
TOTAL			<u>\$435,000</u>

Operating Hours:

$$24 \text{ hr./day} \times 6.67 \text{ day/wk.} \times 52 \text{ wk./yr.} = \underline{8324 \text{ hr./yr.}}$$

Total Process Weight Input to Mill:

$$125 \text{ ton/hr.} \times 2000 \text{ lb./ton} = 250,000 \text{ lb./hr.}$$

Total Product Weight Output:

$$250,000 \text{ lb. Gypsum/hr.} \times 0.8 \frac{\text{lb. Stucco}}{\text{lb. Gypsum}} = 200,000 \text{ lb./hr.}$$

50,000 lb./hr. water released.

ADDENDUM

Airborne Contaminants Discharged:

Particulates from Baghouses:

Note: All dust collectors will be baghouse type with an efficiency of 99.95% to allow no more than 0.01 grain dust/ft.<sup>3</sup> air.

BH-1, #4 Raymond Mill & Rock Dryer Dust Collector:

Actual Emissions:

$$25,000 \text{ ft.}^3/\text{min.} \times 60 \text{ min./hr.} \times 0.01 \text{ grain/ft.}^3 \times \text{lb./7000 grain} = 2.14 \text{ lb./hr.}$$

$$2.14 \text{ lb./hr} \times 8324 \text{ hr./yr.} \times \text{ton/2000 lb.} = \underline{8.92 \text{ ton/yr.}}$$

Potential Emissions:

$$2.14 \text{ lb./hr.} \times 100\% / (100 - 99.95)\% = \underline{42.86 \text{ lb./hr.}}$$

$$4286 \text{ lb./hr.} \times 8324 \text{ hr./yr.} \times \text{ton/2000 lb.} = \underline{17,837 \text{ ton/yr.}}$$

Process Weight Vented:

250,000 lb./hr. Rock Dryer Gypsum

40,000 lb./hr. #4 Raymond Mill Gypsum

290,000 lb./hr. Total

BH-2, #5 Raymond Mill Dust Collector:

Actual Emissions:

$$5000 \text{ ft.}^3/\text{min.} \times 60 \text{ min./hr.} \times 0.01 \text{ grain/ft.}^3 \times \text{lb./7000 grain} = \underline{0.429 \text{ lb./hr.}}$$

$$0.429 \text{ lb./hr.} \times 8324 \text{ hr./yr.} \times \text{ton/2000 lb.} = \underline{1.78 \text{ ton/yr.}}$$

Potential Emissions:

$$0.429 \text{ lb./hr.} \times 100\% / (100 - 99.95)\% = \underline{857 \text{ lb./hr.}}$$

$$857 \text{ lb./hr.} \times 8324 \text{ hr./yr.} \times \text{ton/2000 lb.} = \underline{3567 \text{ ton/yr.}}$$

Process Weight Vented:

70,000 lb./hr. Gypsum

ADDENDUM

BH-3, Modification of No.3 Cottrell:

Convert existing electrostatic precipitator to a baghouse.

Actual Emissions:

$$10,000 \text{ ft.}^3/\text{min.} \times 60 \text{ min./hr.} \times 0.01 \text{ grain/ft.}^3 \times \text{lb/7000 grain} = \underline{0.857 \text{ lb./hr.}}$$

$$0.857 \text{ lb./hr.} \times 8324 \text{ hr./yr.} \times \text{ton/2000 lb.} = \underline{3.57 \text{ ton/yr.}}$$

Potential Emissions:

$$3.57 \text{ lb./hr.} \times 100\% / (100 - 99.95)\% = \underline{1714 \text{ lb./hr.}}$$

$$1714 \text{ lb./hr.} \times 8324 \text{ hr./yr.} \times \text{ton/2000 lb.} = \underline{7135 \text{ ton/yr.}}$$

Process Weight Vented:

50,000 lb./hr. Gypsum #5 & #6 Kettle

10,000 lb./hr. Water Released

BH-4, #7 Kettle Dust Collector:

Actual Emissions:

$$12,000 \text{ ft.}^3/\text{min.} \times 60 \text{ min./hr.} \times 0.01 \text{ grain/ft.}^3 \times \text{lb/7000 grain} = \underline{1.03 \text{ lb./hr.}}$$

$$1.03 \text{ lb./hr.} \times 8324 \text{ hr./yr.} \times \text{ton/2000 lb.} = \underline{4.28 \text{ ton/yr.}}$$

Potential Emissions:

$$1.03 \text{ lb./hr.} \times 100\% / (100 - 99.95)\% = \underline{2057 \text{ lb./hr.}}$$

$$2057 \text{ lb./hr.} \times 8324 \text{ hr./yr.} \times \text{ton/2000 lb.} = \underline{8562 \text{ ton/yr.}}$$

Process Weight Vented:

100,000 lb./hr. Gypsum

20,000 lb./hr. Water Released



ADDENDUM

BH-5, #7 Hot Pit Conveyor Dust Collector:

Actual Emissions:

$$4000 \text{ ft.}^3/\text{min.} \times 60 \text{ min./hr.} \times 0.01 \text{ grain/ft.}^3 \times \text{lb}/7000 \text{ grain} = \underline{0.343 \text{ lb./hr.}}$$

$$0.343 \text{ lb./hr.} \times 8324 \text{ hr./yr.} \times \text{ton}/2000 \text{ lb.} = \underline{1.43 \text{ ton/yr.}}$$

Potential Emissions:

$$1.43 \text{ lb./hr.} \times 100\% / (100 - 99.95)\% = \underline{686 \text{ lb./hr.}}$$

$$686 \text{ lb./hr.} \times 8324 \text{ hr./yr.} \times \text{ton}/2000 \text{ lb.} = \underline{2854 \text{ ton/yr.}}$$

Process Weight Vented:

80,000 lb./hr. Stucco

Airborne Contaminants from the Complete Combustion of Fuel:

Rock Dryer: (19.7 MMBTU/hr.)

Natural Gas:

Actual Sulfur Oxides (SO<sub>2</sub>):

$$0.0189 \times 10^6 \text{ CF/hr.} \times 0.0561 \text{ lb./CF} \times .0011\% / 100\% \times 2\text{SO}_2 / 1\text{S} = \underline{0.0234 \text{ lb./hr.}}$$

$$0.0234 \text{ lb./hr.} \times 8324 \text{ hr./yr.} \times \text{ton}/2000 \text{ lb.} = \underline{0.0973 \text{ ton/yr.}}$$

Potential same as actual.

Actual Nitrogen Oxides (NO<sub>2</sub>):

Use 132 lb. NO<sub>2</sub>/MMCF per AP-42.

$$0.0189 \text{ MMCF/hr.} \times 132 \text{ lb. NO}_2/\text{MMCF} = \underline{2.49 \text{ lb./hr.}}$$

$$2.49 \text{ lb./hr.} \times 8324 \text{ hr./yr.} \times \text{ton}/2000 \text{ lb./} = \underline{10.4 \text{ ton/yr.}}$$

Potential same as actual.

PERMIT NO.: AC 16-33884  
APPLICANT: U.S. Gypsum Company

on notice that the department will review this permit periodically and may initiate court action for any violation of the "Permit Conditions" by the permittee, its agents, employees, servants or representatives.

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

3. 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 notify and provide the department with the following information: (a) a description of and cause of non-compliance; and (b) the period of non-compliance, including exact dates and times; or, if not corrected, the anticipated time the non-compliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the non-compliance. The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the department for penalties or revocation of this permit.

4. As provided in subsection 403.087(6), Florida Statutes, the issuance of this permit does not convey any vested rights or any exclusive privileges. Nor 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.

5. This permit is required to be posted in a conspicuous location at the work site or source during the entire period of construction or operation.

6. 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 arising under the Florida Statutes or department rules, except where such use is proscribed by Section 403.111, F.S.

7. In the case of an operation permit, 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.

8. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, plant, or aquatic life or property and penalties therefore caused by the construction or operation of this permitted source, nor does it allow the permittee to cause pollution in contravention of Florida Statutes and department rules, except where specifically authorized by an order from the department granting a variance or exception from department rules or state statutes.

9. This permit is not transferable. Upon sale or legal transfer of the property or facility covered by this permit, the permittee shall notify the department within thirty (30) days. The new owner must apply for a permit transfer within thirty (30) days. The permittee shall be liable for any non-compliance of the permitted source until the transferee applies for and receives a transfer of permit.

10. The permittee, by acceptance of this permit, specifically agrees to allow access to permitted source at reasonable times by department personnel presenting credentials for the purposes of inspection and testing to determine compliance with this permit and department rules.

11. This permit does not indicate a waiver of or approval of any other department permit that may be required for other aspects of the total project.

12. This permit conveys no title to land or water, nor constitutes state recognition or acknowledgement of title, and does not constitute authority for the reclamation 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.

13. This permit also constitutes:

- Determination of Best Available Control Technology (BACT)
- Determination of Prevention of Significant Deterioration (PSD)
- Certification of Compliance with State Water Quality Standards (Section 401, PL 92-500)

SPECIFIC CONDITIONS:

PERMIT NO.: AC 16-33884  
 APPLICANT: U.S. Gypsum Company  
 6825 Evergreen Avenue  
 Jacksonville, Florida 32206

Specific Conditions

1. The maximum allowable particulate emissions from each individual baghouse controlling a particular function in the No. 3 Board Mill shall be as follows:

<u>Source</u>	<u>ID</u>	<u>lb/hr.</u>	<u>TPY</u>	<u>Input Rate - lb/hr.</u>
Additive Feed System	BG-1	0.429	1.79	109,200
Starch Storage Bin	BG-2	0.028	0.12	40,000
Starch Feed Bin	BH-3	0.028	0.12	720
HRA Feed bin	BG-4	0.028	0.12	1,140
Landplaster feed bin	BG-5	0.028	0.12	1,140
End Saws	BG-6	0.737	3.07	333
Stucco Feed Bin	BG-7	0.441	1.83	160,000
Vermiculite Feed Bin	BG-8	0.028	0.12	5,700
Vermiculite Storage Bin	BG-9	0.028	0.12	40,000

2. There will be no visible emissions from Baghouse discharge stacks.
3. The plant shall operate 24 hours per day, 6.67 days per week, 52 weeks per year or 8,324 hours per year.
4. The 127 MMBTU/hr. maximum heat input wallboard drying kiln shall burn natural gas or propane gas.
5. There will be a thirty (30) day shakedown period during which time No. 1 Board plant may also operate, after 30 days No. 1 Board plant will be shut down and dismantled.
6. Emissions tests for particulates and visible emissions shall be conducted for the bag collector emission point in accordance with Methods 1 through 5, 40 CFR, Appendix A and Method 9, 40 CFR 60 Appendix A. The results shall be submitted to the Bureau of Air Quality Management for determination of compliance with applicable state rules regarding visible and particulate emission and the conditions of this permit.

\_\_\_\_\_  
 Jacob D. Varn, Secretary

Expiration Date:

Issued this \_\_\_\_\_ day of \_\_\_\_\_, 19 \_\_\_\_\_.

STATE OF FLORIDA  
 DEPARTMENT OF ENVIRONMENTAL REGULATION

# UNITED STATES GYPSUM COMPANY //

Post Office Box 3197 / Jacksonville, Florida 32206 //

September 2, 1980

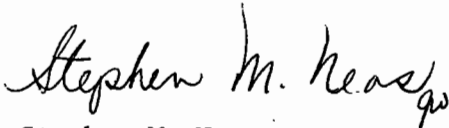
Mr. John Svec  
Bureau of Air Quality Management  
Department of Environmental Regulation  
2600 Blair Stone Road  
Twin Towers Office Building  
Tallahassee, FL 32301

Re: Supplementary information for application for Permit to Construct  
Air Pollution Sources for No.3 Board Plant and Gypsum Calcining Mill

Dear Mr. Svec:

Enclosed is the information you requested by telephone on August 29, 1980.

Very truly yours,



Stephen M. Neas  
Project Engineer

SMN:jw

Encl.



STATE OF FLORIDA  
DEPARTMENT OF ENVIRONMENTAL REGULATION

No. 33546

RECEIPT FOR APPLICATION FEES AND MISCELLANEOUS REVENUE

Received from U.S. GYPSUM CO., (BOARD PLANT & GYM MILL) Date 18 AUG. '80

Address 6825 EVERGREEN AVE, JACKSONVILLE Dollars \$ 40<sup>00</sup>

Applicant Name & Address JANE A. TURLEY, MGR.

Source of Revenue \_\_\_\_\_

Revenue Code 0101 Application Number AC 16-33883  
AC 16-33884

By MCA [Signature]

## SUMMARY OF STACK DATA FOR PROPOSED SOURCES

SOURCE NAME	STACK HEIGHT (FT.)	STACK DIAMETER (FT.)	GAS FLOW RATE (ACFM)	GAS EXIT TEMPERATURE (°F)	WATER VAPOR CONTENT (%)	VELOCITY (FPS)
B1-D	65	1.6	8365	115	5.1 $\Delta$	69.3
B1-A	78	4.0	8375	220	32.4 $\Delta$	11.1
B-1	68	2.0	10,000	110	1.8 $\Delta$	53.1
B1-C	92	1.3	10,000	110	2.0 *	126
B1-B	78	4.0	9734	205	34.5 $\Delta$	12.9
B1-E	68	.96	3000	120	2.0 *	69.9
B1-F	100	11" X 12"	3000	160	2.0 *	54.5
B1-G	50	11" X 12"	3000	160	2.0 *	54.5
B1-H	72	11" X 12"	3000	160	2.0 *	54.5
B1-I	82	2.5	6600	160	2.0 *	10.1
BH-1*	60	2.5	25,000	110	7.5 +	85
BH-2*	80	1.5	5,000	110	2.0 *	47.1
BH-3*	75	4.0	10,000	205	32 *	13.3
BH-4*	80	2.0	12,000	205	32 *	63.7
BH-5*	80	1.0	4,000	160	2.0 *	84.8
BG-1*	50	1.5	5,000	160	2.0 *	47.2
BG-2*	50	0.5	325	110	2.8 *	27.6
BG-3*	56	0.5	325	110	2.0 *	27.6
BG-4*	50	0.5	325	110	2.0 *	27.6
BG-5*	50	0.5	325	110	2.0 *	27.6
BG-6*	50	2.0	8600	110	2.0 *	45.6
BG-7*	50	1.5	5140	110	2.0 *	48.5
BG-8*	50	0.5	325	110	2.0 *	27.6
BG-9*	50	0.5	325	110	2.0 *	27.6
BD-4*	45	3.5	55,000	300	13.7 +	95.3
BD-5*	45	4.5	110,000	300	13.7 +	115
K-1-K-6	92.5	3.5	1852	450	10.1 +	3.21
PM-1-PM-4	60	3.0	4658	500	10.1 +	10.98
D-1	68	3.0	9100	700	10.1 +	21.7
K-7*	80	4.0	8000	400	10.1 +	10.6

\* ESTIMATED + STOICHIOMETRIC RATIO  $\Delta$  ACTUAL MEASUREMENT

# UNITED STATES GYPSUM COMPANY

Post Office Box 3197 / Jacksonville, Florida 32206

August 14, 1980

Mr. Bill Thomas  
Bureau of Air Quality Management  
Department of Environmental Regulation  
2600 Blair Stone Road  
Twin Towers Office Building  
Tallahassee, FL 32301

Re: Application for Permit to Construct Air Pollution Sources for No.3  
Board Plant and Gypsum Calcining Mill

Dear Mr. Thomas:

Please find enclosed two permit applications and \$40.00 application fee.  
Please let me know if you need any further information.

Very truly yours,



Stephen M. Neas  
Project Engineer

SMN:jw

Encl.

This project provides for the conversion of No.3 Cottrell (C-3) Electrostatic Precipitator to a baghouse rated at 10,000 CFM and four additional baghouses in the Gypsum Rock Mill. The existing No.1 Board Machine will be razed and sources BD-1, 2, 3 and B-5 will be eliminated. These sources provide the offset which allows for a decrease in particulate and SO<sub>2</sub> emissions over 1974 levels.

The construction schedule in the Rock Mill at this time is as follows:

- 1) January 1981 - install BH-1
- 2) March 1981 - modify C-3 by converting to a baghouse.
- 3) Work on BH-2, 4, 5 will begin in January 1981 also.

The modified Rock Mill is scheduled to be operating in August 1981.

The new No.3 Board Plant is scheduled to start up August 1981 and to be on line September 1981. No.1 Board Machine will then be closed down when No.3 Board Machine is on line.

OVERALL SUMMARY OF PROPOSED VS. 1974

BASE LINE

Note: Combustion products based on secondary fuel, #6 fuel oil, #2 fuel oil or propane.

<u>Contaminant</u>	(Worst Case) <u>Existing 1974</u> (lb./hr.)	<u>Proposed</u> (lb./hr)
Particulate (Dust)	14.74	14.08
Ash (Fuel Oil)	<u>32.54</u>	<u>32.54</u>
Total Particulate	47.28	46.62
Decrease: 47.28 - 46.62 =	<u>0.66 lb./hr.</u>	
Sulfur Oxides (SO <sub>2</sub> )	434.8	428.6
Decrease: 434.8 - 428.6 =	<u>6.2 lb./hr.</u>	
Nitrogen Oxides (NO <sub>2</sub> )	104.9	126.5
Increase: 126.5 - 104.9 =	<u>21.6 lb./hr.</u>	



SUMMARY OF EXISTING (1974 BASELINE) SOURCES

PARTICULATES:

SOURCE NAME	ACTUAL Lb/Hr.	EMISSIONS Ton/Yr.	POTENTIAL Lb/Hr.	EMISSIONS Ton/Yr.
B1-D	0.881*	3.074*	881	3074
B1-A	0.19 *	0.771*	19	77.1
B-1	0.55 *	2.21	550*	2211*
B1-C	1.4 *	(0.42 <sup>+</sup> ), 5.628	1400	(420 <sup>+</sup> ) 5628
B1-B	1.475*	5.98 *	1475	5983
B1-E	0.08 *	0.068*	80	68
C-3	9.9*	41.2 *	990*	4120*
No.1 Board End Saw Dust Collection	0.267*	1.11 *	267	1110
TOTALS	14.743	60.04	5662	22271.1

\* Data directly from present permits, remaining data from attached calculations.

+ (Present permit), 1974 figure which we have returned to.

SUMMARY OF PROPOSED SOURCES (OVER 1974 BASELINE)

SOURCE NAME	ACTUAL EMISSIONS		POTENTIAL EMISSIONS	
	Lb/Hr.	Ton/Yr.	lb/Hr.	Ton/Yr.
B1-D *	0.881	3.074	881	3074
B1-A *	0.190	0.771	19	77.1
B-1 *	0.550	2.210	550	2211
B1-C *	1.400	5.628	1400	5628
B1-B *	1.475	5.980	1475	5983
B1-E *	0.080	0.068	80	68
B1-F, B1-G + B1-H, B1-I	2.930	12.80	2930	12798
BH-1	2.140	8.92	4286	17837
BH-2	0.429	1.78	857	3567
BH-3	0.857	3.57	1714	7135
BH-4	1.030	4.28	2057	8562
BH-5	0.343	1.43	686	2854
BG-1	0.429	1.79	857	3567
BG-2	0.028	0.116	55.7	232
BG-3	0.028	0.116	55.7	232
BG-4	0.028	0.116	55.7	232
BG-5	0.028	0.116	55.7	232
BG-6	0.737	3.07	1474	6136
BG-7	0.441	1.83	882	3667
BG-8	0.028	0.116	55.7	232
BG-9	1.775	7.39	3547	14762
TOTAL	14.08	57.897		

\* No Changes

+ Existing Collectors

SUMMARY OF EXISTING ASH EMISSIONS:

<u>ASH LB. ASH/HR.</u>	<u>MMBTU/HR.</u>	<u>NATURAL GAS</u>	<u>#6 OIL</u>	<u>#2 OIL</u>
Paper Mill	73.8	-	9.21	-
6 Kettles	58.8	-	7.32	-
#1 Board Plant	49.34	-	6.15	0.731
#2 Board Plant	60.6	-	7.55	0.897
Dowtherm	18.1	-	2.26	0.268
Rock Dryer	7.46	-	-	0.055
<hr/>				
TOTAL	268.1	-	32.49	1.951

Present Permitted Total: (Also 1974 Baseline)

$$32.49 + 0.055 = \underline{32.545 \text{ lb./hr.}}$$

$$32.545 \text{ lb./hr.} \times 8324 \text{ hr./yr.} \times \frac{\text{ton}}{2000 \text{ lb.}} = \underline{135 \text{ ton/yr.}}$$

(#6 Oil, except dryer on #2 Oil)

Information from Permit Renewal Applications 1980.

SUMMARY OF EXISTING SO<sub>2</sub> EMISSIONS:

<u>SULFUR OXIDES LB.SO<sub>2</sub>/HR.</u>	<u>MMBTU/HR.</u>	<u>NAT. GAS</u>	<u>#6 OIL</u>	<u>#2 OIL</u>
Paper Mill	73.8	0.09	121.2	-
6 Kettles	58.8	0.06	96.6	-
#1 Bd. Plant	49.34	0.0583	81.07	43.61
#2 Bd. Plant	60.6	0.072	99.56	53.47
Dowtherm	18.1	0.021	29.74	15.97
Rock Dryer	7.46	0.009	-	6.58
<hr/>				
TOTAL	268.1	0.310	428.17	119.63

Present Permitted Total: (#6 Oil except Dryer #2 Oil)

$$428.17 + 6.58 = \underline{434.75 \text{ lb./hr.}}$$

$$434.75 \text{ lb./hr.} \times 8324 \text{ hr./yr.} \times \frac{\text{ton}}{2000 \text{ lb.}} = \underline{1809 \text{ ton/yr.}}$$

SUMMARY OF EXISTING NO<sub>2</sub> EMISSIONS:

<u>Nitrogen Oxides</u>	<u>LB NO<sub>2</sub>/HR</u>	<u>MMBTU/HR.</u>	<u>NATURAL GAS</u>	<u>#6 OIL</u>	<u>#2 OIL</u>
Paper Mill		73.8	9.72	30.66	-
6 Kettles		58.8	6.78	24.42	-
#1 Board Plant		49.34	6.33	20.49	8.04
#2 Board Plant		60.6	8.35	25.18	9.87
Dowtherm		18.1	2.26	2.95	7.52
Rock Dryer		7.46	0.852	-	1.215
<hr/>					
TOTAL		268.1	34.292	103.7	26.645

Present Permitted Total: (#6 Oil except Dryer on #2)

$$103.7 + 1.215 = \underline{104.9 \text{ lb./hr.}}$$

$$104.9 \text{ lb./hr.} \times 8324 \text{ hr./yr.} \times \frac{\text{ton}}{2000 \text{ lb.}} = \underline{437 \text{ ton/yr.}}$$

SUMMARY OF PROPOSED ASH EMISSIONS:

<u>ASH LB/HR.</u>	<u>MMBTU/HR.</u>	<u>NATURAL GAS</u>	<u>#6 OIL</u>	<u>#2 OIL</u>
Paper Mill	73.8	-	9.21	-
#2 Board Plant	60.6	-	7.55	0.897
Dowtherm	18.1	-	2.26	0.268
6 Kettles	58.8	-	7.32	-
#7 Kettle	30	-	3.74	-
Rock Dryer	19.7	-	2.46	-
#3 Board Plant	127	-	-	-
<hr/>				
TOTAL	388	-	32.54	

Proposed Total: (All on #6 Oil except #3 Board Plant on Propane)

32.54 lb./hr.

$$32.54 \text{ lb./hr.} \times 8324 \text{ hr./yr.} \times \text{ton}/2000 \text{ lb.} = \underline{135 \text{ ton/yr.}}$$

Difference Proposed & Existing:

$$32.54 - 32.54 = 0 \text{ lb./hr.}$$

NO CHANGE

SUMMARY OF PROPOSED SO<sub>2</sub> EMISSIONS:

<u>SULFUR OXIDES LB SO<sub>2</sub>/HR.</u>	<u>MMBTU/HR.</u>	<u>NATURAL GAS</u>	<u>#6 OIL</u>	<u>#2 OIL</u>
Paper Mill	73.8	0.09	121.2	-
#2 Board Plant	60.6	0.072	99.56	53.47
Dowtherm	18.1	0.021	29.74	15.97
6 Kettles	58.8	0.0696	96.6	-
#7 Kettle	30	0.0355	49.3	-
Rock Dryer	19.7	0.0234	32.4	-
#3 Board Plant	127	0.151	-	-
<hr/>				
TOTAL	388	0.463	428.6	

Proposed Total: (All on #6 oil except #3 Board Plant on Propane)

428.6 lb./hr.

428.6 lb./hr. x 8324 hr./yr. x ton/2000 lb. = 1784 ton/yr.

Difference - Proposed & Existing:

434.8 - 428.6 = 6.2 lb./hr. Decrease

1809 - 1784 = 85 ton/yr. Decrease

SUMMARY OF PROPOSED NO<sub>2</sub> EMISSIONS:

<u>NITROGEN OXIDES</u>	<u>LB NO<sub>2</sub>/HR.</u>	<u>MMBTU/HR.</u>	<u>NATURAL GAS</u>	<u>#6 OIL</u>	<u>#2 OIL</u>
Paper Mill		73.8	9.72	30.66	-
#2 Board Plant		60.6	8.35	25.18	9.87
Dowtherm		18.1	2.26	2.95	7.52
6 Kettles		58.8	6.78	24.42	-
#7 Kettle		30	4.13	12.5	-
Rock Dryer		19.7	2.49	8.18	-
#3 Board Plant		127	22.57	-	-
<hr/>					
TOTAL		388	56.3	103.89	

Proposed Total: (All on #6 Oil except #3 Board on Propane)

$$103.89 + 22.57 = \underline{126.46 \text{ lb./hr.}}$$

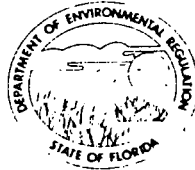
$$126.46 \text{ lb./hr.} \times 8324 \text{ hr./yr.} \times \text{ton}/2000 \text{ lb.} = \underline{526 \text{ ton/yr.}}$$

Difference Proposed & Existing:

$$126.46 - 104.9 = \underline{21.6 \text{ lb./hr. Increase}}$$

$$526 - 437 = \underline{89 \text{ ton/yr. Increase}}$$





DC 16-33883

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION
APPLICATION TO OPERATE/CONSTRUCT
AIR POLLUTION SOURCES

SOURCE TYPE: Gypsum Calcining Mill [X] New [X] Existing
APPLICATION TYPE: [X] Construction [ ] Operation [X] Modification
COMPANY NAME: United States Gypsum Co. COUNTY: Duval
Identify the specific emission point source(s) addressed in this application (i.e. Lime Kiln No. 4 with Venturi Scrubber; Peeking Unit No. 2, Gas Fired) Gypsum Rock Mill, K-7, BH-1 to BH-5
SOURCE LOCATION: Street 6825 Evergreen Avenue City Jacksonville
UTM: East 4 38 900 North 33 61 200
Latitude 30 0 22 52 "N Longitude 81 0 38 01 "W
APPLICANT NAME AND TITLE: Zane G. Turley, Works Manager
APPLICANT ADDRESS: 6825 Evergreen Avenue, Jacksonville, FL 32206

SECTION I: STATEMENTS BY APPLICANT AND ENGINEER

A. APPLICANT

I am the undersigned owner or authorized representative\* of United States Gypsum Co.

I certify that the statements made in this application for a Construction/Modification 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.

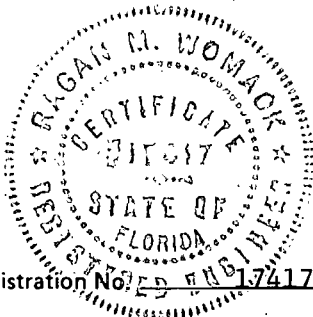
\*Attach letter of authorization

Signed: Zane G. Turley
Zane G. Turley, Works Manager
Name and Title (Please Type)
Date: 8/15/80 Telephone No. 768-2501

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 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.

(Affix Seal)



Signed: Ragan M. Womack
Ragan M. Womack
Name (Please Type)
United States Gypsum Co.
Company Name (Please Type)
P.O. Box 3197, Jacksonville, FL 32206
Mailing Address (Please Type)
Date: 8/15/80 Telephone No. 768-2501

1 See Section 17-2.02(15) and (22), Florida Administrative Code, (F.A.C.)

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.

This project involves upgrading of existing Rock Mill to meet requirements of a new Board Plant (on a separate application). All new dust collectors will be baghouses. This project will result in full compliance.

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

Start of Construction November 1980 Completion of Construction May 1982

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.)

Costs are for each baghouse and associated ducting and installation. Total control system cost = \$435,000 (see addendum for breakdown).

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

The electrostatic precipitator which will be converted to a baghouse A016-2456 (expired July 31, 1980). It is currently being renewed.

E. Is this application associated with or part of a Development of Regional Impact (DRI) pursuant to Chapter 380, Florida Statutes, and Chapter 22F-2, Florida Administrative Code?  Yes  No

F. Normal equipment operating time: hrs/day 24 ; days/wk 6.67 ; wks/yr 52 ; if power plant, hrs/yr \_\_\_\_\_ ; if seasonal, describe: Not seasonal but tied to normal business fluctuations.

G. If this is a new source or major modification, answer the following questions. (Yes or No)

- |   |            |
|---|------------|
| 1. Is this source in a non-attainment area for a particular pollutant?  | <u>Yes</u> |
| a. If yes, has "offset" been applied?   | <u>Yes</u> |
| b. If yes, has "Lowest Achievable Emission Rate" been applied?  | <u>No</u>  |
| c. If yes, list non-attainment pollutants.  |            |
| <u>Particulates, ozone</u>  |            |
| 2. Does best available control technology (BACT) apply to this source? If yes, see Section VI.  | <u>No</u>  |
| 3. Does the State "Prevention of Significant Deterioration" (PSD) requirements apply to this source? If yes, see Sections VI and VII. | <u>No</u>  |
| 4. Do "Standards of Performance for New Stationary Sources" (NSPS) apply to this source?  | <u>No</u>  |
| 5. Do "National Emission Standards for Hazardous Air Pollutants" (NESHAP) apply to this source?                                       | <u>No</u>  |

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: (Fuel is also used.)

Description	Contaminants		Utilization Rate - lbs/hr	Relate to Flow Diagram
	Type	% Wt		
CaSO <sub>4</sub> ·2H <sub>2</sub> O (Gypsum)	Particulate		250,000	See flow sheet.
CaSO <sub>4</sub> ·½H <sub>2</sub> O (Stucco)	"		200,000	" " "

B. Process Rate, if applicable: (See Section V, Item 1) (See addendum for calculations.)

1. Total Process Input Rate (lbs/hr): 250,000
2. Product Weight (lbs/hr): 200,000

C. Airborne Contaminants Emitted: Total emissions - see addendum for individual units and calculations.

Name of Contaminant	Emission <sup>1</sup>		Allowed Emission <sup>2</sup> Rate per Ch. 17-2, F.A.C.	Allowable <sup>3</sup> Emission lbs/hr	Potential Emission <sup>4</sup>		Relate to Flow Diagram
	Maximum lbs/hr	Actual T/yr			lbs/hr	T/yr	
Particulate	4.456	19.98			9600	39955	See addendum.
Ash	13.53	56.3			13.53	56.3	
Sulfur Oxides	178.3	742			178.3	742	
Nitrogen Oxides	45.08	188			45.8	188	

From #6 Oil

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

Name and Type (Model & Serial No.)	Contaminant	Efficiency	Range of Particles <sup>5</sup> Size Collected (in microns)	Basis for Efficiency (Sec. V, It <sup>5</sup> *)
BH-1 Baghouse, 25000 CFM	Gypsum	99.95		Design
BH-2 Baghouse, 5000 CFM	Gypsum	99.95		"
BH-3 Baghouse, 10000 CFM	Gypsum	99.95		"
BH-4 Baghouse, 12000 CFM	Gypsum	99.95		"
BH-5 Baghouse, 4000 CFM	Stucco	99.95		"

<sup>1</sup>See Section V, Item 2. \*EPA Method 5 to be used to confirm actual emissions after construction.

<sup>2</sup>Reference applicable emission standards and units (e.g., Section 17-2.05(6) Table II, E. (1), F.A.C. - 0.1 pounds per million BTU heat input)

<sup>3</sup>Calculated from operating rate and applicable standard

<sup>4</sup>Emission, if source operated without control (See Section V, Item 3)

<sup>5</sup>If Applicable

E. Fuels **Total for 7 Kettles and Rotary Rock Dryer**

Type (Be Specific)	Consumption*		Maximum Heat Input (MMBTU/hr)
	avg/hr	max./hr	
Natural Gas	0.104	0.104	108.5
#6 Fuel Oil	17.88	17.88	108.5

\*Units Natural Gas, MMCF/hr; Fuel Oils, barrels/hr; Coal, lbs/hr

Fuel Analysis: #6 Fuel Oil, see addendum for Natural Gas

Percent Sulfur: 1.5 Percent Ash: 0.05

Density: 7.91 lbs/gal Typical Percent Nitrogen: 0.3

Heat Capacity: 18,260 BTU/lb 144,439 BTU/gal

Other Fuel Contaminants (which may cause air pollution): None

F. If applicable, indicate the percent of fuel used for space heating. Annual Average N/A Maximum \_\_\_\_\_

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

All dust returned to process.

H. Emission Stack Geometry and Flow Characteristics (Provide data for each stack): #7 Kettle Stack (see addendum

Stack Height: 80 ft. Stack Diameter: 4.0 ft. for others

Gas Flow Rate: (Est.) 8000 ACFM Gas Exit Temperature: 400 °F.

Water Vapor Content: \_\_\_\_\_ % Velocity: 10.6 FPS

**SECTION IV: INCINERATOR INFORMATION**

Type of Waste	Type O (Plastics)	Type I (Rubbish)	Type II (Refuse)	Type III (Garbage)	Type IV (Pathological)	Type V (Liq & Gas By-prod.)	Type VI (Solid By-prod.)
Lbs/hr Incinerated							

Description of Waste \_\_\_\_\_

Total Weight Incinerated (lbs/hr) \_\_\_\_\_ Design Capacity (lbs/hr) \_\_\_\_\_

Approximate Number of Hours of Operation per day \_\_\_\_\_ days/week \_\_\_\_\_

Manufacturer \_\_\_\_\_

Date Constructed \_\_\_\_\_ Model No. \_\_\_\_\_

ADDENDUM TO PERMIT APPLICATION

FOR

AIR POLLUTION SOURCE

GYPSUM ROCK MILL:

Estimated Cost of Control Equipment:

<u>BAGHOUSE NO.</u>	<u>NAME</u>	<u>CFM RATING</u>	<u>ESTIMATED COST</u>
BH-1	#4 Raymond Mill & Rock Dryer D.C.	25,000	\$150,000
BH-2	#5 Raymond Mill D.C.	5,000	40,000
BH-3	Modified Cottrell	10,000	110,000
BH-4	#7 Kettle D.C.	12,000	110,000
BH-5	#7 Hot Pit Conveyor D.C.	4,000	25,000
	TOTAL		<u>\$435,000</u>

Operating Hours:

$$24 \text{ hr./day} \times 6.67 \text{ day/wk.} \times 52 \text{ wk./yr.} = \underline{8324 \text{ hr./yr.}}$$

Total Process Weight Input to Mill:

$$125 \text{ ton/hr.} \times 2000 \text{ lb./ton} = 250,000 \text{ lb./hr.}$$

Total Product Weight Output:

$$250,000 \text{ lb. Gypsum/hr.} \times 0.8 \frac{\text{lb. Stucco}}{\text{lb. Gypsum}} = 200,000 \text{ lb./hr.}$$

50,000 lb./hr. water released.

ADDENDUM

Airborne Contaminants Discharged:

Particulates from Baghouses:

Note: All dust collectors will be baghouse type with an efficiency of 99.95% to allow no more than 0.01 grain dust/ft.<sup>3</sup> air.

BH-1, #4 Raymond Mill & Rock Dryer Dust Collector:

Actual Emissions:

$$25,000 \text{ ft.}^3/\text{min.} \times 60 \text{ min./hr.} \times 0.01 \text{ grain/ft.}^3 \times \text{lb./7000 grain} = 2.14 \text{ lb./hr.}$$

$$2.14 \text{ lb./hr} \times 8324 \text{ hr./yr.} \times \text{ton/2000 lb.} = \underline{8.92 \text{ ton/yr.}}$$

Potential Emissions:

$$2.14 \text{ lb./hr.} \times 100\% / (100 - 99.95)\% = \underline{42.86 \text{ lb./hr.}}$$

$$42.86 \text{ lb./hr.} \times 8324 \text{ hr./yr.} \times \text{ton/2000 lb.} = \underline{17,837 \text{ ton/yr.}}$$

Process Weight Vented:

250,000 lb./hr. Rock Dryer Gypsum

40,000 lb./hr. #4 Raymond Mill Gypsum

290,000 lb./hr. Total

BH-2, #5 Raymond Mill Dust Collector:

Actual Emissions:

$$5000 \text{ ft.}^3/\text{min.} \times 60 \text{ min./hr.} \times 0.01 \text{ grain/ft.}^3 \times \text{lb./7000 grain} = \underline{0.429 \text{ lb./hr.}}$$

$$0.429 \text{ lb./hr.} \times 8324 \text{ hr./yr.} \times \text{ton/2000 lb.} = \underline{1.78 \text{ ton/yr.}}$$

Potential Emissions:

$$0.429 \text{ lb./hr.} \times 100\% / (100 - 99.95)\% = \underline{857 \text{ lb./hr.}}$$

$$857 \text{ lb./hr.} \times 8324 \text{ hr./yr.} \times \text{ton/2000 lb.} = \underline{3567 \text{ ton/yr.}}$$

Process Weight Vented:

70,000 lb./hr. Gypsum

ADDENDUM

BH-3, Modification of No.3 Cottrell:

Convert existing electrostatic precipitator to a baghouse.

Actual Emissions:

$$10,000 \text{ ft.}^3/\text{min.} \times 60 \text{ min./hr.} \times 0.01 \text{ grain/ft.}^3 \times \text{lb/7000 grain} = \underline{0.857 \text{ lb./hr.}}$$

$$0.857 \text{ lb./hr.} \times 8324 \text{ hr./yr.} \times \text{ton/2000 lb.} = \underline{3.57 \text{ ton/yr.}}$$

Potential Emissions:

$$3.57 \text{ lb./hr.} \times 100\% / (100-99.95)\% = \underline{1714 \text{ lb./hr.}}$$

$$1714 \text{ lb./hr.} \times 8324 \text{ hr./yr.} \times \text{ton/2000 lb.} = \underline{7135 \text{ ton/yr.}}$$

Process Weight Vented:

50,000 lb./hr. Gypsum #5 & #6 Kettle

10,000 lb./hr. Water Released

BH-4, #7 Kettle Dust Collector:

Actual Emissions:

$$12,000 \text{ ft.}^3/\text{min.} \times 60 \text{ min./hr.} \times 0.01 \text{ grain/ft.}^3 \times \text{lb/7000 grain} = \underline{1.03 \text{ lb./hr.}}$$

$$1.03 \text{ lb./hr.} \times 8324 \text{ hr./yr.} \times \text{ton/2000 lb.} = \underline{4.28 \text{ ton/yr.}}$$

Potential Emissions:

$$1.03 \text{ lb./hr.} \times 100\% / (100-99.95)\% = \underline{2057 \text{ lb./hr.}}$$

$$2057 \text{ lb./hr.} \times 8324 \text{ hr./yr.} \times \text{ton/2000 lb.} = \underline{8562 \text{ ton/yr.}}$$

Process Weight Vented:

100,000 lb./hr. Gypsum

20,000 lb./hr. Water Released

ADDENDUM

BH-5, #7 Hot Pit Conveyor Dust Collector:

Actual Emissions:

$$4000 \text{ ft.}^3/\text{min.} \times 60 \text{ min./hr.} \times 0.01 \text{ grain/ft.}^3 \times \text{lb}/7000 \text{ grain} = \underline{0.343 \text{ lb./hr.}}$$

$$0.343 \text{ lb./hr.} \times 8324 \text{ hr./yr.} \times \text{ton}/2000 \text{ lb.} = \underline{1.43 \text{ ton/yr.}}$$

Potential Emissions:

$$1.43 \text{ lb./hr.} \times 100\% / (100 - 99.95)\% = \underline{686 \text{ lb./hr.}}$$

$$686 \text{ lb./hr.} \times 8324 \text{ hr./yr.} \times \text{ton}/2000 \text{ lb.} = \underline{2854 \text{ ton/yr.}}$$

Process Weight Vented:

80,000 lb./hr. Stucco

Airborne Contaminants from the Complete Combustion of Fuel:

Rock Dryer: (19.7 MMBTU/hr.)

Natural Gas:

Actual Sulfur Oxides (SO<sub>2</sub>):

$$0.0189 \times 10^6 \text{ CF/hr.} \times 0.0561 \text{ lb./CF} \times .0011\% / 100\% \times 2\text{SO}_2 / 1\text{S} = \underline{0.0234 \text{ lb./hr.}}$$

$$0.0234 \text{ lb./hr.} \times 8324 \text{ hr./yr.} \times \text{ton}/2000 \text{ lb.} = \underline{0.0973 \text{ ton/yr.}}$$

Potential same as actual.

Actual Nitrogen Oxides (NO<sub>2</sub>):

Use 132 lb. NO<sub>2</sub>/MMCF per AP-42.

$$0.0189 \text{ MMCF/hr.} \times 132 \text{ lb. NO}_2/\text{MMCF} = \underline{2.49 \text{ lb./hr.}}$$

$$2.49 \text{ lb./hr.} \times 8324 \text{ hr./yr.} \times \text{ton}/2000 \text{ lb./} = \underline{10.4 \text{ ton/yr.}}$$

Potential same as actual.



ADDENDUM

#6 Fuel Oil:

Actual Particulates (Ash):

$$\begin{aligned} & \text{Use } 18 \text{ lb. Ash}/10^3 \text{ gal. per AP-42} \\ & 19.7 \times 10^6 \text{ BTU/hr.} \times \text{gal.}/144,439 \text{ BTU} = 136.3 \text{ gal./hr.} \\ & 136.3 \text{ gal./hr.} \times 18 \text{ lb. Ash}/1000 \text{ gal.} = \underline{2.46 \text{ lb./hr.}} \\ & 2.46 \text{ lb./hr.} \times 8324 \text{ hr./yr.} \times \text{ton}/2000 \text{ lb.} = \underline{10.2 \text{ ton/yr.}} \end{aligned}$$

Potential same as actual.

Actual Sulfur Oxides (SO<sub>2</sub>):

$$\begin{aligned} & 19.7 \times 10^6 \text{ BTU/hr.} \times \text{lb.}/18,260 \text{ BTU} \times 1.5\% \text{S}/100\% \times 2\text{SO}_2/1\text{S} = \underline{32.4 \text{ lb./hr.}} \\ & 32.4 \text{ lb./hr.} \times 8324 \text{ hr./yr.} \times \text{ton}/2000 \text{ lb.} = \underline{135 \text{ ton/yr.}} \end{aligned}$$

Potential same as actual.

Actual Nitrogen Oxides (NO<sub>2</sub>):

$$\begin{aligned} & \text{Use } 60 \text{ lb. NO}_2/1000 \text{ gal. per AP-42} \\ & 136.3 \text{ gal./hr.} \times 60 \text{ lb. NO}_2/1000 \text{ gal.} = \underline{8.18 \text{ lb./hr.}} \\ & 8.18 \text{ lb./hr.} \times 8324 \text{ hr./yr.} \times \text{ton}/2000 \text{ lb.} = \underline{34.0 \text{ ton/yr.}} \end{aligned}$$

Potential same as actual.

#7 Kettle: (30 MMBTU/hr.)

Natural Gas:

Actual Sulfur Oxides (SO<sub>2</sub>):

$$\begin{aligned} & 0.0287 \times 10^6 \text{ CF/hr.} \times 0.05621 \text{ lb./CF} \times \frac{0.0011\% \text{S}}{100\%} \times \frac{2\text{SO}_2}{1\text{S}} = \underline{0.0355 \text{ lb./hr.}} \\ & 0.0355 \text{ lb./hr.} \times 8324 \text{ hr./yr.} \times \text{ton}/2000 \text{ lb.} = \underline{0.148 \text{ ton/yr.}} \end{aligned}$$

Potential same as actual.

Actual Nitrogen Oxides (NO<sub>2</sub>):

$$\begin{aligned} & \text{Use } 144 \text{ lb. NO}_2/\text{MMCF per AP-42} \\ & 0.0287 \text{ MMCF/hr.} \times 144 \text{ lb. NO}_2/\text{MMCF} = \underline{4.13 \text{ lb./hr.}} \\ & 4.13 \text{ lb./hr.} \times 8324 \text{ hr./yr.} \times \text{ton}/2000 \text{ lb.} = \underline{17.2 \text{ ton/yr.}} \end{aligned}$$

Potential same as actual.

ADDENDUM

#6 Fuel Oil:

Actual Particulates (Ash):

Use 18 lb.Ash/1000 gal. per AP-42

$$30 \times 10^6 \text{ BTU/hr.} \times \frac{\text{gal.}}{144439 \text{ BTU}} = 207.7 \text{ gal./hr.}$$

$$207.7 \text{ gal./hr.} \times 18 \text{ lb.Ash/1000 gal.} = \underline{3.74 \text{ lb./hr.}}$$

$$3.74 \text{ lb./hr.} \times 8324 \text{ hr./yr.} \times \text{ton/2000 lb.} = \underline{15.6 \text{ ton/yr.}}$$

Potential same as actual.

Actual Sulfur Oxides (SO<sub>2</sub>):

$$30 \times 10^6 \text{ BTU/hr.} \times \frac{\text{lb.}}{18260 \text{ BTU}} \times \frac{1.5\% \text{ S}}{100\%} \times \frac{2\text{SO}_2}{1\text{S}} = \underline{49.3 \text{ lb./hr.}}$$

$$49.3 \text{ lb./hr.} \times 8324 \text{ hr./yr.} \times \text{ton/2000 lb./} = \underline{205 \text{ ton/yr.}}$$

Potential same as actual.

Actual Nitrogen Oxides (NO<sub>2</sub>):

Use 60 lb.NO<sub>2</sub>/1000 gal. per AP-42

$$207.7 \text{ gal./hr.} \times 60 \text{ lb. NO}_2/1000 \text{ gal.} = \underline{12.5 \text{ lb./hr.}}$$

$$12.5 \text{ lb./hr.} \times 8324 \text{ hr./yr.} \times \text{ton/2000 lb.} = \underline{51.9 \text{ ton/yr.}}$$

Potential same as actual.

6 Existing Kettles: (9.8 MMBTU/hr. per Kettle)

Natural Gas:

Actual Sulfur Oxides (SO<sub>2</sub>):

$$6 \times 0.0094 \times 10^6 \text{ CF/hr.} \times 0.05621 \text{ lb./CF} \times \frac{0.0011\% \text{ S}}{100\%} \times \frac{2\text{SO}_2}{1\text{S}} = \underline{0.0696 \text{ lb./hr.}}$$

$$0.0696 \text{ lb./hr.} \times 8324 \text{ hr./yr.} \times \text{ton/2000 lb.} = \underline{0.290 \text{ ton/yr.}}$$

Potential same as actual.

Actual Nitrogen Oxides (NO<sub>2</sub>):

Use 120 lb. NO<sub>2</sub>/MMCF per AP-42

$$6 \times 0.0094 \text{ MMCF/hr.} \times 120 \text{ lb.NO}_2/\text{MMCF} = \underline{6.78 \text{ lb./hr.}}$$

$$6.78 \text{ lb/hr.} \times 8324 \text{ hr./yr.} \times \text{ton/2000 lb.} = \underline{28.2 \text{ ton/yr.}}$$

Potential same as actual.

ADDENDUM

#6 Fuel Oil:

Actual Particulates (Ash):

Use 18 lb. Ash/1000 gal. per AP-42

$6 \times 9.8 \times 10^6$  BTU/hr.  $\times$  gal/144,439 BTU = 407.1 gal./hr.

407.1 gal./hr.  $\times$  18 lb. Ash/1000 gal. = 7.33 lb./hr.

7.33 lb./hr.  $\times$  8324 hr./yr.  $\times$  ton/2000 lb. = 30.5 ton/yr.

Potential same as actual.

Actual Sulfur Oxides (SO<sub>2</sub>):

$6 \times 9.8 \times 10^6$  BTU/hr.  $\times$  lb./18,260 BTU  $\times$  1.5%/100%  $\times$  2SO<sub>2</sub>/1S = 96.6 lb./hr.

96.6 lb./hr.  $\times$  8324 hr./yr.  $\times$  ton/2000 lb. = 402 ton/yr.

Potential same as actual.

Actual Nitrogen Oxides (NO<sub>2</sub>):

Use 60 lb. NO<sub>2</sub>/1000 gal. per AP-42

407.1 gal./hr.  $\times$  60 lb. NO<sub>2</sub>/1000 gal. = 24.4 lb./hr.

24.4 lb./hr.  $\times$  8324 hr./yr.  $\times$  ton/2000 lb. = 102 ton/yr.

Fuel Analysis: Natural Gas

Percent Sulfur 0.0011% Percent Ash 0% Density 0.0075 lb./gal.

Typical Percent Nitrogen 0% Density 0.05621 lb./CF

Heat Capacity 18,591 BTU/lb. Heat Capacity 1045 BTU/CF

ADDENDUM

Summary of Emissions from Combustion:

<u>Fuel</u>	<u>Contaminant</u>	<u>Actual Emissions</u>	
		<u>Lb./hr.</u>	<u>Ton/Yr.</u>
Natural Gas	Particulate (Ash)	-	-
	Sulfur Oxides (SO <sub>2</sub> )	0.129	0.535
	Nitrogen Oxides (NO <sub>2</sub> )	13.4	55.8
#6 Fuel Oil	Particulate (Ash)	13.5	56.3
	Sulfur Oxides (SO <sub>2</sub> )	178.3	742
	Nitrogen Oxides (NO <sub>2</sub> )	45.1	188

Stack Geometry:

Existing 6 Kettle Stacks:

Stack Height: 92.5 ft.      Stack Diameter 3.5 ft.

Gas Flow Rate 1852 ACFM      Gas Exit Temperature 450°F      Velocity: 3.21 FPS

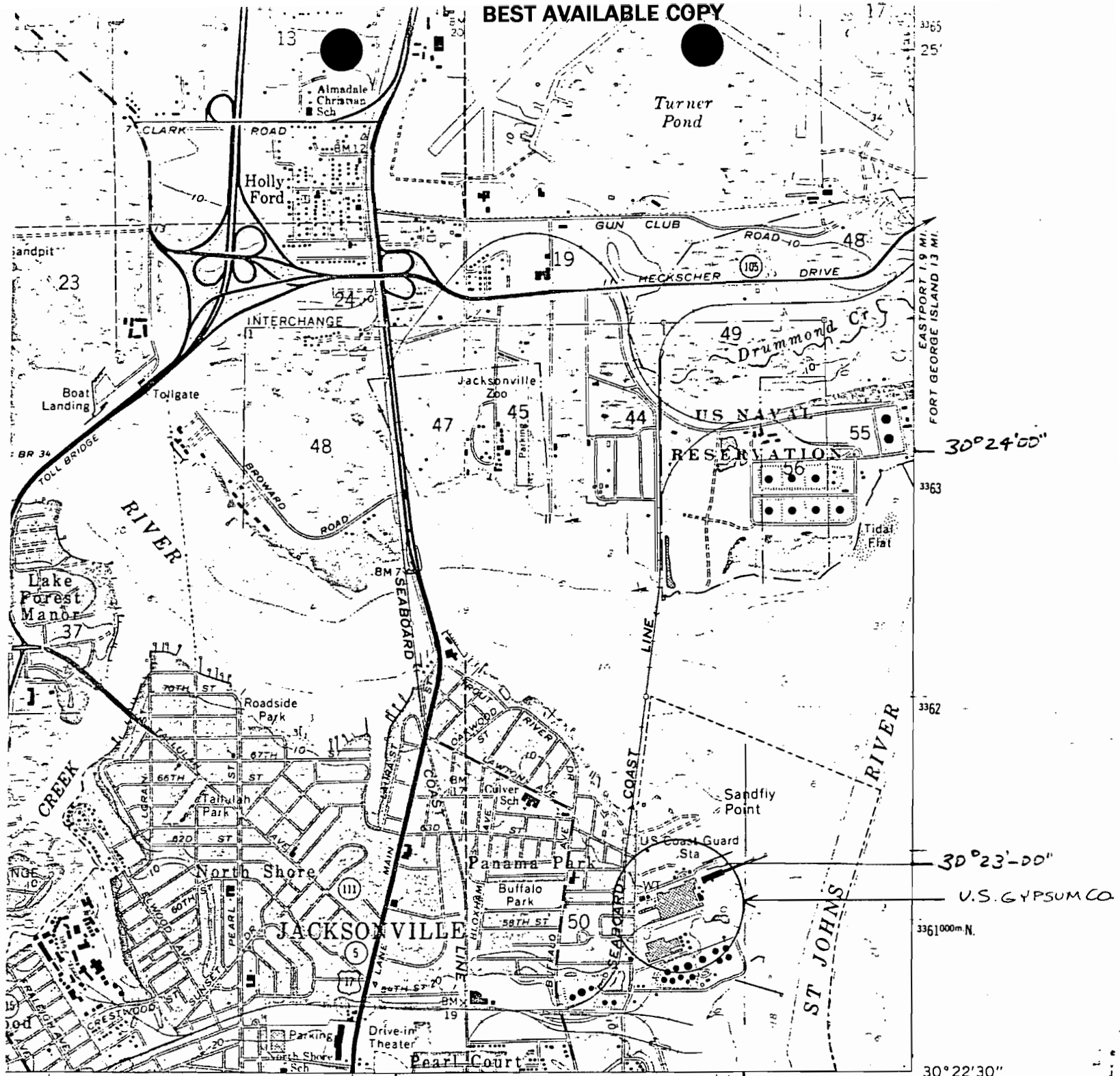
Existing #1 & #2 Kettle Dust Collector, B1-A:

(Example of Calcining Kettle Dust Collector)

Stack Height: (Above ground) 93 ft.      Stack Diameter 4 ft.

Gas Flow Rate 8375 ACFM      Gas Exit Temperature 220°F      Velocity 11.1 FPS

(This is used as an estimate for BH-3 and BH-4 Discharge Temperature.)



3365

25'

EASTPORT 7.9 MI.  
FORT GEORGE ISLAND 13 MI.

30°24'00"

3363

3362

30°23'-00"

U.S. GYPSUM CO.

3361000m N.

30°22'30"

40'

1.3 MI. TO U.S. 1  
ORANGE PARK 19 MI.

R. 26 E. R. 27 E.  
81°34'00"

438  
439000' E

81°37'00"

81°37'30"

ROAD CLASSIFICATION

- Heavy-duty
- Light-duty
- Medium-duty
- Unimproved dirt
- ⊖ Interstate Route
- ⊖ U.S. Route
- ⊖ State Route



QUADRANGLE LOCATION

TROUT RIVER, FLA.

N3022.5—W8137.5/7.5

1964  
PHOTOREVISED 1970  
AMS 4644 I NW—SERIES V847

(ARLINGTON)  
26.4 1 SE



AC 16-33884

STATE OF FLORIDA  
DEPARTMENT OF ENVIRONMENTAL REGULATION  
APPLICATION TO OPERATE/CONSTRUCT  
AIR POLLUTION SOURCES

SOURCE TYPE: Gypsum Wallboard Plant  New<sup>1</sup>  Existing<sup>1</sup>  
APPLICATION TYPE:  Construction  Operation  Modification  
COMPANY NAME: United States Gypsum Co. COUNTY: Duval

Identify the specific emission point source(s) addressed in this application (i.e. Lime Kiln No. 4 with Venturi Scrubber; Peeking Unit No. 2, Gas Fired) No. 3 Board Plant, BG-1 through BG-9, BD-5

SOURCE LOCATION: Street 6825 Evergreen Avenue City Jacksonville  
UTM: East 4 38 900 North 33 61 200  
Latitude 30 ° 22 ' 52 " N Longitude 81 ° 38 ' 01 " W

APPLICANT NAME AND TITLE: Zane G. Turley, Works Manager  
APPLICANT ADDRESS: 6825 Evergreen Avenue, Jacksonville, Fl. 32206

SECTION I: STATEMENTS BY APPLICANT AND ENGINEER

A. APPLICANT

I am the undersigned owner or authorized representative\* of United States Gypsum Co.

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

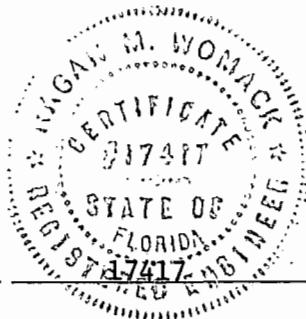
Signed: *Zane G. Turley*  
Zane G. Turley, Works Manager  
Name and Title (Please Type)  
Date: 8/15/80 Telephone No. 768-2501

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 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: *Ragan M. Womack*  
Ragan M. Womack  
Name (Please Type)  
United States Gypsum Co.  
Company Name (Please Type)  
P.O. Box 3197, Jacksonville, FL 32206  
Mailing Address (Please Type)  
Date: 8/15/80 Telephone No. 768-2501

(Affix Seal)



Florida Registration No. 37417

<sup>1</sup>See Section 17-2.02(15) and (22), Florida Administrative Code, (F.A.C.)

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.

This project involves the construction of a new board machine with an upgrading of Rock Mill to handle new production requirements. All dust collectors will be bag-houses. This project will result in full compliance. Particulate and SO<sub>2</sub> emissions decrease. NO<sub>2</sub> emissions increase.

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

Start of Construction November 1980 Completion of Construction May 1982

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.)

Costs are for each baghouse and associated ducting and installation. Total control system cost = \$144,000 (see addendum for breakdown).

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

None.

E. Is this application associated with or part of a Development of Regional Impact (DRI) pursuant to Chapter 380, Florida Statutes, and Chapter 22F-2, Florida Administrative Code?  Yes  No

F. Normal equipment operating time: hrs/day 24 ; days/wk 6.67 ; wks/yr 52 ; if power plant, hrs/yr \_\_\_\_\_ ; if seasonal, describe: \_\_\_\_\_

G. If this is a new source or major modification, answer the following questions. (Yes or No)

- |   |            |
|---|------------|
| 1. Is this source in a non-attainment area for a particular pollutant?  | <u>Yes</u> |
| a. If yes, has "offset" been applied?   | <u>Yes</u> |
| b. If yes, has "Lowest Achievable Emission Rate" been applied?  | <u>No</u>  |
| c. If yes, list non-attainment pollutants.  |            |
| <u>Particulates, ozone</u>  |            |
| 2. Does best available control technology (BACT) apply to this source? If yes, see Section VI.  | <u>No</u>  |
| 3. Does the State "Prevention of Significant Deterioration" (PSD) requirements apply to this source? If yes, see Sections VI and VII. | <u>No</u>  |
| 4. Do "Standards of Performance for New Stationary Sources" (NSPS) apply to this source?  | <u>No</u>  |
| 5. Do "National Emission Standards for Hazardous Air Pollutants" (NESHAP) apply to this source?                                       | <u>No</u>  |

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: (Fuel is also used.)

Description	Contaminants		Utilization Rate - lbs/hr	Relate to Flow Diagram
	Type	% Wt		
CaSO <sub>4</sub> ·2H <sub>2</sub> O (Gypsum)	Particulate	.002	1140	
CaSO <sub>4</sub> ·½H <sub>2</sub> O (Stucco)	"	.0004	101640	
Starch	"	.004	720	
Vermiculite	"	.0005	5700	

B. Process Rate, if applicable: (See Section V, Item 1) (See addendum for calculations)

- Total Process Input Rate (lbs/hr): 182130
- Product Weight (lbs/hr): 128130

C. Airborne Contaminants Emitted: Total emissions - see addendum for individual units and calculations.

Name of Contaminant	Emission <sup>1</sup>		Allowed Emission <sup>2</sup> Rate per Ch. 17-2, F.A.C.	Allowable <sup>3</sup> Emission lbs/hr	Potential Emission <sup>4</sup>		Relate to Flow Diagram
	Maximum lbs/hr	Actual T/yr			lbs/hr	T/yr	
Particulate	1.775	7.39			3547	14,762	See addendum
* Sulfur Oxides	0.151	0.628			0.151	0.628	BD-5
Nitrogen Oxides	22.57	93.9			22.57	93.9	BD-5
* None with propane							

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

Name and Type (Model & Serial No.)	Contaminant	Efficiency	Range of Particles <sup>5</sup> Size Collected (in microns)	Basis for Efficiency (Sec. V, It <sup>5</sup> *)
BG-1 Baghouse, 5000 CFM	Stucco	99.95		Design
BG-2 Baghouse, 325 CFM	Starch	99.95		Design
BG-3 Baghouse, 325 CFM	Starch	99.95		Design
BG-4 Baghouse, 325 CFM	Gypsum	99.95		Design
BG-5 Baghouse, 325 CFM	Gypsum	99.95		Design
BG-6 Baghouse, 8600 CFM	Gypsum	99.95		Design
BG-7 Baghouse, 5140 CFM	Gypsum	99.95		Design
BG-8 Baghouse 325 CFM	Vermiculite	99.95		Design
BG-9 Baghouse 325 CFM	Vermiculite	99.95		Design

\*EPA Method 5 to be used to confirm actual emissions after construction.

<sup>1</sup>See Section V, Item 2.

<sup>2</sup>Reference applicable emission standards and units (e.g., Section 17-2.05(6) Table II, E. (1), F.A.C. - 0.1 pounds per million BTU heat input)

<sup>3</sup>Calculated from operating rate and applicable standard

<sup>4</sup>Emission, if source operated without control (See Section V, Item 3)

<sup>5</sup>If Applicable



E. Fuels

Type (Be Specific)	Consumption*		Maximum Heat Input (MMBTU/hr)
	avg/hr	max./hr	
Natural Gas (Primary Fuel)	0.122	0.122	127
Propane (Secondary Fuel)	0.0496	0.0496	127

\*Units Natural Gas, MMCF/hr; Fuel Oils, barrels/hr; Coal, lbs/hr

Fuel Analysis: Natural Gas (see addendum for Propane)

Percent Sulfur: 0.0011 Percent Ash: -  
 Density: 0.0075 lbs/gal Typical Percent Nitrogen: -  
 Heat Capacity: 18,591 BTU/lb - BTU/gal  
 Other Fuel Contaminants (which may cause air pollution): None

F. If applicable, indicate the percent of fuel used for space heating. Annual Average N/A Maximum \_\_\_\_\_

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

All dust returned to process.

H. Emission Stack Geometry and Flow Characteristics (Provide data for each stack): Do not have details at this time.

Stack Height: \_\_\_\_\_ ft. Stack Diameter: \_\_\_\_\_ ft.

Gas Flow Rate: \_\_\_\_\_ ACFM Gas Exit Temperature: \_\_\_\_\_ °F.

Water Vapor Content: \_\_\_\_\_ % Velocity: \_\_\_\_\_ FPS

All stacks at least 40 ft. high.

SECTION IV: INCINERATOR INFORMATION

Type of Waste	Type O (Plastics)	Type I (Rubbish)	Type II (Refuse)	Type III (Garbage)	Type IV (Pathological)	Type V (Liq & Gas By-prod.)	Type VI (Solid By-prod.)
Lbs/hr Incinerated							

Description of Waste \_\_\_\_\_

Total Weight Incinerated (lbs/hr) \_\_\_\_\_ Design Capacity (lbs/hr) \_\_\_\_\_

Approximate Number of Hours of Operation per day \_\_\_\_\_ days/week \_\_\_\_\_

Manufacturer \_\_\_\_\_

Date Constructed \_\_\_\_\_ Model No. \_\_\_\_\_

ADDENDUM TO PERMIT APPLICATION

FOR  
AIR POLLUTION SOURCE

#3 BOARD PLANT:

Operating Hours:

24 hr./day x 6.67 day/wk. x 52 wk./yr. = 8324 hr./yr.

Estimated Cost of Control Equipment:

<u>Baghouse No.</u>	<u>Name</u>	<u>CFM Rating</u>	<u>Estimated Cost</u>
BG-1	Stucco AdditiveDust Collector	5000	\$30,000
BG-2	Starch Bin Dust Collector	325	4,000
BG-3	Starch Receiver D.C.	325	4,000
BG-4	HRA Bin D.C.	325	4,000
BG-5	Landplaster Receiver D.C.	325	4,000
BG-6	End Saw D.C.	8600	60,000
BG-7	Stucco Storage Bin D.C.	5140	30,000
BG-8	Vermiculite Receiver D.C.	325	4,000
BG-9	Vermiculite Bin D.C.	325	4,000
TOTAL			<u>\$144,000</u>

Process Weight:

1,140 lb./hr. Gypsum  
 101,640 lb./hr. Stucco  
 720 lb./hr. Starch  
 5,700 lb./hr. Vermiculite  
 54,000 lb./hr. Water Evaporated  
18,930 lb./hr. Water Added to Stucco  
 182,130 lb./hr. Total Process Rate

Product Weight:

Water evaporated = 54,000 lb./hr.

Product weight = Process weight - water evaporated

182,130 lb./hr. - 54,000 lb./hr. = 128,130 lb./hr.

ADDENDUM

Airborne Contaminants Discharged:

Particulates from Baghouses:

Note: All dust collectors will be baghouse type with an efficiency of 99.95% to allow no more than 0.01 grain dust/ft.<sup>3</sup> air.

BG-1, Stucco Additive Dust Collector:

Actual Emissions:

$$5000 \text{ ft.}^3/\text{min.} \times 60 \text{ min./hr.} \times 0.01 \text{ grain/ft.}^3 \times \frac{1 \text{ lb}}{7000 \text{ grain}} = \underline{0.429 \text{ lb./hr.}}$$
$$0.43 \text{ lb./hr.} \times 8324 \text{ hr./yr.} \times \frac{\text{ton}}{2000 \text{ lb.}} = \underline{1.79 \text{ ton/yr.}}$$

Potential Emissions:

$$0.429 \text{ lb./hr.} \times \frac{100\%}{(100-99.95)\%} = \underline{857 \text{ lb./hr.}}$$
$$857 \text{ lb./hr.} \times 8324 \text{ hr./yr.} \times \text{ton}/2000 \text{ lb.} = \underline{3567 \text{ ton/yr.}}$$

Process Weight Vented:

$$1140 \text{ lb./hr.} + 101,640 + 720 + 5700 = \underline{109,200 \text{ lb./hr.}}$$

BG-2, Starch Bin Dust Collector:

Actual Emissions:

$$325 \text{ ft.}^3/\text{min.} \times 60 \text{ min./hr.} \times 0.01 \text{ grain/ft.}^3 \times \text{lb.}/7000 \text{ grain} = \underline{0.028 \text{ lb./hr.}}$$
$$0.028 \text{ lb./hr.} \times 8324 \text{ hr./yr.} \times \text{ton}/2000 \text{ lb.} = \underline{0.116 \text{ ton/yr.}}$$

Potential Emissions:

$$0.028 \text{ lb./hr.} \times 100\%/(100-99.95)\% = \underline{55.7 \text{ lb./hr.}}$$
$$55.7 \text{ lb./hr.} \times 8324 \text{ hr./yr.} \times \text{ton}/2000 \text{ lb.} = \underline{232 \text{ ton/yr.}}$$

Process Weight Vented:

Starch unloaded from truck into bin at 20 ton/hr.

ADDENDUM

BG-3, Starch Receiver Dust Collector:

Emissions rate same as BG-2.

Process Weight Vented:

720 lb./hr. starch

BG-4, HRA Bin Dust Collector:

Emission rate same as BG-2.

Process Weight Vented:

1140 lb./hr. gypsum.

BG-5, Land Plaster Receiver Dust Collector:

Emissions rate same as BG-2.

Process Weight Vented:

1140 lb./hr. gypsum.

BG-6, End Saw Dust Collector:

Actual Emissions:

$$8600 \text{ ft.}^3/\text{min.} \times 60 \text{ min./hr.} \times 0.01 \text{ grain/ft.}^3 \times \text{lb./7000 grain} = \underline{0.737 \text{ lb./hr.}}$$

$$0.737 \times 8324 \text{ hr./yr.} \times \text{ton/2000 lb.} = \underline{3.07 \text{ ton/yr.}}$$

Potential Emissions:

$$0.737 \text{ lb./hr.} \times \frac{100\%}{(100-99.95)\%} = \underline{1474 \text{ lb./hr.}}$$

$$1474 \text{ lb./hr.} \times 8324 \text{ hr./yr.} \times \frac{\text{ton}}{2000 \text{ lb.}} = \underline{6136 \text{ ton/yr.}}$$

Process Weight Vented:

End sawing process removes approx. 3/8" from typical 12'-3/8" board.

$0.375"/144.375" \times 100\% = 0.260\%$  of input process rate (128,130 lb./hr.) removed as dust.

$$0.260\% \times 128,130 \text{ lb./hr.} = 333 \text{ lb./hr.}$$

Process Weight Vented = 333 lb./hr. dust.

ADDENDUM

BG-7, Stucco Storage Bin Dust Collector:

Actual Emissions:

$$5140 \text{ ft.}^3/\text{min.} \times 60 \text{ min./hr.} \times 0.01 \text{ grain/ft.}^3 \times \text{lb./7000 grain} = \underline{0.441 \text{ lb./hr.}}$$

$$0.441 \times 8324 \text{ hr./yr.} \times \text{ton/2000 lb.} = \underline{1.83 \text{ ton/yr.}}$$

Potential Emissions:

$$0.441 \text{ lb./hr.} \times 100\% / (100 - 99.95)\% = \underline{882 \text{ lb./hr.}}$$

$$882 \text{ lb./hr.} \times 8324 \text{ hr./yr.} \times \text{ton/2000 lb.} = \underline{3667 \text{ ton/yr.}}$$

Process Weight Vented:

Stucco conveyed from Rock Mill at 160,000 lb./hr.

BG-8, Vermiculite Receiver Dust Collector:

Emissions rate same as BG-2.

Process Weight Vented:

5700 lb./hr. vermiculite

BG-9, Vermiculite Bin Dust Collector:

Vermiculite unloaded from truck into bin at 20 ton/hr.

Total Particulates Emitted:

Actual Emissions:

$$0.429 \text{ lb./hr.} + (0.028 \times 6) + 0.737 + 0.441 = \underline{1.775 \text{ lb./hr.}}$$

$$1.79 \text{ ton/yr.} + (0.116 \times 6) + 3.07 + 1.83 = \underline{7.39 \text{ ton/yr.}}$$

Potential Emissions:

$$857 \text{ lb./hr.} + (55.7 \times 6) + 1474 + 882 = \underline{3547 \text{ lb./hr.}}$$

$$3567 \text{ ton/yr.} + (232 \times 6) + 6136 + 3667 = \underline{14,762 \text{ ton/yr.}}$$

ADDENDUM

Airborne Contaminants from the Complete Combustion of Fuel:

Natural Gas: (Primary Fuel)

Actual Particulates (Ash): None

Actual Sulfur Oxides (SO<sub>2</sub>):

$$0.122 \times 10^6 \text{ CF/hr.} \times 0.05621 \text{ lb./CF} \times \frac{0.0011\%S}{100\%} \times \frac{2 \text{ SO}_2}{1S} = \underline{0.151 \text{ lb./hr.}}$$

$$0.151 \text{ lb./hr.} \times 8324 \text{ hr./yr.} \times \text{ton}/2000 \text{ lb.} = \underline{0.628 \text{ ton/yr.}}$$

Potential same as actual.

Actual Nitrogen Oxides (NO<sub>2</sub>):

2 - 63.5 MMBTU/hr. burners use 185 lb. NO<sub>2</sub>/MMCF per AP-42

$$0.122 \text{ MMCF/hr.} \times 185 \text{ lb. NO}_2/\text{MMCF} = \underline{22.57 \text{ lb./hr.}}$$

$$22.57 \text{ lb./hr.} \times 8324 \text{ hr./yr.} \times \text{ton}/2000 \text{ lb.} = \underline{93.9 \text{ ton/yr.}}$$

Potential same as actual.

Propane: (Secondary Fuel)

Actual Particulates (Ash): None

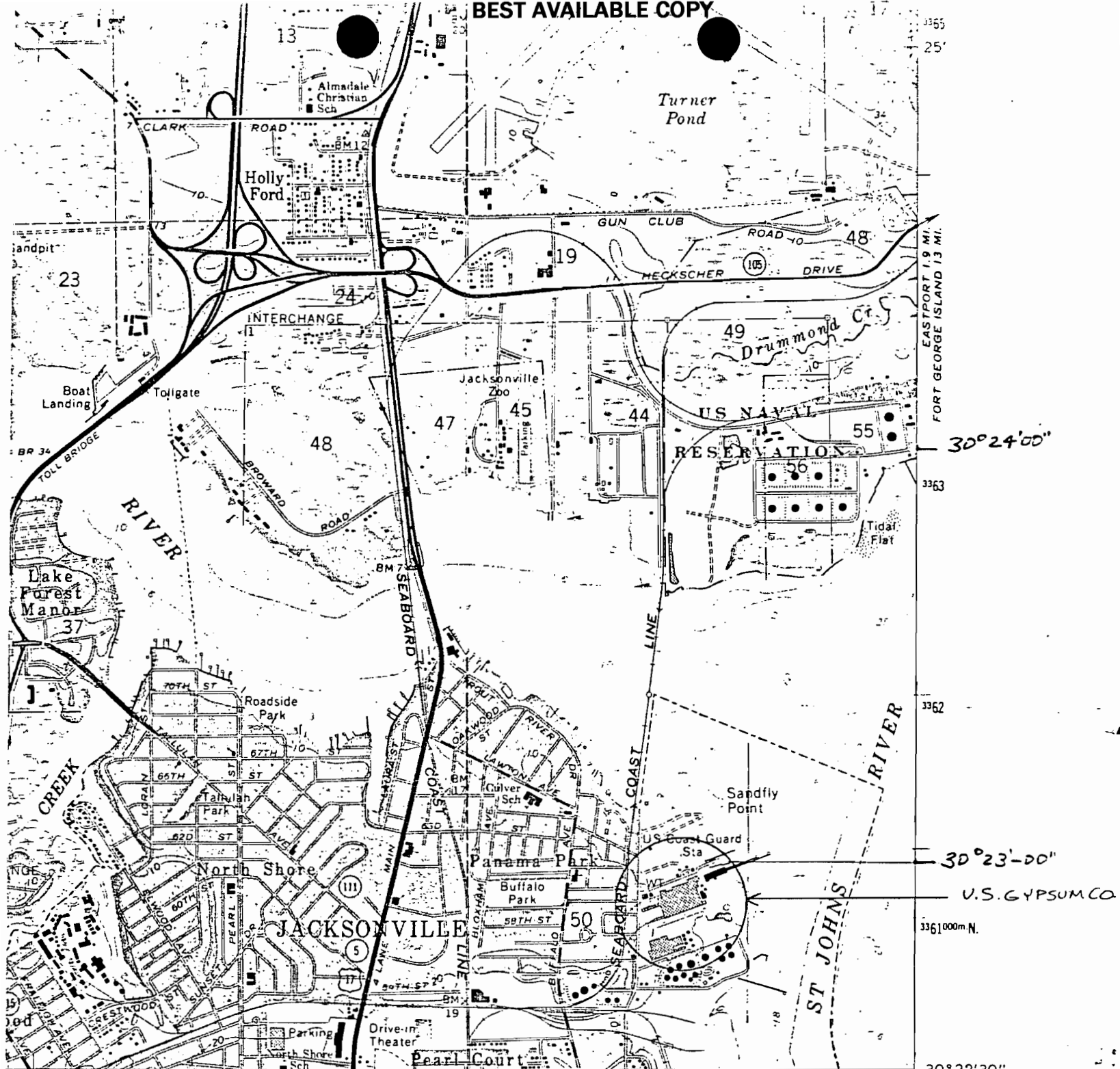
Actual Sulfur Oxides (SO<sub>2</sub>): None

Actual Nitrogen Oxides (NO<sub>2</sub>):

Assumed same as with Natural Gas.

Fuel Analysis: Propane

Percent Sulfur 0%    Percent Ash 0%    Density 0.05621 lb/CF  
Typical Percent Nitrogen 0%    Heat Capacity 2558 BTU/CF



1.3 MI. TO U.S. 1  
ORANGE PARK 19 MI.

R. 26 E. 81° 34' 00"  
R. 27 E. 81° 37' 00"

438 439000 E INTERIOR—GEOLOGICAL SURVEY WASHINGTON, D. C.—1972

30° 22' 30"  
81° 37' 30"

ROAD CLASSIFICATION

- Heavy-duty —————
- Medium-duty - - - - -
- Light-duty ————
- Unimproved dirt = = = = =
- Interstate Route (thick line with shield)
- U. S. Route (thin line with shield)
- State Route (thin line with circle)



TROUT RIVER, FLA.

N3022.5—W8137.5/7.5

1964  
PHOTOREVISED 1970  
AMS 4644 1 NW—SERIES V847

(ARLINGTON)  
2644 1 SE