DEP ROUTING AND TRANSMITTAL SLIP

TO: (NAME, OFFICE, LOCATION)

1. Kanani

2. ______

3. ______

4. ______

5. ______

PLEASE PREPARE REPLY FOR:

____ SECRETARY'S SIGNATURE

____ DIV/DIST DIR SIGNATURE

____ MY SIGNATURE

____ YOUR SIGNATURE

____ DUE DATE ______

ACTION/DISPOSITION

____ DISCUSS WITH ME

____ COMMENTS/ADVISE

____ REVIEW AND RETURN

____ SET UP MEETING

____ FOR YOUR INFORMATION

____ HANDLE APPROPRIATELY

____ INITIAL AND FORWARD

____ SHARE WITH STAFF

____ FOR YOUR FILES

COMMENTS:

Florida Solite Company has a hearing scheduled in late December on the proposed permit in the file. I expect it to be active thru Jan '95.

FROM: Willard DATE: 11/23/94 PHONE: ______

DEP 15-026 (12/93)

Check Sheet

Company Name: Florida Solite Co.
Permit Number:
PSD Number: AC 10-125262
County:
Permit Engineer:
Others involved:

Application:
- [x] Initial Application
- [ ] Incompleteness Letters
- [ ] Responses
- [ ] Final Application (if applicable)
- [ ] Waiver of Department Action
- [ ] Department Response
- [ ] Other

Intent:
- [x] Intent to Issue
- [x] Notice to Public
- [x] Technical Evaluation
- [ ] BACT Determination
- [x] Unsigned Permit
- [ ] Correspondence with:
  - [ ] EPA
  - [ ] Park Services
  - [ ] County
  - [ ] Other
- [ ] Proof of Publication
- [ ] Petitions - (Related to extensions, hearings, etc.)
- [ ] Other

Final Determination:
- [x] Final Determination
- [x] Signed Permit
- [x] BACT Determination
- [ ] Other

Post Permit Correspondence:
- [x] Extensions
- [x] Amendments/Modifications
- [ ] Response from EPA
- [ ] Response from County
- [ ] Response from Park Services
- [x] Other

P 832 538 741

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(See Reverse)

UNITED STATES POSTAL SERVICE

Sent to Mr. Tony Saunders, FL Solite	
Street & No. P. O. Box 297	
P.O., State & ZIP Code Green Cove Springs, FL 32043	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Address of Delivery	
TOTAL Postage & Fees	$
Postmark or Date Mailed: 11-5-91 Permit: AC 10-125262	

PS Form **3800**, June 1990

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

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

Consult postmaster for fee.

3. Article Addressed to:
Mr. Tony Saunders
Florida Solite Corp.
P. O. Box 297
Green Cove Springs, FL 32043

4a. Article Number
P 832 538 741

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

7. Date of Delivery

5. Signature (Addressee)

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

6. Signature (Agent)

PS Form **3811**, October 1990 ☆U.S. GPO: 1990—273-861 **DOMESTIC RETURN RECEIPT**

Florida Department of Environmental Regulation

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

Lawton Chiles, Governor

Carol M. Browner, Secretary

November 5, 1991

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Tony Saunders
Florida Solite Corporation
Post Office Box 297
Green Cove Springs, Florida 32043

Dear Mr. Saunders:

Re: Amendment of Permit No. AC 10-125262

The Department is in receipt of Mr. John Koogler's July 15, 1991, letter requesting clarification on the allowable contaminant content of the liquid burnable materials (LBM) used for fuel in the clay kilns at Florida Solite's Green Cove Springs, Clay County, Florida light aggregate plant. Part of the request is acceptable and Specific Condition No. 16 of construction permit No. AC 10-125262 is amended:

From:

The liquid burnable waste shall not contain any organic cyanides, sulfide, mercaptans, PCB's, insecticides, pesticides, herbicides, electroplating waste or radioactive materials. Florida Solite Company shall retain the manifest of each load for 2 years for Department inspection.

To:

The liquid burnable waste (LBM) shall not contain any of the following contaminants above the detectable levels by the appropriate analytical procedures (40 CFR 263, Appendix III, 7/1/90): organic cyanides, sulfides, mercaptans, PCB's, insecticides, pesticides, herbicides, electroplating waste, and radioactive material. The detectable level for PCB's is considered to be 2 ppm (40 CFR 761.20(d)(2) Testing of used Oil Fuel, 7/1/88). Florida Solite Company shall retain the manifest of each load for 2 years for Department inspection.

A copy of this letter must be attached to the referenced permit and shall become a part of the permit.

Sincerely,

Carol M. Browner
Secretary

CMB/kt

attachment

cc: A. Kutyna, NE District
J. Koogler, P.E.

KOOGLER & ASSOCIATES
ENVIRONMENTAL SERVICES
4014 NW THIRTEENTH STREET
GAINESVILLE, FLORIDA 32609
904/377-5822 • FAX 377-7158

KA 150-90-07

July 15, 1991

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

Subject: Clay County - AP
Florida Solite Company
Kiln 1A - Permit A010-133604
FDER Case No. 91-1329

Dear Mr. Fancy:

On February 1, 1991, the Florida Solite Company was issued the subject air operating permit for the continued operation of lightweight aggregate Kiln 1A. Specific Condition No. 9 of the operating permit provides the following definition of the liquid fuels burned by Solite:

> Liquid burnable materials shall not contain inorganic compounds, organic cyanides, sulfides, lachramates or mercaptans. No PCBs, insecticides, pesticides, herbicides or poisons, explosives, corrosives, reactive or radioactive materials (from LBM Specification received 08-04-83 in #1 Kiln File). The manifest of each load shall be retained for two years for Department inspection.

Solite objected to this definition for two reasons. First, the definition included in the operating permit contained restrictions that were not in the construction permit that had been issued for the kiln and, second, the definition implies that any quantity of a compound listed in the definition above absolute zero would be a violation of the permit condition.

To resolve this matter, Solite corresponded with the Department and met with Mr. Richard Coates, FDER Office of General Counsel, and Mr. Andrew Kutyna, FDER Jacksonville, in Orange Park on May 22, 1991. As a result of this meeting and subsequent correspondence, the following definition of the liquid fuel has been developed:

The liquid burnable waste shall not contain any, above the detectable level by the appropriate analytical procedure, organic cyanides, sulfides, mercaptans, insecticides, pesticides, herbicides, electroplating waste or radioactive materials. The liquid burnable waste shall contain no PCBs which exceed 50 ppm. Florida Solite Company shall retain the manifest of each load for two years for Department inspection.

It is my understanding that this wording has been reviewed, both by Department personnel and by Solite and is acceptable to both parties. This wording is to replace Specific Condition No. 9 of Air Operating Permit AO10-133604 and is to be used to amend the definition of liquid fuel contained in Specific Condition No. 16 of Air Construction Permit AC10-125262.

If there are any questions regarding this matter, please do not hesitate to contact me.

Very truly yours,

KOOGLER & ASSOCIATES

John B. Koogler, Ph.D., P.E.

JBK:mab

cc: Mr. Richard Coates, FDER Office of General Counsel
Mr. Andrew Kutyna, FDER, Jacksonville
Mr. Bill Johnson, Solite Corporation
Mr. George Williamson, Solite Corporation
Mr. Tony Saunders, Florida Solite Company
Mr. John Kopelousos, Attorney for Solite

State of Florida
DEPARTMENT OF ENVIRONMENTAL REGULATION

For Routing To Other Than The Addressee	
To:	Location:
To:	Location:
To:	Location:
From:	Date:

Interoffice Memorandum

TO: Carol Browner

FROM: Steve Smallwood

DATE: November 4, 1991

SUBJ: Amendment of Permit - Florida Solite

Attached for your approval and signature is a letter that will amend the construction permit for Florida Solite's Clay kiln located in Green Cove Springs, Clay County, Florida. The letter clarifies the content of contaminants that can be in the used oil burned as fuel in this plant.

I recommend your approval and signature.

SS/WH/t

attachment

Carol - see the attached letter from John Koogler on behalf of Solite. - Steve.

Please call Patty Adams when signed 8-1344

P 407 802 150

RECEIPT FOR CERTIFIED MAIL

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NOT FOR INTERNATIONAL MAIL

(See Reverse)

Sent to Dr. John B. Koogler	
Street and No. 4014 N.W. 13th St.	
P.O., State and ZIP Code Gainesville, FL 32609	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt showing to whom and Date Delivered	
Return Receipt showing to whom, Date, and Address of Delivery	
TOTAL Postage and Fees	$
Postmark or Date Mailed: 3-21-91 Permit: AC 10-125262	

PS Form 3800, June 1985 ☆U.S.G.P.O. 1989-234-555

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Put your address in the "RETURN TO" Space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for additional service(s) requested.

1. ☐ Show to whom delivered, date, and addressee's address. *(Extra charge)*
2. ☐ Restricted Delivery *(Extra charge)*

3. Article Addressed to:
Dr. John B. Koogler
Koogler & Associates
4014 N.W. 13th Street
Gainesville, FL 32609

4. Article Number
P 407 802 150

Type of Service:
☐ Registered ☐ Insured
☒ Certified ☐ COD
☐ Express Mail ☐ Return Receipt for Merchandise

Always obtain signature of addressee or agent and DATE DELIVERED.

5. Signature — Addressee
X Marion A. Bayer

6. Signature — Agent
X

7. Date of Delivery
3/25/91 D.B. Allen

8. Addressee's Address *(ONLY if requested and fee paid)*

PS Form **3811**, Apr. 1989 ★U.S.G.P.O. 1989-238-815 **DOMESTIC RETURN RECEIPT**

Florida Department of Environmental Regulation

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

Lawton Chiles, Governor

Carol M. Browner, Secretary

March 12, 1991

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Dr. John B. Koogler
Koogler & Associates
4014 NW Thirteenth Street
Gainesville, Florida 32609

Dear Dr. Koogler:

Re: Florida Solite Company, Permit No. AC 10-125262

The Department has reviewed your March 4, 1991, letter requesting the Department to relax the nitrogen oxides emission standard and operation restrictions on Kiln 1 and 1A in construction permit No. AC 10-125262 for Florida Solite Company. The concurrent operation of Kiln 1 and 1A would increase the emissions from the sources that were constructed under the authority of the referenced federally enforceable construction permit. An increase in emissions is a modification by definition and a new permit to construct is required for a modification.

If Florida Solite Company is interested in pursuing the modification outlined in your March 4, 1991, letter, they should submit a complete application for a permit to construct with the appropriate processing fee to this office.

Sincerely,

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

CHF/WH/plm

c: A. Kutyna, NED
T. Saunders, FSC

KOOGLER & ASSOCIATES
ENVIRONMENTAL SERVICES
4014 NW THIRTEENTH STREET
GAINESVILLE, FLORIDA 32609
904/377-5822 ▪ FAX 377-7158

KA 150-90-07

March 4, 1991

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

Subject: Clay County-AP
Florida Solite Company
Permits AC10-125262 and
AO10-133604

Dear Mr. Fancy:

During a meeting in your office on February 11, 1991, Pradeep Raval and I discussed with you and Barry Andrews the possibility of amending two specific conditions in construction and operating permits issued to the Florida Solite Company for the construction and operation of lightweight aggregate Kiln 1A. The two conditions in question relate to a nitrogen oxides emission limit and a joint operating condition placed on Kiln 1A and Kiln 1.

Nitrogen Oxides Limit

Specific Condition No. 12 of the subject air construction permit and Specific Condition No. 4 of the subject operating permit both limit the nitrogen oxides emission rate from Kiln 1A to 14.2 pounds per hour and 54 tons per year. Specific Condition No. 12 of the construction permit further states:

> If the lowest nitrogen oxides emission rate exceeds 14.2 lb/hr (53.8 TPY), the permittee shall submit an engineering report, including test data, to justify the lowest nitrogen oxides emission rate that can be achieved by this kiln.

The qualification that the 14.2 lb/hr nitrogen oxides emission limit could be revisited was placed in the air construction permit at the request of Solite. This request was made to the Department during the comment period following the issuance Technical Evaluation and Preliminary Determination

and was addressed by the Department in the Final Determination.

Solite's reservation regarding this emission limit was based on the fact that the limit was derived from a single measurement made during a 1983 test conducted at Solite by an EPA contractor. Solite had doubts that this one-time measurement was representative of all kiln operating conditions. Solite also reasoned that, even if the emission limit was truly representative of kiln operating conditions, errors associated with the repeatability and/or reproducibility of EPA test Method 7 could show the kiln to be operating out of compliance from time to time.

The first compliance test on Kiln 1A following the issuance of the subject construction permit in January 1987 was conducted on February 20, 1987 (see attached test summary). During this compliance test, the average measured sulfur dioxide emission rate was 13.9 lbs/hr; or slightly below the targeted allowable emission rate of 14.2 lbs/hr. During one of the three test runs, however, a nitrogen oxides emission rate of 19.8 lbs/hr was measured.

As a result of the variability in measured nitrogen oxides emission rates on February 20, 1987, Solite conducted additional testing on July 17, 1987, using EPA Method 7E (a continuous nitrogen oxides emission analyzer). During this test period, measured nitrogen oxides emissions ranged from 4.0 to 21.3 lbs/hr and average 13.2 lbs/hr (when adjusted to a 7 tph production rate). During the test period, the targeted emission limit of 14.2 lbs/hr was exceeded approximately 50 percent of the time. During this test period, Solite also investigated the effects of various kiln operating parameters on the nitrogen oxides emission rate from the kiln and found that nothing that was done significantly effected the nitrogen oxides emission rate. The results of this testing were submitted to the Department with a request to revisit the nitrogen oxides emission limit targeted by the construction permit.

No immediate decision on amending the nitrogen oxides emission rate was made by the Department and subsequent testing conducted by Solite on Kiln 1A in 1988, 1989, and 1990 demonstrated that the average nitrogen oxides emission rate for each of the three test periods fell below 14.2 lbs/hr. Data collected during two of the three test periods (see attached data summary) showed that, during at least part of the test period, the 14.2 lbs/hr limit was exceeded.

Since 1987, as summarized on the attached sheet, five sets of emission measurements have been made for nitrogen oxides on Kiln 1A. Three sets of measurements were made using EPA Method 7 (flasks) and two sets were made using EPA Method 7E (continuous monitor). The average nitrogen oxides emission rate based on Method 7 measurements is 13.1 lbs/hr and the

average emission rate based on all measurements is also 13.1 lbs/hr. Of the eight test runs made using EPA Method 7 (one test run was voided in 1990), three runs (or 38 percent) showed an exceedence of the 14.2 lbs/hr emission limit. During periods when nitrogen oxides emissions were measured using the continuous monitor, the 14.2 lbs/hr emission limit was exceeded about 32 percent of the time.

Based upon all of the nitrogen oxides emission data collected to date, it appears that the average nitrogen oxides emission rate from Kiln 1A is in the range of 13-14 lbs/hr with measured variations ranging from 4-21 lbs/hr. Solite is of the opinion that, with the emission limit so close to the average emission rate, it is only a matter of time until a compliance test reports an exceedence of the limit.

Considering that the standard error (one standard deviation) of repeatability of EPA Method 7 is in the range of 6.6 - 15 percent and that the standard error of reproducibility is in the range of 9.5 - 19 percent (EPA QA/QC Manual), an exceedence of the permitted emission limit could easily be reported even with the kiln operating at the measured average emission rate of 13.1 lbs/hr. For example, if the kiln did operate continuously at a nitrogen oxides emission rate of 13.1 lbs/hr, the average standard error associated with reproducibility of EPA Method 7 would be approximately 14 percent of this rate or approximately 1.8 lbs/hr. The difference between the average emission rate of 13.1 lbs/hr and the permitted emission limit of 14.2 lbs/hr is only 1.1 lbs/hr or 60 percent of the standard error. Thus, it could be expected that errors associated with the reproducibility of EPA test Method 7 could cause a reported violation of the emission limit about 30 percent of the time even with Kiln 1A operating in continuous compliance.

In addition to errors associated with EPA Method 7, measurements made using EPA Method 7E have shown that actual fluctuations in nitrogen oxides emissions from Kiln 1A result in the emission limit of 14.2 lbs/hr being exceeded anywhere between 15 and 50 percent of the time.

As a result of the information provided in the above paragraphs and based upon the July 17, 1987, report previously submitted to the Department, Solite requests that the nitrogen oxides emission limit for Kiln 1A be increased approximately 20 percent above the targeted emission limit of 14.2 lbs/hr; or to a limit of 17.0 lbs/hr. This requested increase is certainly not excessive and it results in a proposed emission rate that will require Solite to continue to use best operating practices to attain compliance on a continuous basis. Even though the proposed limit has been measured to have been exceeded, it is in a range that Solite feels it can meet through the judicious operation of Kiln 1A, even taking into consideration the error associated with test methods and the variability

of emissions associated with kiln operations. It should also be pointed out that the requested change in the emission limit will not increase annual or short-term emissions from this kiln.

To minimize the error associated with test methods and to expedite compliance test reporting, Solite is notifying the Department that it will be exercising the option to use EPA Method 7E for demonstrating compliance with the nitrogen oxides emission limiting standard during annual compliance testing as allowed by Specific Condition No. 12 of Permit AC10-125262 which states in part:

> The permittee shall conduct nitrogen oxides emission measurements on Kiln 1A by Method 7 or any EPA approved alternative method in 40CFR60, Appendix A, ... (emphasis added).

As was pointed out in recent correspondence to your office, we have had considerable analytical problems with EPA Method 7 in the recent past and, as a result, have requested that Method 7E be approved as an alternative sampling procedure in several other cases.

Operating Limit

The second matter that I would like to address is the joint operating restriction placed on Kiln 1A and Kiln 1. This limitation is set forth in Specific Condition No. 20 of the subject construction permit and in Specific Condition No. 4 of the subject operating permit. Specific Condition No. 20 of AC10-125262 states:

> The existing 7 TPH Kiln No. 1 (A010-72240) shall not be operated when Kiln No. 1A is in use. Total hours of operation of Kiln No. 1 and No. 1A shall not exceed 7600 hrs/yr.

This limitation was imposed as the original intent of Solite was to replace Kiln 1 with Kiln 1A. In this original plan, Kiln 1 was to have been dismantled. This strategy was reflected in the permit application submitted to the Department by Solite in March 1984 and in the Technical Evaluation and Preliminary Determination for Permit AC10-84168, issued by the Department in July 1984.

Following the issuance of AC10-84168 in September 1984 and during attempts to certify compliance of Kiln 1A, it was discovered that significant quantities of sulfur dioxide were generated during the calcining of the clay feed stock. This sulfur dioxide had not been taken into consideration during the permitting process and, as a result, the sulfur dioxide emission limits of Permit AC10-84168 could not be achieved. Following extensive testing in 1986 to quantify the sulfur dioxide

emissions contributed by the clay feed stock, and following the preparation of a revised construction permit application for Kiln 1A, Permit AC10-84168 was withdrawn by Solite.

During these proceedings, the market demand for lightweight aggregate improved and Solite undertook a program to refurbish Kiln 1, the kiln originally scheduled to be dismantled. Solite's intent with the three operating kilns was to apply to the Department, subsequent to the issuance of the revised construction permit for Kiln 1A (AC10-125262), for a construction permit issued under PSD review requirements to allow the operation of all three kilns.

Prior to the issuance of Permit AC10-125262, Solite had decided to refurbish Kiln 1. Hence, when the permit was issued in January 1987, Specific Condition No. 20 was inserted to allow the operation of either Kiln 1 or Kiln 1A as both kilns were considered identical for permitting purposes. Both kilns have a permitted production rate of 7.0 tons per hour of lightweight aggregate and both operate with a historically-determined heat input rate of 5.28 MMBTU per ton of product, or 37.0 MMBTU per hour. Nitrogen oxides emissions from the kilns (as determined from measurements made on Kiln 1A and addressed in the proceeding section of this letter) averaged 13-14 pounds per hour, particulate matter emissions (based on 1988 and 1989 compliance tests on Kiln 1 and Kiln 1A) averaged 10.75 pounds per hour and sulfur dioxide emissions (as documented in the application for Permit AC10-125262) averaged 75.8 pounds per hour. At these conditions, Kiln 1 and Kiln 1A jointly can be operated 7600 hours per year. Annual emissions of nitrogen oxides, particulate matter and sulfur dioxide from Kilns 1 and 1A, when jointly operating for 7600 hours a year, will be: nitrogen oxides - 54.0 tons per year; particulate matter - 40.9 tons per year; and sulfur dioxide - 288.0 tons per year.

Solite is requesting that Specific Condition No. 20 of the subject air construction permit be changed to allow the simultaneous operation of any two of the three Solite kilns. In other words, Kiln 1 or Kiln 1A could be operated simultaneously with Kiln 5, as presently permitted, and additionally, Kiln 1 and Kiln 1A could be operated simultaneously when Kiln 5 is not operating.

As stated during our February 11, 1991 meeting, this is a short-term request by Solite and is to be effective only until Solite can complete an application for a PSD review that will allow the simultaneous operation of all three kilns. This application is presently being prepared by our firm. Completion is contingent upon Solite developing a final strategy that will assure compliance, not only with all state and federal air regulations but also with recently adopted federal regulations applicable to industrial furnaces. Solite is presently developing a strategy that

can be applied consistently to all six of their plants in the eastern United States. Once finalized, we will complete the application for a permit that will allow the simultaneous operation of all three kilns. During this interim period, however, Solite would like to have the ability to operate any two of the three kilns to provide added operating flexibility.

In the preceding paragraphs, actual emissions from the operation of Kilns 1 and 1A for a total operating period of 7600 hours per year have been summarized as well as the actual average hourly emission rates from the kilns. In the following paragraphs, the kiln parameters for Kiln 5 are summarized. A comparison of operating parameters for Kilns 1, 1A and 5 will demonstrate that the proposed simultaneous operation of Kilns 1 and 1A when Kiln 5 is inoperative will result in an actual reduction of emissions over the presently permitted simultaneous operations of Kilns 1 or 1A and Kiln 5.

Kiln 5 is permitted to operate at a production rate of 11.0 tons per hour of lightweight aggregate. The heat input to the kiln, based on historic operating records, is 5.61 MMBTU per ton of product, or 61.7 MMBTU per hour. The actual nitrogen oxides emissions are estimated to be 29.6 pounds per hour (based on measurements made on Kiln 1A); particulate matter emissions (based on 1989 and 1990 compliance tests) average 15.39 pounds per hour; and sulfur dioxide emissions (as documented in the application for Permit AC10-125262) are 505.3 tons per year. Kiln 5 is permitted to operated at these conditions for 8760 hours per year. The maximum annual emissions from Kiln 5, assuming 8760 hours a year operation and actual emissions, would be: nitrogen oxides - 130 tons per year; particulate matter - 67.4 tons per year; and sulfur dioxide - 505 tons per year (115.4 pounds per hour, average).

From a comparison of the operating parameters of the three kilns, it can be deduced that the operation of Kiln 1 or 1A for 7600 hours a year will result in the same nitrogen oxides emissions as approximately 3650 operating hours of Kiln 5; that particulate matter emissions from this operation of Kilns 1 or 1A would be equivalent to emissions from approximately 6100 operating hours of Kiln 5, and that sulfur dioxide emissions from this operation of Kiln 1 and 1A would be equivalent to emissions from approximately 3700 operating hours of Kiln 5. The actual operating hours of Kiln 5 historically have exceeded these times.

It is apparent, both on an hourly basis and on an annual basis, that the operation of Kilns 1 and 1A will result in an actual reduction in emissions when compared with the operations of Kilns 1 or 1A and Kiln 5. Thus, Solite is requesting that Specific Condition No. 20 of the subject construction permit be amended to allow the simultaneous operation of any

two of the three Solite kilns with the total hours of operation of Kiln 1, Kiln 1A and Kiln 5 not to exceed 16,360 hours per year (7600 plus 8760 hr/yr).

Your consideration of both of the requested changes is appreciated. If any additional information is required or if there are any questions regarding the information provided herein, please do not hesitate to contact me.

Very truly yours,

KOOGLER & ASSOCIATES

John B. Koogler, Ph.D., P.E.

JBK:wa
Enc.
cc: Mr. Ed Martin, Solite Corporation
Mr. George Williamson, Solite Corporation
Mr. Tony Saunders, Florida Solite Company
H. Hanks
A. Kutyna, NE Dist.

SUMMARY OF NOX EMISSION MEASUREMENTS

KILN 1A
FLORIDA SOLITE COMPANY

FEBRUARY 1987 - APRIL 1990

Date	Test Method	NOx Emissions[1] (lb/hr)
2/20/87	EPA 7	19.8[2] 10.9[2] 11.0[2] Avg = 13.9[3]
7/17/87	EPA 7E	4.0 to 21.3 - exceeded 14.2 lb/hr 50% of time Avg = 13.2
4/22/88	EPA 7E	11.1 to 14.4 - exceeded 14.2 lb/hr 15% of time Avg = 12.9
4/22/89	EPA 7	15.2[2] 11.5[2] 14.5[2] Avg = 13.7[3]
4/30/90	EPA 7	Void[4] 10.6[2] 12.6[2] Avg = 11.6[3]

Avg Emission Rate:

Avg All Tests	13.1 lb/hr
Avg Method 7 Tests	13.1 lb/hr

(1) Normalized to a 7.0 tph production rate.
(2) Average of four Method 7 grab samples.
(3) Average of complete Method 7 test.
(4) Test results voided.

KOOGLER & ASSOCIATES

P 256 396 110

RECEIPT FOR CERTIFIED MAIL

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(See Reverse)

☆U.S.G.P.O. 1989-234-555

Sent to John Kinker	
Street and No. FLA. Solite Co.	
P.O., State and ZIP Code P.O. Box 297 Green Cove Spr. Fl	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt showing to whom and Date Delivered	
Return Receipt showing to whom, Date, and Address of Delivery	
TOTAL Postage and Fees	$
Postmark or Date 7-3-90 AC 10-125262	

PS Form 3800, June 1985

SENDER: Complete items 1 and 2 when additional services are desired, and complete items 3 and 4.
Put your address in the "RETURN TO" Space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for additional service(s) requested.
1. ☐ Show to whom delivered, date, and addressee's address. *(Extra charge)* 2. ☐ Restricted Delivery *(Extra charge)*

3. Article Addressed to:
John Kinker, Plt. Mngr.
FLA. Solite Co.
P.O. Box 297
Green Cove Springs, Fl 32043

4. Article Number
P 256 396 110

Type of Service:
☐ Registered ☐ Insured
☒ Certified ☐ COD
☐ Express Mail ☐ Return Receipt for Merchandise

Always obtain signature of addressee or agent and DATE DELIVERED.

5. Signature — Address
X

6. Signature — Agent
X

7. Date of Delivery

8. Addressee's Address *(ONLY if requested and fee paid)*

GREEN COVE SPRINGS JUL 30 FPO

PS Form **3811**, Mar. 1988 ★ U.S.G.P.O. 1988-212-865 DOMESTIC RETURN RECEIPT

Florida Department of Environmental Regulation

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

Bob Martinez, Governor | Dale Twachtmann, Secretary | John Shearer, Assistant Secretary

June 25, 1990

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. John Kuiken, Plant Manager
Florida Solite Company
Post Office Box 297
Green Cove Springs, Florida 32043

Dear Mr. Kuiken:

Re: Kiln 1A, Permit No. AC 10-125262

The Department is in receipt of Mr. John B. Koogler's June 4, 1990, letter requesting the referenced construction permit be extended from June 30, 1990, to March 31, 1991, to allow time for the Department to evaluate a new application for a permit to construct this source. This request is denied for the following reasons:

1. There have been numerous extensions of the August 1, 1987, expiration date for the permit to construct kiln No. 1A. The purpose of a construction permit is to allow time to construct and document that the source complies with the applicable regulations and permit conditions. It was never the intent of the Department to allow continuous commercial operation of a source under the authority of a construction permit.

2. The Department has not received or reviewed any new application for a permit to construct this source. There is no assurance that any application submitted for this source will be approved or approved within the time frame implied in the June 4 request to extend the referenced permit.

We note that the untimely submittal of your request for a 9 month extension of the construction permit did not allow a reasonable amount of time for you to obtain a permit to operate should this request be denied. For that reason only, the Department will extend construction permit No. AC 10-125262 until August 1, 1990.

Unless Florida Solite Corporation has submitted a complete application for permit to operate kiln 1A prior to that date, the operation of this kiln will be in violation of F.A.C. Rule 17-2.210 and Florida Solite Corporation will be subject to enforcement action by the Department.

Sincerely,

STEVE SMALLWOOD, P.E.
Director
Division of Air Resources
Management

SS/WH/plm

c: Dan Thompson, OGC
Andy Kutyna, NE Dist.
John Koogler, P.E.

KOOGLER & ASSOCIATES
ENVIRONMENTAL SERVICES
4014 NW THIRTEENTH STREET
GAINESVILLE, FLORIDA 32609
904/377-5822 • FAX 377-7158

KA 150-90-02

June 4, 1990

Mr. C.H. Fancy
Bureau Chief
Florida Department of
Environmental Regulation
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Subject: Florida Solite Company
Green Cove Springs, Florida
Permit AC10-125262 - Kiln 1A

Dear Mr. Fancy:

On behalf of the Florida Solite Company, Green Cove Springs, Florida, I would like to request an extension to the construction permit for Kiln 1A, AC10-125262, which is scheduled to expire on June 30, 1990.

We are currently preparing permit application packages for all three Florida Solite kilns and anticipate submitting the permit modification package for Kiln 1A by June 30, 1990. We hereby request an extension of Permit AC10-125262 until March 31, 1991. This extension will allow us enough time to complete the permit applications and to provide any additional information that your office may request. It will also provide your staff with adequate time to review all application materials provided by Solite.

Should you have any questions concerning Kiln 1A or the extension of Permit AC10-125262, please do not hesitate to call me or Pradeep Raval.

Thank you for your consideration in this matter.

Very truly yours,

KOOGLER & ASSOCIATES

John B. Koogler, Ph.D., P.E.

JBK:mab

cc: Mr. Andy Kutyna, FDER, Northeast District
Mr. John Kuiken, Florida Solite Company
Mr. George Williamson, Solite Corporation
Mr. George Kosko, Oldover Corporation
A. Linda
CAF/EA

State of Florida
DEPARTMENT OF ENVIRONMENTAL REGULATION

For Routing To Other Than The Addressee	
To:	Location:
To:	Location:
To:	Location:
From:	Date:

Interoffice Memorandum

TO: Steve Smallwood

FROM: Clair Fancy

DATE: June 25, 1990

SUBJ: Amendment of Construction Permit No. AC 10-125262
Florida Solite Company

Attached for your approval and signature is a letter that will extend the expiration date of a permit to construct a clay kiln that was issued to Florida Solite Company of Green Cove Springs, Clay County, Florida. The extension was requested because a new application for permit to construct will be submitted for this source.

The request is controversial. Basically, the Bureau is recommending that the request be denied.

I recommend your approval and signature.

SS/WH/plm

OK 6-28-90

State of Florida
DEPARTMENT OF ENVIRONMENTAL REGULATION

For Routing To Other Than The Addressee

To: _____ Location: _____

To: _____ Location: _____

To: _____ Location: _____

From: _____ Date: _____

Interoffice Memorandum

NORTHEAST DISTRICT - JACKSONVILLE

TO: Willard Hanks, DARM, BAR, CAPS

FROM: Andrew G. Kutyna, NED AGK

DATE: June 13, 1990

SUBJECT: Clay County - AP
Florida Solite
#1 Kiln

Per your June 12 teleconference request,

1. Have PM tests been done?
   APIS shows done in 84, 86, 87, 88
   1989 found no record for
   1990 in review

2. SO_2 CEMS has not been certified.

3. Comments(s) ?
   Recommend that the extension request be denied.

Also, enclosed is a copy of our last additional information letter.

AK:bt

DEPARTMENT OF ENVIRONMENTAL REGULATION

ROUTING AND TRANSMITTAL SLIP

ACTION NO

ACTION DUE DATE

1. TO: (NAME, OFFICE, LOCATION)	
Willard Hanks	Initial Date
2. DARM	Initial Date
3. BAR	Initial Date
4. CAPS Tally	Initial Date

REMARKS:

RECEIVED
JUN 14 1990
DER - BAQM

RECEIVED
JUN 1~~3~~ 1990
DER - BAQM

permit coordinator Jamie Lewis Malone 7/3

INFORMATION

- Review & Return
- Review & File
- Initial & Forward

DISPOSITION

- Review & Respond
- Prepare Response
- For My Signature
- For Your Signature
- Let's Discuss
- Set Up Meeting
- Investigate & Report
- Initial & Forward
- Distribute
- Concurrence
- For Processing
- Initial & Return

FROM: Air / Jax

DATE

PHONE

Florida Department of Environmental Regulation

Northeast District • 3426 Bills Road • Jacksonville, Florida 32207 • 904-798-4200

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

CERTIFIED - RETURN RECEIPT

March 8, 1989
May 24, 1990

Mr. John M. Kuiken, Plant Manager
Florida Solite Company
Post Office Box 297
Green Cove Springs, FL 32043

Dear Mr. Kuiken:

Clay County - AP
Florida Solite Company
No. 1A kiln

This is a request for the following additional information by March 31, 1989, which is required to complete the permit application for the referenced source. It is requested in accordance with Florida Administrative Code Rule 17-4.055.

Please submit this information using the same item number for each that has been used in several correspondences starting with our request dated June 29, 1988:

5. Documentation from BAQM that clearly shows that it is the Department's intent that the sulfur dioxide emission limit is to be implemented as a "blanket" limit as stated in the February 7 letter from John B. Koogler.

7. The SO_2 CEM Performance Spec. test report.

8. Thirty (30) days of SO_2 CEM data (1 hr. avg.), after the CEM is certified, by 90 days prior to the construction permit expiration date.

9. CEM status reports as required by Specific Condition (SC) #24.

10. Compliance status with the requirements of SC #25 which depends on item #5.

The February 7 response to the other items Nos. 1, 2, 3, 4, 6, and 11 are acceptable.

As a reminder another request to extend permit No. AC10-125262 should be sent to DARM since all of the above cannot be completed 90 days prior to June 30, 1989.

If there are any questions please contact Johnny Cole at the letterhead address or phone number.

Very truly yours,

W. P. Stewart

W. P. Stewart, P.E.
Supervisor Air Section

WPS:jck
cc: John Koogler, Ph.D., P.E.
4/5 copy to WH
6-13-90 copy to WH

KOOGLER & ASSOCIATES
ENVIRONMENTAL SERVICES
4014 NW THIRTEENTH STREET
GAINESVILLE, FLORIDA 32609
904/377-5822 • FAX 377-7158

RECEIVED
JUN 05 1990
DER - BAQM

KA 150-90-02

June 4, 1990

Mr. C.H. Fancy
Bureau Chief
Florida Department of
Environmental Regulation
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Subject: Florida Solite Company
Green Cove Springs, Florida
Permit AC10-125262 - Kiln 1A

Dear Mr. Fancy:

On behalf of the Florida Solite Company, Green Cove Springs, Florida, I would like to request an extension to the construction permit for Kiln 1A, AC10-125262, which is scheduled to expire on June 30, 1990.

We are currently preparing permit application packages for all three Florida Solite kilns and anticipate submitting the permit modification package for Kiln 1A by June 30, 1990. We hereby request an extension of Permit AC10-125262 until March 31, 1991. This extension will allow us enough time to complete the permit applications and to provide any additional information that your office may request. It will also provide your staff with adequate time to review all application materials provided by Solite.

Should you have any questions concerning Kiln 1A or the extension of Permit AC10-125262, please do not hesitate to call me or Pradeep Raval.

Thank you for your consideration in this matter.

Very truly yours,

KOOGLER & ASSOCIATES

John B. Koogler, Ph.D., P.E.

JBK:mab

cc: Mr. Andy Kutyna, FDER, Northeast District
Mr. John Kuiken, Florida Solite Company
Mr. George Williamson, Solite Corporation
Mr. George Kosko, Oldover Corporation
H. Hanks
CHF/BA

KOOGLER & ASSOCIATES
ENVIRONMENTAL SERVICES
4014 NW THIRTEENTH STREET
GAINESVILLE, FLORIDA 32609
904/377-5822 ▪ FAX 377-7158

KA 150-88-03

December 15, 1989

Mr. C.H. Fancy
Bureau of Air Quality Management
Florida Department of
Environmental Regulation
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Subject: Clay County-AP
Florida Solite Company
Kiln 1A, AC10-125262

Dear Mr. Fancy:

On behalf of the Florida Solite Company, I would like to request that the expiration of Permit AC10-125262 be extended from December 31, 1989 to June 30, 1990. We asked for previous extensions in order to allow Solite time to comply with all of the conditions of the subject permit and to be able to supply documentation of this compliance to the Department.

This extension is requested to allow Solite time to assess recently promulgated federal regulations related to the burning of recycled fuels in industrial boilers and furnaces and related to the exemption of certain by-products from RCRA requirements. These regulations could have a significant influence on the air pollution control systems that will be employed by Solite on all three lightweight aggregate kilns at Green Cove Springs.

Thank you for your consideration of this matter. If you have any questions, please do not hesitate to give me a call.

Very truly yours,

KOOGLER & ASSOCIATES

John B. Koogler/MAB

John B. Koogler, Ph.D., P.E.

JBK:mab

cc: Mr. Andy Kutyna, FDER, Northeast District
Mr. John Kuiken, Florida Solite Company
H. Harder
CHF|BT

KOOGLER & ASSOCIATES
ENVIRONMENTAL SERVICES
4014 NW THIRTEENTH STREET
GAINESVILLE, FLORIDA 32609

U.S. POSTAGE
.25
P.B.METER
1302590

DEC 15'89
FLA.

Mr. C.H. Fancy
Bureau of Air Quality Management
Florida Department of
Environmental Regulaiton
2600 Blair Stone Road
Tallahassee, Fl 32399-2400

KOOGLER & ASSOCIATES
ENVIRONMENTAL SERVICES
4014 NW THIRTEENTH STREET
GAINESVILLE, FLORIDA 32609
904/377-5822 ▪ FAX 377-7158

KA 150-87-03

October 3, 1989

Mr. Ernest E. Frey
Deputy Assistant Secretary
Florida Department of
Environmental Regulation
Northeast District
3426 Bills Road
Jacksonville, FL 32207

Subject: Florida Solite Company
ID 31JAX10000401
Kiln No. 1
Permit AO10-154570

Dear Mr. Frey:

As a follow up to my letter to you of August 3, 1989, and the response to that letter from Mr. C. H. Fancy of the Departments' Bureau of Air Regulation in Tallahassee dated September 20, 1989 (copy attached), I would like to restate my request for some procedural amendments to air operation permit AO10-154570 issued to the Florida Solite Company for the operation of the No. 1 lightweight aggregate kiln at their plant near Green Cove Springs, Florida.

In my August 3, 1989 letter, I requested that Specific Condition No. 1 of the subject permit be changed to show a maximum dry clay input rate to the kiln of 8.6 tons per hour and to show the maximum lightweight aggregate production rate of the kiln to be 7.0 tons per hour. In Mr. Fancy's response of September 20, 1989, it was confirmed that a dry clay input rate to the kiln of 8.6 tons per hour had been documented and that a lightweight aggregate production rate of 7.0 tons per hour had also been documented. Mr Fancy further stated that "any increase in these rates ... will require a new permit to construct." My only request is that the subject permit be amended to reflect documented operating conditions of the kiln and not to increase either the raw material input rate to the kiln or the production rate of the kiln. Hence, there appears to be no reasons why this request cannot be granted as both requested rates have been documented at a time when they were not limited by permit conditions.

The second request that I made in my letter of August 30, 1989, relates to the fuel feed rate. I requested that Specific Condition No. 1 of the subject permit be amended to show a maximum heat input rate to Kiln No. 1 of 31.5 million Btu per hour with this heat being supplied entirely with LBM, at a nominal firing rate of 315 gallons per hour, or entirely by coal at a nominal firing rate of 1.3 tons per hour or by a combination of LBM

and coal. Although not addressed in Mr. Fancy's letter of September 20, 1989, these fuel firing rates have been documented historically for Kiln No. 1. Furthermore, there is no reason for the Department not to amend the fuel firing rates specified in the subject permit so long as the documented particulate matter and sulfur dioxide emissions rates referenced in Mr. Fancy's letter are not exceeded.

The final two requested amendments in my August 3, 1989 letter were related to emission rates of particulate matter and sulfur dioxide. In Mr. Fancy's letter of September 20, 1989, it is stated that a particulate matter emission rate of 12.7 pounds per hour (55.6 tons per year) had been documented for Kiln No. 1. As this is the particulate matter emission rate currently permitted by the subject permit, we will accept these emission limiting standards and not ask that the particulate matter emission rate be increased to 14.87 pounds per hour (65.1 tons per year).

Regarding sulfur dioxide, Mr. Fancy's letter states that a sulfur dioxide emission rate of 75.8 pounds per hour average (288.1 tons per year), and a maximum one-hour emission rate of 226.0 pounds per hour have been documented. As a result of the documented sulfur dioxide emissions from the kiln, I am requesting that the sulfur dioxide emission limits stated in Specific Condition No. 4 of the subject permit be changed to allow an average sulfur dioxide emission rate of 75.8 pounds per hour and 288.1 tons per year with the maximum one hour sulfur dioxide emission rate not to exceed 226.0 pounds per hour. Again, these requested emission rates have been documented historically when not limited by permit conditions and do not represent an increase in emission rates.

I appreciate your further review of this matter and will provide any additional information that may be required to implement this request. Please contact me if additional information is required or if you would like to schedule a meeting to discuss this matter.

Very truly yours,

KOOGLER & ASSOCIATES

John B. Koogler, Ph.D, P.E.

JBK:wa
Enc.

cc: Mr. Clair Fancy, FDER-Tallahassee
Mr. Johnny Cole, FDER-Jacksonville
Mr. John Kuiken, Solite
Mr. Bill Johnson, Solite

Florida Department of Environmental Regulation

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

Bob Martinez, Governor | Dale Twachtmann, Secretary | John Shearer, Assistant Secretary

September 20, 1989

Dr. John B. Koogler, P.E.
Koogler & Associates
4014 NW Thirteenth Street
Gainesville, Florida 32609

Dear Dr. Koogler:

Re: Florida Solite Company

The Bureau has reviewed your August 3, 1989, letter to the Northeast District requesting an amendment to specific conditions Nos. 1 and 4 of permit No. AO 10-154570.

In your September, 1986, application requesting Florida Solite be allowed to substitute kiln No. 1A for kiln No. 1 (file No. AC 10-125262), the baseline production and emissions for kiln No. 1 were documented. Briefly, clay input was 8.6 TPH (dry), production was 7.0 TPH (dry), particulate matter emissions were 12.7 lbs/hr (55.6 TPY), and sulfur dioxide emissions were 75.8 lbs/hr (288.1 TPY) average with a maximum 226.0 lbs/hr, one hour average.

Any increase in these rates is a modification and will require a new permit to construct.

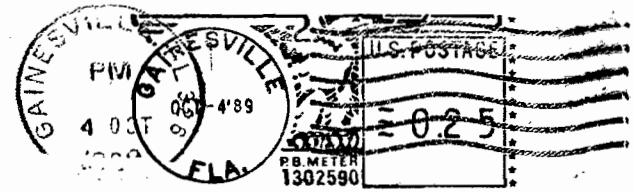
Sincerely,

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

CHF/WH/t

cc: J. Cole, NE District

KOOGLER & ASSOCIATES
ENVIRONMENTAL SERVICES
4014 NW THIRTEENTH STREET
GAINESVILLE, FLORIDA 32609



Mr. Clair Fancy
FDER
Northwest District Office
2600 Blair Stone Road
Tallahassee, FL 32301

Florida Department of Environmental Regulation

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

Bob Martinez, Governor Dale Twachtmann, Secretary John Shearer, Assistant Secretary

November 30, 1988

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. John M. Kuiken
Plant Manager
Florida Solite Corporation
Post Office Box 297
Green Cove Springs, Florida 32043

Dear Mr. Kuiken:

Re: Amendment of Permit No. AC 10-125262

The Department is in receipt of John B. Koogler's October 19, 1988, letter requesting the permit to construct kiln No. 1A be amended to specify the procedures to be used to determine compliance with the sulfur dioxide emission standards. This request is acceptable, with conditions, and Specific Condition No. 11 of the referenced permit is amended as follows:

11. Sulfur dioxide emissions shall not exceed 226 lbs/hr (1 hr/avg) as determined by EPA Method 6 (49 FR 26522) and 75.8 lbs/hr, 30 day average, as determined by the procedure described in John B. Koogler's October 19, 1988, letter (KA 150-88-06). A continuous emissions monitor for sulfur dioxide that meets the performance specifications listed in 40 CFR 60, Appendix B, shall be installed on this source. Method 6 tests will be conducted while kiln No. 1A is operating at 90 to 100 percent of its permitted capacity and burning 0.7 TPH of coal in the fuel mix. Test data shall include the quantity and percent sulfur of each fuel burned during the test. The permittee shall measure the volumetric flow rate in the stack by EPA Method 2 (43 FR 11984) once each month and maintain a record of the ammeter readings for the fan for the kiln. A summary of this data will be included with the quarterly report for the continuous emissions monitor.

BEST AVAILABLE COPY

DEPARTMENT OF ENVIRONMENTAL REGULATION

ROUTING AND TRANSMITTAL SLIP

	ACTION NO
	DUE DATE
1. TO: (NAME, OFFICE, LOCATION) BT !! Comm before session	Initial
	Date
2.	Initial
	Date
3.	Initial
	Date
4.	Initial
	Date

9/7 amend to KS address exp dt + NOx std only

REMARKS:

ANOTHER CONTROVERSIAL AMEND

① Koogler want NOx emissions as "target". I set limit as standard and required test every 5 yrs.

② I integrated SO_2 standard without changing anything (does this belong in an amendment?). I'm saying if test not at max. sulfur content + fuel usage, DER may adjust limits (% S) to assure compliance.

EXPECT OBJECTION ON BOTH POINTS

Any suggestions?

INFORMATION
Review & Return
Review & File
Initial & Forward

DISPOSITION
Review & Respond
Prepare Response
For My Signature
For Your Signature
Let's Discuss
Set Up Meeting
Investigate & Report
Initial & Forward
Distribute
Concurrence
For Processing
Initial & Return

FROM: WMH

DATE 7-26-89

PHONE

P 938 762 684

RECEIPT FOR CERTIFIED MAIL

NO INSURANCE COVERAGE PROVIDED
NOT FOR INTERNATIONAL MAIL
(See Reverse)

Sent to Dr. John B. Koogler	
Street and No. 4014 N.W. 13th St.	
P.O., State and ZIP Code Gainesville, FL 32609	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt showing to whom and Date Delivered	
Return Receipt showing to whom, Date, and Address of Delivery	
TOTAL Postage and Fees	$
Postmark or Date Mailed: 9-21-89 Permit: AO 10-154570	

PS Form 3800, June 1985

GAINESVILLE, FL 32601 SEP 22 1989 USPS

SENDER: Complete items 1 and 2 when additional services are desired, and complete items 3 and 4.
Put your address in the "RETURN TO" Space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for additional service(s) requested.
1. ☐ Show to whom delivered, date, and addressee's address. *(Extra charge)* 2. ☐ Restricted Delivery *(Extra charge)*

3. Article Addressed to: Dr. John B. Koogler Koogler & Associates 4014 N.W. 13th St. Gainesville, FL 32609	4. Article Number P 938 762 684 Type of Service: ☐ Registered ☐ Insured ☒ Certified ☐ COD ☐ Express Mail ☐ Return Receipt for Merchandise Always obtain signature of addressee or agent and DATE DELIVERED.
5. Signature — Address X	8. Addressee's Address *(ONLY if requested and fee paid)*
6. Signature — Agent X Marion Bayer	
7. Date of Delivery 9/22	

PS Form **3811**, Mar. 1988 * U.S.G.P.O. 1988-212-865 * DOMESTIC RETURN RECEIPT

Florida Department of Environmental Regulation

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

Bob Martinez, Governor Dale Twachtmann, Secretary John Shearer, Assistant Secretary

September 20, 1989

Dr. John B. Koogler, P.E.
Koogler & Associates
4014 NW Thirteenth Street
Gainesville, Florida 32609

Dear Dr. Koogler:

Re: Florida Solite Company

The Bureau has reviewed your August 3, 1989, letter to the Northeast District requesting an amendment to specific conditions Nos. 1 and 4 of permit No. AO 10-154570.

In your September, 1986, application requesting Florida Solite be allowed to substitute kiln No. 1A for kiln No. 1 (file No. AC 10-125262), the baseline production and emissions for kiln No. 1 were documented. Briefly, clay input was 8.6 TPH (dry), production was 7.0 TPH (dry), particulate matter emissions were 12.7 lbs/hr (55.6 TPY), and sulfur dioxide emissions were 75.8 lbs/hr (288.1 TPY) average with a maximum 226.0 lbs/hr, one hour average.

Any increase in these rates is a modification and will require a new permit to construct.

Sincerely,

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

CHF/WH/t

cc: J. Cole, NE District

GENERAL CONDITIONS:

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

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

a. ~~Having~~ Have access to and ~~copying~~ Copy any records that must be kept under the conditions of the permit;

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

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

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

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

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

b. the period of noncompliance, 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.

Notation other side of page

LAB ANALYSIS

COAL ~ 11,800 Btu/# + 1.2± % S

LBM ~ 0.16% S + 117,000 Btu/#

Test result 7/15/88

Process wt 9.2 TPH

E 15.4 # PM/hr

9/26/88 VC letter – Coal & LBM SPECS

– DON'T INCREASE SO_2 RATE

– OR CONTACT BAQM TO INCREASE E_{SO_2}

JC NOTES PM maximum 9.6 TPY

SO_2 " 316 TPY

Applic AO10-72240

CLAY IN 17,220 #/hr ~ 8.6 TPH

Prod 7 TPH

LBM 265 GPH (315 GPH MAX)

COAL 1.3 TPH MAX

CONTINUOUS OP

AC10-125262 allowed addn kiln No (1A) new for kiln No 1 — Restrict to prod + E of kiln No 1!

S.C. 2 limits feed to 14.4 TPH (wet) 8.6 TPH (dry)

S.C. 3 limits prod to 7 TPH (dry)

S.C. 8 limited % S Coal to 3% when burned with LBM or 1.5% when burned alone

S.C. 9 limits % S LBM 2.5%

S.C. 10 limits fuels:

LBM	476 GPH	2.5% S
LBM/Coal	308/0.7 TPH	2.5/3.0
Coal	2.0 TPH	1.5

S.C. 11 E_{SO_2} = 226 #/hr (1 hr avg) & 75.8 #/hr, 30 day avg. versus 75.8 to 226 #/hr 288.1 TPY

S.C. 13 PM = 12.8 #/hr (48.5 TPY) (may have been allowed 12.8 + 55.6 TPY CONT. OP)

S.C. 20 limits kiln 1A to 7,600 hrs/yr

applic noted cont. op. / 126.7 lbs/hr SO_2 E ~ 288.1 TPY document

GENERAL CONDITIONS:

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

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

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

11. This permit is transferable only upon Department approval in accordance with Florida Administrative Code Rules 17-4.120 and 17-30.300, F.A.C., as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the Department.

12. This permit, ~~is required to~~ be kept at the work site of the permitted activity, ~~during the entire period of construction or operation.~~ or a copy thereof shall

13. This permit also constitutes:

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

14. The permittee shall comply with the following:

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

Max SO_2 + PM Emissions

PM
- S.C. #4 for Kiln #1, PM by PNT.
- Want max emission 14.87 # PM/hr + 65.1 TPY (8760 hrs/yr) ← INCREASE ✓
- (above load 8.6 TPH feed + 1.3 TPH Coal) is coal part of PW yes
- Request avoid not offset actual Epm

SO_2

S.C. #4 – 84.0 # SO_2/hr limit

S in Clay goes SO_2

Kiln 1A – SO_2 limit 227 #/hr (194 from clay!)

Request SO_2 limit 227 #/hr, 1 hr max, & 994 TPY ← INCREASE ✓

Amend TPY in my permit limit, why?

1983 appln. (Rec'd 8/4/83 NEDist)

feed ~ 10. TPH Clay (Prod 7 TPH)
LBM 194 GPH / 21.3 MMBTU/hr ✓
Coal 0.7 TPH / 17.5 MM BTU/hr ✓
Continuous operation ✓

Nov 1982 Permit (AO 10-72240) – Kiln No. 1

Dry clay input = 7 TPH
Coal input = 0.7 TPH (17.5 MM BTU/hr) @ 3% S
LBM —

Allowable E: 12.73 # PM/hr ~ 55.6 TPY
84.0 # SO_2/hr ~ 366.9 TPY
VE 20% ✓

1989 Permit max input 7.0 TPH dry clay (S.C. #1)
0.7 TPH Coal
194 GPH LBM

MAX E 12.73 # PM/hr ~ 55.6 TPY ← coal part of PW
84.0 # SO_2/hr ~ 366.9 TPY

JK Nov 23, 1988 letter – ans l/c letter

need 2300 #/hr Coal – no S limit, 2.8% S burned (recent only 1% S used)

> No reduction in amount of Coal or sulfur content req'd. <

GENERAL CONDITIONS:

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

c. Records of monitoring information shall include:

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

ok

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

SPECIFIC CONDITIONS:

Issued this _____ day
of _____, 19____

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION

_____
Dale Twachtmann, Secretary

8/3/89 letter

Kiln No. 1 (I believe this is original kiln / max 2 I permitted)

JK Requested amend A010-154570 issued 2/14/89

~~I believe the~~

ash and SC#1 limits fuel / clay input

" " SC#4 limits PM + SO_2 emission

Request does not increase prod, fuel consumption, or ACTUAL emission

Kiln Feed Rate (kiln No. 1)

S.C. #1 limits max Input to 7.0 TPH, Prod. is 7 TPH, 8.6 TPH input

Want 8.6 TPH Input (7.0 TPH production unchanged) OK

FUEL FEED RATE

takes 31.5 mmBtu/hr for 7TPH production (4.5 mmBtu/hr / TPH prod) AVG!

S.C. #1 A010-154570 - MAX input 0.17 TPH Coal Test?

194 GPH LBM

36.2 mmBtu/hr (5.2 mmBtu / ton Prod)

1983 applic - COMBINED 0.17 + 194 fuel rate, neither individually (attach)

38.8 mmBtu/hr

353 GPH LBM ~ 38.8 mmBtu/hr]

1.55 TPH Coal ~ " Other conditions requested

1988 applic. (attached) corrected to 31.5 mm Btu/hr max

heat from LBM, COAL, COMBINATION

1986 - 1989 ~ 30.8 mmBtu/hr

early '80 37-39 mmBtu/hr (used w '83 applic)

Data shows used 4.5 - 5.5 mmBtu / T Prod

4.5 mmBtu/T + 31.5 mmBtu/hr for 7TPH prod recent prod

Want MAX heat in @ 31.5 mmBtu/hr OK

from LBM (315 GPH), Coal (1.3 TPH), & Combination

2.

08-07-89
To: Bill Thomas, BAQM
From: Johnny Cole
Subj: Clay Co. - AP
Fl Solite
#1 kiln

Attached is a copy of
1. 08/03 letter from JBK w/ attachments
2. renewal AOP, file info & current OP.

The 08/03 letter is requesting an increase of allowable emissions. Therefore, a response from CAPS is in order.
If this office is to respond, please advise.

KOOGLER & ASSOCIATES
ENVIRONMENTAL SERVICES
4014 NW THIRTEENTH STREET
GAINESVILLE, FLORIDA 32609
904/377-5822 • FAX 377-7158

KA 150-88-05

August 3, 1989

Mr. Ernest E. Frey
Deputy Assistant Secretary
Florida Department of
Environmental Regulation
Northeast District
3426 Bills Road
Jacksonville, FL 32207

Subject: Florida Solite Company I.D. #31JAX10000401
Air Operating Permit for Lightweight Aggregate Kiln No. 1
Permit AO10-154570

Dear Mr. Frey:

On behalf of the Florida Solite Company, I would like to request some procedural amendments to Air Operating Permit AO10-154570, issued on February 14, 1989, for Florida Solite's No. 1 lightweight aggregate kiln. The amendments are related to Specific Condition No. 1, which sets limits on the fuel and clay input rates to the No. 1 kiln and to Specific Condition No. 4, which limits the particulate matter and sulfur dioxide emission rates from the kiln. The two specific conditions are related in that the particulate matter emission rate specified in Specific Condition No. 4 is dependent upon the input rate of clay and coal, which is addressed in Specific Condition No. 1.

The amendments are meant to incorporate information that more nearly reflects the operation of Kiln No. 1. The refined information has been developed through testing during the period 1986-1988; a time period preceding the issuance of the subject permit but subsequent to the issuance of Permit AO10-72240 (the permit replaced by the subject permit). The requested amendments will not increase the production rate of Kiln No. 1 nor will they allow an increased fuel consumption. Furthermore, the requested amendments will have no effect on actual air pollutant emissions from the kiln.

KILN FEED RATE

Specific Condition No. 1 of Permit A010-154570 limits the "maximum input rate" of dry clay to Kiln No. 1 to 7.0 tons per hour. This limit has been included in several previous operating permits and originated from the fact that the lightweight aggregate production rate of the kiln is, and has been since the 1970's, 7.0 tons per hour. It was presumed for many years that since the production rate of the kiln was 7.0 tons per hour, the bone-dry weight of clay fed to the kiln would also be 7.0 tons per hour. Tests that were conducted in mid-1986, and reviewed in detail by the Department, demonstrated that there was a 19 percent weight loss in the bone-dry clay as the clay was calcined to produce the lightweight aggregate. Thus, for each 7.0 tons of lightweight aggregate produced, the bone-dry feed rate of clay is, and always has been, approximately 8.6 tons per hour. The 1.6 ton per hour weight loss is due to a loss of water of hydration (water chemically bound to the clay), the combustion of organics contained in the clay and the thermal decomposition of chemical compounds such as carbonates in the clay at the elevated temperatures in the kiln.

The amendment that is being requested to Specific Condition No. 1 would show a maximum input rate of dry clay to the kiln to be 8.6 tons per hour and further show that the maximum lightweight aggregate production weight of the kiln be 7.0 tons per hour. This amendment will in no way change the production rate of the kiln nor the material throughput rate of the kiln. The amendment will only reflect more accurately the conditions under which the kiln has operated for nearly 20 years.

FUEL FEED RATE

The No. 1 kiln, as the other kilns operated by Florida Solite, can be fired with liquid burnable material (LBM), coal or a combination of LBM and coal. The heat required by these fuels to produce lightweight aggregate averages approximately 4.5 million BTU per ton of product, or approximately 31.5 million BTU per hour for the 7.0 ton per hour production rate of Kiln No. 1.

Specific Condition No. 1 in Permit A010-154570 sets the maximum input rate of coal not to exceed 0.7 tons per hour and the maximum rate of LBM not to exceed 194 gallons per hour. Using a nominal heating value of 12,000 BTU per pound for coal and 100,000 BTU per gallon for LBM, the total heat input allowed by Specific Condition No. 1 will be 36.2 million BTU per hour, or approximately 5.2 million BTU per ton of lightweight aggregate produced.

The coal feed rate of 0.7 tons per hour and the LBM firing rate of 194 gallons per hour originated in the application to renew Permit A010-6866 for Kiln No. 1, submitted of the Department in June 1983. In this application (copy attached), the information related to fuels (Section 8b) did not represent a case where 100 percent LBM would be burned nor did it represent the case where 100 percent coal would be burned. Instead, a combined fuel firing rate of 194 gallons per hour of LBM and 0.7 tons per hour of coal was represented, resulting in a total heat input to the kiln of 38.8 million BTU per hour. The particular fuel firing combination, as near as I can determine, was the fuel firing rate under which the October 29, 1982 compliance test was conducted.

The 1983 application for permit renewal would have more accurately reflected kiln operating conditions if it had shown a total heat input rate for LBM of 38.8 million BTU per hour and maximum hourly LBM firing rate of 353 gallons per hour (at a heating value of 109,800 BTU per gallon). For coal, the application should have shown a total heat input rate of 38.8 million BTU per hour and a maximum coal firing rate of 1.55 tons per hour (at a heating value of 12,500 BTU per pound). With this representation, it would have been clear that the kiln could have been fired at a rate of 38.8 million BTU per hour with 100 percent LBM, 100 percent coal or combinations of coal and LBM totaling a heat input of 38.8 million BTU per hour.

When the application to renew the permit was submitted to the Department in 1988, the representation of the fuel use was rectified. The application (copy attached) shows a maximum heat input rate of 31.5 million BTU per hour with the potential of supplying all of that heat with either coal or LBM or a combination of the two fuels. The 31.5 million BTU per hour heat input is a true representation of the heat input that is typical of the kiln. For example, compliance test reports from 1986 through 1989 were reviewed and heat input rates of 28.0, 32.4, 29.6, and 30.8 million BTU per hour were recorded. Test reports on the kiln from the early 1980's indicated that the heat input rate was in the range of 37-39 million BTU per hour; or typical of what was represented in the 1983 application for permit renewal.

Data from compliance tests for the past eight to nine years demonstrate that the heat input rate to the No. 1 kiln has ranged from 4.5 to 5.5 million BTU per ton of lightweight aggregate. The reports further indicate that over the past four years, the heat input rate to Kiln No. 1 has been in the range of 4.5 million BTU per ton of product, or approximately 31.5 million BTU per hour at a production rate of 7.0 tons per hour.

The amendment requested to Specific Condition No. 1 as related to fuel use would show the maximum expected heat rate to the kiln to be 31.5 million BTU per hour with this heat input being supplied entirely with LBM at a nominal firing rate of 315 gallons per hour, entirely by coal at a nominal firing rate of 1.3 tons per hour or by a combination of LBM and coal. This amendment will result in Permit A010-154570, reflecting the true range of fuel fired to the kiln, rather than reflecting one set combination of coal and LBM with an unspecified total heat input.

MAXIMUM ALLOWABLE EMISSION RATES OF SULFUR DIOXIDE AND PARTICULATE MATTER

Specific Condition No. 4 establishes that the particulate matter emission limit for Kiln No. 1 shall be determined by Rule 17-2.610(1),FAC; the process weight table. Solite has no objection whatsoever to this part of Specific Condition No. 4. Solite would, however, request that the maximum allowable emission rate for particulate matter, as specified in Specific Condition No. 4, be recalculated, based on a bone-dry clay feed rate of 8.6 tons per hour (resulting in a lightweight aggregate production of 7.0 tons per hour) and a maximum expected coal feed rate of 1.3 tons per hour. Presently, the maximum allowable particulate matter emission limit is based on a bone-dry clay feed rate of 7.0 tons per hour and a maximum coal firing rate of 0.7 tons per hour; both of which are specified by Specific Condition No. 1 and both of which have been addressed in preceding paragraphs of this letter. With the amended clay feed rate and coal firing rate, the maximum allowable particulate matter emission rate allowed by Rule 17-2.610(1),FAC would be 14.87 pounds per hour or 65.1 tons per year, based on 8760 hours per year.

This amendment will not effect actual particulate matter emissions from the kiln nor will it effect the rule by which the actual particulate matter emission limit is established for each compliance test. The amendment will only effect the maximum allowable emission rate and make it reflect the clay feed rate and coal firing rate to the kiln that has existed for the past 20 years.

The sulfur dioxide emission limit specified in Specific Condition No. 4 was artificially established at 84.0 pounds per hour, based on a coal firing rate of 0.7 tons per hour and a coal sulfur content of 3.0 percent. Testing conducted at Solite between 1986 and 1988 has conclusively demonstrated that the majority of the sulfur dioxide emissions from all of the Solite kilns result from sulfur compounds in the clay. With Kilns 1A and 5, the sulfur dioxide limit is established at approximately 227 pounds per hour, each kiln, and tests have demonstrated that up to 194 pounds per hour of sulfur dioxide is attributable to sulfur in the clay. This equates to approximately 27-28 pounds of SO_2 per ton of product. The difference between 227

pounds per hour and 194 pounds per hour (33 pounds per hour of sulfur dioxide) is contributed by coal and/or LBM. To be consistent with the sulfur dioxide emission limits for Kilns 1A and 5, and to reflect sulfur dioxide emissions that have resulted from the operation of Kiln No. 1 over the past 20 years, it is requested that the sulfur dioxide emission limit in Specific Condition No. 4 be corrected to 227 pounds per hour, maximum one-hour average, or 994 tons per year (based on an operating time of 8760 hours per year). This emission limit will not effect actual emissions that have been associated with the kiln for the past 20 years nor will it contradict any federally enforceable permit condition associated with Kiln No. 1 as no federally enforceable permit condition has ever been established for the kiln.

I appreciate your review and consideration of these amendments and will be glad to provide any additional information that may be required or to meet with you and your staff to discuss this matter further. Please contact me if additional information is required or if you would like to schedule a meeting.

Very truly yours,

KOOGLER & ASSOCIATES

John B. Koogler, Ph.D, P.E.

JBK:mab

cc: Mr. Bill Stewart, FDER, Jacksonville
Mr. Johnny Cole, FDER, Jacksonville
Mr. John Kuiken, Solite
Mr. Bill Johnson, Solite

#12240 500 Inc

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

NORTHEAST DISTRICT
3426 BILLS ROAD
JACKSONVILLE, FLORIDA 32207

BOB GRAHAM
GOVERNOR

VICTORIA J. TSCHINKEL
SECRETARY

G. DOUG DUTTON
DISTRICT MANAGER

APPLICATION FOR RENEWAL OF PERMIT TO OPERATE AIR POLLUTION SOURCE(S)

If major alterations have occurred, the applicant should complete the Standard Air Permit Application Form.

Source Type: Rotary Kiln - Production Lightweight Aggregate Renewal of DER Permit No. A010-6866

Company Name: Florida Solite Company County: Clay

Identify the specific emission point source(s) addressed in this application (i.e., Lime Kiln No. 4 with Venturi Scrubber; Peaking Unit No. 2, Gas Fired):

Wet Scrubber Discharge from Aggregate Kiln #1 - Coal and LBM Fired

Source Location: Street: State Road 209-A (north of) City: Green Cove Springs, FL

UTM: East 427,400 North 3,326,500

Latitude: __ __° __ __' __ __"N. Longitude: __ __° __ __' __ __"W.

1. Attach a check made payable to the Department of Environmental Regulation in accordance with operation permit fee schedule set forth in Florida Administrative Code Rule 17-4.05.

2. Have there been any alterations to the plant since last permitted? [ ] Yes [X] No If minor alterations have occurred, describe on a separate sheet and attach.

3. Attach the last compliance test report required per permit conditions if not submitted previously.

4. Have previous permit conditions been adhered to? [X] Yes [ ] No If no, explain on a separate sheet and attach.

5. Has there been any malfunction of the pollution control equipment during tenure of current permit? [ ] Yes [X] No If yes, and not previously reported, give brief details and what action was taken on a separate sheet and attach.

6. Has the pollution control equipment been maintained to preserve the collection efficiency last permitted by the Department? [X] Yes [ ] No

7. Has the annual operating report for the last calendar year been submitted? [X] Yes [ ] No If no, please attach.

8. Please provide the following information if applicable:

A. Raw Materials and Chemical Used in Your Process:

Description	Contaminant Type	%Wt	Utilization Rate lbs/hr
Clay @ 38% Moisture	Particulates	5%	19,320

B. Product Weight (lbs/hr): 14,000

C. Fuels

Type (Be Specific)	Consumption* Avg/hr*	Max/hr**	Maximum Heat Input (MMBTU/hr)
Liquid Burnable Material (LBM)	194 GPH	194 GPH	21.3
Coal	.7 TPH	.7 TPH	17.5 ✓

D. Normal Equipment Operating Time: hrs/day 24 ✓; days/wk 7 ✓; wks/yr 52 ✓;

hrs/yr (power plants only) _____; if seasonal, describe _____

The undersigned owner or authorized representative*** of Florida Solite Company is fully aware that the statements made in this application for a renewal of a permit to operate an air pollution source are true, correct and complete to the best of his knowledge and belief. Further, the undersigned agrees to maintain and operate the pollution source and pollution control facilities in such a manner as to comply with the provisions of Chapter 403, Florida Statutes, and all the rules and regulations of the Department. He also understands that a permit, if granted by the Department, will be non-transferable and he will promptly notify the Department upon sale or legal transfer of the permitted facility.

*During actual time of operation.
**Units: Natural Gas-MMCF/hr; Fuel Oils-barrels/hr; Coal-lbs/hr.
***Attach letter of authorization if not previously submitted

Robert B. Milner Jr.
Signature, Owner or Authorized Representative
(Notarization is mandatory)

Robert B. Milner, Jr. - Treasurer
Typed Name and Title

P. O. Box 27211
Address

Richmond, Virginia 23261
City State Zip

June 22, 1983 (804) 321-6761
Date Telephone No.

Subscribed and Sworn to before me, Christine S. Burton, Notary Public in and for the City of Richmond, State of Virginia, this 22nd Day of June 1983.

Kiln No 1

E Marin

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

NOR

3426 BI
JACKS

Copy to
WT Johnson
J.M. Kuiken
T.L. Parvis
EEM -
original to CSH
for Safety Deposit Box

BOB GRAHAM
GOVERNOR

VICTORIA J. TSCHINKEL
SECRETARY

G. DOUG DUTTON
DISTRICT MANAGER

November 1, 1983

Mr. Robert B. Milner, Jr., Treasurer
Florida Solite Company
Post Office Box 27211
Richmond, Virginia 23261

Dear Mr. Milner:

Clay County - AP
Florida Solite Company
Aggregate Kiln #1

Enclosed is Permit Number A010-72240, dated November 1, 1983 to operate the subject pollution source issued pursuant to Section(s) 403.087, Florida Statutes.

Should you object to this permit, including any and all of the conditions contained therein, you may file an appropriate petition for administrative hearing. This petition must be filed within fourteen (14) days of the receipt of this letter. Further, the petition must conform to the requirements of Florida Administrative Code Rule 28-5.201 (see reverse side of this letter). The petition must be filed with the Office of General Counsel, Department of Environmental Regulation, Twin Towers Office Building, 2600 Blair Stone Road, Tallahassee, Florida 32301.

If no petition is filed within the prescribed time, you will be deemed to have accepted this permit and waived your right to request an administrative hearing on this matter.

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 action for violation of the conditions and requirements thereof.

Sincerely,

Frank Watkins, Jr.

Frank Watkins, Jr., P.E.
District Engineer

FW:jck
Enclosure
cc:

RULES OF THE ADMINISTRATIVE COMMISSION
MODEL RULES OF PROCEDURE
CHAPTER 28-5
DECISION DETERMINING SUBSTANTIAL INTERESTS

PART II
FORMAL PROCEEDINGS

28-5.201 Initiation of Formal Proceedings.

(1) Initiation of formal proceedings shall be made by petition to the agency responsible for rendering final agency action. The term petition as used herein includes any application or other document which expresses a request for formal proceedings. Each petition should be printed, typewritten or otherwise duplicated in legible form on white paper of standard legal size. Unless printed, the impression shall be on one side of the paper only and lines shall be double-spaced and indented.

(2) All petitions filed under these rules should contain:

(a) The name and address of each agency affected and each agency's file or identification number, if known;

(b) The name and address of the petitioner or petitioners, and an explanation of how his/her substantial interests will be affected by the agency determination;

(c) A statement of when and how petitioner received notice of the agency decision or intent to render a decision;

(d) A statement of all disputed issues of material fact. If there are none, the petition must so indicate;

(e) A concise statement of the ultimate facts alleged, as well as the rules and statutes which entitle the petitioner to relief;

(f) A demand for relief to which the petitioner deems himself entitled; and

(f) Other information which the petitioner contends is material.

****

A petition may be denied if the petitioner does not state adequately a material factual allegation, such as a substantial interest in the agency determination, or if the petition is untimely. (Section 28-5.201(3)(a), FAC)

DER Form 17-1.201(7)
Effective November 30, 1982

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

NORTHEAST DISTRICT

3426 BILLS ROAD
JACKSONVILLE, FLORIDA 32207

PERMITTEE:

Florida Solite Company
P.O. Box 27211
Richmond, VA 23261

I.D. Number:	3110000401
Permit/Certification Number:	A010-72240
Date of Issue:	November 1, 1983
Expiration Date:	November 1, 1988
County:	Clay
Latitude/Longitude:	
Section/Township/Range:	
Project:	Aggregate Kiln #1
UTM:	E-427400; N-3326500

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

For the operation of Aggregate Kiln No. 1 with emissions controlled by a two (2) stage Multicyclone and wet scrubber system in series. The dry clay input shall not exceed 14,000 lbs/hr. The coal input shall not exceed 0.7 TPH; shall not exceed a heat input rate of 17.5 MMBTU/hr. and shall not exceed a sulfur content of 3.0 per cent. The LBM (liquid burnable materials) used as fuel shall conform to the specifications attached to your July 28, 1983 submittal.

Located west of U.S. 17, S.R. 209A, north of Green Cove Springs, Clay County, FL.

In accordance with application dated June 22, 1983 and additional information received August 4, 1983.

ERMITTEE:

Florida Solite Co.

I.D. Number:
Permit/Certification Number: A010-72240
Date of Issue: Nov. 1, 1983
Expiration Date: Nov. 1, 1988

ENERAL 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 Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is hereby placed on notice that the department will review this permit periodically and may initiate enforcement 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 applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the department.

3. As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey any vested rights or any exclusive privileges. 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. This permit does not constitute a waiver of or approval of any other department permit that may be required for other aspects of the total project which are not addressed in the permit.

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

5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, plant or aquatic life or property and penalties therefor 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, unless specifically authorized by an order from the department.

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

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

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

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

   c. Sampling or monitoring any substances or parameters at any location reasonably necessary to assure compliance with this permit or department rules.

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

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

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

b. the period of noncompliance, 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.

9. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source, which are submitted to the department, may be used by the department as evidence in any enforcement case arising under the Florida Statutes or department rules, except where such use is proscribed by Sections 403.73 and 403.111, Florida Statutes.

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

11. This permit is transferable only upon department approval in accordance with Florida Administrative Code Rules 17-4.12 and 17-30.30, as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the department.

12. This permit is required to be kept at the work site of the permitted activity during the entire period of construction or operation.

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)
( ) Compliance with New Source Performance Standards

14. The permittee shall comply with the following monitoring and record keeping requirements:

a. Upon request, the permittee shall furnish all records and plans required under department rules. The retention period for all records will be extended automatically, unless otherwise stipulated by the department during the course of any unresolved enforcement action.

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

c. Records of monitoring information shall include:

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

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

'ERMITTEE:

I.D. Number:
Permit/Certification Number:
Date of Issue:
Expiration Date:

6. In the case of a hazardous waste facility permit, the following permit conditions shall also apply.

a. The permittee will submit the following reports to the department:

(1) Manifest discrepancy report: If a significant discrepancy in a manifest is discovered, the permittee must attempt to reconcile the discrepancy. If not resolved within 15 days after receiving the waste, the permittee shall immediately submit a letter report including a copy of the manifest to the department.

(2) Unmanifested waste report: Permittee shall submit an unmanifested waste report to the department within 15 days of receipt of unmanifested waste.

(3) Annual report: An annual report covering facility activities during the previous calendar year must be submitted in accordance with Florida Administrative Code Rule 17-30.

b. Notification of any non-compliance which may endanger health or the environment, including the release of any hazardous waste that may endanger public drinking water supplies, or the occurrence of a fire or explosion from the facility which could threaten the environment or human health outside the facility, shall be verbally submitted to the department within 24 hours and a written submission provided within 5 days. The verbal submission within 24 hours shall contain the name, address, I.D. number and telephone number of the facility and owner or operator, the name and quantity of materials involved, the extent of injuries (if any), an assessment of actual or potential hazards, and the estimated quantity and disposition of recovered material. The written submission shall contain the following:

(1) a description of and cause of non-compliance; and

(2) 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.

c. Reports of compliance or noncompliance with, or any progress reports on, requirements contained in any compliance schedule of this permit shall be submitted no later than 14 days following each schedule date.

d. All reports or information required to be submitted to the department by a hazardous waste permittee shall be signed by a person authorized to sign a permit application.

'ECIFIC CONDITIONS:

PERMITTEE:

Florida Solite Company

I.D. Number:
Permit/Certification Number: A010-72240
Date of Issue: November 1, 1983
Expiration Date: November 1, 1988

SPECIFIC CONDITIONS:

1. Testing of emissions must be accomplished at an input rate of at least 90 percent of 14,000 lbs/hr.

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

Pollutant	Emission Rate (lbs/hr)	Emission Rate (TPY)
PM	12.73	55.6
SO2	84.0	366.9
VE	< 20 opacity	----

3. Test the emission for the following pollutant(s) at intervals indicated from the date of July 25, 1983, notify us 14 days prior to testing, and submit the test report documentation to this office within 15 days after completion of the testing:

Pollutant	Interval
PM	12 mos.
SO2	12 mos. (coal analysis)
VE	12 mos.

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

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

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

6. Forms for renewal will be sent 5 months prior to November 1, 1988 and the completed forms with test results are due 90 days prior to November 1, 1988.

Issued this 1 day of Nov., 1983

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

G. Doug Dutton
District Manager

_____Pages attached.

Florida Department of Environmental Regulation

Northeast District • 3426 Bills Road • Jacksonville, Florida 32207 • 904-798-4200

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

PERMITTEE:
Florida Solite Company
P.O. Box 27211
Richmond, VA 23261

I.D. Number:	31JAX10000401
Permit Number:	AO10-154570
Date of Issue:	February 14, 1989
Expiration Date:	February 14, 1993
County:	Clay
Latitude/Longitude:	30°04'04"N; 81°45'14"W
Project:	No. 1 Kiln
UTM:	E-(17)427.4; N-3326.5

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

For the operation of No. 1 Lightweight Aggregate Kiln with particulate matter emissions conrolled by a two (2) stage multicyclone and wet scrubber system in series.

Located west of U.S. 17, S.R. 209A, north of Green Cove Springs, Clay County, FL.

In accordance with:

permit application dated June 22, 1983
additional information received August 4, 1983
renewal application dated September 2, 1988
additional information received November 28, 1988

PERMITTEE:
Florida Solite Company
No. 1 Kiln

Permit No.: AO10-154570
Date of Issue: February 14, 1989
Expiration Date: February 14, 1993

SPECIFIC CONDITIONS:

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

RATE	MATERIAL
7.0 TPH	dry clay
0.7 TPH	coal
194 GPH	LBM[1,2]

[1]LBM - liquid burnable material
[2]LBM - shall conform to the specifications in the attachment to 07-28-83 additional information response and maintain a record of each shipment.

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

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

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

Pollutant	Rule	Emission Rate lbs/hr	TPY
PM[1]	17-2.610(1), FAC	12.73[2]	55.60[3]
SO_2[4]	---	84.00[5]	366.9[3]
VE[6]	17-2.610(2), FAC	<20% opacity	

[1]PM - particulate matter
[2]Basis: P = 7.0 + 0.7 = 7.7 TPH
[3]Maximum operation time: 24 H/D; 7 D/W; 52 W/Y
[4]SO_2 - sulfur dioxide
[5]Basis: 0.7 TPH; sulfur content shall not exceed 3.0% (see 07-28-83 submittal)
[6]VE - visible emissions

5. Unconfined particulate matter emissions shall be controlled by application of dust suppressants, unless an alternative method is requested and approved, to all areas necessary to reasonably control such emissions per Florida Administrative Code Rule 17-2.610(3).

PERMITTEE:
Florida Solite Company
No. 1 Kiln

Permit No.: AO10-154570
Date of Issue: February 14, 1989
Expiration Date: February 14, 1993

SPECIFIC CONDITIONS:

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

Pollutant	Interval	Test Method
PM	12 months from 07-25-88	EPA 5
VE	12 months from 07-25-88	EPA 9
SO_2	12 months from 07-25-88	ASTM coal analysis

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

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

8. This kiln shall not be operated when No. 1A Kiln is in operation unless prior approval has been obtained from DARM in accordance with Specific Condition #2 of No. 1A Kiln, permit No. AC10-84168.

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

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

11. Forms for renewal will be sent 5 months prior to February 14, 1993 and the completed forms with test results are due 90 days prior to February 14, 1993.

Issued this 14 day of February, 1989

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION

Ernest E. Frey
Deputy Assistant Secretary

Clay Co. - AP
7L Solite
#1 Kiln

12-06-88 11/23 add'l info review

1. coal analysis is not spec'a
2. LBM - " " " "

3. Not acceptable. Discussed w/ Bill S.; we decided I should discuss w/ WH. Called WH; suggested send info to BT.
Sent copy of
1. review notes
2. ~~ltr~~ more info letter
3. 11/23 response.

Will decide how to permit later subject to 1. BT response
2. " not responding.

02-07-08 No response rec'd from BT.
Drafted OP.

Fl Solite - AP
#1 Kiln

DEPARTMENT OF ENVIRONMENTAL REGULATION

ROUTING AND TRANSMITTAL SLIP

ACTION NO

ACTION DUE DATE

	Initial	Date
1. TO: (NAME, OFFICE, LOCATION) Bill Thomas, BAQM, CAPS		
2.		
3.		
4.		

REMARKS:

Note that renewal AOP data would increase SO_2 by 316 TPY per my calc's. Also note JBK's response.

INFORMATION

- Review & Return
- Review & File
- Initial & Forward

DISPOSITION

- Review & Respond
- Prepare Response
- For My Signature
- For Your Signature
- Let's Discuss
- Set Up Meeting
- Investigate & Report
- Initial & Forward
- Distribute
- Concurrence
- For Processing
- Initial & Return

FROM: Johnny Cole

DATE 12-06-88

PHONE

KOOGLER & ASSOCIATES
ENVIRONMENTAL SERVICES
4014 NW THIRTEENTH STREET
GAINESVILLE, FLORIDA 32609
904/377-5822 ▪ FAX 377-7158

KA 150-88-01

November 23, 1988

Mr. W.P. Stewart
Florida Department of
Environmental Regulation
Northeast District
3426 Bills Road
Jacksonville, FL 32207

Subject: Clay County - AP
Florida Solite Company
Kiln No. 1, Permit AO10-72240

Dear Mr. Stewart:

The following information is provided in response to your request for information related to Kiln No. 1.

1. COAL SPECIFICATIONS

The specifications for the coal burned in Kiln No. 1 were included in our compliance test report for Kiln No. 1, dated July 15-20, 1988. A copy of these specifications are attached hereto.

2. LBM SPECIFICATIONS

The specifications for the liquid burnable fuel fired in Kiln No. 1 were included in our compliance test report for Kiln No. 1, dated July 15-20, 1988. It should be recognized that, because of the nature of the liquid burnable fuel, the composition of the fuel is not constant. A copy of the specifications for the fuel burned during our compliance test is attached hereto.

3. SULFUR DIOXIDE EMISSION RATE FROM KILN NO. 1

Kiln No. 1 is permitted for a lightweight aggregate production rate of 7.0 tons per hour. Historically, the kiln has always been permitted to burn coal to provide up to 100 percent of the heat input to the

kiln. At a typical heat requirement of 3.5-4.0 BTU per ton of product, the heat requirement for the kiln could be up to 28 million BTU per hour. This would require up to 2300 pounds per hour of coal as fuel for the kiln. Also, previous permits for Kiln No. 1 have not limited the sulfur content of the coal. Coal with a sulfur content of up to 2.8 percent has been fired to the kiln, although in recent years, the coal fired to the kiln has had a sulfur content in the range of 1.0 percent.

Based upon previous permit requirements, we are of the opinion that no reduction in the amount of coal fired to the kiln, nor a reduction in the sulfur content of the coal is required.

If there are any further questions regarding Kiln No. 1, or any questions regarding the information provided herein, please do not hesitate to contact me.

Very truly yours,

KOOGLER & ASSOCIATES

John B. Koogler, Ph.D, P.E.

JBK:mab

cc: Mr. John Kuiken, Florida Solite Company
Mr. George Kosko, Oldover Corporation

SOUTHEASTERN CHEMISTS' LABORATORIES
170 Arlington Road
Jacksonville, FL 32211
(Between Arlington Expressway & Atlantic Blvd.)

Telephone
(904) 725-2040

Laboratory Marks: Job # 24266 Date Received: 8-4-88

Sample of: Unknown

Client: Koogler & Associates;

Sample Marks: I, II

CERTIFICATE OF ANALYSIS

Test date	7-20-88	7-15-88
Sample Marks	I	II
BTU/lb	11,803	11,856
Sulfur	1.21 %	1.23 %

Samples tested as received.

All samples analyzed in accordance with EPA, ASTM, or other approved methods.

Respectfully submitted,

Joseph W. Newton
President

JWN/vb

FLORIDA SOLITE COMPANY
GREEN COVE SPRINGS, FLORIDA

LBM ANALYSIS

Test Date	Test Run	Sulfur (%)	Heating Value (BTU/Gal)
07/15/88	1	0.165	115,261
	2	0.156	118,208
	3	0.157	117,322
	AVERAGE	0.159	116,930
07/20/88	1	(1)	(1)
	2	0.143	118,260
	3	0.151	120,056
	4	0.158	120,583
	AVERAGE	0.151	119,633

(1) Sample broken in shipment.

Rec'd 09-01-88

Table 1

SUMMARY OF PARTICULATE MATTER EMISSIONS

FLORIDA SOLITE COMPANY
GREEN COVE SPRINGS, FLORIDA

NO. 1 KILN

July 15, 1988

Run No.	Process Weight Rate (Tons/Hr)	Stack Gas Flow Rate (SCFMD)	Stack Gas Temperature (Deg F)	Stack Gas Moisture (%)	Particulate Matter Conc. (gr/SCF)	Particulate Matter Emission Rate (Lbs/Hr)
1	9.23	10043	153.0	17.0	0.1751	15.11
2	9.16	10232	155.0	17.7	0.1741	15.30
3	9.20	10347	156.6	17.4	0.1772	15.75
AVG	9.20	10207	154.9	17.3	0.1755	15.39

Allowable Particulate Matter Emission Rate = 12.73 Lbs/Hr
(Specific Condition #2 of Permit A010-72240)

02/08/89 $ACFM = 10207 \left| \frac{615}{528} \right.$

$= 11889$

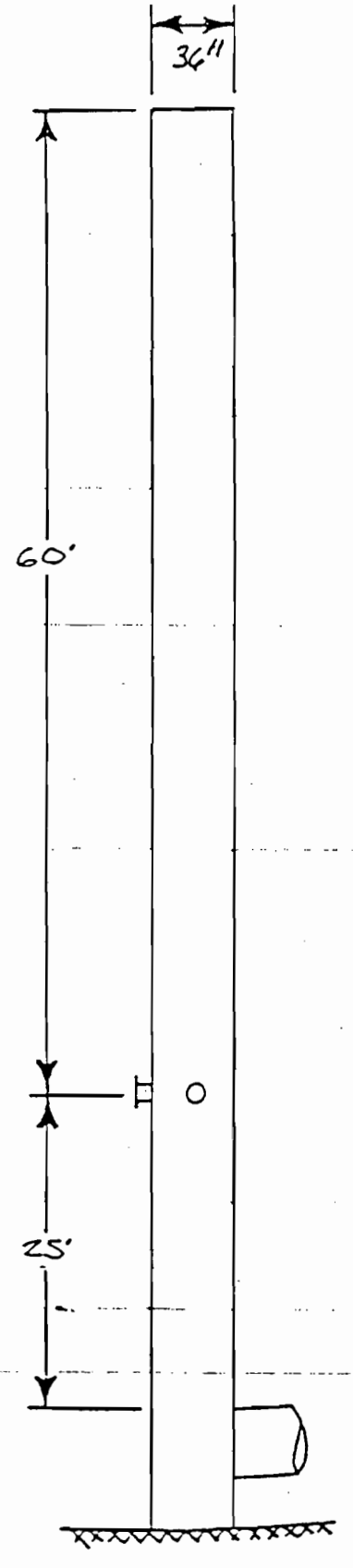


FIGURE 1

SAMPLING POINT LOCATIONS

KILN NO. 1

FLORIDA SOLITE CORPORATION
GREEN COVE SPRINGS, FLORIDA

Point No.	Inches Inside Stack Wall
1	1.58 - 1.6
2	5.3
3	10.6
4	25.4
5	30.7
6	34.4

Florida Department of Environmental Regulation

Northeast District • 3426 Bills Road • Jacksonville, Florida 32207 • 904-798-4200

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

September 20, 1988

October 31, 1988

Mr. John Kuiken, Plant Manager
Florida Solite Company
Post Office Box 297
Green Cove Springs, FL 32043

Dear Mr. Kuiken:

Clay County - AP
Florida Solite Company
No. 1 Kiln

This is a request for the following additional information which is required by October 10, 1988 to complete the permit application for the referenced source. It is requested in accordance with Florida Administrative Code Rule 17-4.055.

Please submit:

1. a copy of the coal specifications.

2. a copy of the LBM specifications.

3. a reduction in the amount of coal or a reduction of the sulfur content in the coal that may be fired so that there is no increase in the SO_2 emission rate.

4. In lieu of No. 3 above, you must contact BAQM for a SO_2 emission rate increase review.

If there are any questions please contact Johnny Cole, phone 904/798-4200.

Yours very truly,

W. P. Stewart

W. P. Stewart, P.E.
Supervisor Air Section

WPS:jck

Clay Co. - AP
Fl Solite
#1 kiln
renewal AOP review

09-15-88 noted input changes (over)

Emis rate changes

	PM lb/hr	TPY PM	SO_2 lb/hr	SO_2 TPY[1]
'88	14.88	65.17	156.0	683.28
'83	12.73	55.60	84.0	366.9
	2.15	9.57	72.0	316.38
sig rates	—	25	—	40

[1] Rates prior to renewal

Add'l info need
1. ~~max % S in~~ coal & LBM spec's
2. reduce amt of coal used so that SO_2 does not increase
3. Or contact BAQM about a CP review for SO_2 increase

Called WH; he is to call.
9/16 called WH; he out; be back Mon.; to call.
09-19 WH called; he will call if #1 kiln SO_2 rate used in model for #1A kiln permit is not same as is in #1 kiln OP.

Clay Co. -- AP

7L Solites

#1 kiln

renewal AOP review

09-15-88 noted input changes

	83 AOP	88 AOP
clay	19320 lb/hr wet dry	17220 lb/hr dry
coal	0.7 TPH	1.3 TPH
LBM	194 GPH	315 gph

~~83 $E_{AL} = 3.59\left(\frac{19320}{2000} + 0.7\right)^{.62} =$~~

83 $E_{AL}^{(PM)} = 3.59\left(\frac{14000}{2000} + 0.7\right)^{.62} = 12.73$ (9.66)

TPY = 4.368 X ↓ = 55.60

88 $E_{AL}^{(PM)} = 3.59\left(\frac{17220}{2000} + 1.3\right)^{.62} = 14.88$ (8.61)

TPY = 4.38 X ↓ = 65.17

83 $E_{AL}^{(SO_2)} = 0.7 \mid 2000 \mid .03 \mid 2 = 84$ - removal

TPY = 4.368 X ↓ = 366.9

88 $E_{AL}^{(SO_2)}$ $1.3 \mid 2000 \mid .03 \mid 2 = 156$ - removal

TPY = 4.38 X " = 683.28

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

(cover)

APPLICATION FOR RENEWAL OF PERMIT TO OPERATE AIR POLLUTION SOURCE(S)

If major alterations have occurred, the applicant should complete the Standard Air Permit Application Form.

Source Type: Lightweight Aggregate Kiln Renewal of DER Permit No. A010-72240

Company Name: Florida Solite Company County: Clay

Identify the specific emission point source(s) addressed in this application (i.e., Lime Kiln No. 4 with Venturi Scrubber; Peaking Unit No. 2, Gas Fired):

Kiln No. 1

Source Location: Street: S.R. 209-C City: 6 miles northwest of Green Cove Springs

UTM: East (17) 427.40 km North 3326.50 km

Latitude: 30° 04' 09"N. Longitude: 81° 45' 12"W.

1. Attach a check made payable to the Department of Environmental Regulation in accordance with operation permit fee schedule set forth in Florida Administrative Code Rule 17-4.05. $500.00 for plant requiring emission measurements.

2. Have there been any alterations to the plant since last permitted? [ ] Yes [X] No If minor alterations have occurred, describe on a separate sheet and attach.

3. Attach the last compliance test report required per permit conditions if not submitted previously. Tested 7/20/88; report submitted under separate cover.

4. Have previous permit conditions been adhered to? [X] Yes [ ] No If no, explain on a separate sheet and attach.

5. Has there been any malfunction of the pollution control equipment during tenure of current permit? [ ] Yes [X] No If yes, and not previously reported, give brief details and what action was taken on a separate sheet and attach.

6. Has the pollution control equipment been maintained to preserve the collection efficiency last permitted by the Department? [X] Yes [ ] No

7. Has the annual operating report for the last calendar year been submitted? [X] Yes [ ] No If no, please attach.

8. Please provide the following information if applicable:

A. Raw Materials and Chemical Used in Your Process:

Description	Contaminant Type	Contaminant %Wt	Utilization Rate lbs/hr
Clay @ 30-40% moisture	None		17,220 dry weight

B. Product Weight (lbs/hr): 14,000 as lightweight aggregate ✓

C. Fuels

Type (Be Specific)	Consumption* Avg/hr*	Consumption* Max/hr**	Maximum Heat Input (MMBTU/hr)
Liquid Burnable Material	265 gph	315 gph	31.5
Coal	0 (1)	1.3 tph	31.5
(1) Coal is used as stand-by fuel; a mixture of coal and LBM can also be fired.			

D. Normal Equipment Operating Time: hrs/day 24 ✓; days/wk 7 ✓; wks/yr 52 ✓;

hrs/yr (power plants only) _____; if seasonal, describe _____

The undersigned owner or authorized representative*** of Florida Solite Company is fully aware that the statements made in this application for a renewal of a permit to operate an air pollution source are true, correct and complete to the best of his knowledge and belief. Further, the undersigned agrees to maintain and operate the pollution source and pollution control facilities in such a manner as to comply with the provisions of Chapter 403, Florida Statutes, and all the rules and regulations of the Department. He also understands that a permit, if granted by the Department, will be non-transferable and he will promptly notify the Department upon sale or legal transfer of the permitted facility.

*During actual time of operation.

**Units: Natural Gas-MMCF/hr; Fuel Oils-barrels/hr; Coal-lbs/hr.

***Attach letter of authorization if not previously submitted

John M Kuiken

Signature, Owner or Authorized Representative (Notarization is mandatory)

John Kuiken, General Manager

Typed Name and Title

P.O. Box 297

Address

Green Cove Springs · Fla 32043

City State Zip

September 2,1988 904/264-6121

Date Telephone No.

Notary Public, State of Florida
My Commission Expires June 27, 1990
Bonded Thru Troy Fain - Insurance Inc.

DER Form 17-1.202(4)
Effective November 30, 1982

KOOGLER & ASSOCIATES
ENVIRONMENTAL SERVICES
4014 NW THIRTEENTH STREET
GAINESVILLE, FLORIDA 32609
904/377-5822 ▪ FAX 377-7158

KA 150-88-03

June 30, 1989

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

Subject: Clay County-AP
Florida Solite Company
Kiln 1A, AC10-125262

Dear Mr. Fancy:

On behalf of the Florida Solite Company, I would like to request that the expiration of Permit AC10-125262 be extended from June 30, 1989 to December 31, 1989. We asked for a previous extension (from December 31, 1988 to June 30, 1989) in order to allow Solite time to comply with all of the conditions of the subject permit and to be able to supply documentation of this compliance to the Department.

One additional matter that must be addressed is that of NOx emissions. The subject permit establishes a target NOx emission limit of 14.2 pounds per hour with the understanding that the emission rate would be increased if it was demonstrated that the target emission limit could not be achieved. During two prior compliance tests, NOx emissions from Kiln 1A were at or slightly below 14.2 pounds per hour and it was felt that the limit could probably be achieved. During the compliance test on April 27, 1989, however, an NOx emission rate of 15.3 pounds per hour was measured with EPA Method 7 and reported to the Department. Measurements and changes in kiln operating practice during a previous compliance test (1987) demonstrated that there was little Solite could do to affect NOx emissions from the kiln.

KOOGLER & ASSOCIATES
ENVIRONMENTAL SERVICES
4014 NW THIRTEENTH STREET
GAINESVILLE, FLORIDA 32609

JACKSONVILLE, FL 322
PM
JUL
1989

Mr. C.H. Fancy
Bureau of Air Quality Management
Florida Department of
Environmental Regulation
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

The amount by which the 15.3 pounds per hour emission rate exceeded the target emission limit (7.7 percent) is within the repeatability error of EPA Method 7 (the method used for the NOx measurements) of 15 percent and within the reproducibility error of 19 percent. In view of the error associated with the method of measurement and the magnitude of the NOx emission rates measured during previous compliance tests, it is further requested that the target NOx emission limit be increased to 17.0 pounds per hour (20 percent greater than 14.2 pounds per hour).

Another matter that must be resolved is the SO2 emission limit for Kiln 1A. A limit is established in the subject permit of 226 pounds per hour (maximum hourly) and 75.8 pounds per hour (30-day average). The Northeast District office of the Department is of the opinion that the 226 pound per hour limit is to be apportioned between SO2 from the clay and the various fuels; rather than be applied as an overall total SO2 emission limit. The apportionment of the SO2 emission limit was never intended and must be resolved prior to the issuance of the operating permit for Kiln 1A.

We are currently in the process of preparing documentation on these and other issues and a report on the continuous SO2 emission monitor that operated on the kiln. We will be able to provide you with much of it under cover of a separate letter within a few weeks. We feel, however, that another extension is necessary in order to resolve the matters addressed herein and also to give the Department time to review all materials and to prepare the operating permit.

Thank you for your consideration of this matter. If you have any questions, please do not hesitate to give me a call.

Very truly yours,

KOOGLER & ASSOCIATES

John B. Koogler /mkb

John B. Koogler, Ph.D, P.E.

JBK:mab

cc: Mr. Bill Stewart, FDER, Northeast District Office
Mr. John Kuiken, Florida Solite Company

copied St. Florida
EHP/137

KOOGLER & ASSOCIATES

KOOGLER & ASSOCIATES
ENVIRONMENTAL SERVICES
4014 NW THIRTEENTH STREET
GAINESVILLE, FLORIDA 32609
904/377-5822 • FAX 377-7158

RECEIVED
JUL 5 1989
DER - BAQM

FAX TRANSMITTAL FORM

TO: Mr. C.H. FANCY
FDER
BUREAU OF AIR QUALITY Management
150-88-03

FROM: John Koogler
K+A

SENT BY: Marion

DATE: 6/30/89

FAX PHONE: 904-377-7158

The text being transmitted consists of 2 pages PLUS this one.

REMARKS: Hard copy mailed today

P 274 007 561

RECEIPT FOR CERTIFIED MAIL

NO INSURANCE COVERAGE PROVIDED
NOT FOR INTERNATIONAL MAIL
(See Reverse)

Sent to Mr. John M. Kuiken, Fla.	
Street and No. P. O. Box 297 Solite	
P.O., State and ZIP Code Green Cove Springs, FL 32043	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt showing to whom and Date Delivered	
Return Receipt showing to whom, Date, and Address of Delivery	
TOTAL Postage and Fees	$
Postmark or Date Mailed: 1-24-89 Permit: AC 10-125262	

PS Form 3800, June 1985 ★ U.S.G.P.O. 1985-480-794

SENDER: Complete items 1 and 2 when additional services are desired, and complete items 3 and 4.
Put your address in the "RETURN TO" Space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for additional service(s) requested.
1. ☐ Show to whom delivered, date, and addressee's address. *(Extra charge)* 2. ☐ Restricted Delivery *(Extra charge)*

3. Article Addressed to: Mr. John M. Kuiken Plant Manager Florida Solite Corp. P. O. Box 297 Green Cove Springs, FL 32043	4. Article Number P 274 007 561 Type of Service: ☐ Registered ☐ Insured ☒ Certified ☐ COD ☐ Express Mail ☐ Return Receipt for Merchandise Always obtain signature of addressee or agent and DATE DELIVERED.
5. Signature – Address X	8. Addressee's Address *(ONLY if requested and fee paid)*
6. Signature – Agent X	
7. Date of Delivery	

PS Form **3811**, Mar. 1988 ★ U.S.G.P.O. 1988-212-865 **DOMESTIC RETURN RECEIPT**

Florida Department of Environmental Regulation

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

Bob Martinez, Governor | Dale Twachtmann, Secretary | John Shearer, Assistant Secretary

January 11, 1989

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. John M. Kuiken
Plant Manager
Florida Solite Corporation
Post Office Box 297
Green Cove Springs, Florida 32043

Dear Mr. Kuiken:

Re: Amendment of Permit No. AC 10-125262

The Department is in receipt of John B. Koogler's December 15, 1988, letter requesting your permit to construct kiln No. 1A be extended. The purpose of the extension is to allow time to demonstrate compliance with the specific conditions for the continuous emissions monitor and submit an application for permit to operate. This request is acceptable and the expiration date of permit No. AC 10-125262 is changed from December 31, 1988, to June 30, 1989. A copy of this letter must be attached to the referenced construction permit and shall become a part of that permit.

Sincerely,

Dale Twachtmann
Secretary

DT/plm

Copy: Bill Stewart
John B. Koogler, P.E.

Enclosure

State of Florida
DEPARTMENT OF ENVIRONMENTAL REGULATION

For Routing To Other Than The Addressee	
To:	Location:
To:	Location:
To:	Location:
From:	Date:

Interoffice Memorandum

TO: Dale Twachtmann

FROM: Steve Smallwood

DATE: January 11, 1989

SUBJ: Amendment of a Construction Permit

Attached for your approval and signature is a letter that will extend the expiration date of the permit to construct that was issued for a kiln at Florida Solite Corporation's Clay County plant. The extension will allow additional time for the permittee to complete the compliance tests and submit an application for permit to operate. This extension is not controversial and the Bureau recommends its approval.

SS/plm

Attachment

DEPARTMENT OF ENVIRONMENTAL REGULATION

ROUTING AND TRANSMITTAL SLIP

ACTION NO

ACTION DUE DATE

1. TO: (NAME, OFFICE, LOCATION) Steve Smallwood	Initial	
	Date	
2. Clair 7	Initial	
	Date	
3.	Initial	
	Date	
4.	Initial	
	Date	

REMARKS:

RECEIVED
JAN 18 1989
DER - BAQM

D. Wachtmeier

FROM:

DATE 1-17

PHONE

INFORMATION	
	Review & Return
	Review & File
	Initial & Forward

DISPOSITION	
	Review & Respond
	Prepare Response
	For My Signature
	For Your Signature
	Let's Discuss
	Set Up Meeting
	Investigate & Report
	Initial & Forward
	Distribute
	Concurrence
	For Processing
	Initial & Return

file copy

KOOGLER & ASSOCIATES
ENVIRONMENTAL SERVICES
4014 NW THIRTEENTH STREET
GAINESVILLE, FLORIDA 32609
904/377-5822 ▪ FAX 377-7158

KA 150-88-03

December 15, 1988

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

Subject: Clay County-AP
Florida Solite Company
Kiln 1A, AC10-125262

Dear Mr. Fancy:

On behalf of the Florida Solite Company, I would like to request that the expiration of Permit AC10-125262 be extended from December 31, 1988 to June 30, 1989. The extension will allow Solite time to comply with all of the conditions of the subject permit and to submit documentation of this compliance to the Department. This extension will also give the Department time to review all materials and to prepare the operating permit.

I originally made this request on November 23, 1988 to the Northeast District office in Jacksonville. As I related to Mr. W.P. Stewart in my request to him, steps are now underway to generate the continuous sulfur dioxide monitoring data required by the subject construction permit. This, to date, has been the most troublesome permit condition to fulfill, but we are working on a viable solution.

Thank you for your consideration of this matter. If you have any questions, please do not hesitate to give me a call.

Very truly yours,

KOOGLER & ASSOCIATES

John B. Koogler, Ph.D, P.E.

JBK:mab

cc: Mr. John Kuiken, Florida Solite Company
Copied: A. Hanks
B. Stewart, NED
CIT F/13T

KOOGLER & ASSOCIATES
ENVIRONMENTAL SERVICES
4014 NW THIRTEENTH STREET
GAINESVILLE, FLORIDA 32609

Mr. C.H. Fancy
Bureau of Air Quality Management
Florida Department of Environmental
Regulation
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

P 274 007 533

RECEIPT FOR CERTIFIED MAIL

NO INSURANCE COVERAGE PROVIDED
NOT FOR INTERNATIONAL MAIL
(See Reverse)

☆ U.S.G.P.O. 1985-480-794

Sent to Mr. John M. Kuiken, FL Solite	
Street and No. P. O. Box 297	
P.O., State and ZIP Code Green Cove Springs, FL 32043	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt showing to whom and Date Delivered	
Return Receipt showing to whom, Date, and Address of Delivery	
TOTAL Postage and Fees	$
Postmark or Date Permit: AC 10-125262 Mailed: 12-14-88	

PS Form 3800, June 1985

SENDER: Complete items 1 and 2 when additional services are desired, and complete items 3 and 4.
Put your address in the "RETURN TO" Space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for additional service(s) requested.
1. ☐ Show to whom delivered, date, and addressee's address. *(Extra charge)*
2. ☑ Restricted Delivery *(Extra charge)*

3. Article Addressed to:
Mr. John M. Kuiken
Plant Manager
Florida Solite Corp.
P. O. Box 297
Green Cove Springs, FL 32043

4. Article Number
P 274 007 533

Type of Service:
☐ Registered ☐ Insured
☒ Certified ☐ COD
☐ Express Mail ☐ Return Receipt for Merchandise

Always obtain signature of addressee or agent and DATE DELIVERED.

5. Signature — Address
X

6. Signature — Agent
X

7. Date of Delivery

8. Addressee's Address *(ONLY if requested and fee paid)*

PS Form **3811**, Mar. 1988 ★ U.S.G.P.O. 1988-212-865 DOMESTIC RETURN RECEIPT

Florida Department of Environmental Regulation

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

Bob Martinez, Governor Dale Twachtmann, Secretary John Shearer, Assistant Secretary

November 30, 1988

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. John M. Kuiken
Plant Manager
Florida Solite Corporation
Post Office Box 297
Green Cove Springs, Florida 32043

Dear Mr. Kuiken:

Re: Amendment of Permit No. AC 10-125262

The Department is in receipt of John B. Koogler's October 19, 1988, letter requesting the permit to construct kiln No. 1A be amended to specify the procedures to be used to determine compliance with the sulfur dioxide emission standards. This request is acceptable, with conditions, and Specific Condition No. 11 of the referenced permit is amended as follows:

11. Sulfur dioxide emissions shall not exceed 226 lbs/hr (1 hr/avg) as determined by EPA Method 6 (49 FR 26522) and 75.8 lbs/hr, 30 day average, as determined by the procedure described in John B. Koogler's October 19, 1988, letter (KA 150-88-06). A continuous emissions monitor for sulfur dioxide that meets the performance specifications listed in 40 CFR 60, Appendix B, shall be installed on this source. Method 6 tests will be conducted while kiln No. 1A is operating at 90 to 100 percent of its permitted capacity and burning 0.7 TPH of coal in the fuel mix. Test data shall include the quantity and percent sulfur of each fuel burned during the test. The permittee shall measure the volumetric flow rate in the stack by EPA Method 2 (43 FR 11984) once each month and maintain a record of the ammeter readings for the fan for the kiln. A summary of this data will be included with the quarterly report for the continuous emissions monitor.

A copy of this letter must be attached to the referenced construction permit and shall become a part of that permit.

Sincerely,

Dale Twachtmann
Secretary

DT/ks

attachment

cc: W. Stewart, NE District
J. Koogler, P.E.

KOOGLER & ASSOCIATES
ENVIRONMENTAL SERVICES
4014 NW THIRTEENTH STREET
GAINESVILLE, FLORIDA 32609
904/377-5822 ▫ FAX 377-7158

KA 150-88-06

October 19, 1988

Mr. Jim Pennington
Division of Air Resources Management
Florida Department of
Environmental Regulation
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Subject: Florida Solite Company
Permit AC10-125262
Continuous SO2 Emission Monitoring

Dear Jim:

Pursuant to our conversation in your office on October 6, 1988, I would like to propose an amendment to Specific Condition No. 11 of the subject permit. This condition states, in part, that the sulfur dioxide emission rate shall not exceed 75.8 pounds per hour, 30-day average, as determined by a continuous emission monitor. The amendment that I would like to propose will allow for the conversion of the sulfur dioxide concentration measured by the continuous emission monitor (parts per million) to a mass emission rate (pounds per hour) that can be used to calculate the 30-day average sulfur dioxide emission rate required by Specific Condition No. 11.

With fossil fuel-fired power boilers, a mass emission rate of sulfur dioxide can be determined by measuring the carbon dioxide or oxygen content of the stack gas and using this measurement in conjunction with an "F" factor and the measured sulfur dioxide concentration (ppm). With sulfuric acid plants, the stack oxygen concentration can be measured and this measurement can be used in conjunction with the measured sulfur dioxide concentration and an "S" factor to determine a mass emission rate for sulfur dioxide. With the Florida Solite kilns, neither the "F" factor nor the "S" factor are applicable and hence, an alternative procedure must be agreed upon. (Note: the "F" factor is theoretically applicable to the Solite kilns; however, the high firing rate of excess air [approximately 300 percent] will result in a calculated sulfur dioxide emission rate that will be greatly influenced by very small fluctuations or measurement errors in the stack gas oxygen or CO2. Hence, from a practical point of view, the "F" factor is not applicable to the Solite kilns.)

The only practical approach that I am aware of that can be used to convert the measured sulfur dioxide concentration in the stack gas (ppm) to a mass emission rate (pounds per hour) is to measure the stack gas flow rate and combine this measurement with the measured sulfur dioxide concentration to obtain a mass emission rate. The alternatives that I discussed with you for measuring the gas flow rate ranged from a continuous measurement of the flow rate to the use of a "constant" flow rate determined by measurements made over an extended period of time and updated by periodic stack gas flow rate measurements.

The problem with continuously monitoring the stack gas flow rate in the Solite kiln stack is that free water droplets exist in the stack as a result of carryover from the scrubber. Additionally, the stack gas is at or near saturation at a temperature of approximately 150°F. The free moisture and the fact that condensation will occur with any drop in the gas temperature eliminates the use of the thermister-type mass flow instrumentation. The presence of this moisture will also make the use of an anubar-type flow measuring device unusable, as water droplets will interfere with the measurement of the pressure associated with the stack gas velocity.

To evaluate the feasibility of using a "constant" stack gas flow rate, I summarized stack gas flow measurements made on Kiln 1A over a three and a half-year period of time (October 1984 through April 1988). This represents the entire period of time that the kiln has been operating. The stack gas flow measurements, measured during eight independent periods of time are summarized in the attached table. The average stack gas flow rate is 25,633 standard cubic feet per minute, dry, and the standard arithmetic deviation associated with the eight measurements is 1645 dry standard cubic feet per minute. The 68th percentile concentration (the average plus one standard deviation) is 27,278 dry standard cubic feet per minute. It will be noted that the measured stack gas flow rate exceeded this 68th percentile flow rate on one occasion (during February 1987).

The fact that the stack gas flow rate is as uniform as it is, is not surprising when viewed in terms of the operating parameters of Kiln 1A. The induced draft fan on the kiln is belt driven by a constant speed motor. The only way to change the fan speed, therefore, is to change the sheave on the motor and/or fan; something there is no need to do at Solite. The other means of varying the air flow through the kiln is by dampers. At Solite, the kilns operate 24-hours per day at a constant production rate (except for mechanical down-time), therefore there is no need to change damper settings after the kiln is balanced. (Balancing occurred right after the kiln was put on-line in October 1984). The kilns at Solite, thus, operate with a constant air flow through the kilns. Fluctuations in operating conditions are adjusted for by varying the fuel flow rate or clay feed rate; neither of which has a significant affect on the stack gas flow rate.

In view of the fact that the stack gas flow rate is remarkably constant, I am proposing that we use the 68th percentile stack gas flow rate in conjunction with the measured sulfur dioxide concentration to determine the 30-day average sulfur dioxide emission rate. I further propose that this 68th percentile stack gas flow rate be updated annually by including the stack gas flow rate measured during the annual compliance tests in the calculations for the 68th percentile flow rate. If it is found necessary to change the fan speed, to change the fan blade or to readjust the kiln damper, the stack gas flow rate will immediately be remeasured and a new "constant" flow rate established.

The mass emission rate of sulfur dioxide will be determined hourly by combining the 68th percentile stack gas flow rate and the measured sulfur dioxide concentration. To obtain the 30-day average sulfur dioxide emission rate, I would propose that hourly sulfur dioxide emission rates be averaged to determine 24-hour emission rates. The 24-hour average sulfur dioxide emission rates would then be averaged over a rolling 30-day period to determine the 30-day average emission rate.

In my professional opinion, the proposal set forth herein is reasonable in view of the fact that the stack gas flow rate is remarkably consistent and in view of the anticipated problems associated with continuously measuring the stack gas flow rate. I would appreciate your review of this proposal and a response at the earliest possible time. Solite has placed an order for a continuous sulfur dioxide emission monitor and anticipates delivery and installation by the end of December 1988. We would like to have your decision on this matter so that we can do whatever is necessary to have a fully operating monitoring system by this date. Your consideration in this matter is very much appreciated.

Very truly yours,

KOOGLER & ASSOCIATES

John B. Koogler, Ph.D, P.E.

JBK:mab
Enc.

cc: Ed Martin, Solite Corporation (Richmond)
John Kuiken, Florida Solite Company
George Kosko, Oldover Corporation
Vernon Hartnett, Kentucky Solite

STACK GAS FLOW RATE MEASUREMENTS
KILN NO. 1A
FLORIDA SOLITE CO.
GREEN COVE SPRINGS
OCTOBER 1984 - APRIL 1988

Date	Stack Gas Flow Rate (dscfm)	Stack Gas Temperature (^{o}F)	Stack Gas Moisture (%)
10/26/84	24,867	165	31.7
3/20/85	25,351	144	19.7
5/23/85	22,951	152	25.8
2/27-28/86	26,211	154	22.5
5/8-16/86	26,283	146	22.6
7/22-23/86	24,872	147	23.5
2/20/87	28,751	141	18.5
4/22/88	25,778	148	23.9
Avg	25,633	150	23.5
Std. Dev.	1,645	$CV = 6.4\% = \frac{\sigma}{\mu}(100\%)$	
68th Percentile	27,278		

2σ 28,923

State of Florida
DEPARTMENT OF ENVIRONMENTAL REGULATION

For Routing To Other Than The Addressee	
To:	Location:
To:	Location:
To:	Location:
From:	Date:

Interoffice Memorandum

TO: Dale Twachtmann

FROM: Steve Smallwood

DATE: November 30, 1988

SUBJ: Amendment to Florida Solite Corporation
State Construction Permit Number AC 10-125262

Attached for your approval and signature is a letter prepared by Central Air Permitting that will amend the construction permit issued to Florida Solite Corporation for their kiln No. 1A located near Green Cove Springs, Clay County, Florida. The amendment addresses the compliance test procedure.

The amendment is not controversial. I recommend your approval and signature.

attachment

CHF/WH/s

KOOGLER & ASSOCIATES
ENVIRONMENTAL SERVICES
4014 NW THIRTEENTH STREET
GAINESVILLE, FLORIDA 32609
904/377-5822 ▪ FAX 377-7158

KA 150-88-06

October 19, 1988

Mr. Jim Pennington
Division of Air Resources Management
Florida Department of
Environmental Regulation
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Subject: Florida Solite Company
Permit AC10-125262
Continuous SO2 Emission Monitoring

Dear Jim:

Pursuant to our conversation in your office on October 6, 1988, I would like to propose an amendment to Specific Condition No. 11 of the subject permit. This condition states, in part, that the sulfur dioxide emission rate shall not exceed 75.8 pounds per hour, 30-day average, as determined by a continuous emission monitor. The amendment that I would like to propose will allow for the conversion of the sulfur dioxide concentration measured by the continuous emission monitor (parts per million) to a mass emission rate (pounds per hour) that can be used to calculate the 30-day average sulfur dioxide emission rate required by Specific Condition No. 11.

With fossil fuel-fired power boilers, a mass emission rate of sulfur dioxide can be determined by measuring the carbon dioxide or oxygen content of the stack gas and using this measurement in conjunction with an "F" factor and the measured sulfur dioxide concentration (ppm). With sulfuric acid plants, the stack oxygen concentration can be measured and this measurement can be used in conjunction with the measured sulfur dioxide concentration and an "S" factor to determine a mass emission rate for sulfur dioxide. With the Florida Solite kilns, neither the "F" factor nor the "S" factor are applicable and hence, an alternative procedure must be agreed upon. (Note: the "F" factor is theoretically applicable to the Solite kilns; however, the high firing rate of excess air [approximately 300 percent] will result in a calculated sulfur dioxide emission rate that will be greatly influenced by very small fluctuations or measurement errors in the stack gas oxygen or CO2. Hence, from a practical point of view, the "F" factor is not applicable to the Solite kilns.)

The only practical approach that I am aware of that can be used to convert the measured sulfur dioxide concentration in the stack gas (ppm) to a mass emission rate (pounds per hour) is to measure the stack gas flow rate and combine this measurement with the measured sulfur dioxide concentration to obtain a mass emission rate. The alternatives that I discussed with you for measuring the gas flow rate ranged from a continuous measurement of the flow rate to the use of a "constant" flow rate determined by measurements made over an extended period of time and updated by periodic stack gas flow rate measurements.

The problem with continuously monitoring the stack gas flow rate in the Solite kiln stack is that free water droplets exist in the stack as a result of carryover from the scrubber. Additionally, the stack gas is at or near saturation at a temperature of approximately 150°F. The free moisture and the fact that condensation will occur with any drop in the gas temperature eliminates the use of the thermister-type mass flow instrumentation. The presence of this moisture will also make the use of an anubar-type flow measuring device unusable, as water droplets will interfere with the measurement of the pressure associated with the stack gas velocity.

To evaluate the feasibility of using a "constant" stack gas flow rate, I summarized stack gas flow measurements made on Kiln 1A over a three and a half-year period of time (October 1984 through April 1988). This represents the entire period of time that the kiln has been operating. The stack gas flow measurements, measured during eight independent periods of time are summarized in the attached table. The average stack gas flow rate is 25,633 standard cubic feet per minute, dry, and the standard arithmetic deviation associated with the eight measurements is 1645 dry standard cubic feet per minute. The 68th percentile concentration (the average plus one standard deviation) is 27,278 dry standard cubic feet per minute. It will be noted that the measured stack gas flow rate exceeded this 68th percentile flow rate on one occasion (during February 1987).

The fact that the stack gas flow rate is as uniform as it is, is not surprising when viewed in terms of the operating parameters of Kiln 1A. The induced draft fan on the kiln is belt driven by a constant speed motor. The only way to change the fan speed, therefore, is to change the sheave on the motor and/or fan; something there is no need to do at Solite. The other means of varying the air flow through the kiln is by dampers. At Solite, the kilns operate 24-hours per day at a constant production rate (except for mechanical down-time), therefore there is no need to change damper settings after the kiln is balanced. (Balancing occurred right after the kiln was put on-line in October 1984). The kilns at Solite, thus, operate with a constant air flow through the kilns. Fluctuations in operating conditions are adjusted for by varying the fuel flow rate or clay feed rate; neither of which has a significant affect on the stack gas flow rate.

In view of the fact that the stack gas flow rate is remarkably constant, I am proposing that we use the 68th percentile stack gas flow rate in conjunction with the measured sulfur dioxide concentration to determine the 30-day average sulfur dioxide emission rate. I further propose that this 68th percentile stack gas flow rate be updated annually by including the stack gas flow rate measured during the annual compliance tests in the calculations for the 68th percentile flow rate. If it is found necessary to change the fan speed, to change the fan blade or to readjust the kiln damper, the stack gas flow rate will immediately be remeasured and a new "constant" flow rate established.

The mass emission rate of sulfur dioxide will be determined hourly by combining the 68th percentile stack gas flow rate and the measured sulfur dioxide concentration. To obtain the 30-day average sulfur dioxide emission rate, I would propose that hourly sulfur dioxide emission rates be averaged to determine 24-hour emission rates. The 24-hour average sulfur dioxide emission rates would then be averaged over a rolling 30-day period to determine the 30-day average emission rate.

In my professional opinion, the proposal set forth herein is reasonable in view of the fact that the stack gas flow rate is remarkably consistent and in view of the anticipated problems associated with continuously measuring the stack gas flow rate. I would appreciate your review of this proposal and a response at the earliest possible time. Solite has placed an order for a continuous sulfur dioxide emission monitor and anticipates delivery and installation by the end of December 1988. We would like to have your decision on this matter so that we can do whatever is necessary to have a fully operating monitoring system by this date. Your consideration in this matter is very much appreciated.

Very truly yours,

KOOGLER & ASSOCIATES

John B. Koogler, Ph.D, P.E.

JBK:mab
Enc.

cc: Ed Martin, Solite Corporation (Richmond)
John Kuiken, Florida Solite Company
George Kosko, Oldover Corporation
Vernon Hartnett, Kentucky Solite

STACK GAS FLOW RATE MEASUREMENTS
KILN NO. 1A
FLORIDA SOLITE CO.
GREEN COVE SPRINGS
OCTOBER 1984 - APRIL 1988

Date	Stack Gas Flow Rate (dscfm)	Stack Gas Temperature (^{o}F)	Stack Gas Moisture (%)
10/26/84	24,867	165	31.7
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7/22-23/86	24,872	147	23.5
2/20/87	28,751	141	18.5
4/22/88	25,778	148	23.9
Avg	25,633	150	23.5
Std. Dev.	1,645	$CV = 6.4\% = \frac{\sigma}{\mu}(100\%)$	
68th Percentile	27,278		
2σ	28,923		

FLORIDA SOLITE® CORPORATION

P.O. BOX 297 • GREEN COVE SPRINGS • FLORIDA 32043 • (904) 284-9[illegible]

September 28,1988

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

RE: Monthly Status Report: Amendment of Permit No: AC-10-125262

Dear

Please accept this as our monthly status report which is required .

During the preceding month, the following actions have been taken:

#1A Kiln is not operational at this time. A meeting was held on 9/21/88 with John Koogler and other Solite people. Decision was reached on which SO2 monitor we will purchase.

Next month the following actions are planned:

We have made arrangements with Koogler & Associates to rent a SO2 unit for 60 days to collect 30 days of data.

We trust that this report complies with the requirements.

If you have any questions,please contact me.

Sincerely,

John Kuiken,
Plant Manager

JK/mr

FLORIDA SOLITE® CORPORATION

P. O. BOX 297 • GREEN COVE SPRINGS • FLORIDA 32043

JACKSONVILLE FLA PM 29 SEP 1988

HELP GOODWILL Bread Wagon 1880s USA 25
HELP
THE HANDICAPPED

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

AQ

FLORIDA SOLITE® CORPORATION

P.O. BOX 297 • GREEN COVE SPRINGS • FLORIDA 32043 • (904) 284-9271

July 29,1988

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

RE: Monthly Status Report: Amendment of Permit No: AC-10-125262

Dear

Please accept this as our monthly status report which is required .

During the preceding month, the following actions have been taken:

A new vendor came out for site evaluation to specify proper monitoring equipment and cost and delivery on SO2 monitor.

Next month the following actions are planned:

Vendor is to evaluate site conditions and recommend the best system for our operation.

We trust that this report complies with the requirements.

If you have any questions,please contact me.

Sincerely,

John Kuiken,
Plant Manager

JK/mr

FLORIDA SOLITE® CORPORATION

P. O. BOX 297 ∘ GREEN COVE SPRINGS ∘ FLORIDA 32043

JACKSONVILLE FL PM 29 JUL 1988

Bread Wagon 1880s 25¢ USA

Permit

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

RECEIVED
BUR. OF PERM.
01
AUG 02 1988
JKB

full Copy
Randy Armstrong

FLORIDA SOLITE® CORPORATION

P.O. BOX 297 • GREEN COVE SPRINGS • FLORIDA 32043 • (904) 284-9271

May 18,1988

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

RE: Monthly Status Report: Amendment of Permit No: AC-10-125262

Dear Mr. Twachtmann:

Please accept this as our monthly status report which is required .

During the preceding month, the following actions have been taken:

Service representative from Syconex spent five (5) days working on the unit. Their recommend converting to extraction type system, and working up price for best type of unit.

Next month the following actions are planned:

Have the President of Syconex come to the location and come up with a solution to inconsistent read outs and errosion problems.

We trust that this report complies with the requirements.

If you have any questions,please contact me.

Sincerely,

John Kuiken,
Plant Manager

Copied: Willard Hanks
CHF|BT
JK/mr

DEPARTMENT OF ENVIRONMENTAL REGULATION

ROUTING AND TRANSMITTAL SLIP

ACTION NO

ACTION DUE DATE

	Initial	Date
1. TO: (NAME, OFFICE, LOCATION) Julie Stacklyn 529		
2. Randy Armstrong		
3. Clair Fancy		
4. Steve Smallwood		

REMARKS:

RECEIVED
MAY 24 1988
DIVISION OF ENVIRONMENTAL PERMITTING

RECEIVED
MAY 25 1988
DER - BAQM

Maggie!
I don't believe 5/27
This is an air permit. check & send to whoever should get it.
Cly

INFORMATION	
	Review & Return
X	Review & File
	Initial & Forward

if needed

DISPOSITION	
X	Review & Respond
	Prepare Response
	For My Signature
	For Your Signature
	Let's Discuss
	Set Up Meeting
	Investigate & Report
	Initial & Forward
X	Distribute
	Concurrence
	For Processing
	Initial & Return

FROM: Jim Lewis

DATE 5/20

PHONE

P 274 010 370

RECEIPT FOR CERTIFIED MAIL

NO INSURANCE COVERAGE PROVIDED
NOT FOR INTERNATIONAL MAIL
(See Reverse)

PS Form 3800, June 1985 ☆ U.S.G.P.O. 1985-480-794

Sent to Mr. John M. Kuiken, Plt. Mgr. ~~Florida Solite Corporation~~	
Street and No. P.O. Box 297	
P.O., State and ZIP Code Green Cove Springs, FL 32043	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt showing to whom and Date Delivered	
Return Receipt showing to whom, Date, and Address of Delivery	
TOTAL Postage and Fees	$
Postmark or Date Mailed: 04/11/88 Permit: AC 10-125262	

● **SENDER:** Complete items 1 and 2 when additional services are desired, and complete items 3 and 4.

Put your address in the "RETURN TO" Space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for additional service(s) requested.

1. XX Show to whom delivered, date, and addressee's address. *(Extra charge)* 2. ☐ Restricted Delivery *(Extra charge)*

3. Article Addressed to: Mr. John M. Kuiken, Plant Manager, Florida Solite Corporation, P.O. Box 297, Green Cove Springs, FL 32043	4. Article Number P 274 010 370
	Type of Service: ☐ Registered ☐ Insured XX Certified ☐ COD ☐ Express Mail
	Always obtain signature of addressee or agent and DATE DELIVERED.
5. Signature – Addressee X Tony Saunders	8. Addressee's Address (ONLY if requested and fee paid)
6. Signature – Agent X	
7. Date of Delivery	

APR 1988 GREEN COVE SPRINGS, FL USPS

PS Form **3811**, Mar. 1987 ★ U.S.G.P.O. 1987-178-268 **DOMESTIC RETURN RECEIPT**

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 30, 1988

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. John M. Kuiken
Plant Manager
Florida Solite Corporation
Post Office Box 297
Green Cove Springs, Florida 32043

Dear Mr. Kuiken:

Re: Amendment of Permit No. AC 10-125262

The Department is in receipt of John B. Koogler's March 11, 1988, letter requesting the permit to construct kiln No. 1A be extended to allow time to install and certify the modified continuous emissions monitor for sulfur dioxide, make additional nitrogen oxides emission tests, and request a revision to the nitrogen oxides emission standard as authorized by Specific Condition No. 12 of the permit to construct. This request is acceptable, with conditions, and the expiration date of permit No. AC 10-125262 is changed from March 31, 1988, to December 31, 1988.

The following three new specific conditions are added to the permit to construct this source.

24. Until a permit to operate this source is issued by the Department's Northeast District office, the permittee shall submit monthly status reports to the Northeast District office by the 15th of each month, beginning in May 1988, listing what action was taken on the continuous emission monitor and nitrogen oxides emission study during the preceding month, and what action is scheduled for the next month.

25. This source shall not be operated commercially unless the emissions, except as allowed by Specific Condition No. 12 for nitrogen oxides, are in compliance with all emission standards listed in the specific conditions of the construction permit.

26. Visible emission tests required to show compliance with Specific Conditions Nos. 1, 5, and 6; sulfur dioxide tests required by Specific Condition No. 11; nitrogen oxides tests required by Specific Condition No. 12; and particulate matter emission tests required by Specific Condition No. 13 shall be conducted annually during April, and the test reports submitted to the Northeast District office within 45 days of the tests.

A copy of this letter must be attached to the referenced construction permit and shall become a part of that permit.

Sincerely,

Dale Twachtmann
Secretary

DT/plm

Attachment: Koogler & Assoc. March 11, 1988 letter

cc: William Stewart, NE Dist.
John Koogler, P.E.

ATTACHMENT

State of Florida
DEPARTMENT OF ENVIRONMENTAL REGULATION

Interoffice Memorandum

For Routing To Other Than The Addressee	
To:	Location:
To:	Location:
To:	Location:
From:	Date:

TO: Dale Twachtmann

FROM: Howard L. Rhodes

SUBJ: Amendment to Florida Solite Corporation
State Construction Permit Number AC 10-125262

DATE: March 30, 1988

Attached for your approval and signature is a letter prepared by Central Air Permitting that will extend the expiration date of the construction permit issued to Florida Solite Corporation for their kiln No. 1A located near Green Cove Springs, Clay County, Florida. The extension will allow additional time for the permittee to correct a sulfur dioxide continuous emissions monitor and to evaluate the nitrogen oxides emissions from the kiln.

The extension is not controversial. I recommend your approval and signature.

HLR/aqm/wh

attachment

RECEIVED
APR 6 1988
Office of the Secretary

RECEIVED
APR 06 1988
DER - BAQM

PM
12 March 1988
Gainesville, FL

File Copy

KOOGLER & ASSOCIATES, *Environmental Services*
4014 N.W. 13th Street • Gainesville, Florida 32609 • 904/377-5822

KA 150-87-04

March 11, 1988

RECEIVED
MAR 15 1988
DER-BAQM

Mr. C.H. Fancy
Deputy Chief
Bureau of Air Quality Management
Florida Department of
Environmental Regulation
2600 Blair Stone Road
Tallahassee, FL 32301

Subject: Clay County-AP
Florida Solite Company
Kiln 1A
Permit AC10-125262

Dear Mr. Fancy:

By this letter, I am requesting that the expiration date of Air Construction Permit AC10-125262, issued to the Florida Solite Company on January 15, 1987, be extended from March 31, 1988 to December 31, 1988. The permit covers the construction and operation of a seven ton per hour lightweight aggregate kiln, operated by the Florida Solite Company at their plant near Green Cove Springs, Florida.

The kiln has been operated by Florida Solite and emission tests have demonstrated that the kiln operates in compliance with all emission limiting standards. The one permit condition that Solite has not satisfied is Specific Condition No. 11. This condition requires that Solite install a continuous emission monitor (CEM) for sulfur dioxide that meets the performance specifications of 40CFR60, Appendix B. Solite installed a CEM but encountered problems with the instrument. The monitor was returned to the manufacturer for modifications and only recently has been returned. Current plans are to reinstall the monitor and certify it within the next three to four weeks.

Additionally, Solite would like additional time to review the nitrogen oxides emissions from the kiln. The targeted NOx emission rate (Specific Condition No. 12) is 14.2 pounds per hour. Previous emission measurements on the kiln demonstrated that this emission rate could be met but with very little margin to spare. Solite will be conducting compliance tests on the kiln within the next three to four weeks and may request an adjustment to the NOx emission rate as addressed in Specific Condition No. 12.

Ka KOOGLER & ASSOCIATES, *Environmental Services*
4014 N.W. 13th Street • Gainesville, Florida 32609 • 904/377-5822

GAINESVILLE FLA. PM 12 MAR 1987
GAINESVILLE FLA. 32 MAR 11'87
U.S. POSTAGE 0.22
P.B. METER 1302590

3.15.88

C~~HF~~
~~BT~~ } FYI

M

Mr. C.H. Fancy
Deputy Chief
Bureau of Air Quality Management
Florida Department of
Environmental Regulaiton
2600 Blair Stone Road
Tallahassee, Florida 32301

In order to reinstall the SO2 CEM, certify the instrument, evaluate the NOx emissions and prepare all necessary reports, several months could be required. Adding to this time, the time that will be required by the Department to review the reports and the application for an operating permit, we are asking that the subject permit be extended through December 31, 1988. We appreciate your consideration of this request and will provide any additional information you may require.

Very truly yours,

KOOGLER & ASSOCIATES

John B. Koogler, Ph.D., P.E.

JBK:mab

cc: Mr. Ed Martin, Solite Corporation
Mr. Bill Johnson, Virginia Solite Corporation
Mr. John Kuiken, Florida Solite Company
Mr. Bill Stewart, FDER, Jacksonville
Copied: CHF/BT
Willard Hanks } 3.15.88

P 274 007 637

RECEIPT FOR CERTIFIED MAIL

NO INSURANCE COVERAGE PROVIDED
NOT FOR INTERNATIONAL MAIL
(See Reverse)

Sent to Mr. John M. Kuiken, P. Mgr ~~FL Solite Corporation~~	
Street and No. P.O. Box 297	
P.O., State and ZIP Code ~~Green Cove Springs, FL 32043~~	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt showing to whom and Date Delivered	
Return Receipt showing to whom, Date, and Address of Delivery	
TOTAL Postage and Fees	$
Postmark or Date Mailed: 12/9/87 Permit: 10-125262	

PS Form 3800, June 1985 ☆ U.S.G.P.O. 1985-480-794

PS Form 3811, July 1983 447-845

SENDER: Complete items 1, 2, 3 and 4.

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1. XX Show to whom, date and address of delivery.
2. ☐ Restricted Delivery.

3. Article Addressed to:
John M. Kuiken
Plant Manager
Florida Solite Corporation
Post Office Box 297
Green Cove Springs, FL 32043

4. Type of Service:
☐ Registered ☐ Insured
XX Certified ☐ COD
☐ Express Mail

Article Number
P 274-007-637

Always obtain signature of addressee or agent and DATE DELIVERED.

5. Signature – Addressee
X Carl L. Linville Jr.

6. Signature – Agent
X

7. Date of Delivery

8. Addressee's Address *(ONLY if requested and fee paid)*

DOMESTIC RETURN RECEIPT

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

December 7, 1987

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. John M. Kuiken
Plant Manager
Florida Solite Corporation
Post Office Box 297
Green Cove Springs, Florida 32043

Dear Mr. Kuiken:

Re: Amendment of Permit No. AC 10-125262

The Department is in receipt of John B. Koogler's November 24, 1987, letter requesting the permit to construct kiln No. 1A be extended. The purpose of the extension is to allow the permittee time to demonstrate compliance with the specific conditions for the continuous emissions monitor. This request is acceptable and the expiration date of permit No. AC 10-125262 is changed from November 30, 1987, to March 31, 1988. A copy of this letter must be attached to the referenced construction permit and shall become a part of that permit.

Sincerely,

Dale Twachtmann

Dale Twachtmann
Secretary

DT/ks

cc: Bill Stewart
John B. Koogler, P.E.

enclosure

ATTACHMENT

State of Florida
DEPARTMENT OF ENVIRONMENTAL REGULATION

Interoffice Memorandum

For Routing To Other Than The Addressee	
To:	Location:
To:	Location:
To:	Location:
From:	Date:

TO: Dale Twachtmann

THRU: Howard Rhodes

FROM: Clair Fancy

DATE: December 7, 1987

SUBJ: Amendment of Permit

Attached is a letter for your signature that will extend the expiration date of a construction permit issued to Florida Solite Corporation for a clay kiln. The extension will allow additional time for the permittee to comply with the specific conditions in the permit for a continuous emissions monitor. The extension is not controversial. The Bureau recommends the extension be approved.

CHF/WH/s

RECEIVED
DEC 7 1987
Office of the Secretary

DER
DEC 09 1987
BAQM

Willard

Federal Express
11-24-87
Gainesville, FL

File Copy

KOOGLER & ASSOCIATES, *Environmental Services*
1213 NW 6th Street • Gainesville, Florida 32601 • 904/377-5822

KA 150-87-06

November 24, 1987

DER
NOV 25 1987
BAQM

VIA FEDERAL EXPRESS

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

Subject: Clay County-AP
Florida Solite Company
Permit AC10-125262

Dear Mr. Fancy:

In my letter dated September 23, 1987, Mr. W.P. Stewart of the Department's Northeast District office in Jacksonville suggested that the Florida Solite Company extend the subject construction permit from November 30, 1987 to March 31, 1988. The permit was issued to the Florida Solite COmpany for the construction of lightweight aggregate Kiln No. 1A. The purpose of the extension is to allow Solite time to demonstrate compliance with a few final specific conditions of the subject permit.

By letter dated October 30, 1987, to the Department's Northeast District office, I requested that the subject permit be extended to March 31, 1988. Since the permit was issued by your office, I realize that I should address the request for extension to you.

Your consideration of this request is appreciated.

Very truly yours,

KOOGLER & ASSOCIATES

John B. Koogler, Ph.D., P.E.

JBK:mab

cc: Mr. W.P. Stewart, FDER, Jacksonville
Mr. John Kuiken, Florida Solite Company

Copied: Willard Hanks
CHF/BT
12/1/87

FEDERAL EXPRESS QUESTIONS? CALL 800-238-5355 TOLL FREE.

AIRBILL NUMBER 6678581011

7310M 6678581011

[redacted] Date 11/24/87

1 From (Your Name) Please Print: John B. Koogler
Your Phone Number (Very Important): (904) 377-5822
Company: KOOGLER & ASSOC
Department/Floor No.
Street Address: 2603 NE 17TH TERR
City: GAINSVILLE State: FL ZIP Required For Correct Invoicing: 32609

2 To (Recipient's Name) Please Print: Mr. C. H. Fancy
Recipient's Phone Number (Very Important): (904) 488-3704
Company: FDER - Bureau of Air
Department/Floor No.
Exact Street Address (Use of P.O. Boxes or P.O. ® Zip Codes Will Delay Delivery And Result in Extra Charge.): 2600 Blair Stone Road
City: Tallahassee State: FL ZIP Street Address Zip Required: 32301

3 YOUR BILLING REFERENCE INFORMATION (FIRST 24 CHARACTERS WILL APPEAR ON INVOICE.) 150-87-06

PAYMENT ☑ Bill Sender ☐ Bill Recipient's FedEx Acct No. ☐ Bill 3rd Party FedEx Acct No. ☐ Bill Credit Card ☐ Cash [redacted]

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Street Address (See Service Guide or Call 800-238-5355)
City State
ZIP ® Zip Code of Street Address Required

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1 ☐ PRIORITY 1 Overnight Delivery Using Your Packaging
6 ☑ OVERNIGHT LETTER* (Our Packaging) 9½"x12½"

OVERNIGHT DELIVERY USING OUR PACKAGING
2 ☐ Courier-Pak Overnight Envelope* 12"x 15½"
3 ☐ Overnight Box 12½"x 17½"x 3" A ☐
4 ☐ Overnight Tube 38"x 6"x 6"x 6" B ☐
*Declared Value Limit $100.

STANDARD AIR
5 ☐ Delivery not later than second business day

SERVICE COMMITMENT
PRIORITY 1 - Delivery is scheduled early next business morning in most locations. It may take two or more business days if the destination is outside our primary service areas.
STANDARD AIR - Delivery is generally next business day or not later than second business day. It may take three or more business days if the destination is outside our primary service areas.

DELIVERY AND SPECIAL HANDLING CHECK SERVICES REQUIRED
1 ☐ HOLD FOR PICK-UP (Fill in Section H at right)
2 ☑ DELIVER WEEKDAY
3 ☐ DELIVER SATURDAY (Extra charge)
4 ☐ DANGEROUS GOODS (P-1 and Standard Air Packages only. Extra charge)
5 ☐ CONSTANT SURVEILLANCE SERVICE (CSS) (Extra charge) (Do Not Complete Section 5)
6 ☐ DRY ICE ______ Lbs.
7 ☐ OTHER SPECIAL SERVICE ______
8 ☐
9 ☐ SATURDAY PICK-UP (Extra charge)
10 ☐

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Total	Total	Total	

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1 ☐ Regular Stop 2 ☐ On-Call Stop 3 ☑ Drop Box 4 ☐ B.S.C. 5 ☐ Station

Federal Express Corp. Employee No. 85600

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☐ Cash Received ☐ Return Shipment ☐ Third Party ☐ Chg. To Del. ☐ Chg. To Hold
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City State Zip
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Date/Time Received FedEx Employee Number

Federal Express Use
Base Charges
Declared Value Charge
Origin Agent Charge
Other
Total Charges

PART #106001 REV 5/87 PRINTED U.S.A. SRCE

007

RECIPIENT'S COPY

12·1·87

FYI

Did we do this? If not, we need to have already amendment approved

SUMMARY OF NITROGEN OXIDE EMISSION MEASUREMENTS AND AN EVALUATION OF FACTORS EFFECTING NITROGEN OXIDES EMISSIONS

KILN NO. 1A

FLORIDA SOLITE COMPANY
GREEN COVE SPRINGS, FLORIDA

Permit No. AC10-125262

July 17, 1987

KOOGLER & ASSOCIATES
Environmental Services
4213 NW 6th Street Gainesville, Florida 32601 904/377-5822

DEPARTMENT OF ENVIRONMENTAL REGULATION

ROUTING AND TRANSMITTAL SLIP

ACTION NO

ACTION DUE DATE

1. TO: (NAME, OFFICE, LOCATION)	
~~Jim Pennington~~ JKP 9/2	Initial / Date
2. Clair Fancy DER	Initial / Date
3. ~~Willard Hanks~~ 9/2/87 AUG 14 1987	Initial / Date
4. BAQM	Initial / Date

REMARKS:

FOR YOUR INFO

9/2/87

appears [illegible] meets NOx std on 2 hr avg with LBM, Co. said they will ask for higher NOx std (while burning coal?). Believe we should give higher std. to Co. on request. Whatever std. is, it is offset by [illegible] those [illegible] replaced. The higher the std., the more likely PSD for NOx will be triggered on next modification (which is planned).

Wmh

INFORMATION
Review & Return
Review & File
Initial & Forward

DISPOSITION
Review & Respond
Prepare Response
For My Signature
For Your Signature
Let's Discuss
Set Up Meeting
Investigate & Report
Initial & Forward
Distribute
Concurrence
For Processing
Initial & Return

FROM: Bill STEWART

DATE 8-13-87

PHONE

SUMMARY OF NITROGEN OXIDE EMISSION MEASUREMENTS AND AN EVALUATION OF FACTORS EFFECTING NITROGEN OXIDES EMISSIONS

KILN NO. 1A

FLORIDA SOLITE COMPANY
GREEN COVE SPRINGS, FLORIDA

Permit No. AC10-125262

July 17, 1987

KOOGLER & ASSOCIATES
ENVIRONMENTAL SERVICES
2603 N.E. 17TH TERRACE
GAINESVILLE, FLORIDA 32609
(904) 377-5822

1.0 INTRODUCTION

The Florida Solite Company owns and operates a lightweight aggregate plant near Green Cove Springs, Florida. Clay is mined on the property, hauled to the production facility and calcined in rotary kilns to produce a lightweight aggregate used in the construction industry. Solite operates three kilns at the facility, designated as Kilns 1, 1A and 5. This report describes nitrogen oxides emission measurements conducted on Kiln 1A on July 17, 1987

On February 20, 1987, Koogler & Associates, Environmental Services of Gainesville, Florida conducted particulate matter, sulfur dioxide and nitrogen oxides (NOx) emission measurements on Solite Kiln 1A. The purpose of the testing was to demonstrate compliance with the conditions of Air Construction Permit AC10-125262. The NOx emission measurements conducted at that time were not acceptable so additional testing for NOx only was conducted on July 17, 1987.

Permit AC10-125262 limits the production rate of the kiln to 7 tons of product per hour and limits the clay input to the kiln, on a dry basis, to 8.6 tons per hour. Nitrogen oxides are not specifically limited by Permit AC10-125262; however, a targeted emission rate of 14.2 pounds per hour is established. If the measured emission rate exceeds 14.2 pounds per hour,

Solite is to evaluate kiln operating parameters effecting NOx emissions to determine if emissions can be reduced. If emissions cannot be reduced, Solite is to request an amendment to the NOx emission limiting standard of Permit AC10-125262.

Prior to the test date, the Northeast District Office of the Florida Department of Environmental Regulation in Jacksonville, Florida was notified of the test schedule. The Department was informed that the NOx emissions would be determined in accordance with EPA Method 7e as described in 40 CFR 60, Appendix A. Mr. W.P. Stewart of the FDER office was at the plant to witness the testing and plant operations.

During the period of testing, Kiln 1A was operating at a production rate of 7.1 tons per hour. The raw clay input rate to the kiln was estimated to be 8.7 tons per hour, dry weight. The kiln was being fired with LBM at an average rate of 330 gallons per hour. The total heat input to the kiln averaged 33 million BTU per hour, or 4.6 million BTU per ton of product. This fuel feed rate is within the feed rates established by Specific Condition No. 9 of the construction permit.

During the test period, the NOx concentration in the stack gas ranged from 20-105 parts per million (by volume). At a stack gas flow rate of 28,708 dry standard cubic feet per minute, this concentration range corresponds to an emission rate range of 4.1-21.6 pounds per hour as NO2. The average NOx concentration for the 2.13 hour test period averaged 65 parts per million and the mass emission rate averaged 13.4 pounds per hour.

This emission rate, measured while the kiln was fired only with LBM, is only slightly below the emission rate of 14.2 pounds per hour targeted by the construction permit. When the kiln is fired with coal or with a mixture of coal and LBM, the NOx emissions rate is expected to be higher; as high as 100 pounds per hour when the kiln is fired with coal.

Based upon the results of the NOx emission measurements conducted on July 17, 1987, it can be concluded that Kiln 1A was operating in compliance with the emission limiting standards established in Permit AC10-125262. However, since the average measured nitrogen oxides emission rate was so close to the targeted rate, and since the targeted emission rate was exceeded a significant fraction of the test period, Solite looked into factors effecting nitrogen oxides emissions from the kiln. It was found that varying none of the kiln parameters within the range that would allow the production of a quality product significantly effected the NOx emission rate. As a result, Solite will request an increase in the permitted NOx emission rate.

PM
8-4-87
Jax. FL

TO: Mr. Bill Stewart

COPIES TO: Mr. Bill Thomas

FROM: John Kuiken, Plant Manager, Florida Solite **DATE:** August 3,1987 Form.9s

SUBJECT:

Please find enclosed the test results of testing done on July 17,1987 for the NOx emission on Kiln #1a.

DER
AUG 5 1987
BAQM

Willard
F-41

Ask Dr. Koogler how he wants this treated.

9-9-87
@ 10:00

Willard,

I spoke with Dr. Kogler this morning. He said that the NO_x test results and cover letter was just to point out that a future request will be submitted. He said that he will call you about a meeting in the future. Therefore, no action is currently required. Bruce

SUMMARY OF NITROGEN OXIDE EMISSION MEASUREMENTS AND AN EVALUATION OF FACTORS EFFECTING NITROGEN OXIDES EMISSIONS

KILN NO. 1A

FLORIDA SOLITE COMPANY
GREEN COVE SPRINGS, FLORIDA

Permit No. AC10-125262

July 17, 1987

KOOGLER & ASSOCIATES
ENVIRONMENTAL SERVICES
2603 N.E. 17TH TERRACE
GAINESVILLE, FLORIDA 32609
(904) 377-5822

KOOGLER K$_a$ ASSOCIATES

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4.0 FIELD AND ANALYTICAL PROCEDURES..... 8

5.0 SUMMARY OF RESULTS..... 10

APPENDIX

To the best of my knowledge, all applicable field and analytical procedures comply with Florida Department of Environmental Regulation requirements and all test data and plant operating data are true and correct.

John B. Koogler, PH.D., P.E.
State of Florida
Registration No. 12925

7/30/89
Date

SEAL

1.0 INTRODUCTION

The Florida Solite Company owns and operates a lightweight aggregate plant near Green Cove Springs, Florida. Clay is mined on the property, hauled to the production facility and calcined in rotary kilns to produce a lightweight aggregate used in the construction industry. Solite operates three kilns at the facility, designated as Kilns 1, 1A and 5. This report describes nitrogen oxides emission measurements conducted on Kiln 1A on July 17, 1987

On February 20, 1987, Koogler & Associates, Environmental Services of Gainesville, Florida conducted particulate matter, sulfur dioxide and nitrogen oxides (NOx) emission measurements on Solite Kiln 1A. The purpose of the testing was to demonstrate compliance with the conditions of Air Construction Permit AC10-125262. The NOx emission measurements conducted at that time were not acceptable so additional testing for NOx only was conducted on July 17, 1987.

Permit AC10-125262 limits the production rate of the kiln to 7 tons of product per hour and limits the clay input to the kiln, on a dry basis, to 8.6 tons per hour. Nitrogen oxides are not specifically limited by Permit AC10-125262; however, a targeted emission rate of 14.2 pounds per hour is established. If the measured emission rate exceeds 14.2 pounds per hour,

Solite is to evaluate kiln operating parameters effecting NOx emissions to determine if emissions can be reduced. If emissions cannot be reduced, Solite is to request an amendment to the NOx emission limiting standard of Permit AC10-125262.

Prior to the test date, the Northeast District Office of the Florida Department of Environmental Regulation in Jacksonville, Florida was notified of the test schedule. The Department was informed that the NOx emissions would be determined in accordance with EPA Method 7e as described in 40 CFR 60, Appendix A. Mr. W.P. Stewart of the FDER office was at the plant to witness the testing and plant operations.

During the period of testing, Kiln 1A was operating at a production rate of 7.1 tons per hour. The raw clay input rate to the kiln was estimated to be 8.7 tons per hour, dry weight. The kiln was being fired with LBM at an average rate of 330 gallons per hour. The total heat input to the kiln averaged 33 million BTU per hour, or 4.6 million BTU per ton of product. This fuel feed rate is within the feed rates established by Specific Condition No. 9 of the construction permit.

During the test period, the NOx concentration in the stack gas ranged from 20-105 parts per million (by volume). At a stack gas flow rate of 28,708 dry standard cubic feet per minute, this concentration range corresponds to an emission rate range of 4.1-21.6 pounds per hour as NO2. The average NOx concentration for the 2.13 hour test period averaged 65 parts per million and the mass emission rate averaged 13.4 pounds per hour.

This emission rate, measured while the kiln was fired only with LBM, is only slightly below the emission rate of 14.2 pounds per hour targeted by the construction permit. When the kiln is fired with coal or with a mixture of coal and LBM, the NOx emissions rate is expected to be higher; as high as 100 pounds per hour when the kiln is fired with coal.

Based upon the results of the NOx emission measurements conducted on July 17, 1987, it can be concluded that Kiln 1A was operating in compliance with the emission limiting standards established in Permit AC10-125262. However, since the average measured nitrogen oxides emission rate was so close to the targeted rate, and since the targeted emission rate was exceeded a significant fraction of the test period, Solite looked into factors effecting nitrogen oxides emissions from the kiln. It was found that varying none of the kiln parameters within the range that would allow the production of a quality product significantly effected the NOx emission rate. As a result, Solite will request an increase in the permitted NOx emission rate.

2.0 PROCESS DESCRIPTION

Clay is mined by dragline and hauled overland to a storage building at the production facility. From the storage area, the clay is transferred by front-end loader to clay feeders, which deliver the clay to the rotary kilns. The kilns heat the clay to a temperature of 2000-2100 degrees Fahrenheit, at which point the clay expands, approximately doubling in volume. During the calcining process, the moisture in the clay (nominally 35 percent) is driven off. Additionally, the clay loses approximately 19 percent of its dry weight due to the loss of water hydration and the decomposition of inorganic compounds in the clay.

The fuel used for firing the rotary kilns is coal, LBM or a mixture of coal and LBM. During the test period on July 17, 1987, Kiln 1A was being fired with an average of 330 gallons per hour of LBM. The total heat input to the kiln averaged 33 million BTU per hour, or 4.6 million BTU per ton of lightweight aggregate produced.

Particulate matter emissions from the kiln consist of particles of clay that are carried from the kiln by the combustion gases. The sulfur dioxide results from sulfur in the fuel and pyritic sulfur in the clay. Nitrogen oxides result from nitrogen in the fuel and the fixation of atmospheric nitrogen at the high temperatures achieved in the kiln. The gas stream leaving the kiln passes through a Ducon scrubber and is then discharged into the atmosphere through a 56-inch diameter stack at a height of approximately 50 feet above grade.

During the test period, the lightweight aggregate production rate was determined by Solite personnel. The clay feed to the kiln, on a dry basis, was estimated by assuming a 19 percent weight loss during the calcining; a factor determined during previous tests at Solite. The LBM firing rate was measured by determining the rate at which the LBM level dropped in the LBM service tank.

3.0 SAMPLING POINT LOCATION

Two sampling ports are located in the 56.5 inch diameter stack, 11 feet above straightening vanes installed to eliminate cyclonic flow and 4.1 feet below the top of the stack. The two ports are at 90 degrees to one another. Using criteria established by EPA Test Method 1, it was determined that a minimum of 24 sampling points should be used for the stack gas velocity traverse. Twelve sampling points were selected on each of two perpendicular traverses. A single point near the mid-point of the stack was used to extract the nitrogen oxides samples.

Figure 1 is a diagram of the stack showing the locations of the sampling points.

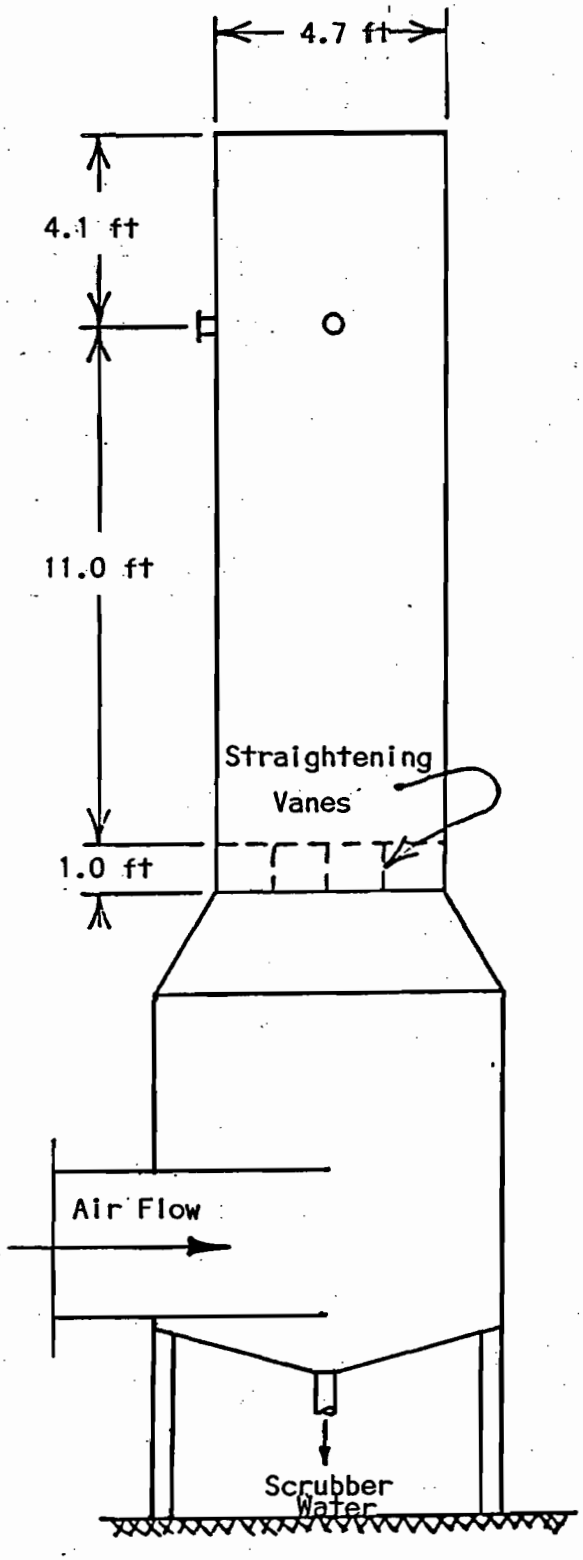


FIGURE 1

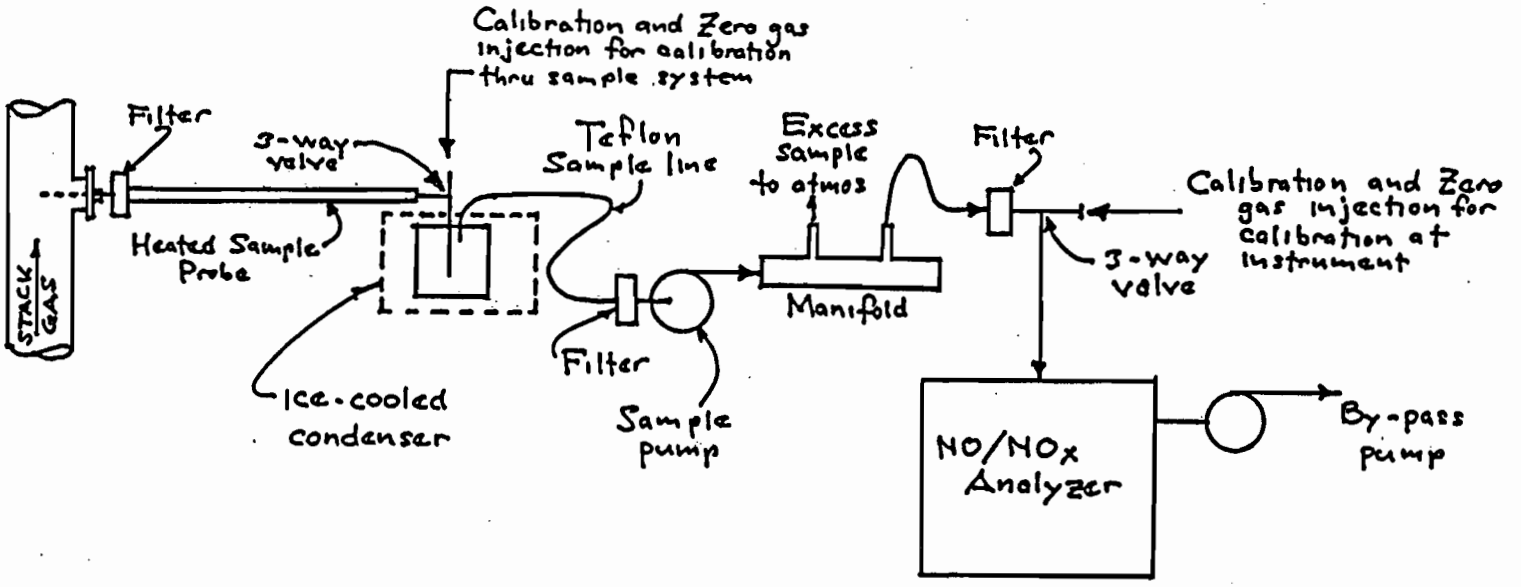
SAMPLING POINT LOCATIONS
NO. 1A KILN
FLORIDA SOLITE CORPORATION
GREEN COVE SPRINGS, FLORIDA

Point No.	Inches Inside Stack Wall
1	1.2
2	3.8
3	6.7
4	10.0
5	14.1
6	20.0
7	36.4
8	42.4
9	46.5
10	49.8
11	52.7
12	55.3

4.0 FIELD AND ANALYTICAL PROCEDURES

The nitrogen oxides emission measurements were conducted in accordance with EPA Method 7e, as described in 40 CFR 60, Appendix A. The stack gas sample for NOx analysis was withdrawn from a single port near the mid-point of the stack. The measurements were made with a Thermo Electron Model 10AR chemilumiscent NO/NOx analyzer. The response time of the instrument to both a zero gas and calibration gas introduced through the sampling system was approximately 30 seconds. The maximum instrument calibration error was 0.4 percent, the maximum system bias was 0.8 percent, the maximum calibration drift was 1.2 percent and there was no zero drift. The analyzer and system calibration data are included in the Appendix of this report. A record of the calibration data and NOx measurements from the strip chart connected to the analyzer are also included in the Appendix of this report. A schematic diagram of the sampling train used for the NOx emission measurements is shown in Figure 2.

The stack gas velocity measurements were made in accordance with EPA Method 2, as adopted by FDER by Rule 17-2.700(6(b,FAC)). Stack gas moisture was estimated by measuring the wet and dry bulb temperatures and using these data and a psychrometric chart to determine the moisture content of the stack gas.



SAMPLING SYSTEM FOR NO/NOx MEASUREMENTS

FIGURE 2

5.0 SUMMARY OF RESULTS

During the test period on July 17, 1987, the production rate of Kiln 1A averaged 7.1 tons per hour, compared with a permitted production rate of 7.0 tons per hour. The clay input rate to the dryer was estimated to be 8.7 tons per hour, based on a 19 percent weight loss in the clay during calcining. During the test period, Kiln 1A was fired with LBM only, at a rate of 330 gallons per hour. This is equivalent to a heat input to the kiln of 33 million BTU per hour, or 4.6 million BTU per ton of product.

During the test period, the NOx concentrations in the stack gas stream ranged from an initial reading of 105 parts per million (by volume) to a low of 20 parts per million near the end of the test period. The NOx analyzer was calibrated and zeroed throughout the test period to assure that the decrease in the NOx concentration in the stack gas was not due to instrument drift.

During the test period, the stack gas flow rate in Kiln 1A was measured and found to be 28,708 dry standard cubic feet per minute. At this stack gas flow rate, the NOx concentration of 105 parts per million corresponds to a mass emission rate, expressed as NO2, of 21.6 pounds per hour. The NOx emission rate targeted by the construction permit for the kiln is 14.2 pounds per hour.

As the test progressed, the NOx concentration decreased from 105 ppm to 75 ppm gradually, then abruptly dropped to approximately 50 ppm before increasing to 85 ppm. The NOx concentration then dropped to about 60 ppm, abruptly increased to 75 ppm and then decreased gradually to the 20-30 ppm range at the end of the test period. The mass emission rate of NOx corresponding to a concentration of 20-30 ppm is 4-6 pounds per hour, expressed as NO2.

For the entire test period of 2.13 hours, the average NOx concentration in the stack was 65 ppm, which corresponds to a mass emission rate of 13.4 pounds per hour as NO2. The emission rate targeted by Permit AC10-125262 is 14.2 pounds per hour. Considering the fact that the average NOx emission rate during the test was 13.4 pounds per hour while Kiln 1A was fired exclusively with LBM, and also considering the fact that the targeted NOx emission rate of 14.2 pounds per hour was exceeded 54 percent of the time during the test period, it is apparent that an adjustment will have to be made in the targeted NOx emission limit in Permit AC10-125262.

To amend the NOx emission limit targeted by Specific Condition 12, Permit AC10-125262 requires that Solite investigate the operating parameters of the kiln to determine whether or not changes in any of the kiln operating conditions might result in a reduced NOx emission rate. To provide a background against which to discuss the evaluation of kiln operating parameters, a brief description of the operation of the lightweight aggregate will be provided. The lightweight aggregate kilns operated by Florida Solite are fired with coal, LBM or a mixture of these two fuels.

The primary combustion air for these fuels is provided by damper-controlled blowers (one for the coal and one for the LBM). This primary air also functions to transport the fuel into the kiln and, in the case of LBM, to atomize the fuel. Secondary combustion air is pulled into the kiln through openings at the kiln face by an I.D. fan located at the back end of the kiln. This fan is also damper-controlled.

The production of a quality lightweight aggregate requires that the feed product be heated to a temperature of 2000-2100 degrees Fahrenheit. If this temperature is not achieved, the feed stock will not expand (bloat) properly, resulting in a material that is too dense. On the other hand, if the temperature range is exceeded, the feed stock will melt and cling to the wall of the kiln. This requires a kiln shut-down and the manual removal of the fused feed stock from the kiln wall.

In addition to the temperature of 2000-2100 degrees Fahrenheit which must be achieved, the temperature distribution in the kiln is also quite critical. The temperature distribution must be such that the feed stock is gradually heated and reaches the temperature of 2000-2100 degrees Fahrenheit shortly before being discharged from the kiln. Heating the material too rapidly results in uneven heating and hence, a non-uniform product.

The overall heat distribution in the kiln is controlled by the damper on the I.D. fan. This damper is balanced to provide an air-flow rate to the kiln that will result in an acceptable temperature profile for the kiln production rate and the fuel feed rate. The location of the high temperature zone in the kiln (both temperature and location) is then adjusted by varying the primary combustion air and the amount of fuel fired to the kiln. As the primary combustion air increased, the flame burns more rapidly and nearer the front of the kiln. As the primary combustion air decreased, the flame produced is a slower-burning flame which moves the high temperature zone further back into the kiln.

During the period of testing on July 17, 1987, the primary combustion air was varied to determine the effect on NOx emissions but the secondary combustion air was not. It was felt that variations in the primary combustion air would have a greater potential effect on NOx emissions than would variations in the secondary air. Also, Solite does not have much flexibility in varying the flow rate of the secondary combustion air while still maintaining conditions that will produce a quality lightweight aggregate product. Adjustments in the primary combustion air were made between 1606 and 1631. The record of the NOx concentration in the stack gas during this period is included in the Appendix of this report.

In reviewing this record, it was assumed that normal kiln operating conditions were achieved at the time of 1606 and that normal kiln operating conditions were re-established at a time of 1631. Between these times, kiln operating conditions were varied. A baseline NOx concentration was established by drawing a straight line between the NOx concentration measured at 1606 and the NOx concentration measured at 1631.

At 1606, the primary combustion air damper was opened one inch (on damper arm adjustment plate) beyond the normal position. At 1612, the primary air damper was opened an additional one inch beyond the normal operating position (two inches total beyond the normal operating position). These adjustments resulted in an increase in primary combustion air and pulled the flame nearer the discharge end of the kiln. These adjustments appeared to have no significant effect on the NOx concentration measured in the stack gas but did result in a more plastic feed stock (one nearer the point of fusion).

At the time of 1618, the primary air damper was closed one inch below the normal position, forcing the flame further back into the kiln. This adjustment apparently reduced the NOx concentration of the stack gas from 37 ppm to 30 ppm, but resulted in an unacceptable (underheated) product. At 1623, the fuel rate was increased to compensate for the damper adjustment made at 1618. This adjustment resulted in an increase in the NOx concentration to a level that was approximately 4 ppm (less than one pound per hour) below the baseline level. At 1626, the primary air damper was closed to a position 2 inches below the normal position and the NOx

concentration in the stack gas dropped approximately 8 ppm (1.5 pounds per hour) below the baseline level. At this setting, the product again approached an unacceptable (underheated) quality. At 1631, the primary combustion air damper was returned to the normal operating position. At this setting, the NOx concentration in the stack gas leveled off at a concentration of approximately 30 ppm (6 pounds an hour as NO2).

The adjustments made to the primary air fired with LBM demonstrate that increasing the primary air flow has no significant effect on the NOx concentration in the stack gas. This adjustment does produce a hotter flame and pulls the flame toward the front of the kiln. The overall result on kiln operating conditions was a product that was nearer the point of fusion (beginning to stick to the kiln wall) and no significant change in the stack gas NOx concentrations.

A reduction in the primary air resulted in a decrease of stack gas NOx levels of 5-8 ppm (1.0-1.5 pounds per hour) but also resulted in an underheated product. An increase in the fuel firing rate to compensate for the reduced primary air increased the stack gas NOx levels to near the baseline levels.

The results of these measurements have demonstrated that none of the adjustments that Solite can make in the firing rate of primary combustion air, while still maintaining acceptable kiln operating conditions, will have any significant effect on the NOx emission rate from the kiln. The secondary air flow rate was not varied since the total air flow rate

through the kiln (a function of the secondary combustion air) can be varied only through narrow limits and a judgment was made that the concentration of NOx in the stack gas would be less sensitive to these slight variations in the secondary combustion air than to the variations in primary combustion air.

Since there is nothing Solite can do within the narrow range of kiln operating conditions necessary to produce a quality lightweight aggregate product that will reduce NOx emissions, Solite requests the Department to amend the NOx emission limit established by Specific Condition 12 of Permit AC10-125262. This condition establishes a target NOx emission rate, expressed as NO2, of 14.2 pounds per hour. During the test period on July 17, 1987, the 14.2 pound per hour emission rate was exceeded 54 percent of the time that measurements were made. The highest NOx emission measured was 21.6 pounds per hour while the kiln was being fired only with LBM. Solite is of the opinion that an NOx emission rate, expressed as NO2, that would be reasonable and acceptable while Kiln 1A is fired with LBM would be 30.0 pounds per hour. This emission limit will provide for fluctuation in NOx levels above the maximum measured concentration of 21.6 pounds per hour that may result from variations in kiln operating conditions and fuel composition.

An NOx emission limit applicable to periods when the kiln is fired with coal and LBM can only be estimated at this time. From AP-42, the expected NOx emission rate from coal firing is in the range of 0.9 pounds per million BTU and for the firing of distillate fuel oil (assumed to be

comparable to LBM), the NOx emission rate is in the range of 0.2 pounds per million BTU. Based upon the ratio of these NOx emission rates, the maximum expected NOx emission from Kiln 1A would be in the range of 135 pounds per hour [(0.9/0.2) X 30lb/hr] when the kiln is fired with coal at the rate of 2.0 tons per hour and in the range of 67.5 pounds per hour when the kiln is fired with a mixture of LBM (308 gallons per hour) and coal (0.7 tons per hour). Based upon the measurements made on July 17, 1987 and data from AP-42, Solite feels that these NOx emission limits are reasonable for periods when the kiln is fired with coal and with a LBM/coal mixture.

APPENDIX

1. Equations and Nomenclature
2. Calculations
3. Field and Laboratory Data Sheets
4. Source Information
5. Equipment Calibrations
6. Project Participants

PRELIMINARY DATA SHEET

Plant FLORIDA SOLITE Stack KILN 1A

Date 7/17/87

Stack Dimensions 56.5" ø Stack Area (ft.²) 17.41 ft²

Pitot Corr. factor 0.84

DB 142 °F WB 139 °F DP 138 °F *

V.P. at DP 5.58"Hg Fract. D.A. 0.814

Density Factor ___ Stack Pres. 30.07

Weather Cloudy

Temp 90 °F Pressure 30.06"Hg

Wind Dir. N Vel. 5-10

Sketch of Stack Cross-Section

Pitot Traverse $M_s = 0.814(29) + 0.186(18) = 26.95$ lb/lb-mol

Point Number	Equal Area Radius	Distance From Stack Wall	Distance From End of Port	Port #1		Port #2		Port #3		Port #4	
				H	Velocity	H	Velocity	H	Velocity	H	Velocity
1				0.51							
2				0.53							
3				0.55			* Note: Temperatures measured with ASTM glass thermometer				
4				0.48							
5				0.43							
6				0.35							
7				0.44							
8				0.40							
9				0.25							
10				0.23							
11				0.23							
12				0.20							
13				0.30							
14				0.32							
15				0.35							
16				0.34							
17				0.37							
18				0.39							
19				0.55							
20				0.56							
21				0.46							
22				0.42							
23				0.39							
24				0.32							

Avg 0.383

$$Q = A \times V = (17.41\ ft^2)(60\ \tfrac{sec}{min})(85.49)(0.84)(\sqrt{0.383})\sqrt{\frac{602}{30.07(26.95}}$$

$$= 40,010\ acfm$$

$$\times (0.814)\left(\frac{528}{602}\right)\left(\frac{30.07}{29.92}\right)$$

$$= 28,708\ scfm\ dry$$

PITOT TUBE CALIBRATION MEASUREMENTS

PITOT TUBE IDENTIFICATION NO. KA-63

DATE CALIBRATED 12/23/86

PITOT TUBE ASSEMBLY LEVEL ? _____ YES X NO

PITOT TUBE OPENINGS DAMAGED ? ____ YES (EXPLAIN BELOW) X NO

α_1= 2.0 ° (<10°) α_2= 3.5 ° (<10°)

β_1= 1.5 ° (<5°) β_2= 1.0 ° (<5°)

Y= 4.5 °, 0= 2.0 °, A= 0.848 IN. = (PA+PB)

Z = A SIN Y = 0.067 IN. (<0.125 IN.)

W = A SIN θ = 0.029 IN. (<0.031 IN.)

P_A 0.412 IN. P_b 0.436 IN.

D_t 0.375 IN. (≥ 0.1875 IN. ≤ 0.3750 IN.)

COMMENTS: Visual check 7/17/87 ; no damage

CALIBRATION REQUIRED? _____ YES X NO

CALIBRATED BY: Rodney Paul

PTCMFORM 1/8/87

KOOGLER K

Analyzer calibration data

Source identification: SOLITE KILN 1A
Test personnel: JBK, RCP
Date: 7/17/87
Analyzer calibration data for sampling runs: 1437 - 1700 hrs
Span: 0 - 250 ppm

	Cylinder value (indicate units)	Analyzer calibration response (indicate units)	Absolute difference (indicate units)	Difference (percent of span)
Zero gas - Amb Air	0	0	0	0
Mid-range gas	86	86	0	0
High-range gas	160	161	1	0.4 %

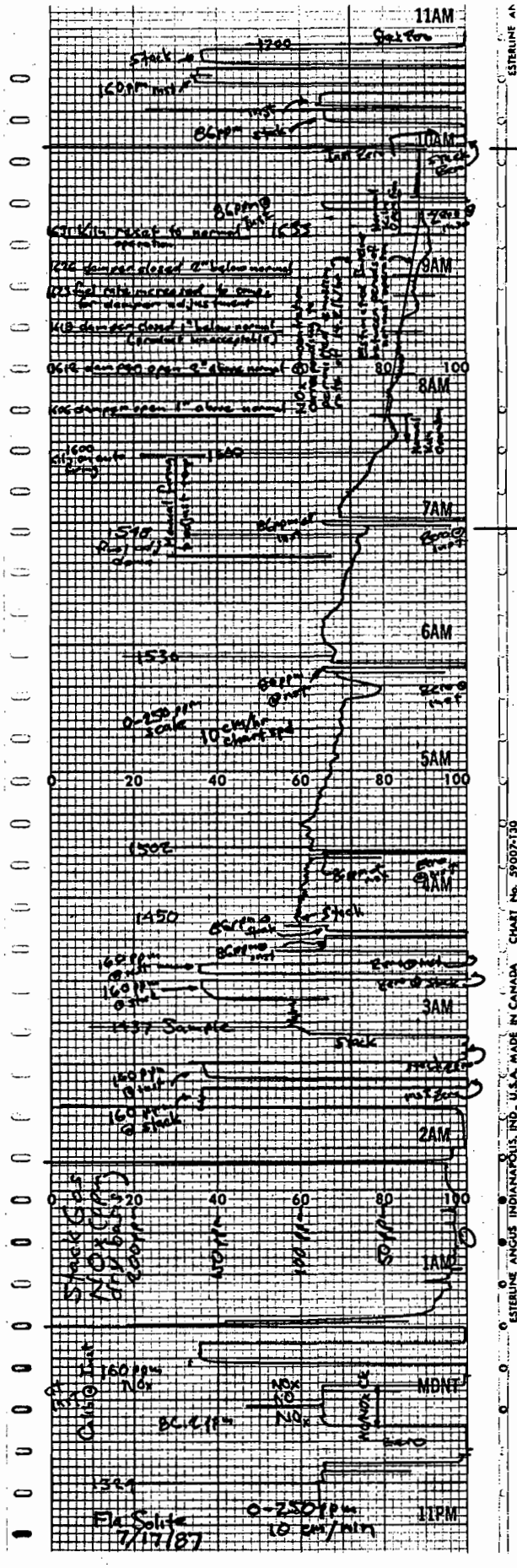
System calibration bias and drift data.

Source identification: SOLITE KILN 1A
Test personnel: JBK, RCP
Date: 7/17/87
Run number: 1437 - 1700 hrs
Span: 0 - 250 ppm

	Analyzer calibration response	Initial values		Final values		Drift (percent of span)
		System calibration response	System cal. bias (percent of span)	System calibration response	System cal. bias (percent of span)	
Zero gas	0	0	0	0	0	0
Upscale gas	86	85	-0.4 %	88	+0.8 %	1.2 %
		Time - 1445		Time - 1655		

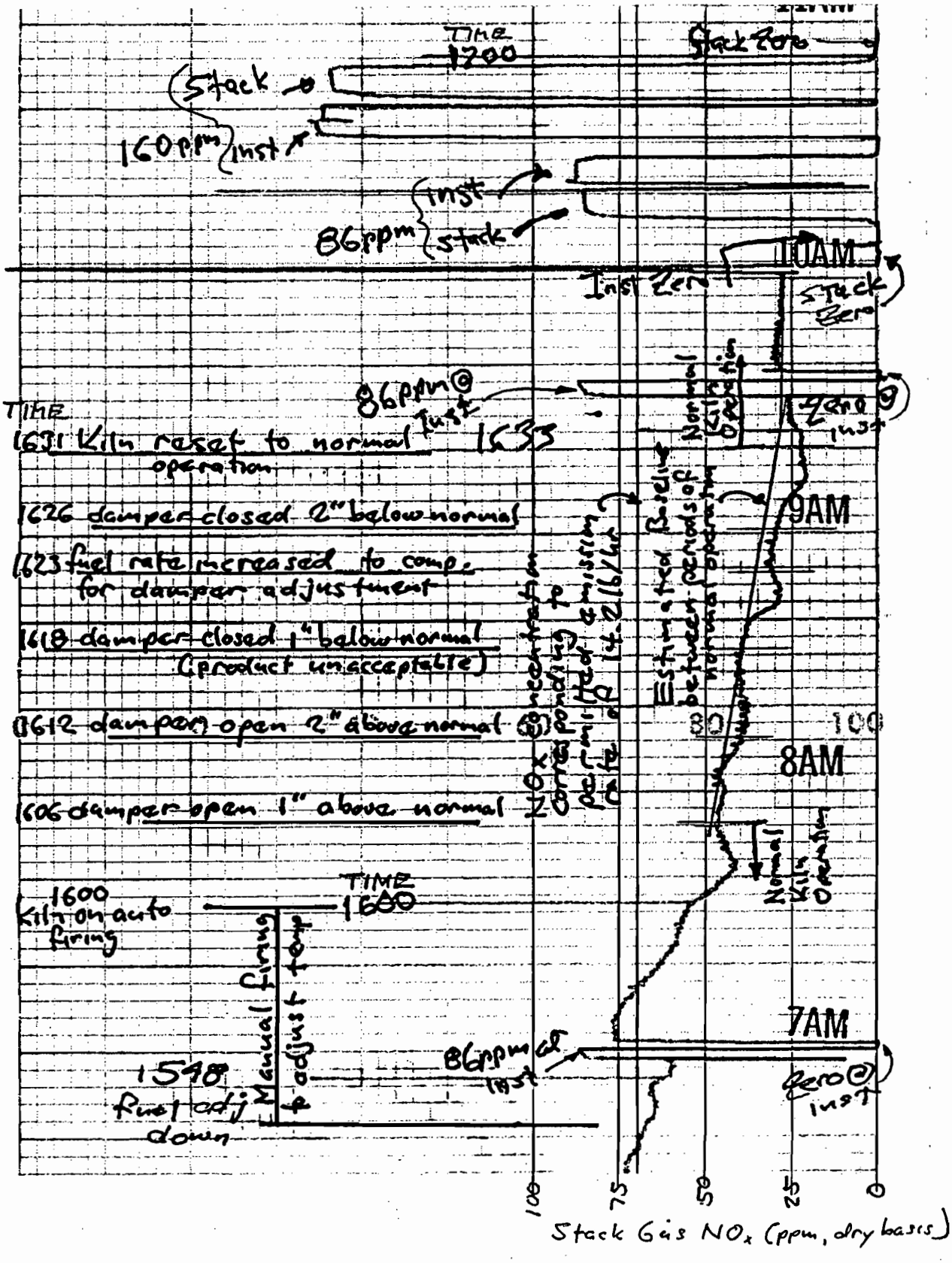
$$\text{System Calibration Bias} = \frac{\text{System Cal. Response-Analyzer Cal. Response}}{\text{Span}} \times 100$$

$$\text{Drift} = \frac{\text{Final System Cal. Response-Initial System Cal. Response}}{\text{Span}} \times 100$$



See following page for enlargement of this section of chart

STACK GAS NOx
FLORIDA SOLITE
KILN 1A
JULY 17, 1987



NOx levels in stack gas during adjustments to primary air

Florida Solite - Kiln 1A

July 17, 1987

PROJECT PARTICIPANTS

PROJECT PARTICIPANTS

John B. Koogler, Ph.D., P.E.	Project Advisor
Rodney C. Paul	Field Test Crew

P 274 021 721

RECEIPT FOR CERTIFIED MAIL

NO INSURANCE COVERAGE PROVIDED
NOT FOR INTERNATIONAL MAIL
(See Reverse)

Sent to Mr. John M. Kuiken Fl Solite Corp	
Street and No. P O Box 297	
P.O., State and ZIP Code Green Cove Springs, Fl 32043	
Postage AC10-125262	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt showing to whom and Date Delivered	
Return Receipt showing to whom, Date, and Address of Delivery	
TOTAL Postage and Fees	$
Postmark or Date	

PS Form 3800, June 1985 ☆ U.S.G.P.O. 1985-480-794

PS Form 3811, July 1983 447-845 DOMESTIC RETURN RECEIPT

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1. ☒ Show to whom, date and address of delivery.
2. ☐ Restricted Delivery.

3. Article Addressed to:

Mr. John M. Kuiken
Fl Solite Corp
P O Box 297
Green Cove Springs, Fl 32043

4. Type of Service:	Article Number
☐ Registered ☐ Insured ☒ Certified ☐ COD ☐ Express Mail	P 274 021 721

AC 10-125262

Always obtain signature of addressee or agent and DATE DELIVERED.

5. Signature – Addressee
X

6. Signature – Agent
X Carl L. Lowell Jr.

7. Date of Delivery
8-6-87

8. Addressee's Address *(ONLY if requested and fee paid)*

file

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

July 31, 1987

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. John M. Kuiken
Plant Manager
Florida Solite Corporation
Post Office Box 297
Green Cove Springs, Florida 32043

Dear Mr. Kuiken:

Re: Amendment of Permit No. AC 10-125262

The Department is in receipt of John B. Koogler's July 17, 1987, letter requesting the permit to construct kiln No. 1A be extended. The purpose of the extension is to allow additional time to conduct the nitrogen oxides emission test required by Specific Condition No. 12 and to complete the application for permit to operate required by Specific Condition No. 22 of the construction permit. This request is acceptable and the expiration date of permit No. AC 10-125262 is changed from August 1, 1987, to November 30, 1987.

A copy of this letter must be actached to the referenced construction permit and shall become a part of that permit.

Sincerely,

Dale Twachtmann
Secretary

DT/ks

cc: W. P. Stewart, NE District
J. B. Koogler, P.E.

attachments

State of Florida
DEPARTMENT OF ENVIRONMENTAL REGULATION

Interoffice Memorandum

For Routing To Other Than The Addressee	
To:	Location:
To:	Location:
To:	Location:
From:	Date:

TO: Dale Twachtmann

THRU: Howard Rhodes

FROM: Clair Fancy

DATE: July 27, 1987

SUBJ: Amendment to Construction Permit No. AC 10-125262
Florida Solite Corporation

Attached for your approval and signature is a letter that will extend the expiration date of the given construction permit issued to the above mentioned company. This extension will allow additional time for the permittee to submit a compliance test report needed to complete their application for a permit to operate.

The request is not controversial. The Bureau recommends this extension be approved.

CHF/mj

attachment

PM
7-17-87
Gainesville, FL

full copy

KOOGLER & ASSOCIATES, *Environmental Services*
1213 NW 6th Street • Gainesville, Florida 32601 • 904/377-5822

DER

JUL 20 1987

BAQM

KA 150-86-06

July 17, 1987

Mr. C. H. Fancy
Florida Department
of Environmental Regulation
Bureau of Air Quality Management
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Subject: Florida Solite Company
Kiln 1A
Permit AC10-125262

Dear Mr. Fancy:

On January 15, 1987, the Florida Solite Company was issued Air Construction Permit No. AC10-125262 for the construction of a seven ton per hour light-weight aggregate kiln, designated as Kiln No. 1A. The permit is due to expire on August 1, 1987. Compliance testing was conducted on the kiln on February 20, 1987 to demonstrate compliance with the emission limiting standards of the permit. It was determined that additional testing would be required to demonstrate compliance with the nitrogen oxides emission limiting standard established by Specific Condition No. 12. This testing is scheduled for July 17, 1987.

A Certificate of Completion of Construction for the kiln was prepared and submitted to the Northeast District office of DER in April, 1987. The issuance of an Air Operating permit for the kiln is being held up until the NOx sampling scheduled for July 17, 1987 is completed.

The purpose of this letter is to request a 90-day extension, until November 1, 1987, on the expiration date of Construction Permit AC10-125262. This extension will allow us to complete the nitrogen oxides testing, prepare the report of the emission measurements and, if necessary, request an amendment to the nitrogen oxides emission limit of the permit under the conditions of Specific Condition No. 12.

7.20.57

Bill:

CHF:
Who does this
go to?

—Willard—

If there are any questions regarding this request for an extension, or if additional information is required, please do not hesitate to contact me.

Very truly yours,

KOOGLER & ASSOCIATES

John B. Koogler, Ph.D., P.E.

JBK:mab

cc: Bill Thomas, FDER, Tallahassee
W.P. Stewart, FDER, Jacksonville
John Kuiken, Florida Solite Company

KOOGLER & ASSOCIATES, *Environmental Services*
1213 NW 6th Street • Gainesville, Florida 32601 • 904/377-5822

Mr. C. H. Fancy
Florida Department
of Environmental Regulation
Bureau of Air Quality Management
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

P 408 530 596

RECEIPT FOR CERTIFIED MAIL

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NOT FOR INTERNATIONAL MAIL

(See Reverse)

Sent to Mr. John M. Kuiken	
Street and No.	
P.O., State and ZIP Code	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to whom and Date Delivered	
Return Receipt Showing to whom, Date, and Address of Delivery	
TOTAL Postage and Fees	$
Postmark or Date 1/16/87	

PS Form 3800, Feb. 1982

PS Form 3811, July 1983 447-845

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1. ☐ Show to whom, date and address of delivery.
2. ☐ Restricted Delivery.

3. Article Addressed to:
Mr. John M. Kuiken
Florida Solite Corp.
P. O. Box 297
Green Cove Springs, FL 32043

4. Type of Service:
☐ Registered ☐ Insured
☒ Certified ☐ COD
☐ Express Mail

Article Number
P 408 530 596

Always obtain signature of addressee or agent and DATE DELIVERED.

5. Signature — Addressee
X

6. Signature — Agent
X

7. Date of Delivery

8. Addressee's Address *(ONLY if requested and fee paid)*

DOMESTIC RETURN RECEIPT

USPS GREEN COVE SPRINGS, FL JAN 1987

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

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION
NOTICE OF PERMIT

Mr. John M. Kuiken
Plant Manager
Florida Solite Corporation
Post Office Box 297
Green Cove Springs, Florida 32043

January 15, 1987

Enclosed is Permit Number AC 10-125262 to Florida Solite Corporation which authorizes the substitution of kiln No. 1A for kiln No. 1 at the Florida Solite Corporation facility near Green Cove Springs, Clay County, Florida. This permit is issued pursuant to Section 403, Florida Statutes.

Any Party to this permit has the right to seek judicial review of the permit pursuant to Section 120.68, Florida Statutes, by the filing of a Notice of Appeal pursuant to Rule 9.110, Florida Rules of Appellate Procedure, with the Clerk of the Department in the Office of General Counsel, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400; and by filing a copy of the Notice of Appeal accompanied by the applicable filing fees with the appropriate District Court of Appeal. The Notice of Appeal must be filed within 30 days from the date this permit is filed with the Clerk of the Department.

Executed in Tallahassee, Florida.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION

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

Copies furnished to:

John B. Koogler
Johnny Cole

CERTIFICATE OF SERVICE

This is to certify that this NOTICE OF PERMIT and all copies were mailed before the close of business on Jan. 16, 1987 to the listed persons.

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

Patricia G. Adams — Clerk
Jan. 16, 1987 — Date

Final Determination

Florida Solite Company
Green Cove Springs, Florida
Clay County

Clay Aggregate Kiln No. 1A
Permit No. AC 10-125262

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

January 15, 1987

Final Determination

The Technincal Evaluation and Preliminary Determination to substitute kiln No. 1A for kiln No. 1 at Florida Solite Company's facility near Green Cove Springs was distributed on October 31, 1986. Copies of the evaluation were available for public inspection at Duval County's Bio-Environmental Services (BESD) and the department's offices in Jacksonville and Tallahassee. The Notice of Proposed Agency Action on the permit application was published in the Clay Today newspaper on November 10, 1986.

The applicant submitted comments on the determination in a letter dated November 26, 1986. No other comments were received. The applicant's comments and the department's response are listed below.

The applicant requested that specific conditions Nos. 9 and 10 be revised to allow the kiln to operate on 100 percent LBM or 100 percent coal with a maximum of 1.5 percent sulfur. They also requested that certified analysis be required on only the composite samples of LBM, not individual shipments. This request is acceptable, with conditions, and specific conditions Nos. 9 and 10 are modified in response to this request.

The applicant is requesting permission to operate kiln No. 1A prior to installing the continuous emissions monitor for sulfur dioxide. This request is acceptable, with conditions, provided the company does not submit any new applications for permits to construct which result in an increase in sulfur dioxide emissions until a minimum of 30 days of valid data from the monitor on kiln No. 1A are available to the department. Specific Condition No. 18 is revised to reflect this change.

The applicant expressed reservation about the nitrogen oxides standard specified for the kiln and requested the department establish a limit based on actual test data for the kiln. This request is acceptable and Specific Condition No. 12 is revised in response to this request.

The applicant stated that fugitive emissions from the clay feed area were nil and asked that the requirement to pave and clean the clay feed area be replaced by other reasonable precautions to minimize emissions. This request is acceptable and Specific Condition No. 1 is revised to reflect this change.

The final action of the department will be to issue the construction permit with the changes noted above.

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

PERMITTEE:
Florida Solite Company
P. O. Box 297
Green Cove Springs, FL 32403

Permit Number: AC 10-125262
Expiration Date: August 1, 1987
County: Clay
Latitude/Longitude: 30° 04' 09" N
81° 45' 11" W
Project: Clay Aggregate Kiln No. 1A

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

Substitute kiln No. 1A for Kiln No. 1. Kiln No. 1A is a 47.6 million Btu/hr heat input, 7 TPH (product) unit that is equipped with a cooler and a Ducon Dynamic, Type UW4, Model 111, Size 108 scrubber. It will use the existing wet clay feed system, coal and liquid burnable material fuel system, and product transfer system that presently services the 7 TPH No. 1 kiln. This equipment is located in Clay County at the existing facility north of Green Cove Springs on State Road 200 A North. The UTM coordinates are Zone 17, 427.4 E and 3326 N.

Operation shall be in accordance with the application for a permit to construct No. 1A kiln that was signed by Mr. John Kuiken on September 12, 1986, except for the changes mentioned in the Technical Evaluation and Preliminary Determination and listed as Specific Conditions of this construction permit.

Attachment:

Application received September 17, 1986.

PERMITTEE:
Florida Solite Company

Permit Number: AC 10-125262
Expiration Date: August 1, 1987

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 Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is hereby placed on notice that the department will review this permit periodically and may initiate enforceable 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 applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the department.

3. As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey any vested rights or any exclusive privileges. 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. This permit does not constitute a waiver of or approval of any other department permit that may be required for other aspects of the total project which are not addressed in the permit.

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

5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, 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, unless specifically authorized by an order from the department.

GENERAL CONDITIONS:

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

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

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

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

c. Sampling or monitoring any substances or parameters at any location reasonably necessary to assure compliance with this permit or department rules.

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

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

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

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

GENERAL CONDITIONS:

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

9. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source, which are submitted to the department, may be used by the department as evidence in any enforcement case arising under the Florida Statutes or department rules, except where such use is proscribed by Sections 403.73 and 403.111, Florida Statutes.

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

11. This permit is transferable only upon department approval in accordance with Florida Administrative Code Rules 17-4.12 and 17-30.30, as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the department.

12. This permit is required to be kept at the work site of the permitted activity during the entire period of construction or operation.

13. This permit also constitutes:

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

14. The Permittee shall comply with the following monitoring and record keeping requirements:

a. Upon request, the permittee shall furnish all records and plans required under department rules. The retention period for all records will be extended automatically, unless otherwise stipulated by the department, during the course of any unresolved enforcement action.

GENERAL CONDITIONS:

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

c. Records of monitoring information shall include:

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

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

SPECIFIC CONDITIONS:

1. If visible emissions from the wet clay feed area exceed 5 percent opacity as determined by EPA Method 9, described in 40 CFR 60, Appendix A, the permittee shall take reasonable precautions to minimize emissions which shall include applying a wetting agent to the clay feed and constructing wind breaks near the clay feed system hoppers and transfer points.

2. Clay feed to the kiln No. 1A shall not exceed 14.4 TPH (wet) or 8.6 TPH (dry).

3. Clay aggregate produced by this kiln No. 1A shall not exceed 7 TPH (dry).

SPECIFIC CONDITIONS:

4. A front end loader used to transport the product from the cooler to the sizing and storage area shall be equipped with a scale which can be used to measure the production from the kiln No. 1A.

5. If visible emissions from the coal handling equipment and product cooler exceed 10 percent opacity, as determined by EPA Method 9 described in 40 CFR 60, Appendix A, the equipment shall be enclosed and/or the material sprayed with a wetting agent to minimize the emissions.

6. Visible emissions from transporting the product to the sizing and storage area shall not exceed 20 percent opacity as determined by DER Method 9 described in Chapter 17-2, FAC.

7. Reasonable precautions, which may include planting shrubs around the perimeter of the plant and wetting the plant area, shall be taken to minimize fugitive dust emissions from the facility.

8. The sulfur content of the coal shall not exceed 3 percent by weight when coal is burned in conjunction with LBM. If coal only is burned, the sulfur content shall not exceed 1.5 percent. A certified analysis by the latest applicable ASTM method shall be used to determine the percent sulfur in each shipment of coal received at the plant. Results of the analysis shall be kept by the company for a minimum of 2 years for department inspection.

9. The sulfur content of the liquid burnable material (LBM) used in the kiln shall not exceed 2.5 percent as determined for a composite sample of the fuel burned in the kiln during the week (Sunday thru Saturday) by the latest applicable ASTM methods. Test results (company procedure) of the sulfur content of the LBM used shall be obtained for each batch received at the plant and on a composite sample of the fuel burned during each week. Results of the analysis shall be kept by the company for a minimum of 2 years for department inspection.

9/7/89 should have been 31.2

10. Maximum fuel input to the kiln shall not exceed an equivalent heat input of 47.6 million Btu/hr. The following combinations of fuel usage and sulfur content are allowed.

Fuel	Max. Rate	Max. Sulfur Content
LBM	476 GPH	2.5%
LBM/coal	308 GPH/0.7 TPH	2.5%/3.0%
coal	2.0 TPH	1.5%

11. Sulfur dioxide emissions shall not exceed 226 lbs/hr (1 hr avg) as determined by EPA Method 6 which is described in 40 CFR 60, Appendix A, and 75.8 lbs/hr, 30 day average, as determined by a continuous

SPECIFIC CONDITIONS:

emissions monitor that meets the performance specifications listed in 40 CFR 60, Appendix B. Method 6 tests will be conducted while the kiln No. 1A is operating at 90 to 100 percent of permitted capacity and burning 0.7 TPH of coal in the fuel mix. Test data shall include the quantity and percent sulfur of each fuel burned during the test.

12. The permittee shall conduct nitrogen oxides emission measurements on kiln No. 1A by Method 7 or any EPA approved alternative method in 40 CFR 60, Appendix A, and make reasonable adjustment to achieve the lowest nitrogen oxides emission rate. If the lowest nitrogen oxides emission rate exceed 14.2 lbs/hr (53.8 TPY), the permittee shall submit an engineering report, including test data, to justify the lowest nitrogen oxides emission rate than can be achieved by this kiln.

13. Particulate matter emissions shall not exceed the amount allowed by the process weight table, Rule 17-2.610(1), FAC, or 12.8 lbs/hr (48.5 TPY), whichever is more restrictive. Tests shall be by EPA Method 5 as described in 40 CFR 60, Appendix A, while kiln No. 1A is operating at 90 to 100 percent of it permitted capacity and burning 0.7 TPH of coal. Scrubber parameters will be recorded during the compliance test. Visible emissions from the kiln shall not exceed 20 percent opacity as determined by DER Method 9 described in Chapter 17-2, FAC.

14. The scrubber shall be equipped with instrumentation to measure the pressure drop of the gas flowing through the scrubber, the pressure of the scrubber water, and the flow (GPH) of scrubber water. The company shall log these readings each day the kiln operates and keep these records for a minimum of 2 years for department inspection.

15. Kiln No. 1A shall not be operated without the scrubber working properly or with the damper open.

16. The liquid burnable waste shall not contain any organic cyanides, sulfide, mercaptans, PCB's, insecticides, pesticides, herbicides, electroplating waste or radioactive materials. Florida Solite Company shall retain the manifest of each load for 2 years for department inspection.

17. The 7 TPH kiln No. 1A shall be equipped with a recording radiant pyrometer and the kiln shall be operated at temperatures above 1800°F when LBM is used as fuel. The temperature records will be retained by the company for 2 years for department inspection.

PERMITTEE:
Florida Solite Company

Permit Number: AC 10-125262
Expiration Date: August 1, 1987

SPECIFIC CONDITIONS:

18. The permittee shall order a sulfur dioxide continuous emissions monitor that meets all the specifications described in 40 CFR 60, Appendix B, Performance Specification 2, prior to operating kiln No. 1A. The monitor shall be installed on the stack and placed in operation as rapidly as is feasible. Until a permit to operate this kiln is issued, the permittee shall submit a monthly status report on the monitor and the calculated sulfur dioxide emissions, 30 day average, based on fuel consumption and certified analysis of the fuel burned.

19. Compliance tests specified in this permit shall be conducted within 30 days of placing kiln No. 1A in operation. The Northeast District shall be notified at least 15 day prior to the compliance tests.

20. The existing 7 TPH kiln No. 1 (AO 10-72240) shall not be operated when kiln No. 1A is in use. Total hours of operation of kiln No. 1 and No. 1A shall not exceed 7,600 hrs/yr.

21. The kiln and its accessory equipment shall be constructed, maintained, and operated in such a manner that the unit will not cause, suffer, allow, or permit the discharge of air pollutants which cause or contribute to an objectionable odor.

22. A complete application for a permit to operate this source, which includes all compliance test reports and at least 30 days continuous emissions monitor data for sulfur dioxide (1 hr avg), shall be submitted to the Northeast District office 90 days prior to the expiration of this permit to construct.

23. Any permit to operate issued for this system shall require routine compliance tests, quarterly reports showing 1 hr averages of the sulfur dioxide emissions from the continuous emissions monitor, and annual operation reports. It shall also limit the operation of kilns Nos. 1 and 1A to 7,600 hrs/yr (total).

Issued this 15 day of January 1987.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION

Howard L. Rhodes

Howard L. Rhodes, P.E.
Director, Division of Environmental Programs

_____pages attached.

State of Florida
DEPARTMENT OF ENVIRONMENTAL REGULATION

Interoffice Memorandum

FOR ROUTING TO OTHER THAN THE ADDRESSEE

To: _____ Loctn: _____
To: _____ Loctn: _____
To: _____ Loctn: _____
From: _____ Date: _____

RECEIVED
JAN 15 1987
DIRECTOR - PROGRAMS

TO: Howard Rhodes

FROM: Clair Fancy

DATE: January 15, 1987

SUBJ: Approval of Air Construction Permit and BACT Determinations

Attached you will find one air construction permit to Florida Solite Company (day 90 is January 23, 1987) and BACT determinations for Metalcoat, Inc. of Florida, Chevron U.S.A., Inc. and Venice Hospital for your signature.

CHF/ks

P 408 532 054

RECEIPT FOR CERTIFIED MAIL

NO INSURANCE COVERAGE PROVIDED—
NOT FOR INTERNATIONAL MAIL

(See Reverse)

Sent to Mr. John M. Kuiken	
Street and No.	
P.O., State and ZIP Code	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to whom and Date Delivered	
Return Receipt Showing to whom, Date, and Address of Delivery	
TOTAL Postage and Fees	$
Postmark or Date 10/31/86	

PS Form 3800, Feb. 1982

PS Form 3811, July 1983 447-845

DOMESTIC RETURN RECEIPT

● **SENDER: Complete items 1, 2, 3 and 4.**

Put your address in the "RETURN TO" space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for service(s) requested.

1. ☐ Show to whom, date and address of delivery.
2. ☐ Restricted Delivery.

3. Article Addressed to:
Mr. John M. Kuiken
Florida Solite Corp.
P. O. Box 297
Green Cove Springs, FL 32043

4. Type of Service:
☐ Registered ☐ Insured
☒ Certified ☐ COD
☐ Express Mail

Article Number
P 408 532 054

Always obtain signature of addressee or agent and DATE DELIVERED.

5. Signature – Addressee
X

6. Signature – Agent
X

7. Date of Delivery
11-3-86

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

GREEN COVE NOV 1986

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

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

BOB GRAHAM
GOVERNOR

VICTORIA J. TSCHINKEL
SECRETARY

October 31, 1986

CERTIFIED MAIL-RETURN RECEIPT REQUESTED

Mr. John M. Kuiken
Plant Manager
Florida Solite Corporation
Post Offic Box 297
Green Cove Springs, Florida 32043

Dear Mr. Kuiken:

Attached is one copy of the Technical Evaluation and Preliminary Determination, and proposed permit to construct kiln No. 1A at your existing facility in Clay County, Florida.

Please submit, in writing, any comments which you wish to have considered concerning the department's proposed action to Mr. Bill Thomas of the Bureau of Air Quality Management.

Sincerely,

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

CHF/pa

Attachments

cc: John B. Koogler, P.E.
Johnny Cole

State of Florida
Department of Environmental Regulation
Notice of Intent

The Department gives notice of its intent to issue a permit to Florida Solite Corporation to construct a new 10 TPH kiln No. 1A to replace existing kiln No. 1 at the applicant's facility on State Road 200 A north of Green Cove Springs, Clay County, Florida. A determination of best available control technology (BACT) was not required.

Persons whose substantial interests are affected by the Department's proposed permitting decision may petition for an administrative determination (hearing) in accordance with Section 120.57, Florida Statutes. The petition must conform to the requirements of Chapters 17-103 and 28-5, Florida Administrative Code, and must be filed (received) in the Department's Office of General Counsel, 2600 Blair Stone Road, Twin Towers Office Building, Tallahassee, Florida 32301, within fourteen (14) days of publication of this notice. Failure to file a petition within this time period constitutes a waiver of any right such person has to request an administrative determination (hearing) under Section 120.57, Florida Statutes.

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 proposed agency action. Therefore, persons who may not wish to file a petition may wish to intervene in the proceeding. A petition for intervention must be filed pursuant to Rule 28-5.207, Florida Administrative Code, 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, Florida Statutes.

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:

Dept. of Environmental Regulation
Bureau of Air Quality Management
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

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

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

BEFORE THE STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

In the Matter of
Application for Permit by:

Florida Solite Corporation
Post Office Box 297
Green Cove Springs, Florida 32043

DER File No. AC 10-125262

INTENT TO ISSUE

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

The applicant, Florida Solite Corporation, applied on September 18, 1986, to the Department of Environmental Regulation for a permit to construct a new 10 TPH kiln No. 1A to replace existing kiln No. 1 at the applicant's facility near Green Cove Springs, Clay County, Florida.

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

Pursuant to Section 403.815, F.S. 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 local 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 days of publication of

the notice. Failure to publish the notice and provide proof of publication within the allotted time may result in the denial of the permit.

The Department will issue the permit with the attached conditions unless petition for an administrative proceeding (hearing) is filed pursuant to the provisions of Section 120.57, F.S. A person whose substantial interests are affected by the Department's proposed permitting decision may petition for an administrative proceeding (hearing) in accordance with Section 120.57, Florida Statutes. Petitions must comply with the requirement of Florida Administrative Code Rules 17-103.155 and 28-5.201 (copies enclosed) and be filed with (received by) 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 receipt of this intent. Petitions filed by other persons must be filed within fourteen (14) days of publication 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, Florida Statutes, concerning the subject permit application. Petitions which are not filed in accordance with the above provisions will be dismissed.

Executed in Tallahassee, Florida.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION

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

Copies furnished to:

John M. Kuiken
John B. Koogler, P.E.
Johnny Cole

CERTIFICATE OF SERVICE

The undersigned duly designated deputy clerk hereby certifies that this NOTICE OF INTENT TO ISSUE and all copies were mailed before the close of business on October 31, 1986.

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

Patricia G. Adams — October 31, 1986
Clerk — Date

RULES OF THE ADMINISTRATIVE COMMISSION
MODEL RULES OF PROCEDURE
CHAPTER 28-5
DECISIONS DETERMINING SUBSTANTIAL INTERESTS

28-5.15 Requests for Formal and Informal Proceedings

(1) Requests for proceedings shall be made by petition to the agency involved. Each petition shall be printed typewritten or otherwise duplicated in legible form on white paper of standard legal size. Unless printed, the impression shall be on one side of the paper only and lines shall be double spaced and indented.

(2) All petitions filed under these rules should contain:

(a) The name and address of each agency affected and each agency's file or identification number, if known;

(b) The name and address of the petitioner or petitioners;

(c) All disputed issues of material fact. If there are none, the petition must so indicate;

(d) A concise statement of the ultimate facts alleged, and the rules, regulations and constitutional provisions which entitle the petitioner to relief;

(e) A statement summarizing any informal action taken to resolve the issues, and the results of that action;

(f) A demand for the relief to which the petitioner deems himself entitled; and

(g) Such other information which the petitioner contends is material.

I. Application

A. Applicant

Florida Solite Company
Post Office Box 297
Green Cove Springs, Florida 32043

B. Request

The applicant is requesting permission to substitute a new 10 TPH kiln No. 1A and scrubber (no current valid state permit) for the manufacture of lightweight clay aggregate for the existing 7 TPH kiln No. 1 and scrubber. The new kiln No. 1A would be restricted to the production (7 TPH) and actual emissions of the kiln No. 1 that it replaces. Kiln No. 1 will be placed on cold stand-by.

The requested permit for kiln No. 1A is an interim request. Florida Solite Company has also begun the preparation of a PSD construction permit application that will request the simultaneous operation of kilns Nos. 1 and 1A as well as the other existing and permitted kiln No. 5.

C. Project and Location

A new rotary kiln (kiln No. 1A) was constructed at Florida Solite's Green Cove Spring plant under permit No. AC 10-84168 in 1984. It was supposed to replace existing kiln No. 1. This equipment is located in Clay County at the existing facility north of Green Cove Springs on State Road 200 A North. Compliance with the conditions of the permit were never consistently achieved and the permit expired on June 30, 1986. This new construction permit application is requesting permission to operate the new kiln (kiln No. 1A) under the same condition which kiln No. 1 (AO 10-72240) is being operated, i.e., the replacement of process equipment with similar process of equipment. Kiln No. 1 (AO 10-72240) will be placed on cold stand-by to be used only if kiln No. 1A is shut down for repairs.

D. Air Pollution Emissions

Kiln No. 1A, which will be fired with coal and spent solvents (LBM), will be used to produce an expanded light-weight clay aggregate for the construction industry. The production rate of aggregate from kiln No. 1A will be restricted to 7.0 tons per hour.

Particulate matter emissions from the kiln will be controlled with a Ducon UW4, Model 111, Size 108 scrubber. The system will be in full compliance with all emission regulations

that were applicable to kiln No. 1 (AO 10-72249). The applicable regulation is the process weight table (17-2.610(1)) which will allow up to 12.8 lbs/hr (55.6 TPY at continuous operation) particulate matter emissions.

Up to 0.7 TPH of coal (3.0% sulfur maximum) will be burned in the kiln to yield 16.8 x 10^6 Btu/hr. Up to 308 GPH of LBM (0.05-2.5% sulfur) will burned, concurrently, to yield 30.8 x 10^6 Btu/hr. The average consumption rate of LBM is estimated to be 200 GPH (20 x 10^6 Btu/hr).

The sulfur in the fuel will be converted to sulfur dioxide when it is burned. Some of the sulfur compounds in the clay will be converted to sulfur dioxide in the kiln. Test data has shown a variation in the sulfur dioxide emissions from this operation. The engineer estimates the sulfur dioxide emissions can vary from 75.8 to 266 lbs/hr. The applicant is willing to install a continuous emissions monitor to measure the sulfur dioxide emissions. This data will establish the actual emissions from this process and will be needed to evaluate future modifications at this facility. In the meantime, the applicant's engineer has requested the sulfur dioxide standard for kiln No. 1A be 75.8 lbs/hr, 30 day rolling average. This is his best estimate of the actual emissions from kiln No. 1.

The emissions of other criteria pollutants (NOx, CO, and VOC) will be controlled through operational practice.

The following table lists the maximum emission from kiln No. 1A while it is producing 7 TPH lightweight aggregate for 7,600 hours per year.

Pollutant	Standard	Max. TPY
Particulate Matter	Process weight table (17-2.610(1)) with a maximum of 12.8 lbs/hr	48.5
Sulfur Dioxide	226.0 lbs/hr, max. 1 hr emissions, 75.8 lbs/hr, 30 day rolling avg.	288.1
Nitrogen Oxides	14.2 lbs/hr	53.8
CO	11.3 lbs/hr	43.1
VOC	trace	trace
Visible Emission	20% opacity	

Any emission increase by the operation of kiln No. 1A is offset by identical emission decrease resulting from the shut-down of the existing kiln No. 1. Actual emissions are unchanged. Kiln No. 1 (AO 10-72240) will be placed on cold stand-by, to be used only if kiln No. 1A is shut down for repair.

II. Rule Applicability

A. State Regulations

The proposed project, substitution of a 7 (oversized) TPH clay aggregate kiln and scrubber (no valid permit) for an existing 7 TPH kiln and scrubber (AO 10-72240), is subject to preconstruction review under the provisions of Chapter 403, FS, and Chapter 17-2, FAC.

The plant site is in an area designated attainment for all criteria pollutants (Rule 17-2.420, FAC).

This facility is a major source of particulate matter and sulfur dioxide (Rule 17-2.100(99), FAC) because the emissions of each of these criteria pollutants exceeds 100 TPY. The proposed project will not change facility emissions. Therefore, the project is not subject to the Prevention of Significant Deterioration regulations (PSD), Rule 17-2.500, FAC, because it is a minor modification to a major source (Rule 17-2.500(2)(d)4.a.(ii), FAC).

The project is subject to Rule 17-2.520, FAC, Sources Not Subject to PSD or Nonattainment Requirements. Emission standards shall be set at the existing rates for kiln No. 1 which is being replaced. Any higher particulate matter or sulfur dioxide emissions may subject the facility to review under other regulations.

B. Federal Regulations

This project is not subject to federal PSD regulations, Section 52.21 of Title 40 of the Code of Federal Regulations (40 CFR 52.21), because it does not cause a significant net emission increase of any criteria pollutant.

III. Technical Evaluation

Approximately 14.4 TPH wet clay (8.6 TPH dry) will be calcined in kiln No. 1A to produce 7 TPH of product. Heat for the process will be provided by 0.7 TPH coal containing up to 3 percent sulfur and 308 GPH (200 GPH average) liquid burnable material (LBM) containing 0.05 to 2.5 percent sulfur. This is equivalent to a heat input of 16.8 MMBtu/hr from coal and 30.8 MMBtu/hr from LBM for a total of 47.6 MMBtu/hr input.

The contaminated gases from the kiln will be treated in a Ducon Type UW4 111, Size 108 scrubber which recycles its scrubber water. The manufacturer estimates the particulate matter removal efficiency of this scrubber at greater than 99 percent in the 1-2 micron range.

The light weight aggregate will be discharged from the kiln into a crude cooler consisting of metal side on a concrete foundation. Heated air from the product will be captured by a fan and used as combustion air in the kiln.

The product is removed from the cooler and transferred to a storage pile by payloaders.

Particulate matter emissions will be generated by the kiln and by the transfer of the product. The high efficiency scrubber will control particulate matter emissions from the kiln. Fugitive emissions from handling of the product can be reduced by wetting the product and planting shrubs to form windbreaks around the equipment.

Sulfur dioxide emissions are not controlled. The ambient air standards for sulfur dioxide will not be violated at the emissions estimated by the applicant. A continuous emissions monitor for sulfur dioxide will be installed to determine the actual sulfur dioxide emissions from the process. This information is needed to evaluate future modifications of this facility.

The emissions of the other criteria pollutants (NOx, CO, and VOC) will be controlled by good operational practices. A test will be required to determine the actual NOx emissions from the kiln.

IV. Ambient Air Impact

Screening modeling (MPTPLU) shows emissions from this kiln have a high impact on the ambient air quality for sulfur dioxide. At its estimated maximum sulfur dioxide emission rate of 226 lbs/hr, the maximum 1 hour impact is 550 ug/m^3. Extrapolation of this impact to other time periods does not show any ambient air quality violation.

V. Conclusion

The emissions from kiln No. 1A, when operating under the same restrictions that exist for kiln No. 1, will not exceed the current actual emission of kiln No. 1.

Kiln No. 1 will not be allowed to operate when kiln No. 1A is being used. Thus, the emissions from kiln No. 1A will be offset by an equal quantity of emissions from kiln No. 1. The

impact on the environment will not be changed by the substitution of kiln No. 1A for kiln No. 1. The department will require close monitoring of the fuels and emissions from kiln No. 1A to obtain reliable data to evaluate any future modification at this facility.

The General and Specific Conditions in the proposed permit, attached, will assure compliance of this source with the state regulations.

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

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

BOB GRAHAM
GOVERNOR

VICTORIA J. TSCHINKEL
SECRETARY

PERMITTEE:
Florida Solite Company
P. O. Box 297
Green Cove Springs, FL 32403

Permit Number: AC 10-125262
Expiration Date: August 1, 1987
County: Clay
Latitude/Longitude: 30° 04' 09" N
81° 45' 11" W
Project: Clay Aggregate Kiln No. 1A

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

Substitution of a 47.6 million Btu/hr 7 TPH (product) clay aggregate kiln No. 1A, cooler, and Ducon Dynamic, Type UW4, Model 111, Size 108 scrubber that will use the existing wet clay feed system, coal and liquid burnable material fuel systems, and product transfer system that presently serves the 7 TPH No. 1 kiln, for the No. 1 kiln. This equipment is located in Clay County at the existing facility north of Green Cove Springs on State Road 200 A North. The UTM coordinates are Zone 17, 427.4 E and 3326 N.

Operation shall be in accordance with the application for a permit to construct No. 1A kiln that was signed by Mr. John Kuiken on September 12, 1986, except for the changes mentioned in the Technical Evaluation and Preliminary Determination and listed as Specific Conditions of this construction permit.

Attachment:

Application received September 17, 1986.

PERMITTEE:
Florida Solite Company

Permit Number: AC 10-125262
Expiration Date: August 1, 1987

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 Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is hereby placed on notice that the department will review this permit periodically and may initiate enforceable 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 applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the department.

3. As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey any vested rights or any exclusive privileges. 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. This permit does not constitute a waiver of or approval of any other department permit that may be required for other aspects of the total project which are not addressed in the permit.

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

5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, 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, unless specifically authorized by an order from the department.

GENERAL CONDITIONS:

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

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

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

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

c. Sampling or monitoring any substances or parameters at any location reasonably necessary to assure compliance with this permit or department rules.

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

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

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

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

GENERAL CONDITIONS:

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

9. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source, which are submitted to the department, may be used by the department as evidence in any enforcement case arising under the Florida Statutes or department rules, except where such use is proscribed by Sections 403.73 and 403.111, Florida Statutes.

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

11. This permit is transferable only upon department approval in accordance with Florida Administrative Code Rules 17-4.12 and 17-30.30, as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the department.

12. This permit is required to be kept at the work site of the permitted activity during the entire period of construction or operation.

13. This permit also constitutes:

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

14. The Permittee shall comply with the following monitoring and record keeping requirements:

a. Upon request, the permittee shall furnish all records and plans required under department rules. The retention period for all records will be extended automatically, unless otherwise stipulated by the department, during the course of any unresolved enforcement action.

GENERAL CONDITIONS:

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

c. Records of monitoring information shall include:

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

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

SPECIFIC CONDITIONS:

1. The wet clay feed area shall be paved and cleaned periodically to minimize fugitive dust emissions from this area.

2. Clay feed to the kiln No. 1A shall not exceed 14.4 TPH (wet) or 8.6 TPH (dry).

3. Clay aggregate produced by this kiln No. 1A shall not exceed 7 TPH (dry).

SPECIFIC CONDITIONS:

4. A front end loader used to transport the product from the cooler to the sizing and storage area shall be equipped with a scale which can be used to measure the production from the kiln No. 1A.

5. If visible emissions from the coal handling equipment and product cooler exceed 10 percent opacity, as determined by DER Method 9 described in Chapter 17-2, FAC, the equipment shall be enclosed and/or the material sprayed with a wetting agent to minimize the emissions.

6. Visible emissions from transporting the product to the sizing and storage area shall not exceed 20 percent opacity as determined by DER Method 9 described in Chapter 17-2, FAC.

7. Reasonable precautions, which may include planting shrubs around the perimeter of the plant and wetting the plant area, shall be taken to minimize fugitive dust emissions from the facility.

8. The sulfur content of the coal shall not exceed 3 percent by weight. A certified analysis by the latest applicable ASTM method shall be used to determine the percent sulfur in each shipment of coal received at the plant. Results of the analysis shall be kept by the company for a minimum of 2 years for department inspection.

9. The sulfur content of the liquid burnable material (LBM) shall not exceed 2.5 percent by weight as determined by the latest applicable ASTM method. Certified test results of the sulfur content of the LBM used shall be obtained for each batch received at the plant site and on a composite sample of the fuel burned during each month. Results of the analysis shall be kept by the company for a minimum of 2 years for department inspection.

10. Maximum coal usage by kiln No. 1A shall not exceed 0.7 TPH. LBM usage by the new kiln shall not exceed 308 GPH (maximum 1 hr rate) GPH and 200 GPH daily average. Maximum combined (coal and LBM) fuel input to the kiln shall not exceed a heat input of 47.6 million Btu/hr.

11. Sulfur dioxide emissions shall not exceed 226 lbs/hr (1 hr avg) as determined by EPA Method 6 which is described in 40 CFR 60, Appendix A, and 75.8 lbs/hr, 30 day average, as determined by a continuous emissions monitor that meets the performance specifications listed in 40 CFR 60, Appendix B. Method 6 tests will be conducted while the kiln No. 1A is operating at 90 to 100 percent of permitted capacity and burning 0.7 TPH of coal in the fuel mix. Test data shall include the quantity and percent sulfur of each fuel burned during the test.

SPECIFIC CONDITIONS:

12. Nitrogen oxide emission shall not exceed 14.2 lbs/hr (53.8 TPY) as determined by Method 7 or any EPA approved alternative method in 40 CFR 60, Appendix A.

13. Particulate matter emissions shall not exceed the amount allowed by the process weight table, Rule 17-2.610(1), FAC, or 12.8 lbs/hr (48.5 TPY), whichever is more restrictive. Tests shall be by EPA Method 5 as described in 40 CFR 60, Appendix A, while kiln No. 1A is operating at 90 to 100 percent of it permitted capacity and burning 0.7 TPH of coal. Scrubber parameters will be recorded during the compliance test. Visible emissions from the kiln shall not exceed 20 percent opacity as determined by DER Method 9 described in Chapter 17-2, FAC.

14. The scrubber shall be equipped with instrumentation to measure the pressure drop of the gas flowing through the scrubber, the pressure of the scrubber water, and the flow (GPH) of scrubber water. The company shall log these readings each day the kiln operates and keep these records for a minimum of 2 years for department inspection.

15. Kiln No. 1A shall not be operated without the scrubber working properly or with the damper open.

16. The liquid burnable waste shall not contain any organic cyanides, sulfide, mercaptans, PCB's, insecticides, pesticides, herbicides, electroplating waste or radioactive materials. Florida Solite Company shall retain the manifest of each load for 2 years for department inspection.

17. The 7 TPH kiln No. 1A shall be equipped with a recording radiant pyrometer and the kiln shall be operated at temperatures above 1800°F when LBM is used as fuel. The temperature records will be retained by the company for 2 years for department inspection.

18. The stack shall be equipped with a sulfur dioxide continuous emissions monitor that meets all the specifications described in 40 CFR 60, Appendix B, Performance Specification 2.

19. Compliance tests specified in this permit shall be conducted within 30 days of placing kiln No. 1A in operation. The Northeast District shall be notified at least 15 day prior to the compliance tests.

PERMITTEE:
Florida Solite Company

Permit Number: AC 10-125262
Expiration Date: August 1, 1987

SPECIFIC CONDITIONS:

20. The existing 7 TPH kiln No. 1 (AO 10-72240) shall not be operated when kiln No. 1A is in use. Total hours of operation of kiln No. 1 and No. 1A shall not exceed 7,600 hrs/yr.

21. The kiln and its accessory equipment shall be constructed, maintained, and operated in such a manner that the unit will not cause, suffer, allow, or permit the discharge of air pollutants which cause or contribute to an objectionable odor.

22. A complete application for a permit to operate this source, which includes all compliance test reports and at least 30 days continuous emissions monitor data for sulfur dioxide (1 hr avg), shall be submitted to the Northeast District office 90 days prior to the expiration of this permit to construct.

23. Any permit to operate issued for this system shall require routine compliance tests, quarterly reports showing 1 hr averages of the sulfur dioxide emissions from the continuous emissions monitor, and annual operation reports. It shall also limit the operation of kilns Nos. 1 and 1A to 7,600 hrs/yr (total).

Issued this_____day of _____
19___.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION

_____
Victoria J. Tschinkel, Secretary

_____pages attached.

FLORIDA SOLITE® CORPORATION

P.O. BOX 297 • GREEN COVE SPRINGS • FLORIDA 32043 • (904) 284-9271

September 15, 1986

001031

Florida Department of Environmental Regulation
2600 Blair Stone Road
Tallahassee, Florida 32301

ATTN: CLAIR FANCY, Deputy Bureau Chief

Dear Mr. Fancy;

Enclosed, please find four (4) copies of the Construction Permit for #1-A Kiln at Florida Solite and also a check for $1000.00.

RECEIVED
DER - MAIL ROOM
1986 SEP 18 AM 10:56

Very truly yours,

John M Kuiken

John M. Kuiken, Plant Manager
FLORIDA SOLITE

~~Clair~~ - Bill
New applications
Millard has copy -
Please return
for file
Patty

Department of Environmental Regulation

Daily Cash Listing

Dep # 1538

Date Received 9-18-86

Bureau of Accounting & Budgeting (Revenue Section)

Date Bureau of Air Quality Received _____

Lister's Signature Nola K. Daughtry

Signature of Receiver _____

REMITTED BY	CHECK NUMBER	AMOUNT	RECEIPT NUMBER	REVENUE CODE	FILE NUMBER
Florida Solite Co.	933	$1,000.00	76134	001031	
Total this Page		$1,000.00			

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

No. 76134

RECEIPT FOR APPLICATION FEES AND MISCELLANEOUS REVENUE

Received from Florida Solite Co. Date Sept. 18, 1986

Address P.O. Box 297 Green Cove Springs, FL 32043 Dollars $ 1,000.00

Applicant Name & Address Same as above

Source of Revenue

Revenue Code 001031 Application Number AC 10-125262

By Patricia G. Adams

AC 10-125242

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

DER

SEP 17 1986

BAQM

NORTHEAST DISTRICT

3426 BILLS ROAD
JACKSONVILLE, FLORIDA 32207

BOB GRAHAM
GOVERNOR

VICTORIA J. TSCHINKEL
SECRETARY

G. DOUG DUTTON
DISTRICT MANAGER

APPLICATION TO ~~OPERATE~~/CONSTRUCT AIR POLLUTION SOURCES

SOURCE TYPE: Lightweight Aggregate Kiln [X] New[1] [ ] Existing[1]

APPLICATION TYPE: [X] Construction [ ] Operation [ ] Modification

COMPANY NAME: Florida Solite Co. COUNTY: Clay

Identify the specific emission point source(s) addressed in this application (i.e. Lime Kiln No. 4 with Venturi Scrubber; Peaking Unit No. 2, Gas Fired) No. 1A Kiln

SOURCE LOCATION: Street SR 209A North of Green Cove Springs City Green Cove Springs

UTM: East (17)427.400 km North 3326.500 km

Latitude 30 ° 04 ' 09 "N Longitude 81 ° 45 ' 11 "W

APPLICANT NAME AND TITLE: John Kuiken, Plant Manager

APPLICANT ADDRESS: Post Office Box 297, Green Cove Springs, FL 32043

SECTION I: STATEMENTS BY APPLICANT AND ENGINEER

A. APPLICANT

I am the undersigned owner or authorized representative* of Florida Solite 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: John Kuiken

John Kuiken, Plant Manager
Name and Title (Please Type)

Date: 9/12/86 Telephone No. (904) 284-9271

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

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

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

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

Signed _____

John B. Koogler, Ph.D., P.E.
Name (Please Type)

Koogler & Associates Environmental Services
Company Name (Please Type)

1213 N.W. 6th Street, Gainesville, FL 32601
Mailing Address (Please Type)

Florida Registration No. 12925 Date: 9/12/86 Telephone No. (904) 377-5822

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.

See attached page 2a

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

Start of Construction NA Completion of Construction NA

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.)

Ducon Scrubber, Fan and Ductwork $100,000

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

A010-72240 Issued for Kiln No. 1 11/1/83; expires 11/1/88 (See Attachment 1)

AC10-84168 issued 9/6/84; expiring 6/30/86 (for Kiln 1A)

SECTION II: GENERAL PROJECT INFORMATION

A. A new rotary kiln (Kiln No. 1A) was constructed under permit AC10-84168 in 1984 to replace existing Kiln No. 1. Compliance with the conditions of the permit were never consistently achieved and the permit expired on June 30, 1986. A new construction permit is applied for which will allow the operation of the new kiln (Kiln No. 1A) under the same conditions which Kiln No. 1 operated (A010-72240); i.e., the replacement of a piece of equipment with an identical piece of equipment.

Kiln 1A, which will be fired with coal or spent solvents, will be used to produce an expanded light-weight aggregate for the construction industry. The production rate of aggregate will be 7.0 tons per hour.

Particulate matter emissions from the kiln will be controlled with a Ducon UW4, Model III, Size 108 Scrubber. The system will be in full compliance with all emission regulations that were applicable to Kiln No. 1 (A010-72240).

All emission increases are offset by identical emission decreases resulting from the shut-down of the existing No. 1 kiln. It is requested that Kiln No. 1 (A010-72240) be placed on cold stand-by; to be used only if Kiln No. 1A is shut down for repair.

The requested permit for Kiln No. 1A is an interim request. Solite has also begun the preparation of a PSD construction permit application that will request the simultaneous operation of Kilns 1 and 1A as well as existing and permitted Kiln No. 5.

E. Requested permitted equipment operating time: hrs/day 24 ; days/wk 7 ; wks/yr 52 ;

if power plant, hrs/yr _____; if seasonal, describe: _____

F. If this is a new source or major modification, answer the following questions.
(Yes or No) NA - Replacement of one piece of equipment with an identical piece of equipment.

1. Is this source in a non-attainment area for a particular pollutant? NO

   a. If yes, has "offset" been applied? _____

   b. If yes, has "Lowest Achievable Emission Rate" been applied? _____

   c. If yes, list non-attainment pollutants. _____

2. Does best available control technology (BACT) apply to this source? If yes, see Section VI. NO

3. Does the State "Prevention of Significant Deterioriation" (PSD) requirement apply to this source? If yes, see Sections VI and VII. NO

4. Do "Standards of Performance for New Stationary Sources" (NSPS) apply to this source? NO

5. Do "National Emission Standards for Hazardous Air Pollutants" (NESHAP) apply to this source? NO

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

   a. If yes, for what pollutants? _____

   b. If yes, in addition to the information required in this form, any information requested in Rule 17-2.650 must be submitted.

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

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

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

Description	Contaminants		Utilization Rate - lbs/hr	Relate to Flow Diagram
	Type	% Wt		
Clay	None (1)	---	17,220(2)	1
(1)Moisture content of 30-40% eliminates potential for dust emissions				
(2)Reported as dry weight and based on 1.23 ~~pounds~~ TONS of dry clay per ton of product (See Section V)				

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

1. Total Process Input Rate (lbs/hr): 17,220 dry clay

2. Product Weight (lbs/hr): 14,000 lightweight aggregate

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

Name of Contaminant	Emission[1]		Allowed[2] Emission Rate per Rule 17-2	Allowable[3] Emission lbs/hr	Potential[4] Emission		Relate to Flow Diagram
	Maximum lbs/hr	Actual T/yr			lbs/yr	T/yr	
Part. Matter	12.76	55.6	(1)	12.7	672	2943	7
Sulf. Dioxide	126.7(2)	288.1	Actual from Kiln No. 1	126.7	126.7	288.1	7
NOx	14.2	53.8	NA	14.2	14.2	53.8	7
CO	11.3	43.1	NA	11.3	11.3	43.1	7
VOC	~0	~0	NA	~0	~0	~0	7

[1]See Section V, Item 2.

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

[3]Calculated from operating rate and applicable standard.

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

(1) Permitted by A010-72240, permit for Kiln 1 which is being replaced by Kiln 1A

(2) Under extreme conditions, SO_2 emissions could reach 226.0 lb/hr (See Section V)

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

Name and Type (Model & Serial No.)	Contaminant	Efficiency	Range of Particles Size Collected (in microns) (If applicable)	Basis for Efficiency (Section V Item 5)
Ducon Type UW, Model III, Size 108	Particulate Matter	98.1%	> 2 um	Estimate

E. Fuels

Type (Be Specific)	Consumption*		Maximum Heat Input (MMBTU/hr)
	avg/hr	max./hr	
Liquid Burnable Material	200 gph	308 gph	30.8
Coal	0.7 tph	0.7 tph	16.8

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

Fuel Analysis: LBM/coal

Percent Sulfur: 0.05-2.5/3.0 max Percent Ash: 8/12 max

Density: 7.7 avg/NA lbs/gal Typical Percent Nitrogen: Nil/1.4

Heat Capacity: 13,000/12,000 BTU/lb 100,000/NA BTU/gal

Other Fuel Contaminants (which may cause air pollution): See analysis of LBM (Attachment 12) and coal (Attachment 13)

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

Annual Average NA Maximum

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

Scrubber water is recirculated though existing settling ponds.

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

Stack Height: 58 ft. Stack Diameter: 4.7 ft.

Gas Flow Rate: 40,050 ACFM 26,000 DSCFM Gas Exit Temperature: 150 °F.

Water Vapor Content: 25 % Velocity: 38.3 FPS

SECTION IV: INCINERATOR INFORMATION

NOT APPLICABLE

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

Description of Waste _____

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

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

Manufacturer _____

Date Constructed _____ Model No. _____

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

Stack Height: _____ ft. Stack Diamter: _____ Stack Temp. _____

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

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

Type of pollution control device: [ ] Cyclone [ ] Wet Scrubber [ ] Afterburner

[ ] Other (specify) _____

Brief description of operating characteristics of control devices: _____

_____

_____

_____

_____

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

_____

_____

_____

_____

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

SECTION V: SUPPLEMENTAL REQUIREMENTS

(SEE SUPPLEMENTAL INFORMATION SECTION, PAGE 7A)

Please provide the following supplements where required for this application.

1. Total process input rate and product weight -- show derivation [Rule 17-2.100(127)]

2. To a construction application, attach basis of emission estimate (e.g., design calculations, design drawings, pertinent manufacturer's test data, etc.) and attach proposed methods (e.g., FR Part 60 Methods 1, 2, 3, 4, 5) to show proof of compliance with applicable standards. To an operation application, attach test results or methods used to show proof of compliance. Information provided when applying for an operation permit from a construction permit shall be indicative of the time at which the test was made.

3. Attach basis of potential discharge (e.g., emission factor, that is, AP42 test).

4. With construction permit application, include design details for all air pollution control systems (e.g., for baghouse include cloth to air ratio; for scrubber include cross-section sketch, design pressure drop, etc.)

5. With construction permit application, attach derivation of control device(s) efficiency. Include test or design data. Items 2, 3 and 5 should be consistent: actual emissions = potential (1-efficiency).

6. An 8 1/2" x 11" flow diagram which will, without revealing trade secrets, identify the individual operations and/or processes. Indicate where raw materials enter, where solid and liquid waste exit, where gaseous emissions and/or airborne particles are evolved and where finished products are obtained.

7. An 8 1/2" x 11" plot plan showing the location of the establishment, and points of airborne emissions, in relation to the surrounding area, residences and other permanent structures and roadways (Example: Copy of relevant portion of USGS topographic map).

8. An 8 1/2" x 11" plot plan of facility showing the location of manufacturing processes and outlets for airborne emissions. Relate all flows to the flow diagram.

9. The appropriate application fee in accordance with Rule 17-4.05. The check should be made payable to the Department of Environmental Regulation.

10. With an application for operation permit, attach a Certificate of Completion of Construction indicating that the source was constructed as shown in the construction permit.

SECTION VI: BEST AVAILABLE CONTROL TECHNOLOGY

(NOT APPLICABLE)

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

[ ] Yes [ ] No

Contaminant	Rate or Concentration

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

[ ] Yes [ ] No

Contaminant	Rate or Concentration

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

Contaminant	Rate or Concentration

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

1. Control Device/System:
2. Operating Principles:
3. Efficiency:*
4. Capital Coats:

*Explain method of determining

SECTION V

SUPPLEMENTAL INFORMATION

1. Process Input Weight Rate

Clay @ 1.23 tons/ton of product*	17,220 lbs/hr
Moisture in Clay (35%, typical)	6,543 lbs/hr
Total	23,763 lbs/hr

Production Rate

Expanded light-weight aggregate	14,000 lbs/hr
Moisture and thermal decomposition products in stack gas	9,763 lbs/hr
Total	23,763 lbs/hr

*A dry clay feed rate of 1.23 tons per ton of product was determined during February 1986 tests. Loss of weight is due to loss of combined water and the thermal decomposition of organic and inorganic compounds.

2&3. Potential and Actual Emissions

PARTICULATE MATTER

Potential @ 96 lbs/ton of product (AP-42, Sect. 8.3.1; Clay drying and Grinding)

7 tons/hr x 96 lbs/ton
= 672 lbs/hr
(x 8760 hrs/yr x 1/2000)
= 2943 tons/yr

Actual - 12.7 lbs/hr and 55.6 tpy permitted by A010-72240 for Kiln No. 1. See Attachment No. 1 to this application.

SULFUR DIOXIDE

Potential and actual emissions from Kiln No. 1 (A010-72240) for baseline period 6/1/83-5/31/84.

Coal Consumption and SO_2 from Coal

Total Coal - 6342 tons (See Attachment 2)

Sulfur Content - (See Attachment 3)

date	sulfur
7/29/83	2.66%
12/12/83	2.84
3/06/84	2.63
5/15/84	2.81
Avg.	2.74%

SO_2 Emissions (total Kiln 1 and Kiln 5)

= 6342 tons coal x (0.0274x2) tons SO_2/ton coal
= 347.5 tons/yr.

Clay Feed and SO_2 from Clay

Total Solite Production - 102100 tons (See Attachment 2)

Clay Feed = 102100 x 1.23* = 125583 tons

SO_2 Emissions (total Kiln 1 and Kiln 5)

= 125583 tons clay x 6.02 lb SO_2/ton clay** x 1/2000
= 378.0 tons/yr.

* - Tests conducted on Kiln 1A on Feb. 27-28, 1986 revealed a dry clay feed rate of 1.23 tons per ton of product. The report is in FDER files.

** - See Attachment 4

LBM Consumption and SO_2 from LBM

Total LBM Use

"High sulfur" LBM - 269,396 gal (Attachment 5)
"Low sulfur" LBM - 2,347,483 gal (by difference)
Total 2,616,876 gal (Attachment 2)

Sulfur Content (Estimated from 1985 data)

LBM	Gallons Consumed	Density (lb/gal)	Sulfur (%)
"High sulfur" LBM	390,651(1)	8.33(4)	2.596(7)
"Low sulfur" LBM	3,634.239(2)	7.60(5)	0.054(8)
Total LBM	4,024.890(3)	7.67(6)	0.322(9)

Sulfur content of "High sulfur" LBM

3634239(7.60 lb/gal)(0.054%S) + 390651 (8.33)(S)
= 4024890(7.67)(0.322)

S = 2.596%

SO_2 Emissions (total Kiln 1 and Kiln 5)

=[(269396 gal "high sulfur" LBM)(8.33 lb/gal)(0.02596 x 2)
+ (2347483 gal "low sulfur" LBM)(7.60 lb/gal)(0.00054 x 2)]
x 1/2000 ton/lb

= 67.9 tons/yr

(1) See Attachment 6
(2) Total LBM minus "High sulfur" LBM
(3) Solite records for 1985
(4) See Attachment 5
(5) Average density during six emission test periods
(6) Weighted Average
(7) Calculated above
(8) Average sulfur content of "low sulfur" composite samples (Attachment 7)
(9) Average sulfur content of all composite samples (Attachment 6)

Total SO_2 Emissions for Baseline Period

SO_2 from:

Coal	-	347.5 tons/yr
Clay	-	378.0
LBM	-	67.9
Total	-	793.4 tons/yr

Solite Production (Attachment 2)

Kiln 1 - 37,080 tons/yr
Kiln 5 - 65,020
Total - 102,100 tons/yr

Actual SO_2 Emissons from Kiln 1 for Baseline Period

SO_2 = 37080/102100 x 793.4
= 288.1 tons/yr

Kiln No. 1 hours of Operation for Baseline Period

Hours = 5320 hours/year (Attachment 2)

Average hourly SO_2 Emission from Kiln 1

SO_2 = 288.1 tpy x 2000 lb/ton x 1/5320 hr/yr
= 108.3 lb/hr

Maximum hourly SO_2 Emissions from Kiln 1 during Baseline Period

Assume 0.7 tph coal firing @ 2.8% sulfur (Max by permit A010-72240 or 16.8 MMBTU/hr); balance of heat (30.8-16.8 MMBTU/hr-Section III E, this Application) by LBM @ 2.6% sulfur; 90th percentile SO_2 emission rate from clay (10.1 lb SO_2/ton of clay - Attachment 4)

SO_2 = [0.7 tph coal x 2000 x (0.0238 x 2) lb SO_2/lb coal] +
[(30.8-16.8) MMBTU/hr x 1/100,000 BTU gal
x 8.33 lb/gal x (0.026 x 2) lb SO_2/lb LBM] +
[7 tph clay x 1.23 ton clay/ton x 10.1 lb SO_2/ton clay]

SO_2 = 226.0 lb/hr

NOTE: Permit A010-72240 has an hourly SO_2 limit of 84.0 lb/hr and an annual limit of 55.6 tpy. These limits appeared in a previous operating permit for Kiln No. 1 based upon an estimated SO_2 emission rate for the kiln supplied by Solite to satisfy a request by FDER for "expected" SO_2 emissions from the kiln.

Proposed SO_2 Emissions from Kiln 1A

The annual SO_2 emissions from Kiln 1A will not exceed the annual SO_2 emissions from Kiln No. 1 for the baseline period June 1983-May 1984; or 288.1 tpy. This will require an average hourly SO_2 emission rate of:

SO_2 = 288.1 tpy x 2000 x 1/7600 hr/yr
= 75.8 lb/hr based on 7600 hours per year of operation

The maximum hourly SO_2 emission rate will be:

SO_2 = 226.0 lb/hr based on emissions from Kiln 1 during the baseline period. This emission rate may be reached during the trial periods when high sulfur coal and high sulfur LBM are burned to simulate maximum SO_2 emission conditions from Kiln 1. These data would be used for PSD permitting.

The normal maximum SO_2 emission rate, based on the use of 1.0 percent sulfur coal and 0.5 percent sulfur LBM will be:

SO_2 = [0.7 tph coal x 2000 x (0.01 x 2) lb SO_2/lb coal] +
[(30.8-16.8) MMBTU/hr x 1/100,000 BTU/gal
x 8.33 lb/gal x (0.005 x 2) lb SO_2/lb LBM] +
[7 tph clay x 1.23 x 10.1 lb SO_2/ton clay]
= 28.0 + 11.7 + 87.0
= 126.7 lb/hr

Nitrogen Oxides

Potential and Actual based on 0.46 lb NOx per MMBTU heat unput from 2/20-25/83 EPA test (See Attachment 1 to SKEC letter of 5/16/84 in file of permit AC10-84168)

Heat input = 30.8 MMBTU/hr (Section III, E)

NOx = 30.8 x 0.46 lb NOx/MMBTU
= 14.2 lb/hr
x 7600/2000
= 53.8 tpy

Carbon Monoxide

Assume 100 ppm maximum CO in stack gas

CO = 26,000 scfm x 60 min/hr x $1/10^6$ x 100 ppm
x 1/385 ft^3/lb-mole x 28 lb/lb-mole
= 11.3 lb/hr
x 7600/2000
= 43.1 tpy

VOC

Expected to be near zero based on 2/20-25/83 EPA tests

Other

The emission rates of non-criteria pollutants from Kiln 1A will be unchanged from the emission rates from Kiln 1.

4. Scrubber Specifications - See Attachment No. 8

5. Control Efficiency

   Inlet - 672 lb/hr
   Stack - 12.7 lb/hr

   Efficiency = (672-12.7)x100/672
   = 98.1%

6. Process Flow Diagram - See Attachment No. 9

7. Location Map - See Attachment No. 10

8. Site Map - See Attachment No. 11

9. Application Fee - $1,000 for source with emissions greater than 100 tpy

10. Certificate of Completion of Construction - NA

5. Useful Life:

6. Operating Costs:

7. Energy:

8. Maintenance Cost:

9. Emissions:

Contaminant	Rate or Concentration

10. Stack Parameters

a. Height: ft.

b. Diameter: ft.

c. Flow Rate: ACFM

d. Temperature: °F.

e. Velocity: FPS

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

1.

a. Control Device:

b. Operating Principles:

c. Efficiency:[1]

d. Capital Cost:

e. Useful Life:

f. Operating Cost:

g. Energy:[2]

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

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

2.

a. Control Device:

b. Operating Principles:

c. Efficiency:[1]

d. Capital Cost:

e. Useful Life:

f. Operating Cost:

g. Energy:[2]

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

[1]Explain method of determining efficiency.
[2]Energy to be reported in units of electrical power - KWH design rate.

j. Applicability to manufacturing processes:

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

3.

a. Control Device:

b. Operating Principles:

c. Efficiency:[1]

d. Capital Cost:

e. Useful Life:

f. Operating Cost:

g. Energy:[2]

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

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

4.

a. Control Device:

b. Operating Principles:

c. Efficiency:[1]

d. Capital Costs:

e. Useful Life:

f. Operating Cost:

g. Energy:[2]

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

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

F. Describe the control technology selected:

1. Control Device:

2. Efficiency:[1]

3. Capital Cost:

4. Useful Life:

5. Operating Cost:

6. Energy:[2]

7. Maintenance Cost:

8. Manufacturer:

9. Other locations where employed on similar processes:

a. (1) Company:

(2) Mailing Address:

(3) City:

(4) State:

[1]Explain method of determining efficiency.
[2]Energy to be reported in units of electrical power - KWH design rate.

(5) Environmental Manager:

(6) Telephone No.:

(7) Emissions:[1]

Contaminant	Rate or Concentration

(8) Process Rate:[1]

b. (1) Company:

(2) Mailing Address:

(3) City: (4) State:

(5) Environmental Manager:

(6) Telephone No.:

(7) Emissions:[1]

Contaminant	Rate or Concentration

(8) Process Rate:[1]

10. Reason for selection and description of systems:

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

SECTION VII - PREVENTION OF SIGNIFICANT DETERIORATION

A. Company Monitored Data (NOT APPLICABLE)

1. _____no. sites _____ TSP _____( ) SO^2* _____ Wind spd/dir

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

Other data recorded _____

Attach all data or statistical summaries to this application.

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

2. Instrumentation, Field and Laboratory

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

b. Was instrumentation calibrated in accordance with Department procedures?

[ ] Yes [ ] No [ ] Unknown

B. Meteorological Data Used for Air Quality Modeling

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

2. Surface data obtained from (location)_____

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

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

C. Computer Models Used

1. _____ Modified? If yes, attach description.

2. _____ Modified? If yes, attach description.

3. _____ Modified? If yes, attach description.

4. _____ Modified? If yes, attach description.

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

D. Applicants Maximum Allowable Emission Data

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

E. Emission Data Used in Modeling

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

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

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

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

ATTACHMENT 1

AIR OPERATING PERMIT A010-72240
FOR KILN NO. 1

FLORIDA SOLITE CO.
GREEN COVE SPRINGS, FLORIDA

Permit A010-72240 was issued for Kiln No. 1. This kiln will be replaced by Kiln No. 1A which will operate under identical conditions. It is requested that Kiln No. 1 be placed on cold stand-by, to be used only if Kiln No. 1A is shut down for major repair.

Two conditions of permit A010-72240 deserve comment; one limiting the dry clay feed rate to 14,000 lb/hr and one limiting SO_2 emissions to 84.0 lb/hr and 55.6 tpy. The dry clay feed rate was limited to 14,000 lb/hr (7 tph) based on a lightweight aggregate production rate of 7 tph. The limitation was imposed not recognizing that there is a weight loss in the clay due to calcining. When the clay is heated to 2000-2100°F to produce the lightweight aggregate, combined water (water of hydration) and products of thermal decomposition of inorganic (carbonates, pyrites, etc) and organic compounds are driven from the clay. These losses amount to about 19 percent of the dry clay weight (based on tests conducted at Solite on February 22-23, 1986; the report of which is in FDER files). Since the production rate of Kiln No. 1 has always been 7 tph, the dry clay feed rate has always been 8.6 tph (17,222 lb/hr).

The SO_2 emission limits were introduced into an earlier (date unknown) operating permit for Kiln No. 1 and were based on information supplied to the Department by Solite in response to a request for an estimate of expected SO_2 emissions from the kiln. The information supplied by Solite was based upon the best information available at the time; but information that is now judged to be erroneous based on July 21-22, 1986 tests (copy of this test report is also in FDER files). The information provided in Section V of this application documents actual SO_2 emissions from Kiln No. 1; and hence expected emissions from Kiln No. 1A.

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

NORTHEAST DISTRICT

3426 BILLS ROAD
JACKSONVILLE, FLORIDA 32207

PERMITTEE:

Florida Solite Company
P.O. Box 27211
Richmond, VA 23261

I.D. Number:	3110000401
Permit/Certification Number:	A010-72240
Date of Issue:	November 1, 1983
Expiration Date:	November 1, 1988
County:	Clay
Latitude/Longitude:	
Section/Township/Range:	
Project:	Aggregate Kiln #1
UTM:	E-427400; N-3326500

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

For the operation of Aggregate Kiln No. 1 with emissions controlled by a two (2) stage Multicyclone and wet scrubber system in series. The dry clay input shall not exceed 14,000 lbs/hr. The coal input shall not exceed 0.7 TPH; shall not exceed a heat input rate of 17.5 MMBTU/hr. and shall not exceed a sulfur content of 3.0 per cent. The LBM (liquid burnable materials) used as fuel shall conform to the specifications attached to your July 28, 1983 submittal.

Located west of U.S. 17, S.R. 209A, north of Green Cove Springs, Clay County, FL.

In accordance with application dated June 22, 1983 and additional information received August 4, 1983.

b. the period of noncompliance, 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.

9. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source, which are submitted to the department, may be used by the department as evidence in any enforcement case arising under the Florida Statutes or department rules, except where such use is proscribed by Sections 403.73 and 403.111, Florida Statutes.

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

11. This permit is transferable only upon department approval in accordance with Florida Administrative Code Rules 17-4.12 and 17-30.30, as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the department.

12. This permit is required to be kept at the work site of the permitted activity during the entire period of construction or operation.

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)
( ) Compliance with New Source Performance Standards

14. The permittee shall comply with the following monitoring and record keeping requirements:

a. Upon request, the permittee shall furnish all records and plans required under department rules. The retention period for all records will be extended automatically, unless otherwise stipulated by the department during the course of any unresolved enforcement action.

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

c. Records of monitoring information shall include:

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

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

PERMITTEE:

Florida Solite Company

I.D. Number:
Permit/Certification Number: A010-72240
Date of Issue: November 1, 1983
Expiration Date: November 1, 1988

SPECIFIC CONDITIONS:

1. Testing of emissions must be accomplished at an input rate of at least 90 percent of 14,000 lbs/hr.

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

Pollutant	Emission Rate (lbs/hr)	Emission Rate (TPY)
PM	12.73	55.6
SO2	84.0	366.9
VE	< 20 opacity	----

3. Test the emission for the following pollutant(s) at intervals indicated from the date of July 25, 1983, notify us 14 days prior to testing, and submit the test report documentation to this office within 15 days after completion of the testing:

Pollutant	Interval
PM	12 mos.
SO2	12 mos. (coal analysis)
VE	12 mos.

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

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

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

6. Forms for renewal will be sent 5 months prior to November 1, 1988 and the completed forms with test results are due 90 days prior to November 1, 1988.

Issued this 1 day of Nov., 1983

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

G. Doug Dutton
District Manager

_____ Pages attached.

ATTACHMENT 2

PRODUCTION AND FUEL USE RECORDS
OF KILN NO. 1

FOR BASELINE PERIOD
JUNE 1983 - MAY 1984

SOLITE® CORPORATION

P. O. BOX 27211 • RICHMOND • VIRGINIA 23261 • PHONE AREA CODE 804 321-6761

August 14, 1986

Dr. John B. Koogler
Koogler & Associates
1213 N. W. 6th Street
Gainesville, Florida 32601

Dear John:

Confirming our telephone conversation yesterday, attached is a copy of the data that we put together on the No. 1 and No. 5 kiln operations.

As you can see the total tons produced from June 1, 1983 through May 31, 1984 was 102,100 tons. The coal used was 6,342 tons and the Oldover oil used was 2,616,876 gallons.

No. 1 operated for 5,320 hours and No. 2 operated for 6,501.5 hours. The production rate on No. 5 kiln is 10 tons per hour for a total of 65,010 tons and the production rate on kiln No. 1 was 6.97 tons per hour for a total production of 37,080 tons.

John Kuiken could probably give you a better estimate of the sulphur contents of the coal, but I would estimate it to be approximately 2.7%. Since we were using a good deal of Ethyl oil during that period of time the sulphur content of the Oldover oil should average close to 1.5%.

If you need any further information, don't hestitate to contact me, John Kuiken or Bill Johnson.

Sincerely,

SOLITE CORPORATION

Ed

E. E. Martin, Vice President

EEM:emd
Encl.

168 wk - 52 wks

	Production Tons	Fuel Used Type	#1 Down Hours	#5 Down Hours
June '83	7,449	549 Coal / 180165 Old	244	234
July	9,891	310 Coal / 256713 Old	440	176
Aug	6,897	403 Coal / 215694 Old	411.5	168.5
Sept	7,252	486 Coal / 194178 Old	393	143
Oct	8,927.5	478 Coal / 293949 Old	162	112
Nov	10,477	1002 Coal / 135423 Old	214	230
Dec	7,734.5	603 Coal / 196608 Old	307	154
Jan '84	9,869	632 Coal / 224189 Old	206.5	250
Feb	8,979	515 Coal / 225098 Old	176	120
Mar	8,396	624 Coal / 221333 Oldover	241	135
Apr	8,590	343 Coal / 237448 Old	270	298
May 84	7,638	337 Coal / 236078 Oldover	351	214
			11 Downtime - 3416	11 Downtime - 2234.5
	102,100 Total Prod. Tons	Coal Tons 6342 / Oldover Coal 2611876	5320 Prod Hours	6501.5 Prod Hours

ATTACHMENT 3

COAL SULFUR CONTENT
FOR KILN NO. 1

JUNE 1983 - MAY 1984

STANDARD LABORATORIES, INC.

WHITESBURG, KENTUCKY 41858

DELANO THOMAS, Vice-President
Southern Division

Telephone 606

Lab No. 30730411
Date Received 7/29/83
Date Sampled 7/29/83

Company Name Terry Glenn Coal Company
Address Crummies, KY

SAMPLE IDENTIFICATION AS SUPPLIED BY SAMPLER Crummies (Hart) Sampled By Std. Lab. (R. Cvetnich)

New Ben
Cartop Sample; SOU 77396-76987-360518-77002-78820-352917-350422
Gregory
Cartop Sample; N&W 10266-68983-94875-139498-4182-74387-74557
94874-134152-93562-10149-68425-SOU 75527-75638-351448-350084

	% Moisture	% Ash	% Volatile	% Fixed Carbon	B. T. U.	% Sulfur
As Rec'd.	4.13	8.63	xx	xx	12,875	2.66
Dry Basis		9.00	xx	xx	13,431	2.77
A-M-Free					14,759	

Fusion Temperature of Ash

Initial xx ° F
Softening xx ° F
Hemispherical xx ° F
Fluid xx ° F

Free Swelling Index No. xx
Grindability (Hardgrove) Index No. xx

Respectfully Submitted Delano Thomas

Compliments
of
DELANO THOMAS, Vice-President
Southern Division

STANDARD LABORATORIES, INC.
Post Office Box 606
Whitesburg, Kentucky 41858
Telephone: 606-633-9373

Lab No. _____ Date: 12-12-83

Identity: NEB (Cummins)

	As Rec'd	Dry
Moisture	3.90	
Ash	8.80	9.15
Volatile		
Carbon		
Sulfur	2.84	2.95
Btu	13222	13754
FSI		MAF
Grind		15150

Fusion

Init. _____ °F

Soft. _____ °F

Hemi. _____ °F

Fluid _____ °F

GENERAL TESTING AND CONTROL SERVICES
OF HARLAN, INC.
P.O. BOX 365 — HARLAN, KENTUCKY 40831
TELEPHONE (606) 573-2552

Company Name	Terry Glenn Coal Co. General Delivery Crummies, Ky. 40821	Lab	14714
		Date Rec'd.	3/6/84
		Date Analyzed	3/6/84

Sample Type		Sampled By	R. Brock
Flow		Sample Taken At	Load Site
Continuous Belt		Sample I.D.	Crummies
Stop Belt			Car #'s listed bel
Stockpile		To G.P.	
Car Top	x		
Barge Top			
Truck Top			
Channel			

Crummie Coal 450' into #1 panel off 11½ Right

	% Moisture	% Ash	% Volatile	% Fixed Carbon	B.T.U.	% Sulfur
As Rec'd.	3.69	8.00	x	x	13,191	2.63
Dry Basis	x	8.31	x	x	13,696	2.73
M.A.F.B.T.U.	14,937					

Fusion Temperature of Ash (Reducing)

Initial	x	°F
Softening	x	°F
Hemispherical	x	°F
Fluid	x	°F

CAR# 153217, 182704, 180425, 188673, 187367
184826, 521419, 85729.

Free Swelling Index No. x

Grindability Index No. x

Submitted By: Paul Barnes

Compliments
of
DELANO THOMAS, Vice-President
Southern Division

STANDARD LABORATORIES, INC.
Post Office Box 606
Whitesburg, Kentucky 41858
Telephone: 606-633-9373

Lab No. _____ Date: 5-15-84

Identity: NER Clearfield

540' into #3 panel 11½ Right

	As Rec'd	Dry
Moisture	3.28	
Ash	9.19	9.50
Volatile		
Carbon		
Sulfur	2.81	2.91
Btu	12981	13422
FSI		MAF 14832
Grind		

Fusion

Init. _____ °F

Soft. _____ °F

Hemi. _____ °F

Fluid _____ °F

ATTACHMENT 4

STACK GAS SO_2 CONTRIBUTED BY CLAY
DURING 37 EMISSION TESTS ON
KILN NO. 1A BETWEEN
OCTOBER 1984 AND JULY 1986

STACK GAS SO_2 CONTRIBUTED BY CLAY DURING
37 EMISSION TESTS

FLORIDA SOLITE COMPANY
GREEN COVE SPRINGS, FLORIDA

OCTOBER 1984 - JULY 1986

Date/Test	Fuel SO_2 (lb/hr)			Total SO_2(1) (lb/hr)	Clay SO_2(2) (lb/hr)	Clay Feed(3) (tph)	Clay SO_2 (lb/ton)
	Coal	LBM	Total				
10/26/84							
1	45.5	18.3	63.8	176.7	112.9	12.4	9.09
2	45.5	18.3	63.8	160.8	97.0	12.4	7.81
3	45.5	18.3	63.8	140.9	77.1	12.4	6.21
5/22-24/85							
1	13.0	5.9	18.9	99.1	80.2	12.3	6.52
2	13.0	5.9	18.9	94.2	75.3	12.3	6.12
3	17.2	0.8	18.0	104.4	86.4	12.3	7.02
4	17.2	0.8	18.0	84.5	66.5	12.3	5.41
2/27-28/86							
1	0.0	1.2	1.2	70.8	69.6	11.8	5.90
2	0.0	1.5	1.5	39.8	38.3	9.1	4.21
3	0.0	0.9	0.9	57.6	56.7	9.0	6.30
4	0.0	0.9	0.9	42.0	41.1	12.1	3.40
4/2/86							
1	0.0	3.8	3.8	57.7	53.9	10.1	5.34
2	0.0	2.3	2.3	19.9	17.6	9.1	1.93
3	0.0	2.0	2.0	12.3	10.3	9.4	1.10
5	0.0	1.5	1.5	17.6	16.1	9.8	1.64
6	0.0	2.3	2.3	43.2	40.9	9.8	4.17
5/8-16/86							
1	0.0	2.8	2.8	21.7	18.9	10.15	1.86
2	0.0	3.1	3.1	70.8	67.7	10.30	6.57
3	0.0	3.4	3.4	93.1	89.7	10.30	8.71
4	0.0	2.4	2.4	59.3	56.9	8.0	7.11
5	0.0	2.4	2.4	57.5	55.1	8.0	6.89
6	0.0	2.3	2.3	56.2	53.9	8.8	6.13
7	0.0	2.8	2.8	47.8	45.0	8.8	5.11
8	0.0	3.3	3.3	48.2	44.9	8.8	5.10
9	0.0	3.1	3.1	55.5	52.4	8.8	5.95
6/13/86							
1	0.0	3.0	3.0	39.6	36.6	9.2	3.98
2	0.0	3.0	3.0	58.4	55.4	9.2	6.02
3	0.0	3.0	3.0	118.0	115.0	9.2	12.50
5	0.0	3.0	3.0	86.5	83.5	9.2	9.08
6	0.0	3.0	3.0	82.4	79.4	9.2	8.63
7/22-23/86							
1	0.0	13.0	13.0	62.2	49.2	8.0	6.15
2	0.0	13.0	13.0	85.8	72.8	8.0	9.10
4	0.0	13.0	13.0	55.8	42.8	8.0	5.36
5	0.0	13.0	13.0	71.0	58.0	8.0	7.24
6	0.0	13.4	13.4	43.8	30.4	8.0	3.80
7	0.0	15.3	15.3	50.3	35.0	7.5	4.67
8	0.0	12.7	12.7	95.1	82.4	7.7	10.70

Average = 6.02

Range = 1.10-12.05

Std. Dev. = 2.47

90% CL = 1.9-10.1

(1) Measured by EPA Method 6 or 8
(2) Difference between Total SO_2 and SO_2 contributed by fuel
(3) Production rate x 1.23 tons clay/ton product

ATTACHMENT 5

SUMMARY OF "HIGH SULFUR" LBM SHIPMENTS
TO FLORIDA SOLITE COMPANY

JUNE 1983 - MAY 1984

PLANT: GLOOVER - FL

LBM TEST DATA

MONTH: EMC

PAGE _____ OF _____

DATE	TIME	SOURCE	SPEC. GRAVITY	BTU/ GALLON	% RESIDUE	% WATER	% CHLORINE	GALLONS	COMMENTS
4-8-81			.980	130,200	3.7	1.8	025	23,184	
5-26-81			.982	142,000	2.7	3.4	0.4	20,782	
5-26-81			.974	136,300	3.3	0.4	0.4	20953	
7-15-81			.984	139,100	4.4	4.2	0.3	22,393	
10-24-81			.992	138,000	1.3	2.4	0.7	23409	
11-29-81			.992	137,300	2.1	2.2	0.5	22,763	
12-19-81			.995	113,900	5.5	8.9	0.1	22564	
1-8-82			.982	111,500	0.9	4.9	-0	22975	
3-13-82			.985	138,400	0.8	3.1	-0	22974	
4-13-82			.979	135300	2.2	3.1	0.1	25444	
4-23-82			1.000	136,800	4.0	4.1	0.1	16014	
8-26-82			.978	127,900	5.6	4.9	0.1	23028	
9-24-82			1.002	119,400	9.8	16.2	0.8	21817	
1-4-83			1.010	118,300	6.1	1.4	0.2	19576	
1-18-83			.892	106,900	0.6	2.4	0.1	13337	
2-2-83			.999	121,700	5.6	7.5	-0	22197	
2-11-83			1.003	127,900	9.4	7.5	-0	22442	
2-17-83			.996	124,000	5.4	6.8	-0	21478	
2-25-83			1.025	121,500	7.5	10.4	0.8	23021	
5-11-83			.988	131,700	7.1	7.5	0.4	21415	
5-13-83			1.067	114,700	13.3	10.6	0.6	22129	
6-30-83			.992	124,300	7.8	10.2	0.6	22848	
7-18-83			.984	127,800	12.4	7.9	0.3	21758	
7-22-83			1.06	93,800	15.5	27.2	0.6	22347	
7-22-83			.962	119,900	9.3	11.9	0.3	22129	
9-13-83			.988	124,900	9.4	10.4	0.8	21415	
9-13-83			.986	122,900	9.2	15.0	0.4	22129	

FORM 526

PLANT: OLDOVER FL

LBM TEST DATA

MONTH: _____

PAGE _____ OF _____

DATE	TIME	SOURCE	SPEC. GRAVITY	BTU/ GALLON	% RESIDUE	% WATER	% CHLORINE	GALLONS	COMMENTS
12-23-83			.990	130,000	6.3	5.9	0.4	16418	
12-23-83			.986	127,200	6.8	3.4	0.3	22227	
12-24-83			.995	125,800	5.1	7.4	0.5	21316	
12-29-83			1.05	106,000	12.7	14.3	1.4	16032	
4-3-84			.982	119,600	7.0	5.0	0.4	18919	
4-5-84			1.01	110,000	10.6	11.2	0.6	21958	
4-16-84			1.042	99,410	13.7	22.1	0.4	19905	
6-15-84			1.016	136,000	8.3	7.5	0.5	20701	
6-15-84			.996	142,100	6.0	3.9	0.3	8560	
6-25-84			.984	125,700	6.2	4.9	0.3	16418	
7-5-84			.968	135,800	9.2	3.4	0.5	17846	
7-5-84			.952	130,700	10.1	8.6	0.1	17272	
7-5-84			1.10	141,200	8.8	7.8	0.3	17132	
8-31-84			.972	135,200	4.0	2.9	0.2	21415	
8-31-84			.972	136,400	2.6	3.9	0.2	21415	
8-31-84			.973	139,300	4.2	4.3	.02	17132	

FORM 526

ATTACHMENT 6

"HIGH SULFUR" LBM CONSUMED IN 1985
AT FLORIDA SOLITE COMPANY

TABLE 3

1985 RECEIVING RECORD OF HIGH SULFUR LBM

FLORIDA SOLITE COMPANY
GREEN COVE SPRINGS, FLORIDA

Date Received	Gallons Received	
01/07/85	20,181	
01/09/85	19,955	
01/14/85	18,833	
01/17/85	20,157	
01/28/85	19,331	
02/23/85	20,005	
02/28/85	19,224	
03/04/85	20,911	
03/04/85	19,552	
03/09/85	18,275	
03/20/85	19,931	
03/28/85	1,705	– Not included in total
04/01/85	20,573	
04/05/85	14,836	
04/12/85	22,138	
04/19/85	5,215	– Not included in total
06/05/85	20,996	
06/05/85	15,258	
06/05/85	18,781	
09/10/85	21,377	
12/02/85	20,570	
12/02/85	19,767	
Total	~~397,571~~ 390,651	

ATTACHMENT 7

SULFUR CONTENT OF 1985
COMPOSITE LBM SAMPLES
FROM FLORIDA SOLITE COMPANY

TABLE 2

SULFUR CONTENT OF COMPOSITE LBM SAMPLES
JANUARY 1, 1985 -- DECEMBER 31, 1985

FLORIDA SOLITE COMPANY
GREEN COVE SPRINGS, FLORIDA

Solite Sample Number (1)	Dates Represented By Solite Sample	Sulfur (%)	
1-85	01/01 - 01/07	NR(2)	
2-85	01/08 - 01/10	2.060**	
3-85	01/11 - 01/17	1.570**	
4-85	01/18 - 01/28	1.260*	
5-85	01/29 - 02/04	0.077	
6-85	02/05 - 02/14	0.017	
7-85	02/15 - 02/22	0.067	
8-85	02/23 - 02/28	1.170**	
9-85	03/01 - 03/09	2.610***	
10-85	03/10 - 03/15	0.066	
11-85	03/16 - 03/19	1.090*	
12-85	03/20 - 03/25	0.036	
13-85	03/26 - 03/28	0.760+	- Not included in average
14-85	03/29 - 03/31	0.057	
15-85	04/01 - 04/05	1.400**	
16-85	04/06 - 04/08	0.019	
17-85	04/09 - 04/11	0.075	
18-85	04/12 - 04/15	1.540*	
19-85	04/16 - 04/19	0.793#	- Not included in average
20-85	04/20 - 04/23	0.112	
21-85	04/24 - 04/26	0.058	
22-85	04/27 - 04/30	0.094	
23-85	05/01 - 05/03	0.032	
24-85	05/04 - 05/07	0.040	
25-85	05/08 - 05/10	0.042	
26-85	05/11 - 05/14	0.063	
27-85	05/15 - 05/17	0.022	
28-85	05/18 - 05/22	0.085	
29-85	05/23 - 05/27	0.088	
30-85	05/28 - 05/31	0.045	

(Continued)

SULFUR CONTENT OF COMPOSITE LBM SAMPLES
JANUARY 1, 1985 -- DECEMBER 31, 1985

FLORIDA SOLITE COMPANY
GREEN COVE SPRINGS, FLORIDA

Solite Sample Number (1)	Dates Represented By Solite Sample	Sulfur (%)
31-85	06/01 - 06/05	1.390***
32-85	06/06 - 06/10	0.056
33-85	06/11 - 06/14	0.081
34-85	06/15 - 06/18	0.025
35-85	06/19 - 06/21	0.038
36-85	06/22 - 06/26	0.059
37-85	06/27 - 07/01	0.068
38-85	07/02 - 07/09	0.036
39-85	07/10 - 07/16	0.021
40-85	07/17 - 07/22	0.029
41-85	07/23 - 07/26	0.054
42-85	07/27 - 08/01	0.002
43-85	08/02 - 08/09	0.035
44-85	08/10 - 08/16	0.021
45-85	08/17 - 08/20	0.063
46-85	08/21 - 08/27	0.042
47-85	08/28 - 09/01	2.370*
48-85	09/02 - 09/06	0.034
49-85	09/07 - 09/12	0.038
50-85	09/13 - 09/19	0.045
51-85	09/20 - 09/25	0.014
52-85	09/26 - 10/01	0.062
53-85	10/02 - 10/04	0.016
54-85	10/05 - 10/08	0.035
55-85	10/09 - 10/12	0.032
56-85	10/13 - 10/15	0.096
57-85	10/16 - 10/19	0.056
58-85	10/20 - 10/24	0.079
59-85	10/25 - 10/29	0.071
60-85	10/30 - 11/03	0.260
61-85	11/04 - 11/07	0.050
62-85	11/08 - 11/13	0.024
63-85	11/14 - 11/19	0.022

(Continued)

SULFUR CONTENT OF COMPOSITE LBM SAMPLES
JANUARY 1, 1985 -- DECEMBER 31, 1985

FLORIDA SOLITE COMPANY
GREEN COVE SPRINGS, FLORIDA

Solite Sample Number (1)	Dates Represented By Solite Sample	Sulfur (%)
64-85	11/20 - 11/26	0.040
65-85	11/27 - 12/02	2.120**
66-85	12/03 - 12/08	0.080
67-85	12/09 - 12/14	0.020
68-85	12/15 - 12/19	0.063
69-85	12/20 - 12/24	0.084
70-85	12/25 - 12/31	0.078

(1) The number preceeding the hyphen is the sequential composite sample number; samples 1 through 70. The number following the hyphen (85) indicates the composite represents LBM received in calendar year 1985.

(2) NR - Not Reported

* - Number of asterisks indicates number of shipments of suspected high sulfur LBM from Supplier A.

\+ - Number of shipments of suspected high sulfur LBM from Supplier B.

\# - Number of shipments of suspected high sulfur LBM from Supplier C.

ATTACHMENT 8

DUCON SCRUBBER PERFORMANCE SPECIFICATION
KILN NO. 1A

FLORIDA SOLITE COMPANY

DUCON ENVIRONMENTAL TECHNOLOGY

A DIVISION OF THE DUCON COMPANY INCORPORATED

April 23, 1984

Mr. Thomas Purvis
Solite Corporation
P.O. Box 7211
Richmond, VA 23261

Subject: UW4 Scrubber
(Carter-Waters' Former Equipment)

Dear Mr. Purvis:

Although we do not have any actual operating data from the defunct Carter-Waters plant, we are fully confident that the equipment now in Solite's possession will perform as follows.

The Ducon Dynamic Scrubber Type UW4 normally operates at an efficiency in excess of 99%, with particulate in the 1-2 micron range. That efficiency can be maintained over a wide range of gas handling capacity, from 60 to 100% of design.

Very truly yours,

DUCON ENVIRONMENTAL TECHNOLOGY

Paul Hubbard

PH:CG

147 EAST SECOND STREET MINEOLA, NEW YORK 11501 TEL: 516 741-6100 TWX 510 222-9861

ATTACHMENT 1

THE DUCON COMPANY, INC.

147 EAST SECOND STREET

MINEOLA, NEW YORK

INSTALLATION, OPERATING & MAINTENANCE INSTRUCTIONS FOR DYNAMIC SCRUBBER TYPE UW-4, MODEL III

NUMBER OF UNITS One SIZE 108

CUSTOMER NAME Carters-Waters Corp.
Kansas City, Mo.

ULTIMATE CUSTOMER NAME Same As Above
Centerville, Iowa

CUSTOMER ORDER NO. 4898

DUCON CONTRACT NO. C74-074

DATE March 13, 1974

DESIGN DATA

DYNAMIC SCRUBBER TYPE UW-4, MODEL III

UNIT SIZE 108 NUMBER OF UNITS One

APPLICATION Clav Products

PLANT ELEVATION Sea Level

INLET GAS FLOW 55,000 ACFM, TEMPERATURE 875 °F

HUMIDITY .11 LBS. WATER/LB. DRY AIR

DENSITY .028 LBS./CU. FT.

INLET SUCTION 3.2 "WG @ Cond.

OUTLET GAS FLOW 32,022 ACFM, TEMPERATURE 160 °F

DENSITY .056 LBS./CU. FT.

FAN AND DRIVE SPECIFICATIONS:

FAN BHP 147.1 @ Std. / 109.8 @ Cond. FAN SPEED 626 RPM

MOTOR HP 150 MOTOR SPEED ____ RPM

SCRUBBING LIQUID REQUIREMENTS:

FAN INLET 64 GPM @ 18 PSIG

• FAN WHEEL 32 GPM @ 5 PSIG

HUMIDIFICATION SECTION INLET 100 GPM 30 PSIG

•• MINIMUM SLUDGE OUTLET PIPE DIAMETER 8 INCHES

MINIMUM OUTLET STACK DIAMETER 54 1/4 I.D. INCHES

Note: Outlet stack diameter and side outlet manifold connecting ducts to be designed to suit a maximum outlet gas flow velocity of 2000 FPM.

•For type UW-4 units only.

••See Item (7) of Installation Section. Pipe diameter based on .07 PSI resistance per 100 ft. of pipe. For certain slurries prone to settling, plant experience should dictate minimum slurry velocity needed and pipe size.

REFERENCE DRAWINGS K-74074-1, W75-25-1, W75-25-2, W75-3, W75-4

S-3764

INSTALLATION

For the purpose of these instructions, the scrubbing liquid will be referred to as water. However, it should be noted that liquids other than water can be used with this unit.

FOUNDATION:

In designing the foundation for this unit, refer to column and/or support bracket loads as shown on certified dimensional drawings.

STRUCTURAL STEEL SUPPORT:

The structural steel support, when supplied, is normally shipped in bundles. Members should be layed out in approximately the order in which they are to be assembled, referring to the assembly drawings. All members should be located and identified before proceeding with erection.

SCRUBBER ASSEMBLY:

All units are assembled at the factory and match marked. Units above size 21 are shipped knocked down. Assemble the sections using the drawings of the scrubber as a guide. Be sure to line up flanges using match marks. Gaskets are to be installed inside bolt circles and not to be snaked between bolts.

INLET DUCT:

The inlet duct should slope downward toward scrubber. (See arrangement of inlet as shown on Drawing W75-3).

STACK:

Unless the outlet gas connection of scrubber is reinforced, the maximum permissible stack height is 12 ft. considering 3/16" thick plate for stack construction.

WATER SUPPLY PIPING:

The internal water supply piping is shipped installed within the scrubber. When designing the supply piping, provisions should be made to insure that it is possible to drain all the piping. A gate valve should be installed in each supply line as a shut-off for the scrubber water. Cock valves in each branch line should be used as regulating valves. 1/4" needle valves should be connected between the gauges and the piping to act as shut-off valves for the removal of gauges. If wide fluctuations in line pressure are anticipated, a pressure regulator should be installed in the supply line.

SLURRY PIPING:

The slurry piping should provide free drainage of the slurry to a settling pond, tailing area thickner or recirculating tank by gravity. If it is necessary to pump the slurry away from the scrubber, it is imperative that a surge tank be placed between the scrubber outlet and the pump suction line. The suction line should be located approximately twelve inches (12") below the normal liquid level. "U" traps are not to be used.

RECIRCULATING TANK (IF APPLICABLE):

Recirculating (or recycle) tanks are necessary and installed in some scrubber applications. The purpose of this tank, whether integral or separate, is to provide a reservoir for recirculating of the scrubbing water. Refer to the attached drawing W75-1 for recommended piping, pumps and controls.

Recycle tanks are usually supplied with a simple float level control and make-up water solenoid valve. The recycle water can be drawn off either continuously or in batches when the required concentration is reached. Recycle water is also continually lost due to evaporation. The level control maintains a constant water level by actuating the solenoid valve on the make-up water supply line when required.

On certain applications a float type level control as described above is not recommended or supplied. The accepted practice has been to

add the required fresh water make-up to the scrubber fan which will equal that which is drawn off continuously to the process plus the evaporative loss.

The maximum allowable suspended solids content is varied depending upon the application of the unit. This value is shown on the assembly drawing.

FAN INSTALLATION:

Check bearing alignments and be sure that there is adequate clearance between the shaft and the fan housing. Check drive alignments and belt tension.

When installing the motor, there should be no more than 0.005" clearance between the motor pads and the rails before tightening down on the bolts. This is to prevent frame distortion which can cause excessive motor vibration.

OPERATION

CAPACITY:

This scrubber has been selected for a certain gas capacity or range of capacity based on outlet gas conditions as stipulated on the Design Data Sheet Page 1 of these instructions. Most satisfactory operation is obtained within this range.

Each unit incorporates a heavy paddle wheel fan with a selected speed to give the required gas flow against a specified system resistance. Should the total external static pressure be lower than that stipulated in the Design Data Sheet, it will be necessary to impose resistance by means of a damper in the duct system or to decrease fan speed. It is recommended that a damper be used to impose this required additional resistance. Any well designed duct system should have a damper installed.

If this is not done, the fan motor will be overloaded, and the maximum scrubber gas flow may be exceeded.

If the total external static pressure is higher than that stated in the Design Data Sheet, the required scrubber gas flow will not be reached and it may be necessary to increase the fan speed.

The Dynamic Scrubber can operate at a substantial reduction in gas flow without a marked decrease in efficiency due to its constant speed wet fan. However, peak efficiency is obtained at design flows. Should sustained low gas flow operation be required, it is recommended that provision be made for bleeding atmospheric air into the system at the scrubber inlet. This will allow the scrubber to handle the desired design gas flow while handling a reduced flow in the system.

If it is anticipated that the scrubber will operate above the stated design flow it is required that this be checked with The Ducon Company as there is a definite maximum scrubber capacity.

PRE-START UP:

Do not run the unit prior to the connection of the complete duct work system. This precaution is necessary to prevent overloading of the fan motor.

Remove all spray nozzles and thoroughly flush out all water piping for at least 20 minutes at full line pressure. This precaution is necessary to clean welding slag and thrash from the piping system.

Conduct a thorough inspection of the interior of the unit making sure of the following items:

After Water Piping has been cleared, replace the spray nozzles with proper orientation as per the drawing provided.

That Orifice Plates in the internal cone discharge are in place.

The internal sections of the scrubber are free from debris.

Pump motor to check for proper fan rotation. The lower edge of fan wheel should move toward the scrubber shell.

Fully open main water supply valve. Set spray nozzle pressure to that stated on Design Data Sheet by adjusting the branch line cock valves. Once desired pressure is established, these valves need not be touched since the main supply valve will be used to turn on or turn off the water supply.

If unit has been shut down for a lengthy period, check bearing grease; and renew to proper level.

START-UP PROCEDURE:

Normally, the scrubber water supply and fan motor should be turned on simultaneously or as close together as is practical. On high temperature applications the scrubbing water should be turned on first since this provides the required cooling. Where lined and/or solid plastic or similar scrubber construction is supplied, there is usually a definite temperature limitation. Cooling water should be turned on before high temperature gases are introduced. (See Design Data Sheet for maximum temperature limitations if applicable). Where the start-up gas temperature is not high enough to prevent freeze-up, it is recommended that the water not be introduced until the gases are at a high enough temperature to eliminate this problem. The period of operation without liquid should, of course, be as short as possible.

Partial closure of the damper may be required to prevent overloading the motor during this period.

OPERATING SCRUBBER:

It is important that the required water rate be maintained to the scrubber. This can be assured by maintaining the specified readings on the pressure gauges. In instances where supply line pressure fluctuates to a large degree, a pressure regulator may be required. The Dynamic Wet Fan has been designed to handle a specific water quantity. Additional fan water rates above design specifications will result in higher BHP requirements and could overload the motor. Fan Water rates below design specifications will reduce scrubber performance.

In some cases recirculated water may become acidic. Once this condition is established in the scrubbing water, it should be closely watched and proper control maintained. If necessary, a basic chemical should be added in order to approach a PH of between 7 and 9.

SHUTTING SCRUBBER DOWN:

The scrubbing water and the fan should be turned off simultaneously. When units are exposed to the outside air the unit should immediately be drained.

During any lengthy shut-down, it is recommended that the fan wheel be rotated manually several complete revolutions periodically so as to prolong bearing life.

MAINTENANCE

INSPECTION AND INITIAL MAINTENANCE:

Re-tighten all flange bolts after 48 hours of continuous operation and again after two weeks of continuous operation.

Frequent inspection is recommended, especially during the first week of operation. An inspection and cleaning schedule should be based on actual operating experience and necessity. The inside of the collector must be kept free of accumulation which may impair operation.

An early estimate should be made of corrosive and abrasive wear so that replacement can be provided for worn parts or corrective measures be taken.

Specifically check spray nozzles for plugging or signs of wear, if recirculated water is used. Plugging of nozzles can result in an inadequate water supply even at specified gauge pressures. Worn nozzles can cause excessive water rates and higher BHP requirements.

It is advisable to paint the inside of carbon steel scrubbers at least once a year, or sooner, depending upon condition. Apply one coat of rest-resistant primer and a top coat of high quality paint.

LUBRICATION:

Item	Location	Recommended Lubricant
a	Electric Motors	Follow Manufacturer's Recommendations.
b	Fan Wheel Shaft Bearings	For normal operating temperature a good grade of general purpose grease should be used. All grease shall be free from excessive dirt, abrasive matter, fillers, excessive amount of moisture, free acid or free alkali. The grease should be satisfactory for operating temperatures which may vary from minus 40°F to 250°F. When lubricating the bearings ⅓ to ½ of the volume of the housing should be filled, an over supply would only result in churning and a breakdown of the lubricant. For operating temperatures over 175° consult The Ducon Co. or the bearing manufacturer for lubrication specifications. Practice should dictate the lubricating intervals. In any case bearings should be cleaned of all old grease and repacked at least once a year.
c	Door Hinges, Pins, Eyebolts, Nuts and Inspection Doors, Etc.	Coat lightly with grease for easy opening of doors and maximum protection of threads.
d	*Float Level Control Linkage	Grease or Oil Lightly

*Only on units equipped with a Ducon Liquid Recycle Tank.

RECOMMENDED SPARE PARTS:

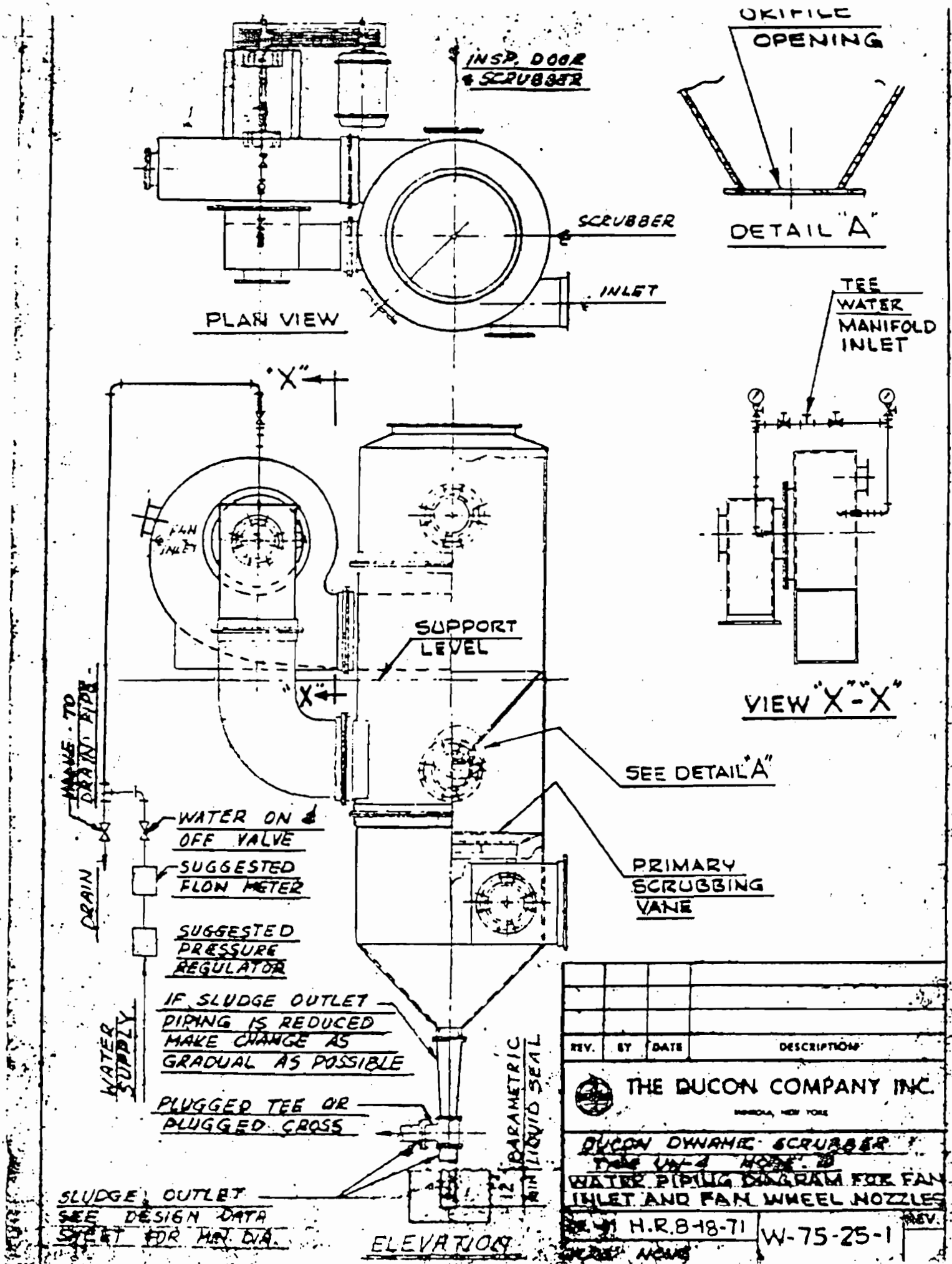
Fan wheel with shaft. (This item is custom fabricated. Delivery is approximately 5 to 6 weeks.)

1 set of fan shaft bearings, (one held, one free).

1 full set scrubber spray nozzles.

1 set V-belts. (Could be obtained direct from supplier)

When ordering spare parts, specify item number, assembly drawing number and Ducon Contract Serial Number.

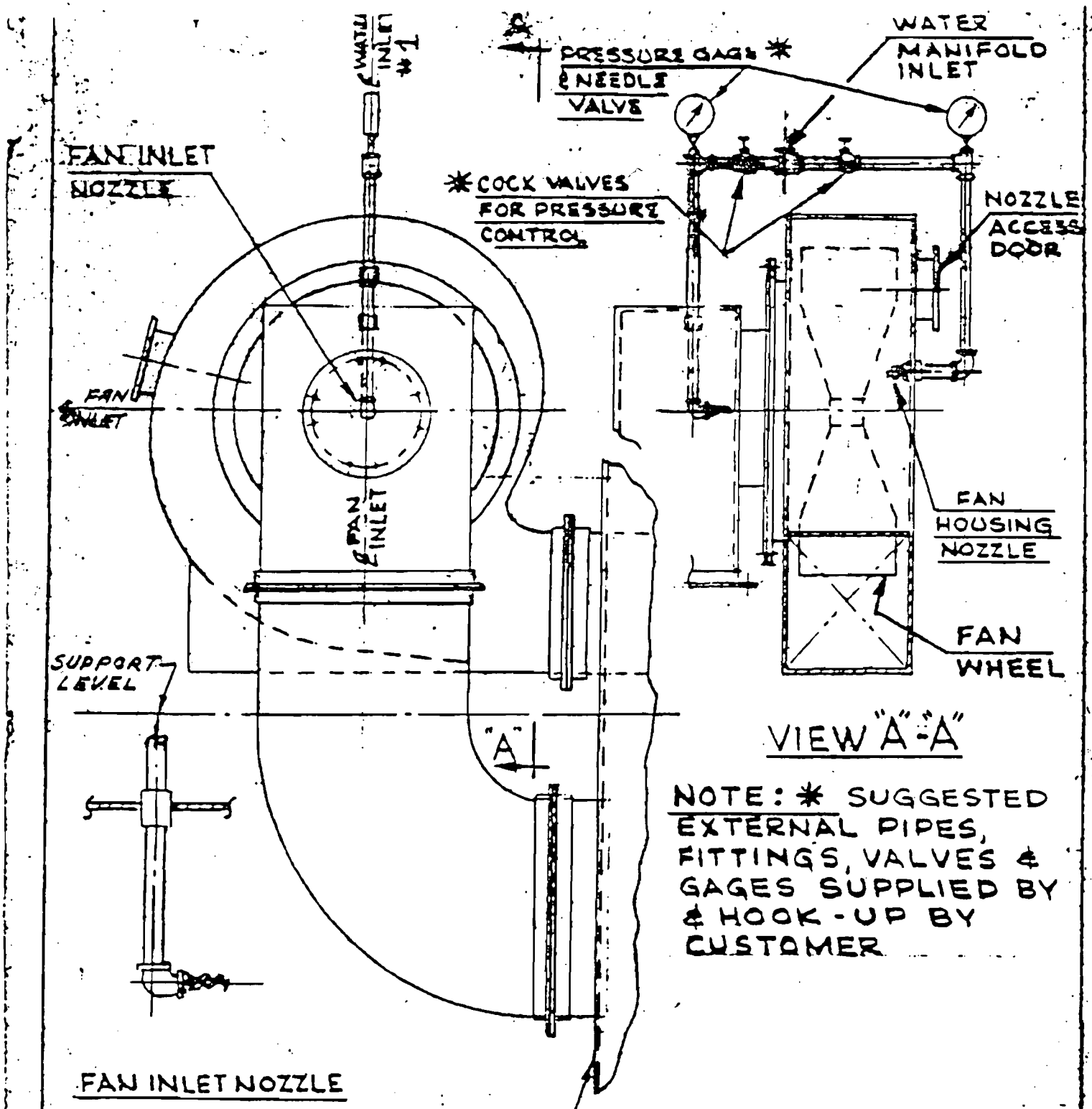


REV.	BY	DATE	DESCRIPTION

THE DUCON COMPANY INC.
MINEOLA, NEW YORK

DUCON DYNAMIC SCRUBBER
TYPE UW-4 NOZZ. 28
WATER PIPING DIAGRAM FOR FAN INLET AND FAN WHEEL NOZZLES

H.R. 8-18-71 | W-75-25-1 | REV.



REV.	BY	DATE	DESCRIPTION

THE DUCON COMPANY INC.

DUCON DYNAMIC SCRUBBER
TYPE VSA MODEL 48

WATER PIPING DIAGRAM FOR FAN INLET AND FAN WHEEL NOZZLES

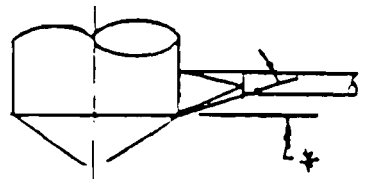
DRG. H.R. 8-18-71

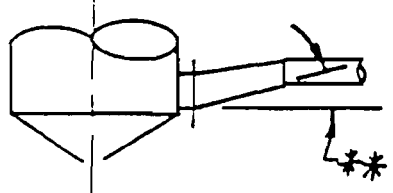
W-75-25-2

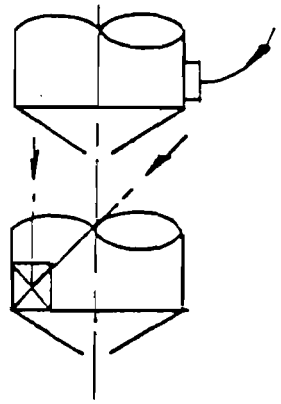
REV.

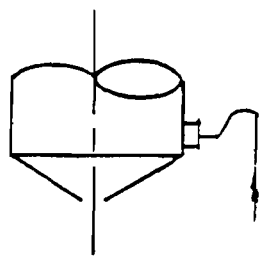
INLET DUCT INSTALLATION

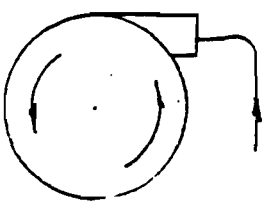
PREFERRED ARRGT.



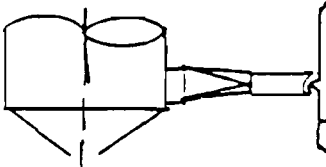




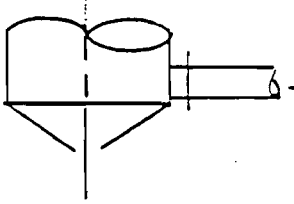




NOT RECOMMENDED

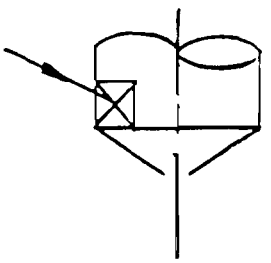


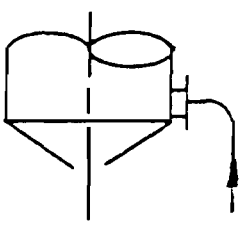
RECTANGULAR TO ROUND TRANSITIONS * 25° MIN. ANGLE



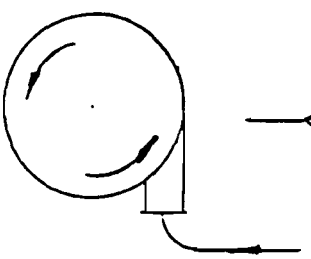
RECTANGULAR TO RECTANGULAR TRANSITION ** 15° MIN. ANGLE SLOPE LENGTH EQUIVALENT TO 1/2 HIGHT OF INLET

VERTICAL OR INCLINED DOWNCOMER

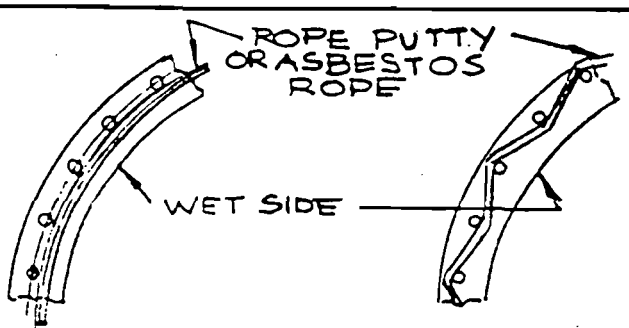




VERTICAL RISER



IF ELBOW REQUIRED JUST BEFORE SCRUBBER



USE THIS METHOD NOT THIS METHOD

GASKET INSTALLATION

REV.	BY	DATE	DESCRIPTION

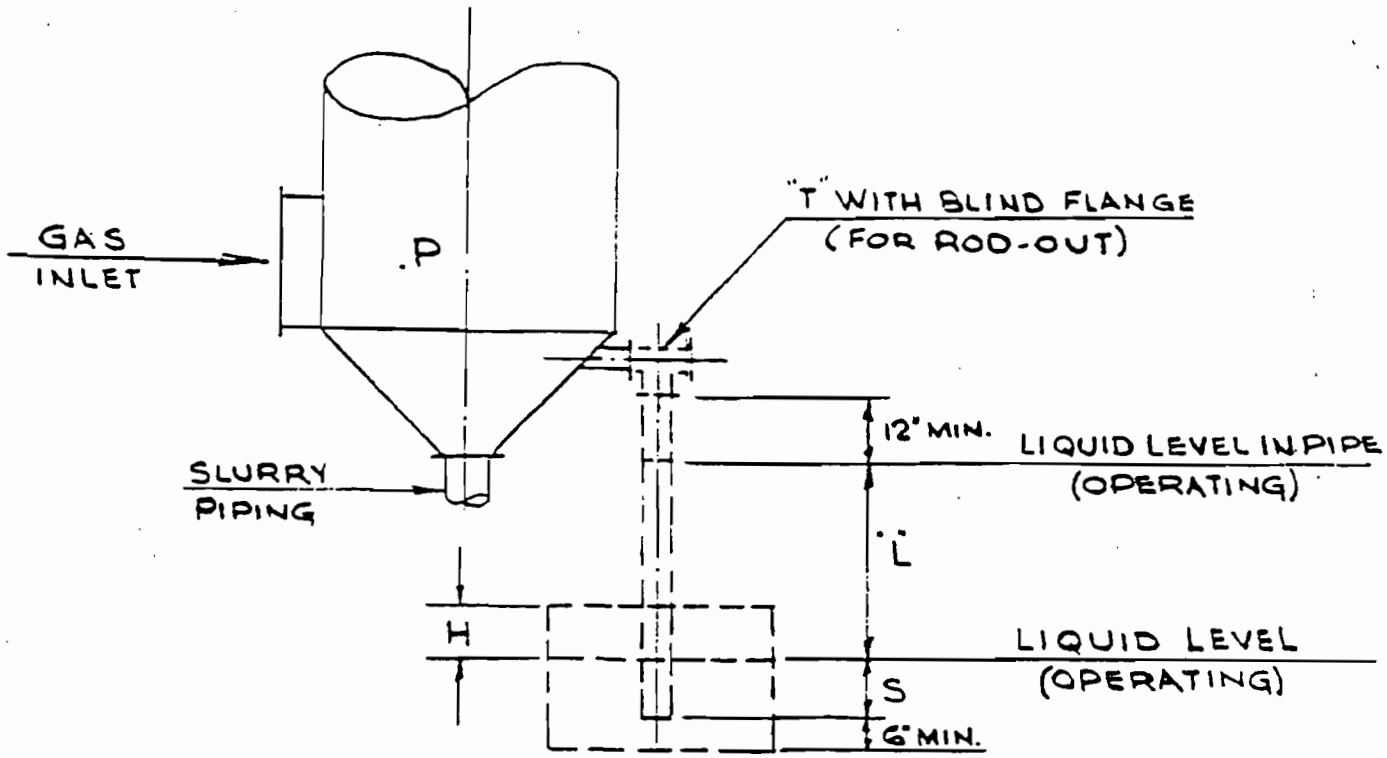
THE DUCON COMPANY INC.
MINEOLA, NEW YORK

DUCON DYNAMIC SCRUBBER
INLET DUCT AND GASKET INSTALLATION

DR. BY JD. 8/1/66

W-75-3

REV.



NOTE:

DO NOT ATTACH OVERFLOW TO SLURRY PIPING

NOTE:

* P = PRESSURE AT SCRUBBER INLET

IF 'P' IS NEGATIVE

L = P (IN IN. W.G.)

H = HEIGHT REQUIRED SO THAT VOLUME ABOVE LIQUID LEVEL IS EQUAL TO VOLUME IN OVERFLOW PIPE FOR HEIGHT OF "L" PLUS 6"

S = 12"

IF 'P' IS POSITIVE

L = 0

S = P (IN IN. W.G.) + 12"

H = HEIGHT REQUIRED SO THAT VOLUME ABOVE LIQUID LEVEL IS EQUAL TO VOLUME IN OVERFLOW PIPE FOR HEIGHT OF "S" PLUS 6"

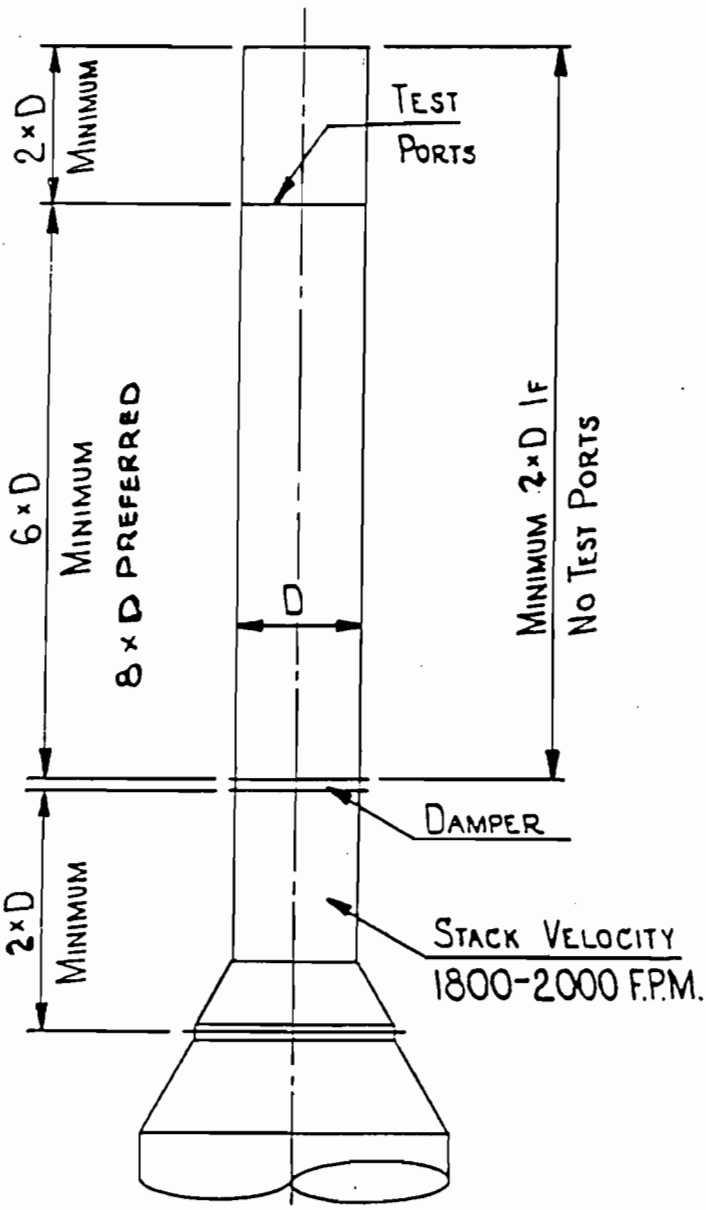
* FOR VENTURI SCRUBBERS P = PRESSURE AT SEPARATOR INLET.

REV.	BY	DATE	DESCRIPTION

THE DUCON COMPANY INC.
MINEOLA, NEW YORK

SUGGESTED ARRANGEMENT
FOR
EMERGENCY OVERFLOW PIPING

DR. BY FWG	W-75-4	REV.
SCALE		



NOTES:

ALTERNATE DAMPER LOCATION UP STREAM OF SCRUBBER INLET, BUT CARE SHOULD BE TAKEN ON ABRASION, DUST BUILDUP AND TEMPERATURE IN THIS AREA.

CONTACT DUCON IF ADDITIONAL INFORMATION IS REQUIRED.

REV.	BY	DATE	DESCRIPTION

THE DUCON COMPANY INC.
MINEOLA, NEW YORK

SUGGESTED STACK DAMPER LOCATION FOR UW-3 & UW-4 DYNAMIC GAS SCRUBBERS

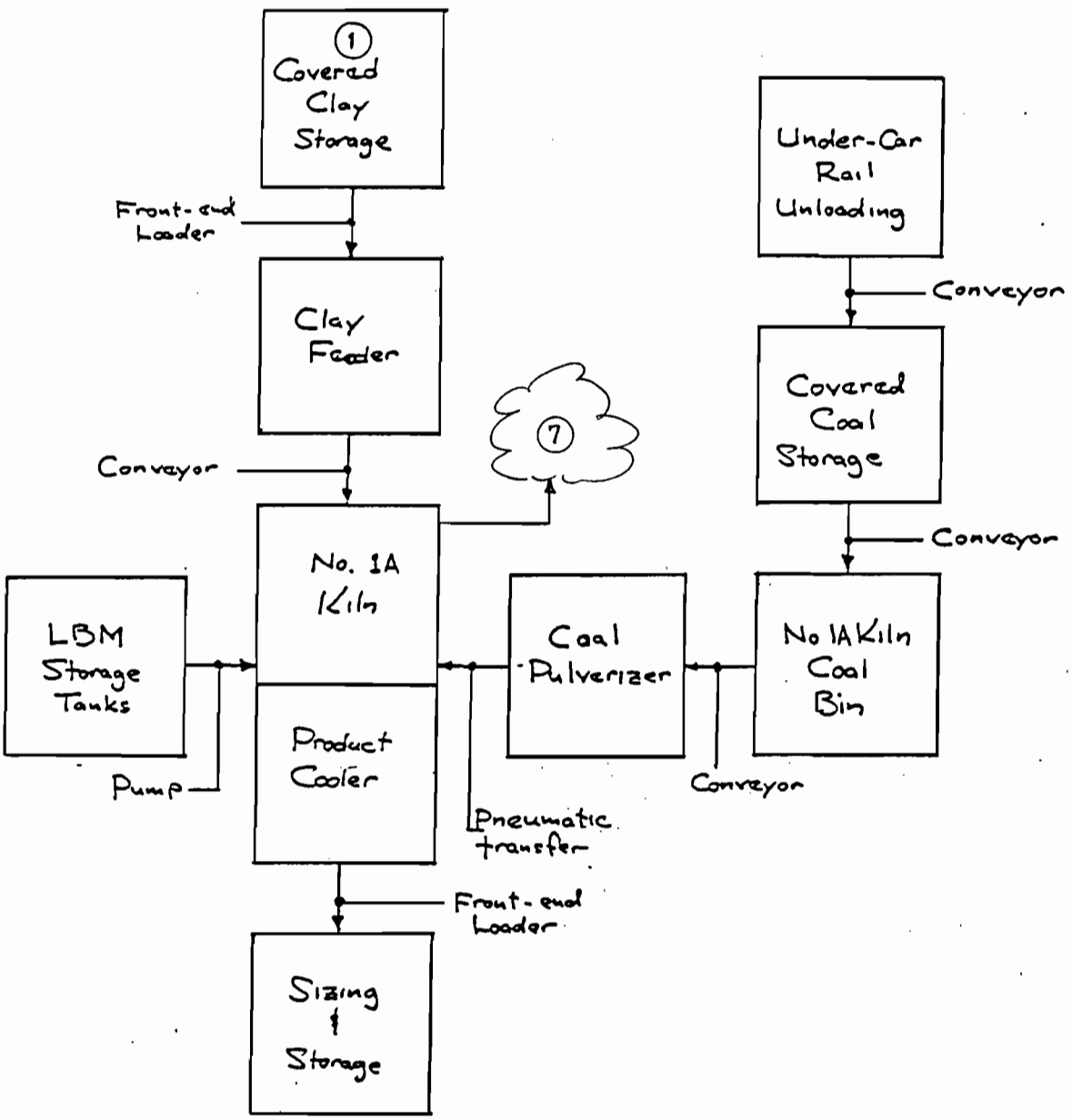
DR. BY M. FITZGERALD | S-3764 | REV.

SCALE NONE

ATTACHMENT 9

PROCESS FLOW DIAGRAM
KILN NO. 1A

FLORIDA SOLITE COMPANY
GREEN COVE SPRINGS, FLORIDA

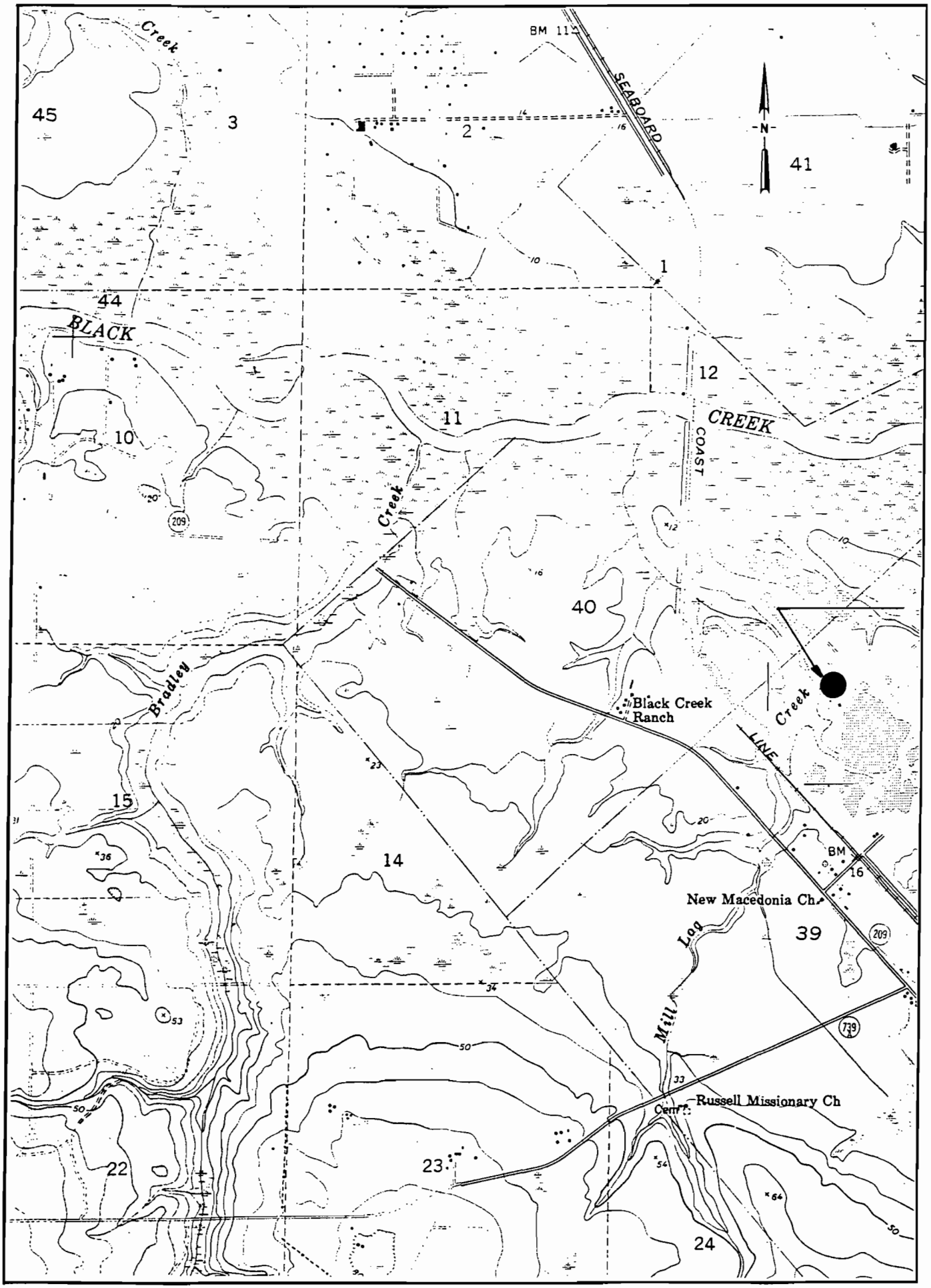

1
Covered Clay Storage
Front-end Loader
Clay Feeder
Conveyor
7
No. 1A Kiln
LBM Storage Tanks
Pump
Product Cooler
Pneumatic transfer
Front-end Loader
Sizing & Storage
Under-Car Rail Unloading
Conveyor
Covered Coal Storage
Conveyor
Coal Pulverizer
No 1A Kiln Coal Bin
Conveyor

ATTACHMENT 10

LOCATION MAP
AND PLANT LOCATION

FLORIDA SOLITE COMPANY
GREEN COVE SPRINGS, FLORIDA

Best Available Copy

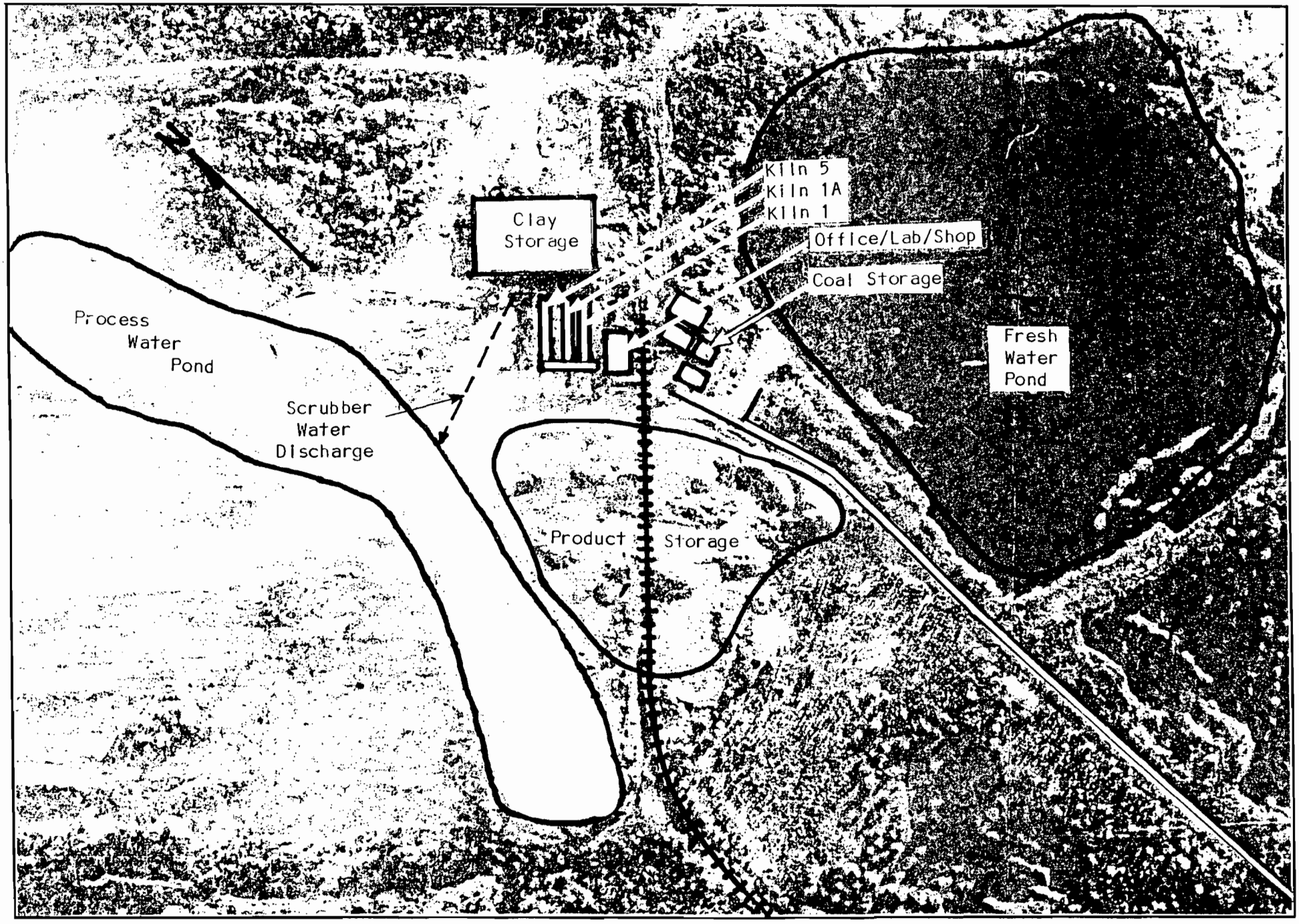


KOOGLER Ka ASSOCIATES

ATTACHMENT 11

SITE PLAN

FLORIDA SOLITE COMPANY
GREEN COVE SPRINGS, FLORIDA



KOOGLER Ka ASSOCIATES

ATTACHMENT 12

TYPICAL LBM
ANALYSIS

FLORIDA SOLITE COMPANY
GREEN COVE SPRINGS, FLORIDA

ATTACHMENT 12

TYPICAL ANALYSIS OF LIQUID BURNABLE MATERIAL

BTU/gallon - 50,000 - 135,000 - 96,000

Ash	0 - 25% - 8%
Water	0 - 50% - 15%
Cl_2	0 - 10% - 1.5%

Metals (ppm)

Barium	0 - 500 - 150
Chromium	0 - 300 - 150
Lead	0 - 250 - 100

Petroleum Products - 10%

Ketones, alcohols, aromatics & aliphatics - 45%

Organic resins, paint & other coating solids dissolved or suspended - 45%

FLORIDA SOLITE COMPANY
GREEN COVE SPRINGS, FLORIDA

FEBRUARY 28, 1984

ATTACHMENT 13

COAL SPECIFICATION

FLORIDA SOLITE COMPANY
GREEN COVE SPRINGS, FLORIDA

ATTACHMENT 13

SOLITE CORPORATION

COAL SPECIFICATIONS

Btu/lb., minimum	12,000
Moisture, maximum	10%
Ash, maximum	12%
Volatile, minimum	32%
Sulfur, Requested Range 2.0 - 2.5% with a Maximum of 3%	
Fusion Temperature, initial, maximum	2200°
Hargrove Grindability Index No., maximum	55