

Technical Evaluation
and
Preliminary Determination

NATIONAL PORTLAND CEMENT COMPANY OF FLORIDA, INC.

Manatee County

Palmetto, Florida

Clinker & Gypsum Storage Silos, Grinding Mill and
Cement Storage Silos

Permit Numbers: AC 41-74307
AC 41-74311
AC 41-74313

Florida Department of Environmental Regulation

Bureau of Air Quality Management

Central Air Permitting

February 15, 1984

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Florida Department of Environmental Regulation

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NOTICE OF PROPOSED AGENCY ACTION

The Department of Environmental Regulation gives notice of its intent to issue permits to National Portland Cement Company of Florida, Inc. for the construction of a new 45 tons per hour cement grinding mill, clinker and gypsum storage silos, and cement storage silos at the company's existing facility in Palmetto, Manatee County, Florida. A determination of best available control technology (BACT) was not required.

A person who is substantially affected by the department's proposed permitting decision may request a hearing in accordance with Section 120.57, Florida Statutes, and Chapters 17-1 and 28-5, Florida Administrative Code. The request for hearing must be filed (received) in the Office of General Counsel of the department at 2600 Blair Stone Road, Twin Towers Office Building, Tallahassee, Florida 32301, within fourteen (14) days of publication of this notice. Failure to file a request for hearing within this time period shall constitute a waiver of any right such person may have to request a hearing under Section 120.57, Florida Statutes.

The applications, technical evaluation and department intent are available for public inspection during normal business hours, 8:00 a.m. to 5:00 p.m., Monday through Friday, except legal holidays, at the following locations:

DER Bureau of Air Quality Management
2600 Blair Stone Road
Tallahassee, Florida 32301

DER Southwest District
7601 Highway 301 North
Tampa, Florida 33610

Comments on this action shall be submitted in writing to Bill Thomas of Tallahassee office within thirty (30) days of this notice.

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. Project Description

A. Applicant

National Portland Cement Company of
Florida, Inc.
Route 1 - Port Manatee
Palmetto, Florida 33561

B. Project and Location

The applicant proposes to construct clinker and gypsum storage silos, a 45 ton per hour grinding mill and modify existing cement storage silos. The new mill will be constructed on the west side of the facility, parallel to their present mill. The new clinker and gypsum storage silos will be filled utilizing a modification to an existing covered belt conveyor system from the existing materials storage building. The proposed project will be constructed at the company's existing facility located at Route 1 - Port Manatee, Manatee County, Palmetto, Florida. The universal transverse mercator (UTM) coordinates of the source are Zone 17, 346.4 km East and 3058.4 km North.

C. Process and Controls

This facility manufactures portland cement. The cement clinker is manufactured elsewhere, shipped to the plant and stored inside the raw material storage building. The production process begins with the transfer of clinker and gypsum from the material storage building to separate storage silos. This is accomplished using a covered belt conveyor system. A Mikro-Pulsaire Model 81S-8-20 dust collector mounted on top of the silos will control any emissions created during silo charging and/or discharging operations.

Clinker and gypsum are discharged from the silos at specified rates onto a conveyor belt which delivers them to the rotary grinding mill. As the materials tumble through the mill, their particle size is continually being reduced by a combination of actions including abrasion or attrition, impact and grinding. The grinding operation is facilitated by the placement of steel spheres or balls in the mill. As the drum rotates, a flight picks up the materials and steel balls, carrying them around until they are dropped to the opposite side of the drum, creating an impact and/or crushing effect. The materials and steel balls then roll within the drum causing abrasion and grinding action until another flight picks them up and the cycle is repeated.

Dust generated in the mill is drawn off at the discharge end and is delivered to a Mikro-Pulsaire Model 1445-8-20 dust collector. When the ground product leaves the mill, it is transferred to an air separator through air slides and a bucket elevator. The cement is classified according to particle size in the separator. This is done by placing the cement in the center cone of the separator and suspending it in a column of air. The smaller or lighter particles are forced to the top of the cone while the larger or heavier particles fall to the bottom and are returned to the mill for further processing.

The separator is usually equipped with mixing blades to facilitate the sizing operation. By adjusting the speed of the blade and the air flow in the separator, the fineness of the finished product can be controlled. When the cement particles are fine enough, they are forced out the top of the center cone and delivered by an air slide to the cement cooler. Any dust that would be generated during the sizing or transfer operations will be controlled by a separate Mikro-Pulsaire Model 144S-8-20 dust collector.

From the cooler, the finished cement product is pneumatically conveyed to storage silos. At the silos, the cement can be loaded into tanker trucks for shipment to concrete producers. A Mikro-Pulsaire Model 25S-8-20 dust collector for the cement silos will control any emissions during the pneumatic filling or truck loading operations.

II. Rule Applicability

The proposed project is subject to preconstruction review under the provisions of Chapter 403, Florida Statutes, and Rule 17-2, Florida Administrative Code (FAC), because it constitutes a facility as defined in Rule 17-2.100(95) for particulate matter.

The proposed project is located within the fifty kilometer area of influence of the Hillsborough County particulate matter nonattainment area, FAC Rule 17-2.100(14) and FAC Rule 17-2.410. However, this project will not have a significant impact on the particulate nonattainment area because the maximum 24-hour concentration of particulate matter will not exceed 1.0 micrograms per cubic meter.

Prevention of Significant Deterioration, FAC Rule 17-2.500, will not apply to this proposed project because the total allowable emissions increase of particulate matter is 16.47 tons per year. This is below the PSD significant emission rate of 25 tons per year, FAC Rule 17-2.500 Table 500-2.

Also, the proposed project is subject to the federal New Source Performance Standards (NSPS), 40 CFR 60.60, Subpart F, which were adopted by reference in FAC Rule 17-2.660. These Standards of Performances for Portland Cement Plants limit opacity to 10 percent.

III. Summary of Emissions and Air Quality Analysis

A. Emission Limitations

The pollutant emitted during the manufacture of cement from clinker and gypsum is particulate matter. The particulate matter is generated from the transfer of the clinker and gypsum to their storage silos, the grinding of the clinker and gypsum to form cement, and the transfer of the finished cement to the cement storage silos.

The applicant has requested that the emission limiting standards of FAC Rule 17-2.650(2)(c)11 apply to the proposed new clinker and gypsum storage silos, grinding mill, and cement storage silos.

This will limit the proposed sources to visible emissions of 5 percent opacity and particulate concentrations of 0.03 grains per dry standard cubic foot of exhaust gas. The allowable emissions will be 1.25 pounds per hour (4.92 tons per year) for the clinker and gypsum storage silos; 1.68 pounds per hour (6.61 ton per year) for the ball mill; 1.61 pounds per hour (6.33 tons per year) for the air separator, air slide, elevator, and pump; and 1.13 pounds per hour (4.94 tons per year) for the existing cement storage silos.

The baghouse filters proposed for installation by the applicant have a guaranteed outlet loading by the manufacturer of 0.02 grains per dry standard cubic foot of exhaust gas. The applicant estimates the actual emissions for the clinker and gypsum storage silos will be 0.18 pounds per hour (0.71 tons per year). The ball mill estimated actual emissions will be 1.08 pounds per hour (4.25 tons per year). Estimated actual emissions for the air separator, air slide, elevator, and pump will be 1.08 pounds per hour (4.25 tons per year). And the additional estimated actual emissions from the existing cement storage silos will be 0.23 pounds per hour (1.01 tons per year).

B. Air Quality Analysis

Since the increase of emissions is exempted from the requirements of Florida Administrative Code Rule 17-2.500, Prevention of Significant Deterioration, an ambient air quality analysis is not required.

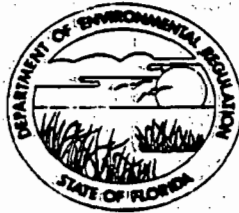
IV. Conclusion

The emission limits that will be imposed have been determined to be in compliance with all applicable requirements of FAC 17-2. The permitted maximum allowable emission limits should not cause any violation of Florida's ambient air quality standards.

The General and Specific Conditions listed in the proposed construction permits (attached) will assure compliance with all applicable requirements of FAC 17-2.

DEPARTMENT OF ENVIRONMENTAL REGULATION

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



BOB GRAHAM
GOVERNOR

VICTORIA J. TSCHINKEL
SECRETARY

PERMITTEE:

National Portland Cement
Company of Florida, Inc.
Route 1 - Port Manatee
Palmetto, Florida 33561

Permit Number: AC 41-74307

Date of Issue:

Expiration Date: September 30, 1985

County: Manatee

Latitude/Longitude: 27° 38' 07" N
82° 33' 45" W

Project: Cement Storage Silo.

This permit is issued under the provisions of Chapter(s) 403, Florida Statutes, and Florida Administrative Code Rule(s) 17-2 and 17-4. The above named permittee is hereby authorized 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 construction of a new 45 tons per hour cement grinding mill, clinker and gypsum storage silos, and cement storage silos at National Portland Cement Company of Florida, Inc.'s existing facility in Palmetto, Manatee County, Florida.

Construction shall be in accordance with the attached permit application and additional information except as otherwise noted on pages 5 and 6, Specific Conditions.

Attachments are as follows:

1. Applications to Construct an Air Pollution Source, DER Form 17-1.202(1).
2. Central Florida Testing Laboratories letter dated October 17, 1983.
3. Central Florida Testing Laboratories letter dated October 28, 1983.
4. C. H. Fancy's letter dated December 1, 1983.
5. Central Florida Testing Laboratories letter dated December 8, 1983.
6. Central Florida Testing Laboratories letter dated December 16, 1983.

PERMITTEE: National Portland
Cement Company of
Florida, Inc.

I. D. Number:
Permit Number: AC 41-74307
Date of Issue:
Expiration Date: September 30, 1985

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 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.

PERMITTEE: National Portland
Cement Company of
Florida, Inc.

I. D. Number:
Permit Number: AC 41-74307
Date of Issue:
Expiration Date: September 30, 1985

GENERAL CONDITIONS:

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 noncompliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the noncompliance.

PERMITTEE: National Portland
Cement Company of
Florida, Inc.

I. D. Number:
Permit Number: AC 41-74307
Date of Issue:
Expiration Date: September 30, 1985

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 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)
- (X) 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.

PERMITTEE: National Portland
Cement Company of
Florida, Inc.

I. D. Number:
Permit Number: AC 41-74307
Date of Issue:
Expiration Date: September 30, 1985

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 allowable particulate emission rate from the cement storage silos shall not exceed 1.13 pounds per hour (0.03 grains per dry standard cubic foot).
2. The hours of operation shall not exceed 8736 hours per year.
3. Visible emissions shall not be greater than 5 percent opacity demonstrated in accordance with DER Method 9 (Rule 17-2.700(6)(a)9., FAC).

PERMITTEE: National Portland
Cement Company of
Florida, Inc.

I. D. Number:
Permit Number: AC 41-74307
Date of Issue:
Expiration Date: September 30, 1985

SPECIFIC CONDITIONS:

4. Compliance tests shall be run at 90-100% rated capacity.
5. Sampling facilities, source sampling and reporting shall be in accordance with Rule 17-2.700, FAC, and 40 CFR 60, Appendix A.
6. Compliance tests, in accordance with Rule 17-2.700(1)(d)b, FAC, shall be submitted to DER's Southwest District Office Air Program within 45 days after completion of the tests.
7. Fifteen (15) days notification of the compliance tests to DER's Southwest District office Air Program is required.
8. After satisfactory completion of the initial compliance test and prior to ninety (90) days before the expiration of this permit, a complete application for an operating permit shall be submitted to the Southwest District office. The permittee may continue to operate in compliance with all terms of this construction permit until its expiration date or the issuance of an operating permit. The department may extend the expiration date of this permit as authorized by Rule 17-2.210(1), FAC.

Issued this _____ day of _____, 1984

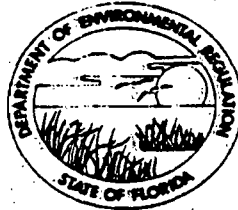
STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

Victoria J. Tschinkel, Secretary

Pages Attached.

DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32307-6241



BOB GRAHAM
GOVERNOR

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SECRETARY

PERMITTEE:

National Portland Cement
Company of Florida, Inc.
Route 1 - Port Manatee
Palmetto, Florida 33561

Permit Number: AC 41-74311

Date of Issue:

Expiration Date: September 30, 1985

County: Seminole

Latitude/Longitude: 27° 38' 07" N
82° 33' 45" W

Project: Clinker and Gypsum Storage
Silos

This permit is issued under the provisions of Chapter(s) 403
Florida Statutes, and Florida Administrative Code Rule(s)
17-2 and 17-4. The above named permittee is hereby
authorized 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 construction of a new 45 tons per hour cement grinding
mill, clinker and gypsum storage silos, and cement storage silos at
National Portland Cement Company of Florida, Inc.'s existing facility
in Palmetto, Manatee County, Florida.

Construction shall be in accordance with the attached permit
application and additional information except as otherwise noted on
pages 5 and 6, Specific Conditions.

Attachments are as follows:

1. Applications to Construct an Air Pollution Source, DER Form 17-1.202(1).
2. Central Florida Testing Laboratories letter dated October 17, 1983.
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Cement Company of
Florida, Inc.

I. D. Number:
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Date of Issue:
Expiration Date: September 30, 1985

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 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.

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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.

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- () Determination of Best Available Control Technology (BACT)
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- 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 allowable particulate emission rate from the clinker and gypsum storage silos shall not exceed 1.25 pounds per hour (0.03 grains per dry standard cubic foot).
2. The hours of operation shall not exceed 7863 hours per year.
3. Visible emissions shall not be greater than 5 percent opacity demonstrated in accordance with DER Method 9 (Rule 17-2.700(6)(a)9., FAC).

PERMITTEE: National Portland
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SPECIFIC CONDITIONS:

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5. Sampling facilities, source sampling and reporting shall be in accordance with Rule 17-2.700, FAC, and 40 CFR 60, Appendix A.
6. Compliance tests, in accordance with Rule 17-2.700(1)(d)6, FAC, shall be submitted to DER's Southwest District Office Air Program within 45 days after completion of the tests.
7. Fifteen (15) days notification of the compliance tests to DER's Southwest District office Air Program is required.
8. After satisfactory completion of the initial compliance test and prior to ninety (90) days before the expiration of this permit, a complete application for an operating permit shall be submitted to the Southwest District office. The permittee may continue to operate in compliance with all terms of this construction permit until its expiration date or the issuance of an operating permit. The department may extend the expiration date of this permit as authorized by Rule 17-2.210(1), FAC.

Issued this _____ day of _____, 1984

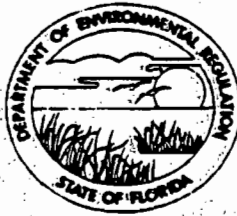
STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

Victoria J. Tschinkel, Secretary

Pages Attached.

DEPARTMENT OF ENVIRONMENTAL REGULATION

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



BOB GRAHAM
GOVERNOR

VICTORIA J. TSCHINKEL
SECRETARY

PERMITTEE:

National Portland Cement
Company of Florida, Inc.
Route 1 - Port Manatee
Palmetto, Florida 33561

Permit Number: AC 41-74313
Date of Issue:
Expiration Date: September 30, 1985
County: Manatee
Latitude/Longitude: 27° 38' 07" N
82° 33' 45" W
Project: Grinding Mill

This permit is issued under the provisions of Chapter(s) 403, Florida Statutes, and Florida Administrative Code Rule(s) 17-2 and 17-4. The above named permittee is hereby authorized 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 construction of a new 45 tons per hour cement grinding mill, clinker and gypsum storage silos, and cement storage silos at National Portland Cement Company of Florida, Inc.'s existing facility in Palmetto, Manatee County, Florida.

Construction shall be in accordance with the attached permit application and additional information except as otherwise noted on pages 5 and 6, Specific Conditions.

Attachments are as follows:

1. Applications to Construct an Air Pollution Source, DER Form 17-1.202(1).
2. Central Florida Testing Laboratories letter dated October 17, 1983.
3. Central Florida Testing Laboratories letter dated October 28, 1983.
4. C. H. Fancy's letter dated December 1, 1983.
5. Central Florida Testing Laboratories letter dated December 8, 1983.
6. Central Florida Testing Laboratories letter dated December 16, 1983.

PERMITTEE: National Portland
Cement Company of
Florida, Inc.

I. D. Number:
Permit Number: AC 41-74313
Date of Issue:
Expiration Date: September 30, 1985

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 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.

ERMITTEE: National Portland
Cement Company of
Florida, Inc.

I. D. Number:
Permit Number: AC 41-74313
Date of Issue:
Expiration Date: September 30, 1985

GENERAL CONDITIONS:

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 noncompliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the noncompliance.

PERMITTEE: National Portland
Cement Company of
Florida, Inc.

I. D. Number:
Permit Number: AC 41-74313
Date of Issue:
Expiration Date: September 30, 1985

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 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)
- (X) 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.

PERMITTEE: National Portland
Cement Company of
Florida, Inc.

I. D. Number:
Permit Number: AC 41-74313
Date of Issue:
Expiration Date: September 30, 1985

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 allowable particulate emission rate from the cement grinding mill shall not exceed 3.29 pounds per hour ((0.03 grains per dry standard cubic foot)).
2. The hours of operation shall not exceed 7863 hours per year.
3. Visible emissions shall not be greater than 5 percent opacity demonstrated in accordance with DER Method 9 (Rule 17-2.700(6)(a)9., FAC).

PERMITTEE: National Portland
Cement Company of
Florida, Inc.

I. D. Number:
Permit Number: AC 41-74313
Date of Issue:
Expiration Date: September 30, 1985

SPECIFIC CONDITIONS:

4. Compliance tests shall be run at 90-100% rated capacity.
5. Sampling facilities, source sampling and reporting shall be in accordance with Rule 17-2.700, FAC, and 40 CFR 60, Appendix A.
6. Compliance tests, in accordance with Rule 17-2.700(1)(d)6, FAC, shall be submitted to DER's Southwest District Office Air Program within 45 days after completion of the tests.
7. Fifteen (15) days notification of the compliance tests to DER's Southwest District office Air Program is required.
8. After satisfactory completion of the initial compliance test and prior to ninety (90) days before the expiration of this permit, a complete application for an operating permit shall be submitted to the Southwest District office. The permittee may continue to operate in compliance with all terms of this construction permit until its expiration date or the issuance of an operating permit. The department may extend the expiration date of this permit as authorized by Rule 17-2.210(1), FAC.

Issued this ___ day of _____, 1984

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

Victoria J. Tschinkel, Secretary

Pages Attached.

ATTACHMENT 1

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION



D.E.R. AUG 29 1983

BOB GRAHAM GOVERNOR

VICTORIA J. TSCHINKEL SECRETARY

WILLIAM K. HENNESSEY DISTRICT MANAGER

SOUTHWEST DISTRICT

1 HIGHWAY 301 NORTH TAMPA, FLORIDA 33610

AC 41-74307
AUG 23 1983

NOV 3 1983

APPLICATION TO OPERATE/CONSTRUCT AIR POLLUTION SOURCES

SOURCE TYPE: BAOM Cement Grinding Mill New Existing

APPLICATION TYPE: Construction Operation Modification

COMPANY NAME: National Portland Cement Company of Florida, Inc. COUNTY: Manatee

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) Cement Storage Silo

SOURCE LOCATION: Street Route 1 - Port Manatee City Palmetto

UTM: East 17-346.4 North 3058.4

Latitude 27° 38' 07" N Longitude 82° 33' 45" W

APPLICANT NAME AND TITLE: Mr. Nicholas E. Ryan, Jr., Vice President

APPLICANT ADDRESS: Route 1 - Port Manatee Palmetto, FL 33561

SECTION I: STATEMENTS BY APPLICANT AND ENGINEER

A. APPLICANT

National Portland Cement Company of Florida, Inc.

I am the undersigned owner or authorized representative* of

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: Nicholas E. Ryan, Jr.

Mr. Nicholas E. Ryan, Jr., Vice President
Name and Title (Please Type)

Date: 8-17-83 Telephone No. (813) 722-7776

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

* 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 *Thomas E. Brumagin*

Thomas E. Brumagin, P.E.

Name (Please Type)

Central Florida Testing Laboratories, Inc.

Company Name (Please Type)

1400 Starkey Road Largo, FL 33541

Mailing Address (Please Type)

Florida Registration No. 31063 Date: 8/17/83 Telephone No. (813) 581-7019

SECTION II: GENERAL PROJECT INFORMATION

add PROMOTION CONTROL Device

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 PROJECT DESCRIPTION

This construction permit application is being made to add a Mikro-Pulsaire Model 25S-8-20 dust collector to the existing cement storage silos at the facility. Applications for the new grinding mill and raw material silos are filed separately.

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

Start of Construction January, 1984 Completion of Construction July, 1985

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.)

Mikro-Pulsaire 81S-8-20 Baghouse	Clinker & Gypsum Silos	\$16,150
Mikro-Pulsaire 144S-8-20 Baghouse	Ball Mill	21,200
Mikro-Pulsaire 144S-8-20 Baghouse	Air Separator, Elevator, F-K Pump	21,200
Mikro-Pulsaire 25S-8-20 Baghouse	Existing Cement Silos	9,800

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

See Attached DER Permits

BEST AVAILABLE COPY

Requested permitted equipment operating time: hrs/day 24 ; days/wk 7 ; wks/yr 52 ;
if power plant, hrs/yr _____ ; if seasonal, describe: _____

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

1. Is this source in a non-attainment area for a particular pollutant? 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? No
If yes, see Section VI. Existing Source
3. Does the State "Prevention of Significant Deterioration" ((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
6. Do "Reasonably Available Control Technology" ((RACT) requirements apply to this source? In area of Influence of Hillsborough County Non-Attainment Area. No
a. If yes, for what pollutants? Particulate
b. If yes, in addition to the information required in this form, any information requested in Rule 17-2.650 must be submitted.

Exempt under present operation permit. Emissions still below permitted. Attach all supportive information related to any answer of "Yes". Attach any justification for any answer of "No" that might be considered questionable.

RACT Emission Limiting Standards - Section 17-2.650 (2) (c) 11

11. Materials Handling, Sizing, Screening, Crushing and Grinding Operation
- a. Applicability - these emission limitations shall apply to the handling, sizing, screening, crushing, or grinding of materials such as, but not limited to, CEMENT, CLINKER, fly ash, coke, GYPSUM, shale, lime, sulfur, phosphatic materials, slag, and grain or grain products.
- b. Emissions Limitations
(i) Visible Emissions - 5 percent opacity
(ii) Particulate Concentration - 0.03 grain/dscf

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	S Mt		
Clinker	-200 mesh	3.0	85,500	B
Gypsum	-200 mesh	1.0	4,500	C

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

- Total Process Input Rate (lbs/hr): 90,000 lbs/hr
- Product Weight (lbs/hr): 90,000 lbs/hr of Type I Portland Cement

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 Emission Rate per Rule 17-2	Allowable Emission ³ (lb/hr)	Potential ⁴ Emission		Relate to Flow Diagram
	Maximum lbs/hr	Actual T/yr			lbs/yr	T/yr	
Particulate	7.38	32.24	Permit Reduction	7.50	3690	16,118	R
Sulfur Oxides	0						
Carbon Monoxide	0						
Hydrocarbons	0						
Nitrogen Oxides	0						

¹See Section V, Item 2.

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

³Calculated from operating rate and applicable standard.

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

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

Name and Type (Model & Serial No.)	Contaminant	Efficiency (percent)	Range of Particles Size Collected (in microns) (If applicable)	Basis for Efficiency (Section V Item 5)
Miller Dracco Model 24-2-500	Particulate	99.8	+1 micron	Design & Test Data
Mikro-Pulsaire Model 25S-8-20	Particulate	99.99	+1 micron	Design Data

E. Fuels - All Electric

Type (Be Specific)	Consumption*		Maximum Heat Input (MMBTU/hr)
	avg./hr	max./hr	

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

Fuel Analysis:

Percent Sulfur: _____ Percent Ash: _____

Density: _____ lbs/gal Typical Percent Nitrogen: _____

Heat Capacity: _____ BTU/lb _____ BTU/gal

Other Fuel Contaminants (which may cause air pollution): _____

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

Annual Average _____ Maximum _____

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

No liquid or solid waste generated from this process.

H. Emission Stack Geometry and Flow Characteristics (Fuller / Mikro-Pul):

Stack Height: 100 / 100 ft. Stack Diameter: 16 x 24 in.
 Gas Flow Rate: 3785/1500 ACFM 3000/1190 DSCFM Gas Exit Temperature: 120 / 120 °F.
 Water Vapor Content: 0 / 0 % Velocity: 23.66 / 9.38 FPS

SECTION IV: INCINERATOR INFORMATION

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

Description of Waste _____

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

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

Manufacturer _____

Date Constructed _____ Model No. _____

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

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

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

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

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

Brief description of operating characteristics of control devices: _____

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

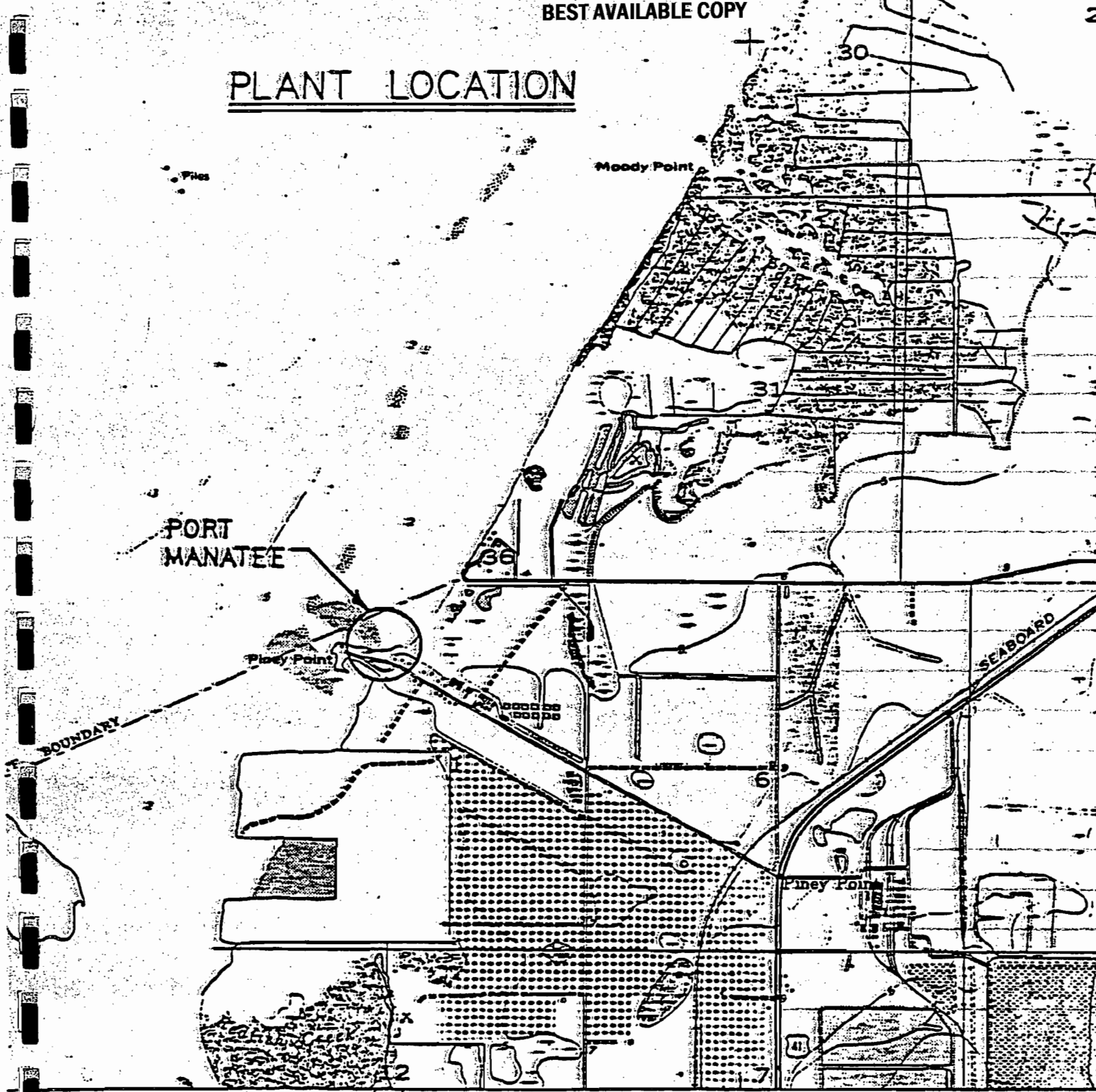
NOTE: Items 2, 3, 4, 6, 7, 8, and 10 in Section V must be included where applicable.

SECTION V: SUPPLEMENTAL REQUIREMENTS

Please provide the following supplements where required for this application.

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

PLANT LOCATION



PORT MANATEE

Moody Point

Piney Point

SEABOARD

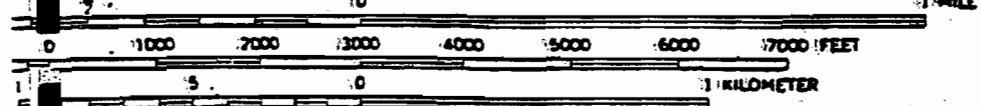
Piney Point

(PALMETTO)
4439 IN 1/2 E

R. 17 E R. 18 E

32°30' RUBENIA 3.5 MI.
BRADENTON'S 3 MI.

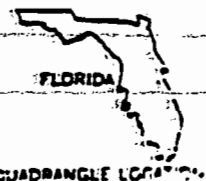
SCALE 1:24,000



CONTOUR INTERVAL 5 FEET
DATUM IS MEAN SEA LEVEL

CURVES AND SOUNDINGS IN FEET - DATUM IS MEAN LOW WATER
OF LINE SHOWN REPRESENTS THE APPROXIMATE LINE OF MEAN HIGH WATER
THE AVERAGE RANGE OF TIDE IS APPROXIMATELY 2 FEET

MAP COMPILES WITH NATIONAL MAP ACCURACY STANDARDS
BY U.S. GEOLOGICAL SURVEY, WASHINGTON, D.C. 20242
TOPOGRAPHIC MAPS AND SYMBOLS AVAILABLE ON REQUEST

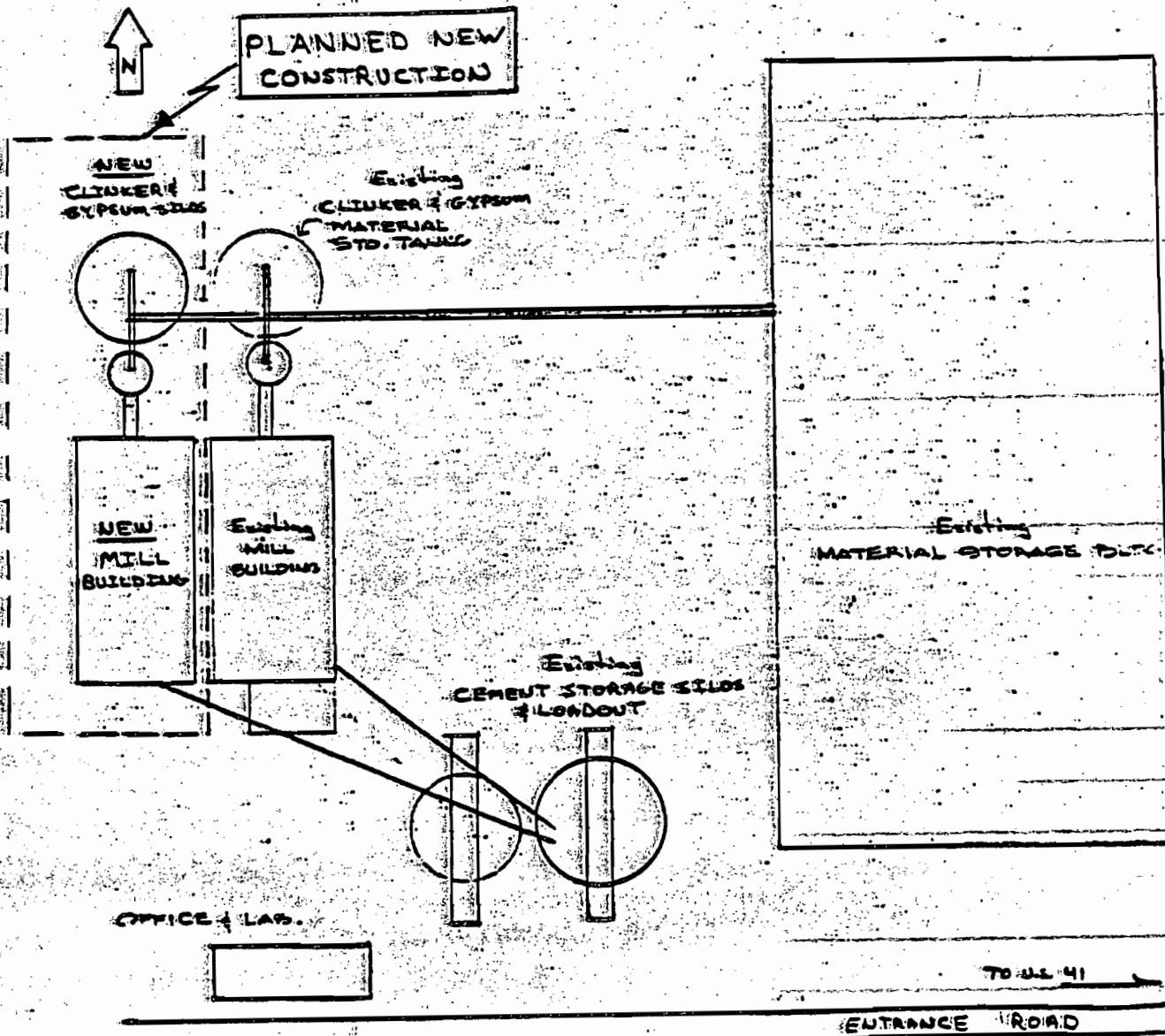


QUADRANGLE LOCATION



National Portland Cement Company of Florida, Inc.

Plot Plan



NATIONAL PORTLAND CEMENT
COMPANY OF FLORIDA, INC.

PROJECT DESCRIPTION

National Portland Cement proposes to construct a new 45 TPH cement finishing mill at their Port Manatee facilities. The new mill will be constructed on the west side of the facility, parallel to their present mill. The new mill will have separate clinker and gypsum storage silos which will be filled utilizing the existing covered belt conveyor system from the materials storage building.

The grinding operation will be performed in a new 2000 Hp ball mill equipped with an air separator to classify the material. After the proper fineness is achieved the finished product will be pneumatically transferred to the existing cement storage silos at this facility.

For further details on the mill operations, see the PROCESS DESCRIPTION. Separate dust collection systems will be installed on the equipment of the new finishing mill to control the particulate emissions during grinding operations.

This project will comply with all DER rules and regulations.

NATIONAL PORTLAND CEMENT
COMPANY OF FLORIDA, INC.

PROCESS DESCRIPTION

This facility manufactures portland cement by grinding clinker and gypsum in a ball mill to form portland cement. The cement clinker manufactured elsewhere is shipped to the plant and stored inside the raw material storage building.

The production process begins with the transfer of clinker and gypsum from the materials storage building to separate storage silos. This is accomplished using a covered belt conveyor system. A dust collector mounted on top of the silos controls any emissions created during silo charging and/or discharging operations.

Clinker and Gypsum are discharged from the silos at specified rates onto a conveyor belt which delivers them to the rotary grinding mill. As the materials tumble through the mill, their particle size is continually being reduced by a combination of actions including abrasion or attrition, impact, and grinding. The grinding operation is facilitated with the placement of steel spheres or balls in the mill. As the drum rotates, a flight picks up the materials and steel balls, carrying them around until they are dropped to the opposite side of the drum, creating an impact and/or crushing effect. The materials and steel balls then roll within the drum causing abrasion and grinding action until another flight picks them up and the cycle is repeated. Dust generated in the mill is drawing off at the discharge end and delivered to the mill dust collector.

When the ground product leaves the mill it is transferred to the air separator through air slides and a bucket elevator. In the separator the cement is classified according to particle size. The cement is placed in the center cone of the separator and suspended in a column of air. The smaller or lighter particles are forced to the top of the cone while the larger or heavier particles fall to the bottom and are returned to the mill for further processing.

Usually the separator is equipped with mixing blades to facilitate the sizing operation. By adjusting the speed of the blade and the air flow in the separator, the fineness of the finished product is controlled. When the cement particles are fine enough, they are forced out the top of the center cone and delivered by an air slide to the cement cooler. Any dust which would be generated during the sizing or transfer operations will be controlled by a separate process dust collector.

From the cooler, the finished cement product is pneumatically conveyed to storage silos. At the silos, the cement can be loaded into tanker trucks for shipment to concrete producers. A dust collector for the cement silos will control any emissions during pneumatic filling or truck loading operations.

Clincher & Exhaust Storage SilosMilken-Fulbright 815-8-20 Collector

Required Draft 5050 ACFM

Outlet Temperature ambient (90°F)

Air to Cloth Ratio 6.6:1

Est. Inlet loading 6.5-8 grains/dscf

Outlet loading 0.02 grains/dscf Mfg Guarantee
assuming gas stream 80% moisture @ 90°F

$$SCFM = ACFM (1 - B_{mo}) \left(\frac{T_{std}}{T_s} \right) \left(\frac{P_s}{P_{std}} \right)$$

$$SCFM = 5050 (1 - 0) \left(\frac{528}{550} \right) \left(\frac{29.92}{29.92} \right) \approx 4850 \text{ scfm}$$

Uncontrolled Particulate Emissions

$$E_{pu} = 45 \text{ TPH} (2 \text{ lb/ton}) (4 \text{ pts.}) = 360 \text{ lb/hr}$$

$$C_{pu} = \frac{360 \text{ lb/hr}}{4850 \text{ scfm}} \left(\frac{7000 \text{ grains/lb}}{60 \text{ min/hr}} \right) = 8.66 \text{ grains/dscf}$$

Controlled Particulate Emissions

$$E_p = 360 \text{ lb/hr} (1 - 0.9995) = 0.18 \text{ lb/hr}$$

$$C_p = 8.66 \text{ grains/dscf} (1 - 0.9995) \approx 0.005 \text{ grains/dscf}$$

Allowable Particulate Emissions (0.03 grains/dscf)

$$E_{pa} = 0.03 \text{ grains/dscf} (4850 \text{ scfm}) (60/7000) = 1.25 \text{ lb/hr}$$

$$C_{pa} = 0.03 \text{ grains/dscf}$$

- 1 Uncontrolled emissions based on emissions factors from AP-42 table 8.20-1 for screening, conveying & handling rock.



Finishing Mill (Ball Mill, Air Separator, Air Slide, Elevator, Pump)

Controlled by Two Dust Collectors with Half the Loading on Each System.

Ball Mill

Mikro-Pulsaire 1445-8-20 Collector

Required Draft 8000 ACFM

Outlet Temperature 150 - 200 °F (Water Spray in Mill)

Air to Cloth Ratio 5.9:1

Est. Inlet loading 30-40 grains/dscf

Outlet loading 0.02 grains/dscf Mfg Guarantee

assuming gas stream @ 2% moisture @ 175 °F

$$SCFM = 8000 (1 - 0.02) \left(\frac{528}{635} \right) \left(\frac{29.92}{29.92} \right) \approx 6525 \text{ scfm}$$

Uncontrolled Particulate Emissions

$$E_p = 45 \text{ TPH} (48 \text{ lb/ton}) = 2160 \text{ lb/hr}$$

$$C_p = \frac{2160 \text{ lb/hr}}{6525 \text{ scfm}} (7000/60) = 38.62 \text{ grains/dscf}$$

Controlled Particulate Emissions

$$E_p = 2160 \text{ lb/hr} (1 - 0.9995) = 1.08 \text{ lb/hr}$$

$$C_p = 38.62 \text{ grains/dscf} (1 - 0.9995) = 0.019 \text{ grains/dscf}$$

Allowable Particulate Emissions (0.03 grains/dscf)

$$E_{PA} = 0.03 \text{ grains/dscf} (6525 \text{ scfm}) (60/7000) = 1.68 \text{ lb/hr}$$

$$C_{PA} = 0.03 \text{ grains/dscf}$$

Air Separator Air Slide Elevator Pump

Mikro-Pulsaire 1445-8-20 Collector

Required Draft 7800 ACFM

Air Separator 5000 ACFM

Air Slide 500 ACFM

Elevator 1500 ACFM

Pump 800 ACFM



Outlet Temperature 175 - 225 °F

Air to Cloth Ratio 5.8:1

Est. Inlet loading 28.5 grains/dscf

Air Separator 40 grains/dscf

Air Slide 5 grains/dscf

Elevator 8.5 grains/dscf

Pump 8.5 grains/dscf

Outlet loading 0.02 grains/dscf Mfg Guarantee
assuming gas stream @ 0% moisture @ 200 °F

$$SCFM = 7800 (1.0) \left(\frac{528}{660} \right) \left(\frac{29.92}{29.92} \right) \approx 6250 \text{ scfm}$$

Uncontrolled Particulate Emissions

$$E_{P_u} = 45 \text{ TPH} \left(\frac{48 \text{ lb/ton}}{2} \right) = 2160 \text{ lb/hr}$$

$$C_{P_u} = \frac{2160 \text{ lb/hr}}{6250 \text{ scfm}} \left(\frac{7000}{60} \right) = 40.32 \text{ grains/dscf}$$

Controlled Particulate Emissions

$$E_{P_c} = 2160 \text{ lb/hr} (1 - 0.9995) = 1.08 \text{ #/hr}$$

$$C_{P_c} = 40.32 \text{ grains/dscf} (1 - 0.9995) = 0.020 \text{ grains/dscf}$$

Allowable Particulate Emissions (0.03 grains/dscf)

$$E_{P_a} = 0.03 \text{ grains/dscf} (6250 \text{ scfm}) \left(\frac{60}{7000} \right) = 1.61 \text{ lb/hr}$$

$$C_{P_a} = 0.03 \text{ grains/dscf}$$

2 Uncontrolled emissions based on emission factors from AP-42 table 8.6-1 for cement manufacturing dryers, grinders, etc.



Cement Storage Silos - Existing

Existing Fuller 24-2-500 Collector is adequately controlling silo filling operations from the existing 47.25 TPH mill as well as the truck loading operations at both silos.

Therefore only have to size new collector to handle filling operations from new 45 TPH mill.

Mikro-Pulsaire 255-8-20 Collector

F-K Pump Rating 600 CFM

Required Draft 1500 ACFM

Outlet Temperature 120 °F

Air to Cloth Ratio 6.4:1

Present Permitted (A041-67797) Allowable Emission Rate

$$E_{PA} = 7.50 \text{ lb/hr}$$

Uncontrolled Particulate Emissions

$$E_{PU} = E_{PU}(\text{existing plant}) + E_{PU}(\text{new plant})$$

$$E_{PU} = 47.25 \text{ TPH} (2\% \text{ Dust}) + 45 \text{ TPH} (2\% \text{ Dust})$$

$$E_{PU} = 3690 \text{ lb/hr}$$

Controlled Particulate Emissions

Use 99.8% collector efficiency of the existing Fuller collector, since the efficiency is higher on the new Mikro-Pulsaire collector

$$E_{PC} = 3690 \text{ lb/hr} (1 - 0.998) = 7.38 \text{ lb/hr}$$

$$E_{PC} < E_{PA}$$

∴ An increase in the production rate can be made under the existing permit for the cement storage silos.



NATIONAL PORTLAND CEMENT COMPANY OF FLORIDA, INC.

Calculation of Emissions

Operating Hours

$$O_p = 24 \text{ hr/day} (7 \text{ day/wk}) (52 \text{ wk/yr}) = 8736 \text{ hr/yr}$$

Net Increase in Emissions Caused by New Mill

New Clinker & Gypsum Silos

$$0.18 \text{ lb/hr} (8736 \text{ hr/yr}) / (2000 \text{ lb/ton}) = 0.79 \text{ ton/yr}$$

New Finishing Mill

$$1.08 \text{ lb/hr} (8736 \text{ hr/yr}) / (2000 \text{ lb/ton}) = 4.72 \text{ ton/yr}$$

$$1.08 \text{ lb/hr} (8736 \text{ hr/yr}) / (2000 \text{ lb/ton}) = 4.72 \text{ ton/yr}$$

Existing Cement Storage Silos

$$3.60 \text{ lb/hr} (8736 \text{ hr/yr}) / (2000 \text{ lb/ton}) = 15.73 \text{ ton/yr}$$

$$\text{Net Increase} = 25.96 \text{ ton/yr}$$

Net increase in particulate emissions is less than 100 tons/yr.

∴ Considered Minor Modification to an Existing Source.

Mikro-Pulsaire

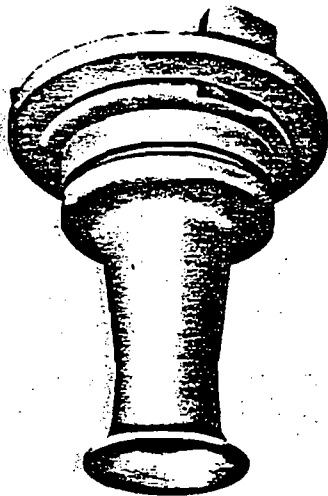
An integrated system

When MikroPul invented the pulse-jet fabric filter, it was designed as an integrated system. This means that components were designed to work best together; for example, the original jet pump was tested and designed to work as a coordinated system with the timer, 4½-inch diameter bag, blowtubes and special diaphragm valves.

MikroPul fabric filter components were designed by MikroPul

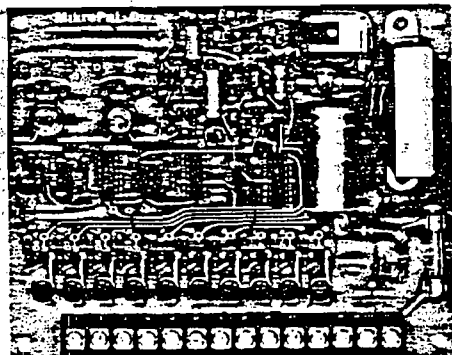
engineers and are built to MikroPul's rigid specifications. These components are not interchangeable with those of other manufacturers.

MikroPul components have been field-tested on over 125,000 installations. They have successfully served major industries all over the world. They embody many years of operating experience.



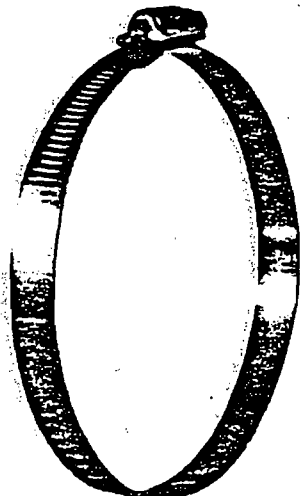
Venturi

MikroPul's unique venturi design assures maximum cleaning efficiency. It is available in aluminum, steel, stainless steel, and Inconel. Produced to close tolerance, the venturi is guaranteed to fit properly into the tube sheet. The standard venturi can be coated with a variety of materials (examples are chrome and epoxy) to meet special needs.



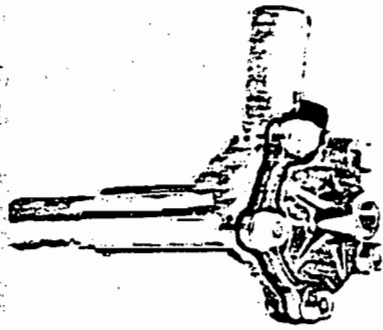
Model 72 Sequential Integrated Cyclic Timer

Model 72 Timer, designed by and made exclusively for MikroPul, is all solid state. It can switch 10 independent outputs. Each output has a switching capacity of 1 amp at 115V, which is sufficient to operate five (5) solenoid valves per output position. It is mounted on a fiberglass reinforced, plastic coated, U.L. approved circuit board. The timer is supplied completely set up for 10 outputs. It can be adjusted to activate in intervals from 3 to 60 seconds. Adjustable duration of the pulse is .05 to .15 second. Options include digital readout and clean-on-demand operation. The timer was designed for use with Mikro venturi, Mikro blowtubes, and Mikro 4½" diameter bag.



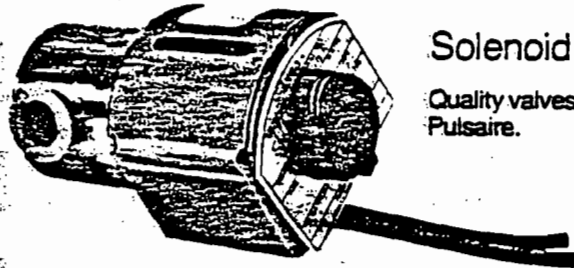
Filter Cylinder Clamp

Stainless steel bag clamp effectively holds the bag-retainer assembly to the venturi collar and assures a positive seal at the tube sheet. Hex head permits easy adjustment of clamp.



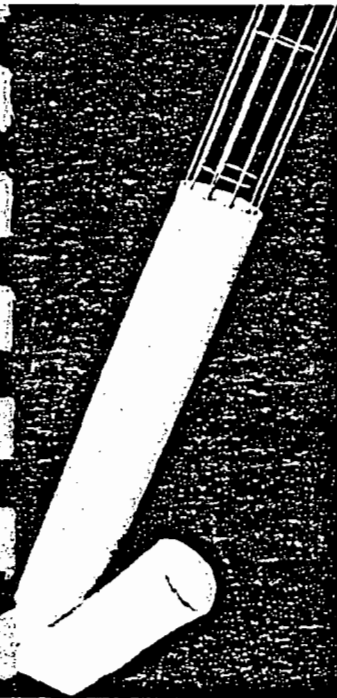
Diaphragm Valve

Developed jointly by MikroPul engineers and ASCO. The diaphragm valve, along with the venturi and the timer, are the heart of a good pulse-jet cleaning system. The diaphragm valve is available in ¾", 1", and 1¼" sizes.



Solenoid Valve

Quality valves designed for long life and reliable performance by ASCO specifically for the Mikro-Pulsaire.



Bag Retainer

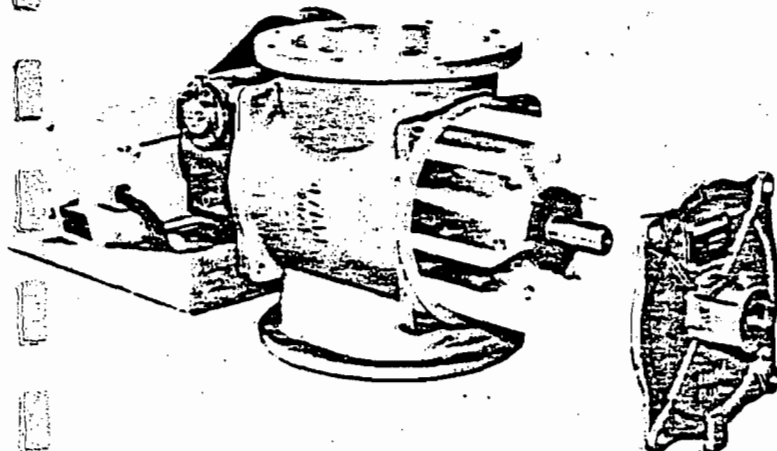
The bag retainer provides support for the bag and serves as a means of installing the bag in the collector. Retainers are 2½, 4, 6, 8, 10, and 12 feet long, and are available in carbon steel, epoxy coated carbon steel, or stainless steel. Each retainer consists of ten ½-inch thick vertical wires and ½-inch diameter horizontal welded rings on 8" centers. Retainers are manufactured in MikroPul's own shop on machinery designed by Mikro engineers. A rigorous inspection procedure assures top quality.

Filter Cylinders (Bags)

Filter bags are 2½, 4, 6, 8, 10, and 12 feet long. The bags are available in a variety of materials to meet a range of operating conditions. Materials include polyester, polypropylene, Nomax, acrylic, wool, Teflon, and glass, for temperatures ranging from ambient to 550°F.

The 4½ inch diameter bags on 7 inch centers assure low velocity between bags. Bag size was determined by laboratory tests to determine most economical size that would provide ease of cleaning, long bag life and maximum square feet in a given area. These lab results have since been verified by computer testing and over 25 years of field experience.

Manufactured by a U.S. Filter sister company, bags must meet rigid MikroPul specifications for porosity, cloth weight, stitching, dimensions and other important properties. The specifications were selected to provide long life and efficient operation.



Mikro-Airlock

The Mikro-Airlock is a rotary valve consisting of a cylindrical housing, a vaned rotor, and a drive. The rotor fits snugly into the housing, thus minimizing air or gas leakage while effectively feeding or discharging the material. The material to be moved enters the Mikro-Airlock by gravity. As the vanes rotate, appropriate quantities of material are delivered to storage or to process. All models come with a replaceable six-vane rotor. The rotor features minimum clearance between the vane tip and the body interior. The standard blade is of Delrin. Blades of Teflon, rubber, 316 stainless steel, carbon steel, bronze, and polyurethane are also available. The choice of material depends on temperature and chemical properties of the material handled. Housing is available in cast iron and stainless steel. Interior surfaces are machined to close tolerances. The entry and exit throats are polished to assure free flow of the material. Available in two (2) sizes: 8" and 14", 5 Models.

Top Access Mikro-Pulsaire

"S" Series from 151 to 7,070 sq. ft. filter area — 8, 10, 12 foot bags

- Factory assembled for rapid field installation
- Permits bags to be inspected, removed and replaced from clean air side
- Fast replacement reduces maintenance and downtime. One man can change a bag in about two minutes
- Leaking bags can be detected rapidly and easily
- Operators are not in contact with toxic or valuable products during maintenance operations
- Header pipe assembly (consisting of header pipe, right angle valves, solenoid valve and solenoid valve enclosure) is shipped mounted, wired, and completely assembled on most sizes

Features

- Unique Cam-Action Lock Venturi that locks into and is removed from the tube sheet by a twist of the wrist. Positive seal of venturi with bag clamp assures proper installation; bags cannot be partially installed; bags and retainer cannot fall into the collector; and fingers are protected against injury.
- Modular models can consist of pre-fabricated panels or large welded sections.
- Sections can be bolted or welded in field.
- Compressed air headers are pre-assembled and pre-wired.
- Welded 12 gauge carbon steel construction.
- Operating temperatures to 200°F.
- Operating pressure to 20 in. w.g.

Delivered with

- Aluminum venturis
- Stainless steel bag clamps
- Model 72 Solid State 10-position timer
- Lift off access doors (number depending on size)
- Primed carbon steel surfaces
- Solenoid valves and timer enclosures are NEMA-4
- One hinged access door in hopper

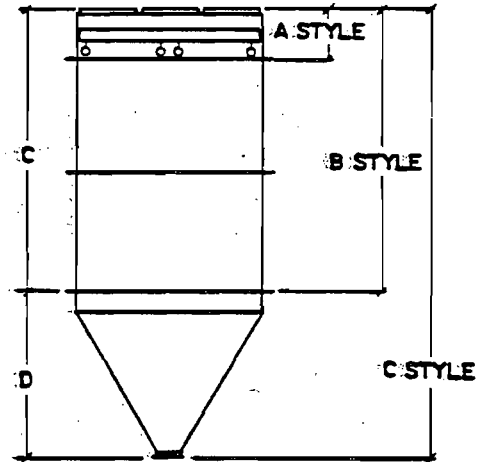
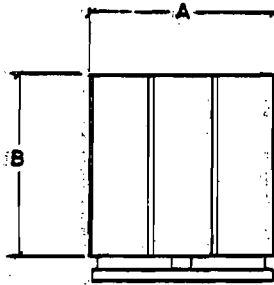
Options

- Explosion proof electricals
- External catwalk
- Designed for use at 500°F.
- Explosion doors
- Inspection window
- Standlegs and bracing
- Ladder and cage
- Bag grid and/or man grid
- Weather hood over access door
- Pressure gauge on header
- Special interior coatings to your specification
- High quality Mikro bags in wide variety of materials and finishes
- Clean-on-Demand timer
- Epoxy coat, stainless steel 10-wire or 20-wire retainers
- All surfaces that may come in contact with dust or product can be fabricated of fiberglass or stainless steel
- All surfaces that may come in contact with gas can be fabricated of stainless steel

Typical applications

Include venting particle size reduction machinery, spray dryers, separators, calciners, mixers, packaging machines, conveyors, carloaders, and a range of process equipment.





SQUARE TR. SERIES							
8 FT. AND 10 FT. FILTER ELEMENTS *							
MODEL	NO OF FILTER ELEMENTS	FILTER AREA FT. ²	APPROX WGT. LBS.	DIM 'A' INCHES	DIM 'B' INCHES	DIM 'C' INCHES	DIM 'D' INCHES
16 S	8	151	1300	30	30	108 3/4	29
	10	188	1370	30	30	132 1/2	29
25 S	8	236	1550	36	36	108 3/4	34
	10	295	1650	36	36	132 1/2	34
36 S	8	339	2100	48	48	108 3/4	45
	10	424	2275	48	48	132 1/2	45
49 S	8	462	2725	54	54	113 1/2	50
	10	577	2925	54	54	137 1/2	50
64 S	8	603	3000	60	60	113 1/2	55
	10	754	3250	60	60	137 1/2	55
81 S	8	763	3650	66	66	113 1/2	60
	10	954	3950	66	66	137 1/2	60
100 S	8	942	4100	72	72	113 1/2	65
	10	1178	4460	72	72	137 1/2	65
121 S	8	1140	4775	78	78	113 1/2	70
	10	1425	5200	78	78	137 1/2	70
144 S	8	1356	5600	84	85	119 1/2	75
	10	1696	5900	84	85	143 1/2	75
156 S	8	1470	7150	92	85	135	83
	10	1836	7600	92	85	159	83
168 S	8	1583	7250	99	85	135	89
	10	1979	7750	99	85	159	89
180 S	8	1697	7800	106	85	135	94
	10	2121	8350	106	85	159	94
196 S	8	1847	7900	99	99	135	89
	10	2309	8450	99	99	159	89
221 S	8	2083	8950	120	92	135	107
	10	2604	9550	120	92	159	107
238 S	8	2243	9750	120	99	135	107
	10	2804	10150	120	99	159	107
289 S	8	2724	10850	120	120	135	107
	10	3405	11500	120	120	159	107
320 S	8	3016	12000	141	113	135	125
	10	3770	12700	141	113	159	125
340 S	8	3203	12775	141	120	135	125
	10	4005	13525	141	120	159	125
360 S	8	3393	13550	141	127	138	125
	10	4241	14350	141	127	162	125
380 S	8	3579	14545	141	134	138	125
	10	4476	14745	141	134	162	125
400 S	8	3768	15740	141	141	138	125
	10	4712	15945	141	141	162	125
420 S	8	3957	17329	148	141	138	131
	10	4946	17776	148	141	162	131
440 S	8	4145	18888	155	141	138	137
	10	5181	19133	155	141	162	137
460 S	8	4333	20588	162	141	138	143
	10	5418	20857	162	141	162	143
480 S	8	4521	22646	169	141	138	149
	10	5624	22942	169	141	162	149
500 S	8	4710	24807	176	141	138	155
	10	5890	25008	176	141	162	155

* ALSO AVAILABLE IN 12 FT. LG. FILTER ELEMENTS.

NATIONAL PORTLAND CEMENT
COMPANY OF FLORIDA, INC.

PREVIOUS DER PERMITS

<u>PERMIT NO.</u>	<u>SOURCE</u>	<u>ISSUED</u>	<u>EXPIRES</u>
AC 41-2000	Finish Grinding Mill	03-16-73	01-31-74
AO 41-2000	Finish Grinding Mill	04-21-75	04-21-78
AO 41-6582	Clinker & Gypsum Storage Silos	05-10-78	04-21-83
AO 41-6583	Ball Mill, Air Slide & Elevator	05-10-78	04-21-83
AO 41-6584	Cement Storage Silo	05-10-78	04-21-83
AO 41-2176	Material Unloading System	05-23-78	04-05-81
AC 41-27637	Material Unloading System	01-06-81	10-30-81
AO 41-43511	Material Unloading System	08-06-81	03-27-86
AO 41-67794	Clinker & Gypsum Storage Silos	06-16-83	06-02-88
AO 41-67795	Ball Mill, Air Slide & Elevator	06-16-83	06-02-88
AO 41-67797	Cement Storage Silo	06-16-83	06-02-88

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION



DER
AUG 22 1983
SOUTHWEST DISTRICT
TAMPA

BOB GRAHAM
GOVERNOR

VICTORIA J. TSCHINKEL
SECRETARY

WILLIAM K. HENNESSEY
DISTRICT MANAGER

SOUTHWEST DISTRICT

1 HIGHWAY 301 NORTH
TAMPA, FLORIDA 33610

AC 41-74313

NOV 8 1983

AUG 4 1983

BAOM

APPLICATION TO OPERATE/CONSTRUCT AIR POLLUTION SOURCES

SOURCE TYPE: Cement Grinding Mill [] New¹ [] Existing¹

APPLICATION TYPE: [] Construction [] Operation [] Modification

COMPANY NAME: National Portland Cement Company of Florida, Inc. COUNTY: Manatee

Identify the specific emission point source(s) addressed in this application (i.e. Line

Kiln No. 4 with Venturi Scrubber; Peaking Unit No. 2, Gas Fired) Grinding Mill

SOURCE LOCATION: Street Route 1 - Port Manatee City Palmetto

UTM: East 17-346.4 North 3058.4

Latitude 27° 38' 07" N Longitude 82° 33' 45" W

APPLICANT NAME AND TITLE: Mr. Nicholas E. Ryan, Jr., Vice President

APPLICANT ADDRESS: Route 1 - Port Manatee Palmetto, FL 33561

SECTION I: STATEMENTS BY APPLICANT AND ENGINEER

A. APPLICANT

National Portland Cement Company of Florida, Inc.

I am the undersigned owner or authorized representative* of National Portland Cement Company of Florida, Inc.

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: Nicholas E. Ryan, Jr.

Mr. Nicholas E. Ryan, Jr., Vice President
Name and Title (Please Type)

Date: 8-17-83 Telephone No. (813) 722-7776

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 Thomas E. Brumagin
 Thomas E. Brumagin, P.E.
 Name (Please Type)

Central Florida Testing Laboratories, Inc.
 Company Name (Please Type)
 1400 Starkey Road Largo, FL 33541
 Mailing Address (Please Type)

Florida Registration No. 31063 Date: 8/17/83 Telephone No. (813) 581-7019

SECTION II: GENERAL PROJECT INFORMATION

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 PROJECT DESCRIPTION

NEW MILL

This application is for the grinding mill operations, which are controlled by two Mikro-Pulsaire Model 144S-8-20 dust collectors.

Applications for the raw material and finished product storage silos are filed separately.

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

Start of Construction January, 1984 Completion of Construction July, 1985

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.)

Mikro-Pulsaire 81S-8-20 Baghouse	Clinker & Gypsum Silos	\$16,150
Mikro-Pulsaire 144S-8-20 Baghouse	Ball Mill	21,200
Mikro-Pulsaire 144S-8-20 Baghouse	Air Separator, Elevator, F-K Pump	21,200
Mikro-Pulsaire 25S-8-20 Baghouse	Existing Cement Silos	9,800

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

See Attached DER Permits

Requested permitted equipment operating time: hrs/day 24 ; days/wk 7 ; wks/yr 52 ;
if power plant, hrs/yr _____ ; if seasonal, describe: _____

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

1. Is this source in a non-attainment area for a particular pollutant? 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? Yes
If yes, see Section VI.
Controlled Emissions from New Facilities < 100 tons/year
3. Does the State "Prevention of Significant Deterioration" (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

- Do "Reasonably Available Control Technology" (RACT) requirements apply to this source? In area of influence of Hillsborough County Non-Attainment Area. Yes
- a. If yes, for what pollutants? Particulate
 - 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.

RACT Emission Limiting Standards - Section 17-2.650 (2) (c) 11

11. Materials Handling, Sizing, Screening, Crushing and Grinding Operation
 - a. Applicability - these emission limitations shall apply to the handling, sizing, screening, crushing, or grinding of materials such as, but not limited to, CEMENT, CLINKER, fly ash, coke, GYPSUM, shale, lime, sulfur, phosphatic materials, slag, and grain or grain products.
 - b. Emissions Limitations
 - (i) Visible Emissions - 5 percent opacity
 - (ii) Particulate Concentration - 0.03 grain/dscf

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

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

Description	Contaminants		Utilization Rate - lbs/hr	Relate to Flow Diagram
	Type	% Wt		
Clinker	-200 mesh	3.0	85,500	B
Gypsum	-200 mesh	1.0	4,500	C

Process Rate, if applicable: (See Section V, Item 1)

1. Total Process Input Rate (lbs/hr): 90,000 lbs/hr

2. Product Weight (lbs/hr): 90,000 lbs/hr of Type I Portland Cement

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 Emission Rate per Rule 17-2	Allowable ³ Emission (grains/dscf)	Potential ⁴ Emission		Relate to Flow Diagram
	Maximum lbs/hr	Actual T/yr			lbs/yr	T/yr	
Particulate	2.16	9.52	RACT	0.03	4320	18,870	G & L
Sulfur Oxides	0						
Carbon Monoxide	0						
Hydrocarbons	0						
Nitrogen Oxides	0						

¹ See Section V, Item 2.

² Reference applicable emission standards and units (e.g. Rule 17-2.600(5)(b)2. Table II, (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).

Control Devices: (See Section V, Item 4)

Name and Type (Model & Serial No.)	Contaminant	Efficiency (percent)	Range of Particles Size Collected (in microns) (If applicable)	Basis for Efficiency (Section V Item 5)
Mikro-Pulsaire Model 144S-8-20	Particulate	99.995	+1 micron	Design Data
Mikro-Pulsaire Model 144S-8-20	Particulate	99.995	+1 micron	Design Data

Fuels - All Electric

Type (Be Specific)	Consumption*		Maximum Heat Input (MMBTU/hr)
	avg/hr	max./hr	

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

Fuel Analysis:

Percent Sulfur: _____ Percent Ash: _____

Density: _____ lbs/gal Typical Percent Nitrogen: _____

Heat Capacity: _____ BTU/lb _____ BTU/gal

Other Fuel Contaminants (which may cause air pollution): _____

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

Annual Average _____ Maximum _____

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

No liquid or solid waste generated from this process.

Emission Stack Geometry and Flow Characteristics (Ball Mill / Separator):

Stack Height: 50 / 90 ft. Stack Diameter: 2.0 / 2.0 ft.
 Gas Flow Rate: 8000/7800 ACFM 6525/6250 DSCFM Gas Exit Temperature: 175 / 200 °F.
 Water Vapor Content: 2 / 0 % Velocity: 42.5 / 41.4 FPS

SECTION IV: INCINERATOR INFORMATION

Type of Waste	Type D (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 (lbs/hr) Incinerated							
Uncontrolled (lbs/hr)							

Description of Waste _____

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

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

Manufacturer: _____

Date Constructed _____ Model No. _____

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

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

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

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

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

Brief description of operating characteristics of control devices: _____

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

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.

The appropriate application fee in accordance with Rule 17-4.05. The check should be made payable to the Department of Environmental Regulation.

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

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

[] Yes [X] No

Contaminant

Rate or Concentration

Contaminant	Rate or Concentration

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

[] Yes [X] No

Contaminant

Rate or Concentration

Contaminant	Rate or Concentration

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

Contaminant

Rate or Concentration

Contaminant	Rate or Concentration
Particulate	0.03 grains/dscf
Visible Emissions	5 percent opacity

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

1. Control Device/System:

2. Operating Principles:

3. Efficiency:*

4. Capital Costs:

*Explain method of determining

5. Useful Lives:

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: Baghouse

b. Operating Principles: Dust laden air enters the collector where airborne particules are collected on the outside surface of the bags. Periodic pulsing of high pressure air removes the accumulated dust. Dust falls to the bottom hopper of the collector and is returned to the separator through an air slide.

c. Efficiency:¹ 99.99%

d. Capital Cost: \$42,400

e. Useful Life: 15 years

f. Operating Cost: \$5000/year

g. Energy:² 440 KWH

h. Maintenance Cost: \$3000/year

i. Availability of construction materials and process chemicals:

All materials are readily available

j. Applicability to manufacturing processes:

Dust is returned to the separator.

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

2. NO OTHER METHODS SUITABLE FOR THIS TYPE OPERATION.

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 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:

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: Baghouse

2. Efficiency:¹ +99.99%

3. Capital Cost: \$42,400

4. Useful Life: 15 years

5. Operating Cost: \$5000/year

6. Energy:² 440 KWH

7. Maintenance Cost: \$3000/year

8. Manufacturer: Mikro-Pul

9. Other locations where employed on similar processes:

a. (1) Company: National Portland Cement Company Of Florida, Inc.

(2) Mailing Address: Route 1 - Port Manatee

(3) City: Palmetto

(4) State: FL 33561

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:

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

NOT APPLICABLE

A. Company Monitored Data

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

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

Other data recorded _____

Attach all data or statistical summaries to this application.

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

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. Applicant's 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.

Attach all other information supportive to the PSD review.

- 1. 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.
- 2. 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.

PLANT LOCATION

Piles

Moody Point

PORT MANATEE

Piney Point

Piney Point

SEABOARD

(PALMETTO)
4439 N 3E

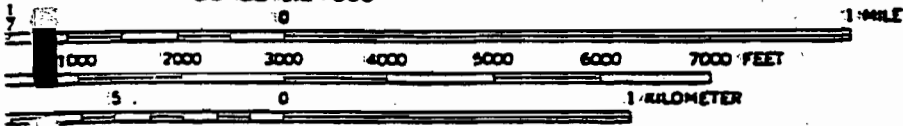
R. 17 E R. 18 E

3230'

RUSCHIA 3.5 MI.
BRADENTON 9.8 MI.

349

SCALE 1:24 000



CONTOUR INTERVAL 5 FEET

DATUM IS MEAN SEA LEVEL

SOUNDINGS AND SOUNDINGS IN FEET—DATUM IS MEAN LOW WATER

LINE REPRESENTS THE APPROXIMATE LINE OF MEAN HIGH WATER
THE AVERAGE DEPTH OF TIDE IS APPROXIMATELY 2 FEET



QUADRANGLE LOCATION

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS

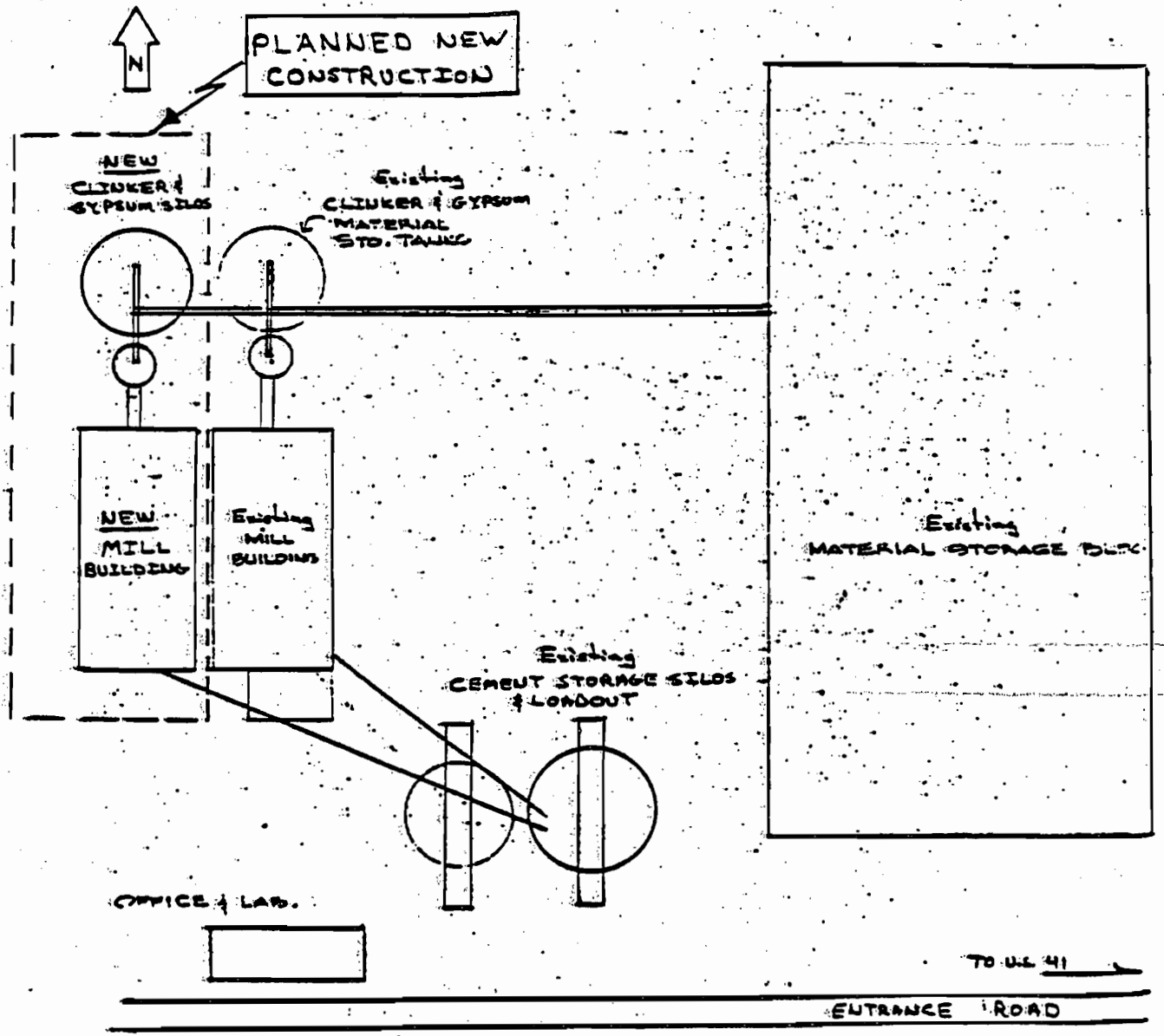
BY THE U.S. GEOLOGICAL SURVEY, WASHINGTON, D.C. 20242

FOR TOPOGRAPHIC MAPS AND SYMBOLS, SEE AVAILABLE ON REQUEST



National Portland Cement Company of Florida, Inc.

Plot Plan



NATIONAL PORTLAND CEMENT
COMPANY OF FLORIDA, INC.

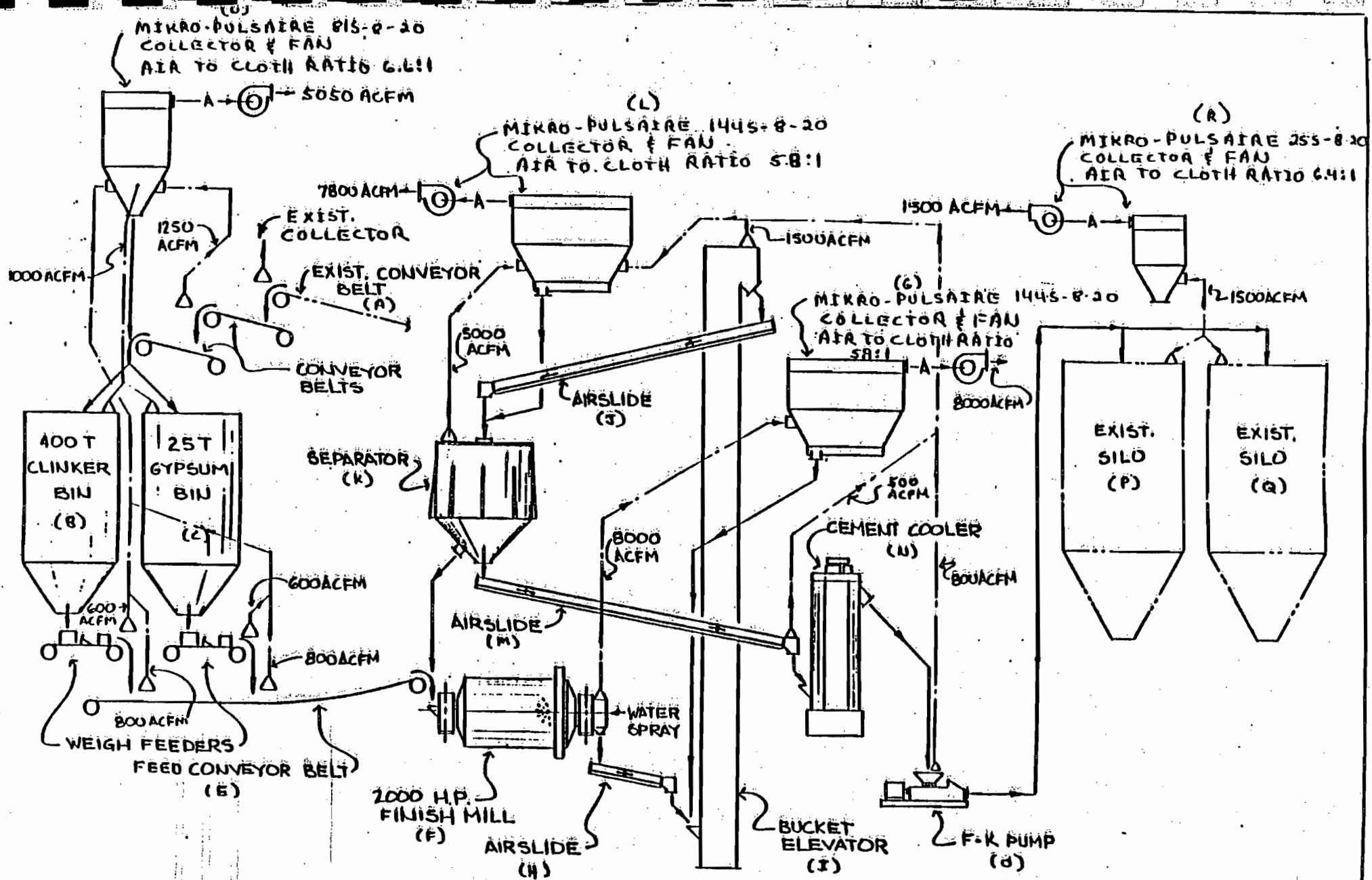
PROJECT DESCRIPTION

National Portland Cement proposes to construct a new 45 TPH cement finishing mill at their Port Manatee facilities. The new mill will be constructed on the west side of the facility, parallel to their present mill. The new mill will have separate clinker and gypsum storage silos which will be filled utilizing the existing covered belt conveyor system from the materials storage building.

The grinding operation will be performed in a new 2000 Hp ball mill equipped with an air separator to classify the material. After the proper fineness is achieved the finished product will be pneumatically transferred to the existing cement storage silos at this facility.

For further details on the mill operations, see the PROCESS DESCRIPTION. Separate dust collection systems will be installed on the equipment of the new finishing mill to control the particulate emissions during grinding operations.

This project will comply with all DER rules and regulations.



NATIONAL PORTLAND CEMENT
COMPANY OF FLORIDA, INC.

FINISH MILL FLOW DIAGRAM
Raymond Kaiser Engineers

NATIONAL PORTLAND CEMENT
COMPANY OF FLORIDA, INC.

PROCESS DESCRIPTION

This facility manufactures portland cement by grinding clinker and gypsum in a ball mill to form portland cement. The cement clinker manufactured elsewhere is shipped to the plant and stored inside the raw material storage building.

The production process begins with the transfer of clinker and gypsum from the materials storage building to separate storage silos. This is accomplished using a covered belt conveyor system. A dust collector mounted on top of the silos controls any emissions created during silo charging and/or discharging operations.

Clinker and Gypsum are discharged from the silos at specified rates onto a conveyor belt which delivers them to the rotary grinding mill. As the materials tumble through the mill, their particle size is continually being reduced by a combination of actions including abrasion or attrition, impact, and grinding. The grinding operation is facilitated with the placement of steel spheres or balls in the mill. As the drum rotates, a flight picks up the materials and steel balls, carrying them around until they are dropped to the opposite side of the drum, creating an impact and/or crushing effect. The materials and steel balls then roll within the drum causing abrasion and grinding action until another flight picks them up and the cycle is repeated. Dust generated in the mill is drawing off at the discharge end and delivered to the mill dust collector.

When the ground product leaves the mill it is transferred to the air separator through air slides and a bucket elevator. In the separator the cement is classified according to particle size. The cement is placed in the center cone of the separator and suspended in a column of air. The smaller or lighter particles are forced to the top of the cone while the larger or heavier particles fall to the bottom and are returned to the mill for further processing.

Usually the separator is equipped with mixing blades to facilitate the sizing operation. By adjusting the speed of the blade and the air flow in the separator, the fineness of the finished product is controlled. When the cement particles are fine enough, they are forced out the top of the center cone and delivered by an air slide to the cement cooler. Any dust which would be generated during the sizing or transfer operations will be controlled by a separate process dust collector.

From the cooler, the finished cement product is pneumatically conveyed to storage silos. At the silos, the cement can be loaded into tanker trucks for shipment to concrete producers. A dust collector for the cement silos will control any emissions during pneumatic filling or truck loading operations.



Clinker & Gypsum Storage Silos

Mike-Fulcoinc 815-8-20 Collector

Required Draft 5050 ACFM

Outlet Temperature ambient (90°F)

Air to Cloth Ratio 6.6:1

Est. Inlet loading 6.5-8 grains/dscf

Outlet loading 0.02 grains/dscf Mfg Guarantee

assuming gas stream @ 0% moisture @ 90°F

$$SCFM = ACFM (1 - B_{H_2O}) \left(\frac{T_{std}}{T_s} \right) \left(\frac{P_s}{P_{std}} \right)$$

$$SCFM = 5050 (1 - 0) \left(\frac{528}{550} \right) \left(\frac{29.92}{29.92} \right) \approx 4850 scfm$$

Uncontrolled Particulate Emissions

$$E_{p_u} = 45 \text{ TPH } (2 \text{ lb/ton}) (4 \text{ pts.}) = 360 \text{ lb/hr}$$

$$C_{p_u} = \frac{360 \text{ lb/hr}}{4850 \text{ scfm}} \left(\frac{7000 \text{ grains/lb}}{60 \text{ min/hr}} \right) = 8.66 \text{ grains/dscf}$$

Controlled Particulate Emissions

$$E_{p_c} = 360 \text{ lb/hr } (1 - 0.9995) = 0.18 \text{ lb/hr}$$

$$C_{p_c} = 8.66 \text{ grains/dscf } (1 - 0.9995) \approx 0.005 \text{ grain/dscf}$$

Allowable Particulate Emissions (0.03 grains/dscf)

$$E_{p_a} = 0.03 \text{ grains/dscf } (4850 \text{ scfm}) (60/7000) = 1.25 \text{ lb/hr}$$

$$C_{p_a} = 0.03 \text{ grains/dscf}$$

- 1 Uncontrolled emissions based on emissions factors from AP-42 table 8.20-1 for screening, conveying & handling rock.



Finishing Mill (Ball Mill, Air Separator, Air Slide, Elevator, Pump)

Controlled by Two Dust Collectors with Half the Loading on Each System.

Ball Mill

Mikro-Pulsaire 144S-8-20 Collector

Required Draft 8000 ACFM

Outlet Temperature 150-200 °F (Water Spray in Mill)

Air to Cloth Ratio 5.9:1

Est. Inlet loading 30-40 grains/dscf

Outlet loading 0.02 grains/dscf Mfg Guarantee

assuming gas stream @ 2% moisture @ 175 °F

$$SCFM = 8000 (1 - 0.02) \left(\frac{528}{635} \right) \left(\frac{29.92}{29.92} \right) \approx 6525 \text{ scfm}$$

Uncontrolled Particulate Emissions

$$E_p = 45 \text{ TPH} (48 \text{ lb/ton}) = 2160 \text{ lb/hr}$$

$$C_p = \frac{2160 \text{ lb/hr}}{6525 \text{ scfm}} (7000/60) = 38.62 \text{ grains/dscf}$$

Controlled Particulate Emissions

$$E_p = 2160 \text{ lb/hr} (1 - 0.9995) = 1.08 \text{ lb/hr}$$

$$C_p = 38.62 \text{ grains/dscf} (1 - 0.9995) = 0.019 \text{ grains/dscf}$$

Allowable Particulate Emissions (0.03 grains/dscf)

$$E_{pA} = 0.03 \text{ grains/dscf} (6525 \text{ scfm}) (60/7000) = 1.68 \text{ lb/hr}$$

$$C_{pA} = 0.03 \text{ grains/dscf}$$

Air Separator Air Slide Elevator Pump

Mikro-Pulsaire 144S-8-20 Collector

Required Draft 7800 ACFM

Air Separator 5000 ACFM

Air Slide 500 ACFM

Elevator 1500 ACFM

Pump 800 ACFM



Calculation of Emissions

Outlet Temperature 175 - 225 °F

Air to Cloth Ratio 5.8:1

Est. Inlet loading 28.5 grains/dscf

Air Separator 40 grains/dscf

Air Slide 5 grains/dscf

Elevator 8.5 grains/dscf

Pump 8.5 grains/dscf

Outlet loading 0.02 grains/dscf Mfg Guaranteed

assuming gas stream @ 0% moisture @ 200 °F

$$SCFM = 7800 (1-0) \left(\frac{528}{660} \right) \left(\frac{29.92}{29.92} \right) \approx 6250 \text{ scfm}$$

Uncontrolled Particulate Emissions

$$E_{p_1} = 45 \text{ TPH} \left(\frac{48 \text{ lb/ton}}{2} \right) = 2160 \text{ lb/hr}$$

$$C_{p_1} = \frac{2160 \text{ lb/hr}}{6250 \text{ scfm}} \left(\frac{7000}{60} \right) = 40.32 \text{ grains/dscf}$$

Controlled Particulate Emissions

$$E_{p_2} = 2160 \text{ lb/hr} (1 - 0.9995) = 1.08 \text{ #/hr}$$

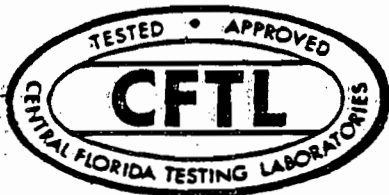
$$C_{p_2} = 40.32 \text{ grains/dscf} (1 - 0.9995) = 0.020 \text{ grains/dscf}$$

Allowable Particulate Emissions (0.03 grains/dscf)

$$E_{p_a} = 0.03 \text{ grains/dscf} (6250 \text{ scfm}) \left(\frac{60}{7000} \right) = 1.61 \text{ lb/hr}$$

$$C_{p_a} = 0.03 \text{ grains/dscf}$$

2 Uncontrolled emissions based on emission factors from AP-42 table 8.6-1 for cement manufacturing dryers, grinders, etc.

Cement Storage Silos - Existing

Existing Fuller 24-2-500 Collector is adequately controlling silo filling operations from the existing 47.25 TPH mill as well as the truck loading operations at both silos.

Therefore only have to size new collector to handle filling operations from new 45 TPH mill.

Mikro-Pulsaire 255-8-20 Collector

F-K Pump Rating 600 CFM

Required Draft 1500 ACFM

Outlet Temperature 120 °F

Air to Cloth Ratio 6.4:1

Present Permitted (A041-67797) Allowable Emission Rate

$$E_{pA} = 7.50 \text{ lb/hr}$$

Uncontrolled Particulate Emissions

$$E_{pU} = E_{pU}(\text{existing plant}) + E_{pU}(\text{new plant})$$

$$E_{pU} = 47.25 \text{ TPH} (2\% \text{ Dust}) + 45 \text{ TPH} (2\% \text{ Dust})$$

$$E_{pU} = 3690 \text{ lb/hr}$$

Controlled Particulate Emissions

Use 99.8% collector efficiency of the existing Fuller collector, since the efficiency is higher on the new Mikro-Pulsaire collector

$$E_{pC} = 3690 \text{ lb/hr} (1 - 0.998) = 7.38 \text{ lb/hr}$$

$$E_{pC} < E_{pA}$$

∴ An increase in the production rate can be made under the existing permit for the cement storage silo.



Calculation of Emissions

Operating Hours

$$O_p = 24 \text{ hr/day} (7 \text{ day/wk}) (52 \text{ wk/yr}) = 8736 \text{ hr/yr}$$

Net Increase in Emissions Caused by New Mill

New Clinker & Gypsum Silos

$$0.18 \text{ lb/hr} (8736 \text{ hr/yr}) / (2000 \text{ lb/ton}) \quad 0.79 \text{ ton/yr}$$

New Finishing Mill

$$1.08 \text{ lb/hr} (8736 \text{ hr/yr}) / (2000 \text{ lb/ton}) \quad 4.72 \text{ ton/yr}$$

$$1.08 \text{ lb/hr} (8736 \text{ hr/yr}) / (2000 \text{ lb/ton}) \quad 4.72 \text{ ton/yr}$$

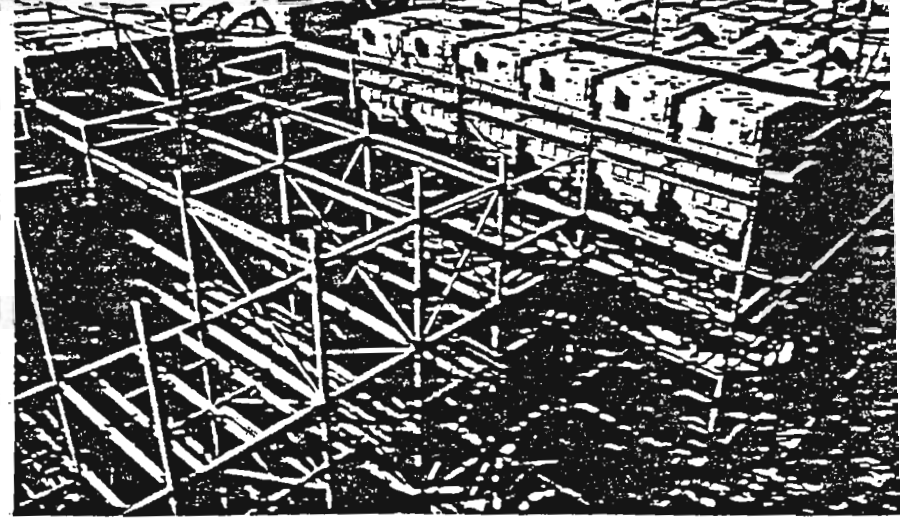
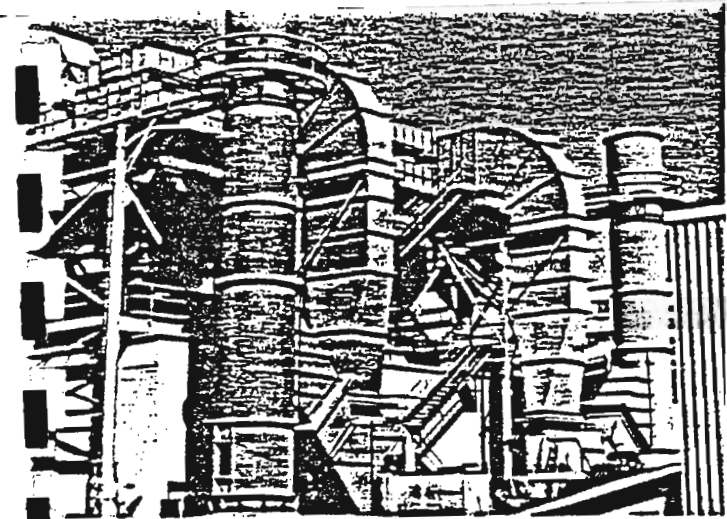
Existing Cement Storage Silos

$$3.60 \text{ lb/hr} (8736 \text{ hr/yr}) / (2000 \text{ lb/ton}) \quad 15.73 \text{ ton/yr}$$

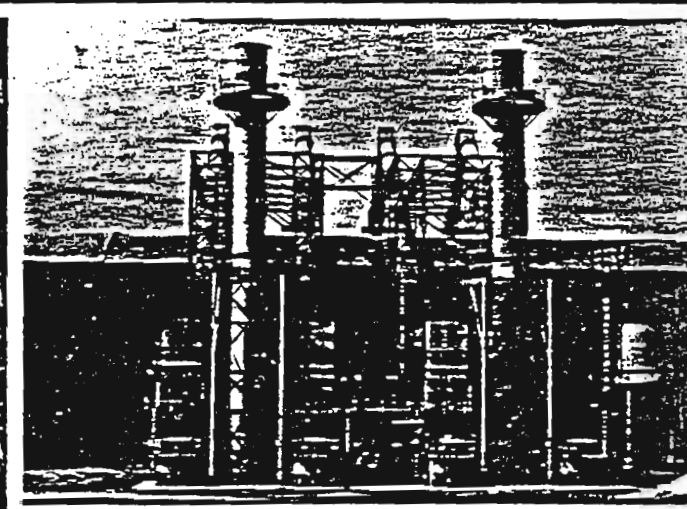
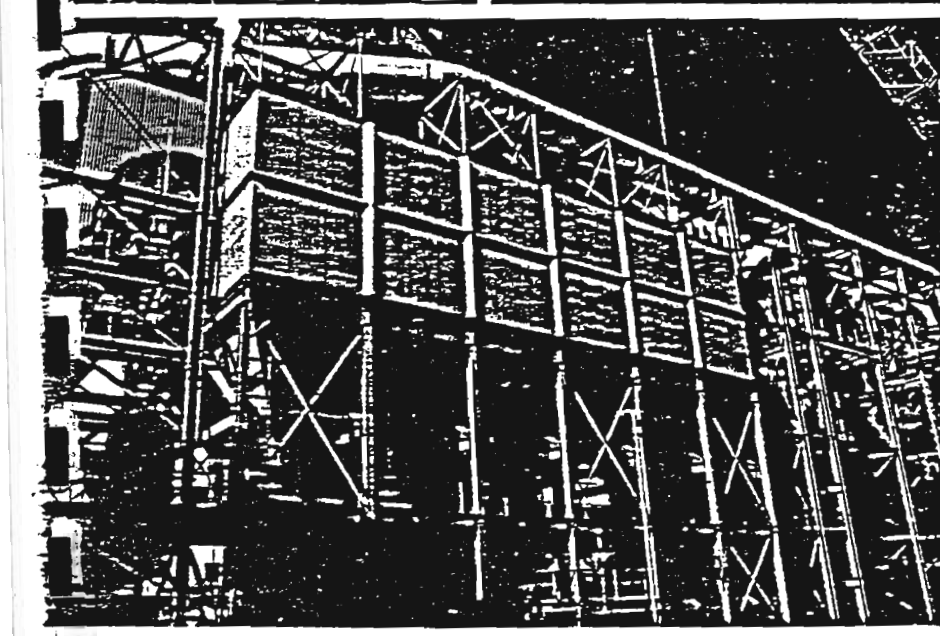
$$\text{Net Increase} \quad 25.96 \text{ ton/yr}$$

Net increase in particulate emissions is less than 100 tons/yr.

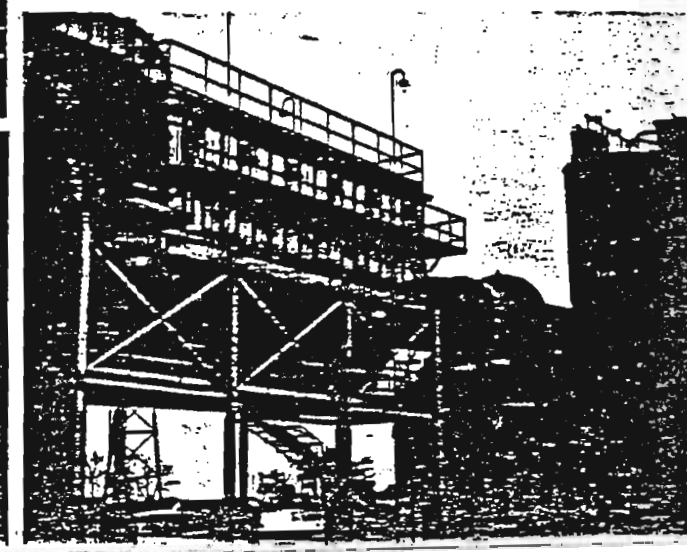
∴ Considered Minor Modification to an Existing Source.



Mikro-Pulsaire Dust Collectors



MikroPul **US**
CORPORATION
U.S. FILTER SYSTEMS COMPANY
Chatham Road, Summit, N.J. 07901 Phone: (201) 273-6360



Mikro-Pulsaire™

The Original Pulse-Jet Fabric Filter

More than 125,000 installations in operation all over the world

Wide Applications

The Mikro-Pulsaire effectively vents:

- Particle size reduction machinery
- Spray dryers
- Separators
- Calciners
- Mixers
- Packaging machinery
- Mechanical conveyors
- Rail cars
- Chemical processing equipment

The Mikro-Pulsaire Offers

- Constant pressure drop assures constant air flow through system
- No internal moving parts
- Eliminates the need for troublesome chain drives, mechanical drives, or hard-to-maintain isolation valves
- Continuous operation
- Collection efficiency of 99.9% assures compliance with almost all local and national air quality standards
- Heavy duty construction
- Felt media filters at 3 or 4 times the rate of woven fabrics
- A range of fabrics to meet a variety of temperature and operating conditions

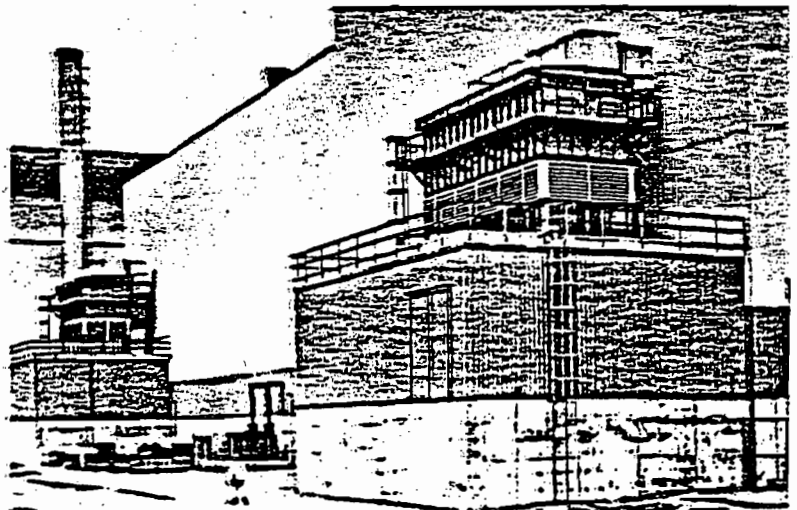
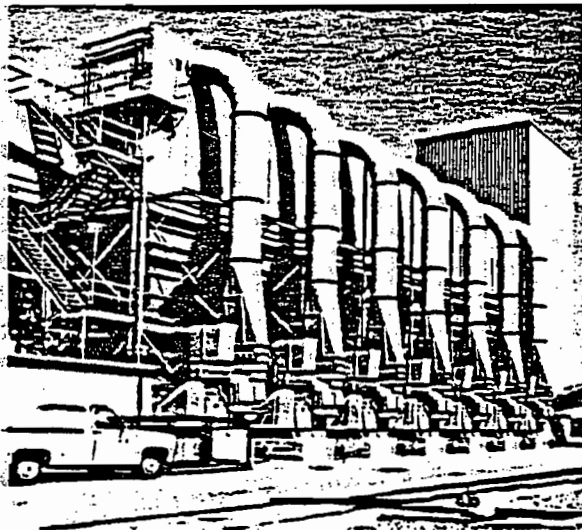


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How the Mikro-Pulsaire works

The Mikro-Pulsaire consists of a group of filter cylinders (bags) enclosed in a metal housing. In operation, dust-laden air enters the collector housing through the hopper inlet in the storage-discharge hopper. Either pressure or suction delivers the dirty air to the hopper. The fine particles travel upward and collect on the filter bags.

The clean air passes through the bag and is vented to the atmosphere. A high pressure jet of compressed air directed through the bag at timed intervals removes the dust, which is deposited in the hopper and is easily collected for disposal or recovered for use.

Anatomy of the Pulsaire

The dust-tight Pulsaire has three sections: a plenum at the top, a collector housing in the center, and a hopper at the bottom.

The plenum (Q) houses the blowtubes and supports for the solenoid valves. Clean air or gas is discharged through the exhaust outlet (R) in the plenum. The housing (M) contains the filter bag assemblies. Below the housing is the hopper (O), which contains the inlet (N). A diffuser (T) in the hopper, adjacent to the inlet, absorbs the impact of the high velocity dust particles and properly distributes the incoming air.

Pressure drop, which measures collector performance, is indicated by a manometer (S) connected at one end to the filter bag section and to the clean air plenum at the other end.

A Mikro Airlock (P) is recommended as the discharge valve to handle the collected dust. The Mikro Airlock is a rotary valve consisting of a cylindrical housing, a vaned rotor and a drive. The rotor fits snugly into the housing, thus minimizing air or gas leakage while effectively discharging the material. The material to be removed enters the Mikro Airlock by gravity. As the vanes rotate, appropriate quantities of material are delivered to storage.

Filter Cylinder Assembly

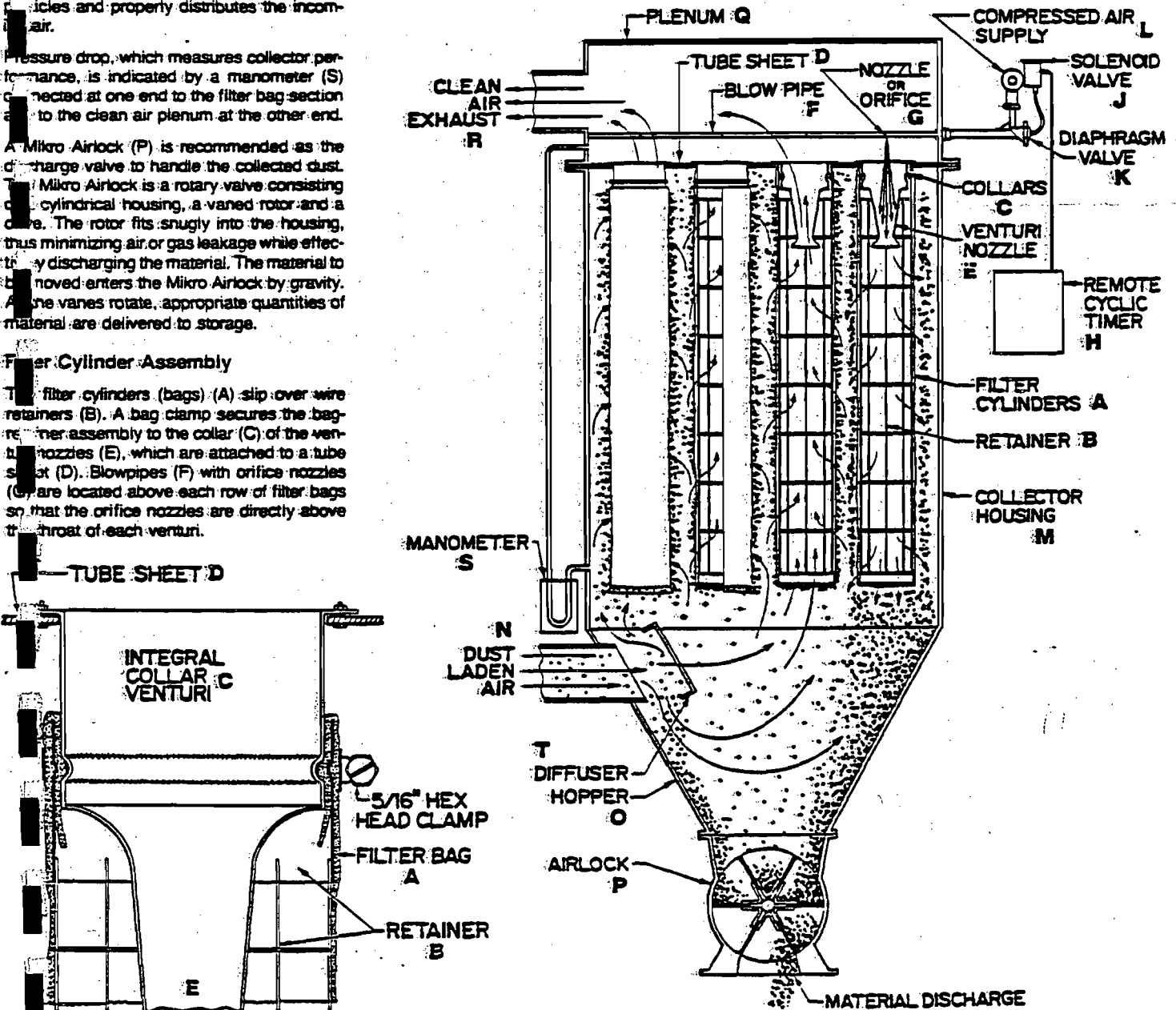
The filter cylinders (bags) (A) slip over wire retainers (B). A bag clamp secures the bag-retainer assembly to the collar (C) of the venturi nozzles (E), which are attached to a tube sheet (D). Blowpipes (F) with orifice nozzles (G) are located above each row of filter bags so that the orifice nozzles are directly above the throat of each venturi.

The Cleaning Cycle

A signal from a remote cyclic timer (H) actuates the opening of the normally closed solenoid or pilot valve (J). The opening of the solenoid valve decreases the pressure in the tube connecting the solenoid to the right angle

diaphragm valve (K) causing the diaphragm valve to open. This permits a momentary jet of 100 psig air to flow from the air supply pipe (L) to blowtube, down each venturi, and into each filter bag. All bags in a row are cleaned simultaneously.

MIKRO-PULSAIRE COLLECTOR



Mikro-Pulsaire

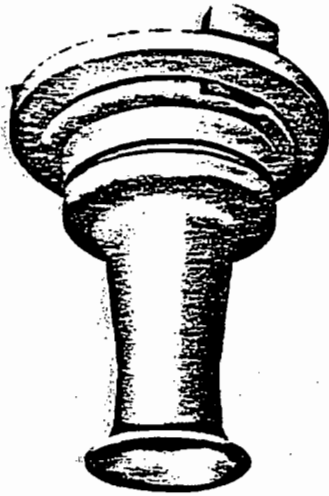
An integrated system

When MikroPul invented the pulse-jet fabric filter, it was designed as an integrated system. This means that components were designed to work best together; for example, the original jet pump was tested and designed to work as a coordinated system with the timer, 4½-inch diameter bag, blowtubes and special diaphragm valves.

MikroPul fabric filter components were designed by MikroPul

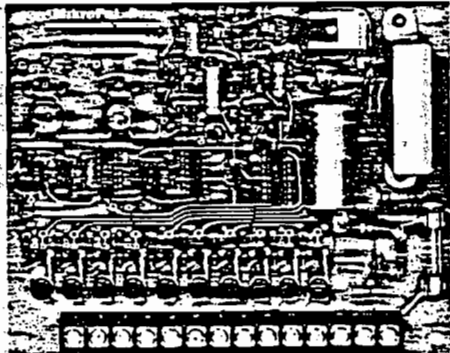
engineers and are built to MikroPul's rigid specifications. These components are not interchangeable with those of other manufacturers.

MikroPul components have been field-tested on over 125,000 installations. They have successfully served major industries all over the world. They embody many years of operating experience.



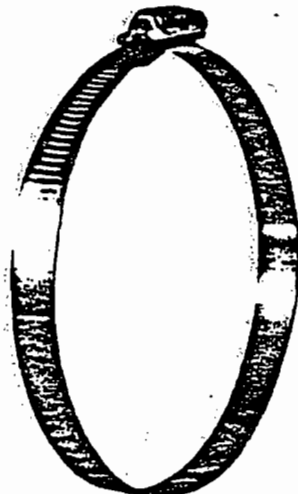
Venturi

MikroPul's unique venturi design assures maximum cleaning efficiency. It is available in aluminum, steel, stainless steel, and Inconel. Produced to close tolerance, the venturi is guaranteed to fit properly into the tube sheet. The standard venturi can be coated with a variety of materials (examples are chrome and epoxy) to meet special needs.



Model 72 Sequential Integrated Cyclic Timer

Model 72 Timer, designed by and made exclusively for MikroPul, is all solid state. It can switch 10 independent outputs. Each output has a switching capacity of 1 amp at 115V, which is sufficient to operate five (5) solenoid valves per output position. It is mounted on a fiberglass reinforced, plastic coated, U.L. approved circuit board. The timer is supplied completely set up for 10 outputs. It can be adjusted to activate in intervals from 3 to 60 seconds. Adjustable duration of the pulse is .05 to .15 second. Options include digital readout and clean-on-demand operation. The timer was designed for use with Mikro venturi, Mikro blowtubes, and Mikro 4½" diameter bag.



Filter Cylinder Clamp

Stainless steel bag clamp effectively holds the bag-retainer assembly to the venturi collar and assures a positive seal at the tube sheet. Hex head permits easy adjustment of clamp.



Diaphragm Valve

Developed jointly by MikroPul engineers and ASCO. The diaphragm valve, along with the venturi and the timer, are the heart of a good pulse-jet cleaning system. The diaphragm valve is available in ¾", 1", and 1¼" sizes.



Solenoid Valve

Quality valves designed for long life and reliable performance by ASCO specifically for the Mikro-Pulsaire.



Bag Retainer

The bag retainer provides support for the bag and serves as a means of installing the bag in the collector. Retainers are 2½, 4, 6, 8, 10, and 12 feet long, and are available in carbon steel, epoxy coated carbon steel, or stainless steel. Each retainer consists of ten ½-inch thick vertical wires and ½-inch diameter horizontal welded rings on 8" centers. Retainers are manufactured in MikroPul's own shop on machinery designed by Mikro engineers. A rigorous inspection procedure assures top quality.

Filter Cylinders (Bags)

Filter bags are 2½, 4, 6, 8, 10, and 12 feet long. The bags are available in a variety of materials to meet a range of operating conditions. Materials include polyester, polypropylene, Nomex, acrylic, wool, Teflon, and glass, for temperatures ranging from ambient to 550°F.

The 4½ inch diameter bags on 7 inch centers assure low velocity between bags. Bag size was determined by laboratory tests to determine most economical size that would provide ease of cleaning, long bag life and maximum square feet in a given area. These lab results have since been verified by computer testing and over 25 years of field experience.

Manufactured by a U.S. Filter sister company, bags must meet rigid MikroPul specifications for porosity, cloth weight, stitching, dimensions and other important properties. The specifications were selected to provide long life and efficient operation.



Mikro-Airlock

The Mikro-Airlock is a rotary valve consisting of a cylindrical housing, a vaned rotor, and a drive. The rotor fits snugly into the housing, thus minimizing air or gas leakage while effectively feeding or discharging the material. The material to be moved enters the Mikro-Airlock by gravity. As the vanes rotate, appropriate quantities of material are delivered to storage or to process. All models come with a replaceable six-vane rotor. The rotor features minimum clearance between the vane tip and the body interior. The standard blade is of Delrin. Blades of Teflon, rubber, 316 stainless steel, carbon steel, bronze, and polyurethane are also available. The choice of material depends on temperature and chemical properties of the material handled. Housing is available in cast iron and stainless steel. Interior surfaces are machined to close tolerances. The entry and exit throats are polished to assure free flow of the material. Available in two (2) sizes: 8" and 14", 5 Models.

Top Access Mikro-Pulsaire

"S" Series from 151 to 7,070 sq. ft. filter area — 8, 10, 12 foot bags

- Factory assembled for rapid field installation
- Permits bags to be inspected, removed and replaced from clean air side
- Fast replacement reduces maintenance and downtime. One man can change a bag in about two minutes
- Leaking bags can be detected rapidly and easily
- Operators are not in contact with toxic or valuable products during maintenance operations
- Header pipe assembly (consisting of header pipe, right angle valves, solenoid valve and solenoid valve enclosure) is shipped mounted, wired, and completely assembled on most sizes

Features

- Unique Cam-Action Lock Venturi that locks into and is removed from the tube sheet by a twist of the wrist. Positive seal of venturi with bag clamp assures proper installation; bags cannot be partially installed; bags and retainer cannot fall into the collector; and fingers are protected against injury.
- Modular models can consist of pre-fabricated panels or large welded sections.
- Sections can be bolted or welded in field.
- Compressed air headers are pre-assembled and pre-wired.
- Welded 12 gauge carbon steel construction.
- Operating temperatures to 200°F.
- Operating pressure to 20 in. w.g.

Delivered with

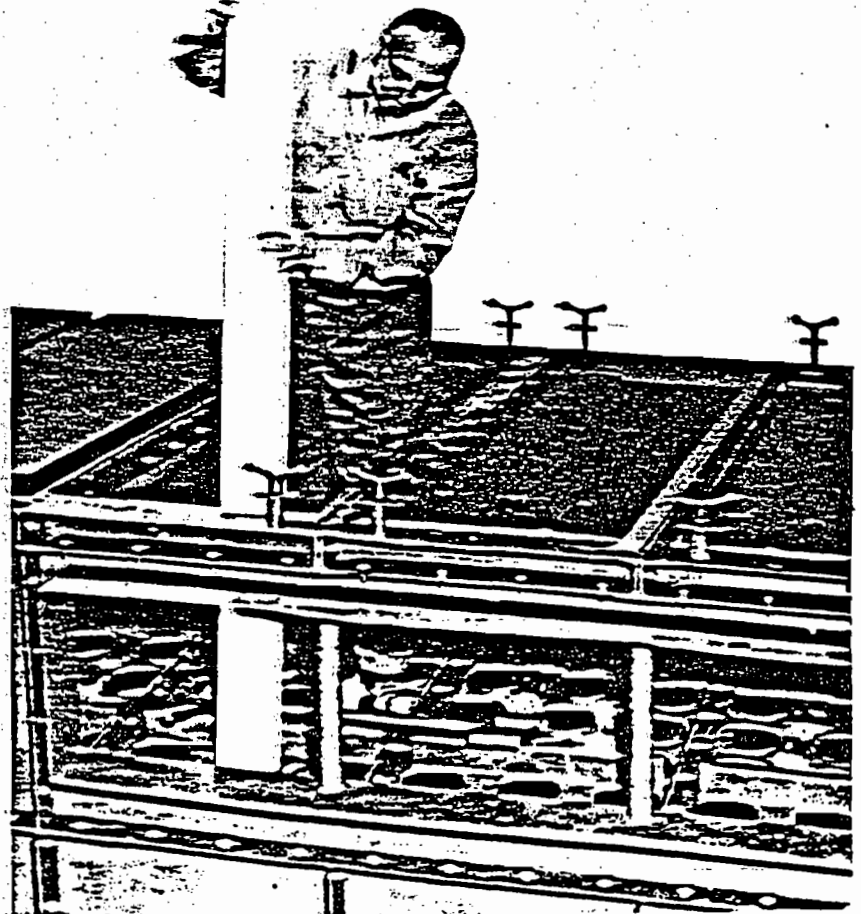
- Aluminum venturis
- Stainless steel bag clamps
- Model 72 Solid State 10-position timer
- Lift off access doors (number depending on size)
- Primed carbon steel surfaces
- Solenoid valves and timer enclosures are NEMA 4
- One hinged access door in hopper

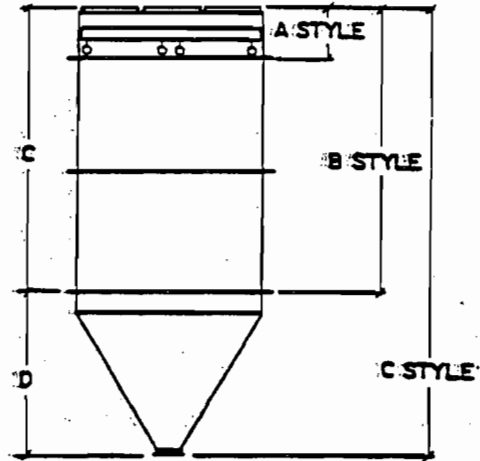
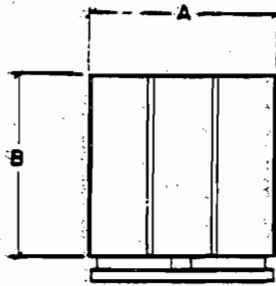
Options

- Explosion proof electricals
- External catwalk
- Designed for use at 500°F.
- Explosion doors
- Inspection window
- Standlegs and bracing
- Ladder and cage
- Bag grid and/or man grid
- Weather hood over access door
- Pressure gauge on header
- Special interior coatings to your specification
- High quality Mikro bags in wide variety of materials and finishes
- Clean-on-Demand timer
- Epoxy coat, stainless steel 10-wire or 20-wire retainers
- All surfaces that may come in contact with dust or product can be fabricated of fiberglass or stainless steel
- All surfaces that may come in contact with gas can be fabricated of stainless steel

Typical applications

Include venting particle size reduction machinery, spray dryers, separators, calciners, mixers, packaging machines, conveyors, carloaders, and a range of process equipment.



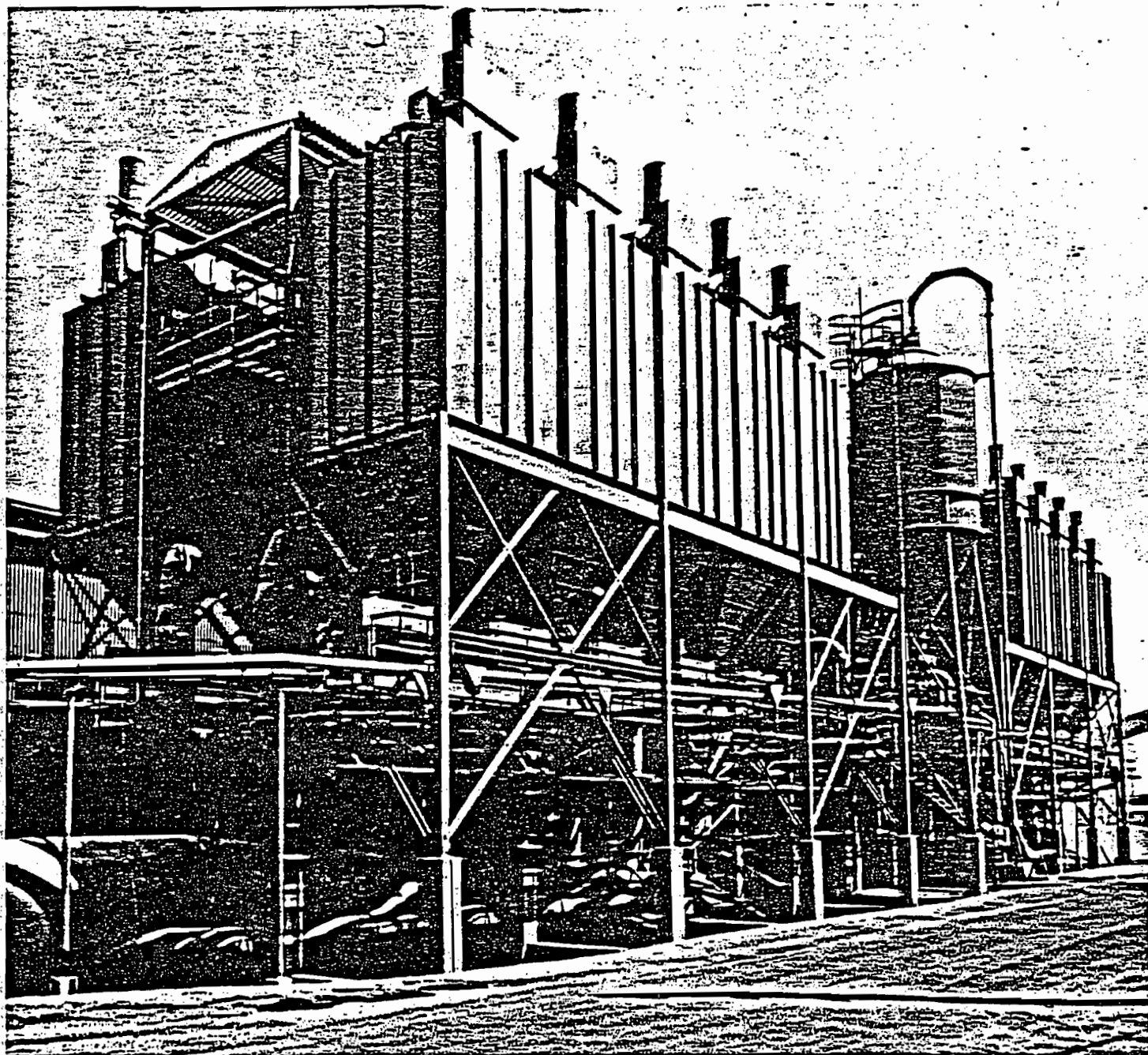


SQUARE TR SERIES

8 FT AND 10 FT FILTER ELEMENTS *

MODEL	NO OF FILTER ELEMENTS	FILTER AREA FT. ²	APPROX WT. LBS.	DIM 'A' INCHES	DIM 'B' INCHES	DIM 'C' INCHES	DIM 'D' INCHES
16 S	8	151	1300	30	30	108 3/8	29
	10	188	1370	30	30	132 3/8	29
25 S	8	236	1550	36	36	108 3/8	34
	10	295	1650	36	36	132 3/8	34
36 S	8	339	2100	48	48	108 3/8	45
	10	424	2275	48	48	132 3/8	45
49 S	8	462	2725	54	54	113 3/8	50
	10	577	2925	54	54	137 3/8	50
64 S	8	603	3000	60	60	113 3/8	55
	10	754	3250	60	60	137 3/8	55
81 S	8	763	3650	66	66	113 3/8	60
	10	954	3950	66	66	137 3/8	60
100 S	8	942	4100	72	72	113 3/8	65
	10	1178	4460	72	72	137 3/8	65
121 S	8	1140	4775	78	78	113 3/8	70
	10	1425	5200	78	78	137 3/8	70
144 S	8	1356	5600	84	85	119 3/8	75
	10	1696	5900	84	85	143 3/8	75
156 S	8	1470	7150	92	85	135	83
	10	1836	7600	92	85	159	83
168 S	8	1583	7250	99	85	135	89
	10	1979	7750	99	85	159	89
180 S	8	1697	7800	106	85	135	94
	10	2121	8350	106	85	159	94
196 S	8	1847	7900	99	99	135	89
	10	2309	8450	99	99	159	89
221 S	8	2083	8950	120	92	135	107
	10	2604	9550	120	92	159	107
238 S	8	2243	9750	120	99	135	107
	10	2804	10150	120	99	159	107
289 S	8	2724	10850	120	120	135	107
	10	3405	11500	120	120	159	107
320 S	8	3016	12000	141	113	135	125
	10	3770	12700	141	113	159	125
340 S	8	3203	12775	141	120	135	125
	10	4005	13525	141	120	159	125
360 S	8	3393	13550	141	127	138	125
	10	4241	14350	141	127	162	125
380 S	8	3579	14545	141	134	138	125
	10	4476	14745	141	134	162	125
400 S	8	3768	15740	141	141	138	125
	10	4712	15945	141	141	162	125
420 S	8	3957	17329	148	141	138	131
	10	4946	17776	148	141	162	131
440 S	8	4145	18888	155	141	138	137
	10	5181	19133	155	141	162	137
460 S	8	4333	20588	162	141	138	143
	10	5418	20857	162	141	162	143
480 S	8	4521	22646	169	141	138	149
	10	5624	22942	169	141	162	149
500 S	8	4710	24807	175	141	138	155
	10	5890	25008	176	141	162	155

* ALSO AVAILABLE IN 2-FT. LG. FILTER ELEMENTS.



MikroPul USF

A U.S. FILTER SYSTEMS COMPANY
10 Chatham Road, Summit, N.J. 07801 — Phone: (201) 273-6360

LINDER INDUSTRIAL MACHINERY CO.
4330 S. FLA. AVE. -- (P. O. BOX 5330)
LAKELAND, FLA. 33803 -- PH. 646-5711

NATIONAL PORTLAND CEMENT
COMPANY OF FLORIDA, INC.

PREVIOUS DER PERMITS

<u>PERMIT NO.</u>	<u>SOURCE</u>	<u>ISSUED</u>	<u>EXPIRES</u>
AC 41-2000	Finish Grinding Mill	03-16-73	01-31-74
AO 41-2000	Finish Grinding Mill	04-21-75	04-21-78
AO 41-6582	Clinker & Gypsum Storage Silos	05-10-78	04-21-83
AO 41-6583	Ball Mill, Air Slide & Elevator	05-10-78	04-21-83
AO 41-6584	Cement Storage Silo	05-10-78	04-21-83
AO 41-2176	Material Unloading System	05-23-78	04-05-81
AC 41-27637	Material Unloading System	01-06-81	10-30-81
AO 41-43511	Material Unloading System	08-06-81	03-27-86
AO 41-67794	Clinker & Gypsum Storage Silos	06-16-83	06-02-88
AO 41-67795	Ball Mill, Air Slide & Elevator	06-16-83	06-02-88
AO 41-67797	Cement Storage Silo	06-16-83	06-02-88

DEPARTMENT OF ENVIRONMENTAL REGULATION

SOUTHWEST DISTRICT

1 HIGHWAY 301 NORTH
TAMPA, FLORIDA 33610



DER
AUG 22 1983
SOUTHWEST DISTRICT
TAMPA

BOB GRAHAM
GOVERNOR

VICTORIA J. TSCHINKEL
SECRETARY

WILLIAM K. HENNESSEY
DISTRICT MANAGER

NOV 3 1983

APPLICATION TO OPERATE/CONSTRUCT AIR POLLUTION SOURCES

SOURCE TYPE: BAOM Cement Grinding Mill New Existing

APPLICATION TYPE: Construction Operation Modification

COMPANY NAME: National Portland Cement Company of Florida, Inc. COUNTY: Manatee

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) Clinker & Gypsum Storage Silos

SOURCE LOCATION: Street Route 1 - Port Manatee City Palmetto

UTM: East 17-346.4 North 3058.4

Latitude 27° 38' 07" N Longitude 82° 33' 45" W

APPLICANT NAME AND TITLE: Mr. Nicholas E. Ryan, Jr., Vice President

APPLICANT ADDRESS: Route 1 - Port Manatee Palmetto, FL 33561

SECTION I: STATEMENTS BY APPLICANT AND ENGINEER

A. APPLICANT

National Portland Cement Company of Florida, Inc.

I am the undersigned owner or authorized representative* of National Portland Cement Company of Florida, Inc.

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: Nicholas E. Ryan
Mr. Nicholas E. Ryan, Jr., Vice President
Name and Title (Please Type)

Date: 8-17-83 Telephone No. (813) 722-7776

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

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 Thomas E. Brumagin

Thomas E. Brumagin, P.E.

Name (Please Type)

Central Florida Testing Laboratories, Inc.

Company Name (Please Type)

1400 Starkey Road Largo, FL 33541

Mailing Address (Please Type)

Florida Registration No. 31063 Date: 2/17/83 Telephone No. (813) 581-7019

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 PROJECT DESCRIPTION

This application is for the clinker and gypsum storage silos which will be controlled by a Mikro-Pulsaire Model 81S-8-20 dust collector. Applications for the grinding mill operations and the finished product storage silos are filed separately.

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

Start of Construction January, 1984 Completion of Construction July, 1985

- 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.)

Mikro-Pulsaire 81S-8-20 Baghouse	Clinker & Gypsum Silos	\$16,1
Mikro-Pulsaire 144S-8-20 Baghouse	Ball Mill	21,2
Mikro-Pulsaire 144S-8-20 Baghouse	Air Separator, Elevator, F-K Pump	21,2
Mikro-Pulsaire 25S-8-20 Baghouse	Existing Cement Silos	9,8

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

See Attached DER Permits

Requested permitted equipment operating time: hrs/day 24 ; days/wk 7 ; wks/yr 52 ;

if power plant, hrs/yr _____ ; if seasonal, describe: _____

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

1. Is this source in a non-attainment area for a particular pollutant? 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? Yes
If yes, see Section VI.
Controlled Emissions from New Facilities < 100 tons/year
3. Does the State "Prevention of Significant Deterioration" (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

Do "Reasonably Available Control Technology" (RACT) requirements apply to this source? In area of Influence of Hillsborough County Yes
Non-Attainment Area.

- a. If yes, for what pollutants? Particulate
- 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.

RACT Emission Limiting Standards - Section 17-2.650 (2) (c) 11

11. Materials Handling, Sizing, Screening, Crushing and Grinding Operation

- a. Applicability - these emission limitations shall apply to the handling, sizing, screening, crushing, or grinding of materials such as, but not limited to, CEMENT, CLINKER, fly ash, coke, GYPSUM, shale, lime, sulfur, phosphatic materials, slag, and grain or grain products.
- b. Emissions Limitations
(i) Visible Emissions - 5 percent opacity
(ii) Particulate Concentration - 0.03 grain/dscf

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		
Clinker	-200 mesh	3.0	85,500	B
Gypsum	-200 mesh	1.0	4,500	C

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

1. Total Process Input Rate (lbs/hr): 90,000 lbs/hr
2. Product Weight (lbs/hr): 90,000 lbs/hr of Type I Portland Cement

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 Emission Rate per Rule 17-2	Allowable ³ Emission (grains/dscf)	Potential ⁴ Emission		Relate to Flow Diagram
	Maximum lbs/hr	Actual T/yr			lbs/yr	T/yr	
Particulate	0.18	0.79	RACT	0.03	360	1573	D
Sulfur Oxides	0						
Carbon Monoxide	0						
Hydrocarbons	0						
Nitrogen Oxides	0						

¹See Section V, Item 2.

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

³Calculated from operating rate and applicable standard.

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

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

Name and Type (Model & Serial No.)	Contaminant	Efficiency (percent)	Range of Particles Size Collected (in microns) (If applicable)	Basis for Efficiency (Section V Item 5)
Mikro-Pulsaire Model 81S-8-20	Particulate	99.995	+1 micron	Design Data

E. Fuels - All Electric

Type (Be Specific)	Consumption*		Maximum Heat Input (MMBTU/hr)
	avg/hr	max./hr	

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

Fuel Analysis:

Percent Sulfur: _____ Percent Ash: _____

Density: _____ lbs/gal Typical Percent Nitrogen: _____

Heat Capacity: _____ BTU/lb _____ BTU/gal

Other Fuel Contaminants (which may cause air pollution): _____

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

Annual Average _____ Maximum _____

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

No liquid or solid waste generated from this process.

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

Stack Height: 100 ft. Stack Diameter: 16 X 24 in.
 Gas Flow Rate: 5050 ACFM 4850 DSCFM Gas Exit Temperature: ambient °F.
 Water Vapor Content: 0 % Velocity: 31.56 FPS

SECTION IV: INCINERATOR INFORMATION

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

Description of Waste _____

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

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

Manufacturer _____

Date Constructed _____ Model No. _____

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

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

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

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

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

Brief description of operating characteristics of control devices: _____

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

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

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

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

Contaminant	Rate or Concentration

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

Contaminant

Rate or Concentration

Contaminant	Rate or Concentration
Particulate	0.03 grains/dscf
Visible Emissions	5 percent opacity

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

1. Control Device/System:
3. Efficiency:*

2. Operating Principles:
4. Capital Costs:

*Explain method of determining

5. Useful Life:

6. Operating Costs:

7. Energy:

8. Maintenance Cost:

9. Emissions:

Contaminant

Rate or Concentration

Contaminant	Rate or Concentration

10. Stack Parameters

- a. Height: _____ ft.
- b. Diameter: _____ ft.
- c. Flow Rate: _____ ACFM
- d. Temperature: _____ °F.
- e. Velocity: _____ FPS

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

1. a. Control Device: Baghouse

b. Operating Principles: Dust laden air enters the collector where airborne particules are collected on the outside surface of the bags. Periodic pulsing of high pressure air removes the accumulated dust. Dust falls to the bottom hopper of the collector and is returned to the silo.

c. Efficiency:¹ 99.99%

d. Capital Cost: \$ 16,150

e. Useful Life: 15 years

f. Operating Cost: \$5000/year

g. Energy:² 440 KWH

h. Maintenance Cost: \$3000/year

i. Availability of construction materials and process chemicals:

All materials are readily available

j. Applicability to manufacturing processes:

Dust is returned to the silo

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

2. NO OTHER METHODS SUITABLE FOR THIS TYPE OF OPERATION.

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: Baghouse

2. Efficiency:¹ +99.99%

3. Capital Cost: \$16,150

4. Useful Life: 15 years

5. Operating Cost: \$5000/year

6. Energy:² 440 KWH

7. Maintenance Cost: \$3000/year

8. Manufacturer: Mikro-Pul

9. Other locations where employed on similar processes:

a. (1) Company: National Portland Cement Company of Florida, Inc.

(2) Mailing Address: Route 1 - Port Manatee

(3) City: Palmetto

(4) State: FL 33561

¹Explain method of determining efficiency.

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

BEST AVAILABLE COPY

(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

NOT APPLICABLE

1. Company Monitored Data

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

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

Other data recorded _____

Attach all data or statistical summaries to this application.

Specify bubbler (B) or continuous (C).

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

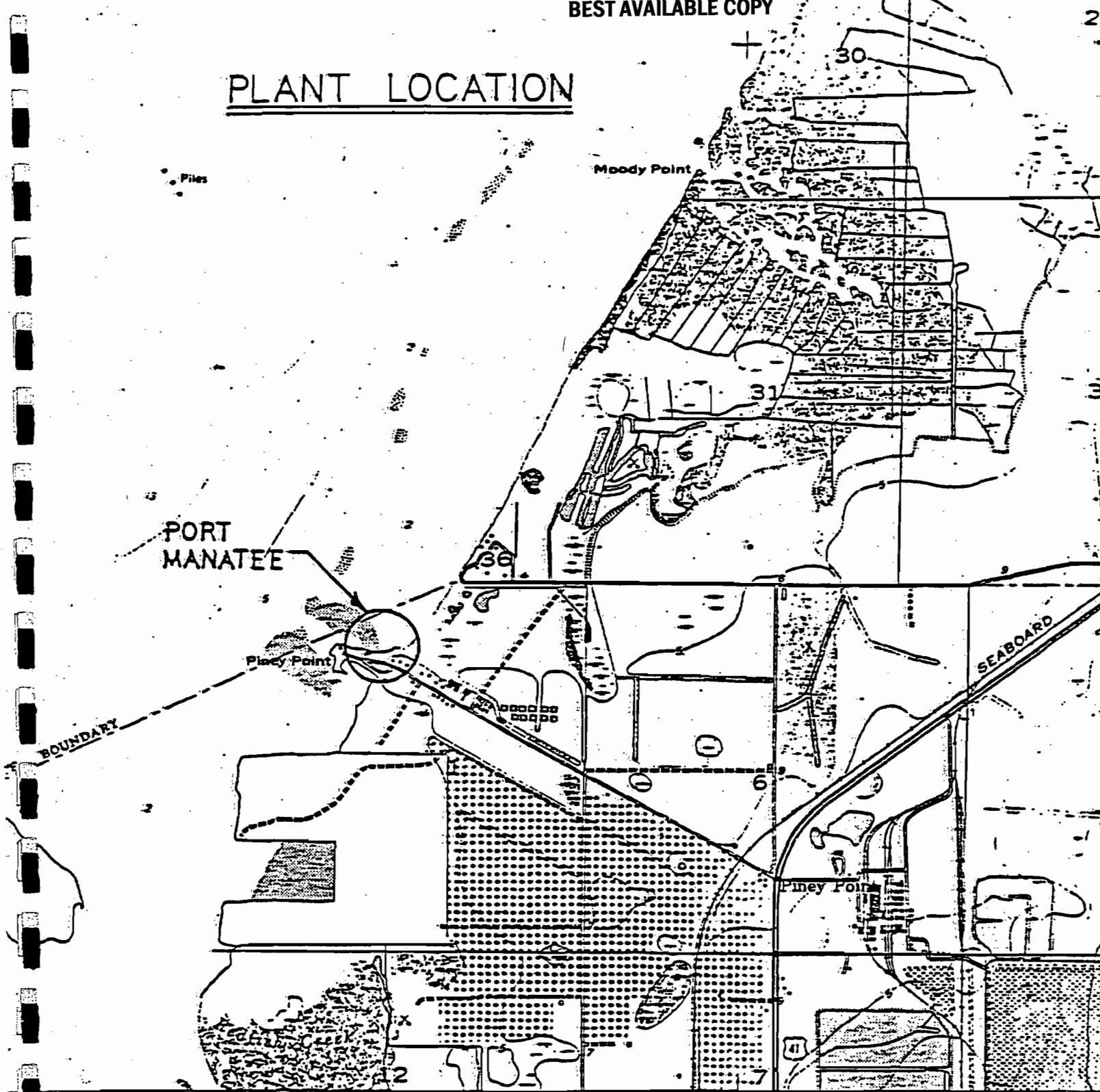
Attach list of emission sources. Emission data required is source name, description of point source (on NEDS point number), UTM coordinates, stack data, allowable emissions, and normal operating time.

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.

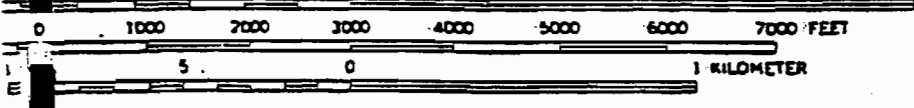
H. Attach scientific, engineering, and technical material, reports, publications, journals, and other competent relevant information describing the theory and application of the requested best available control technology.

PLANT LOCATION



SCALE 1:24 000

1 MILE

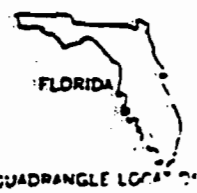


CONTOUR INTERVAL 5 FEET

DATUM IS MEAN SEA LEVEL

CURVES AND SOUNDINGS IN FEET—DATUM IS MEAN LOW WATER

LINE SHOWN REPRESENTS THE APPROXIMATE LINE OF MEAN HIGH WATER
THE AVERAGE RANGE OF TIDE IS APPROXIMATELY 2 FEET

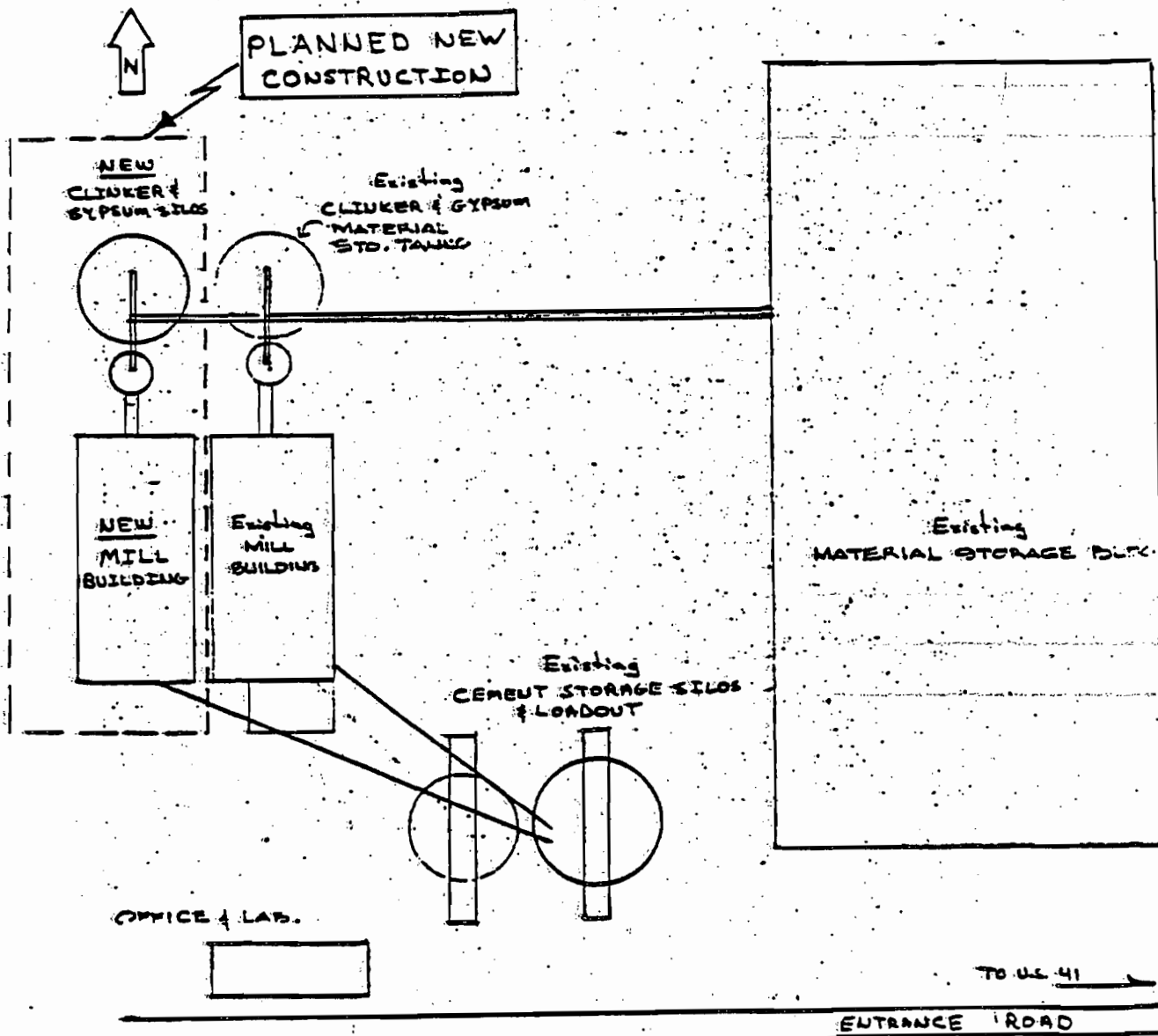


QUADRANGLE LOCALITY



National Portland Cement Company of Florida, Inc.

Plot Plan



NATIONAL PORTLAND CEMENT
COMPANY OF FLORIDA, INC.

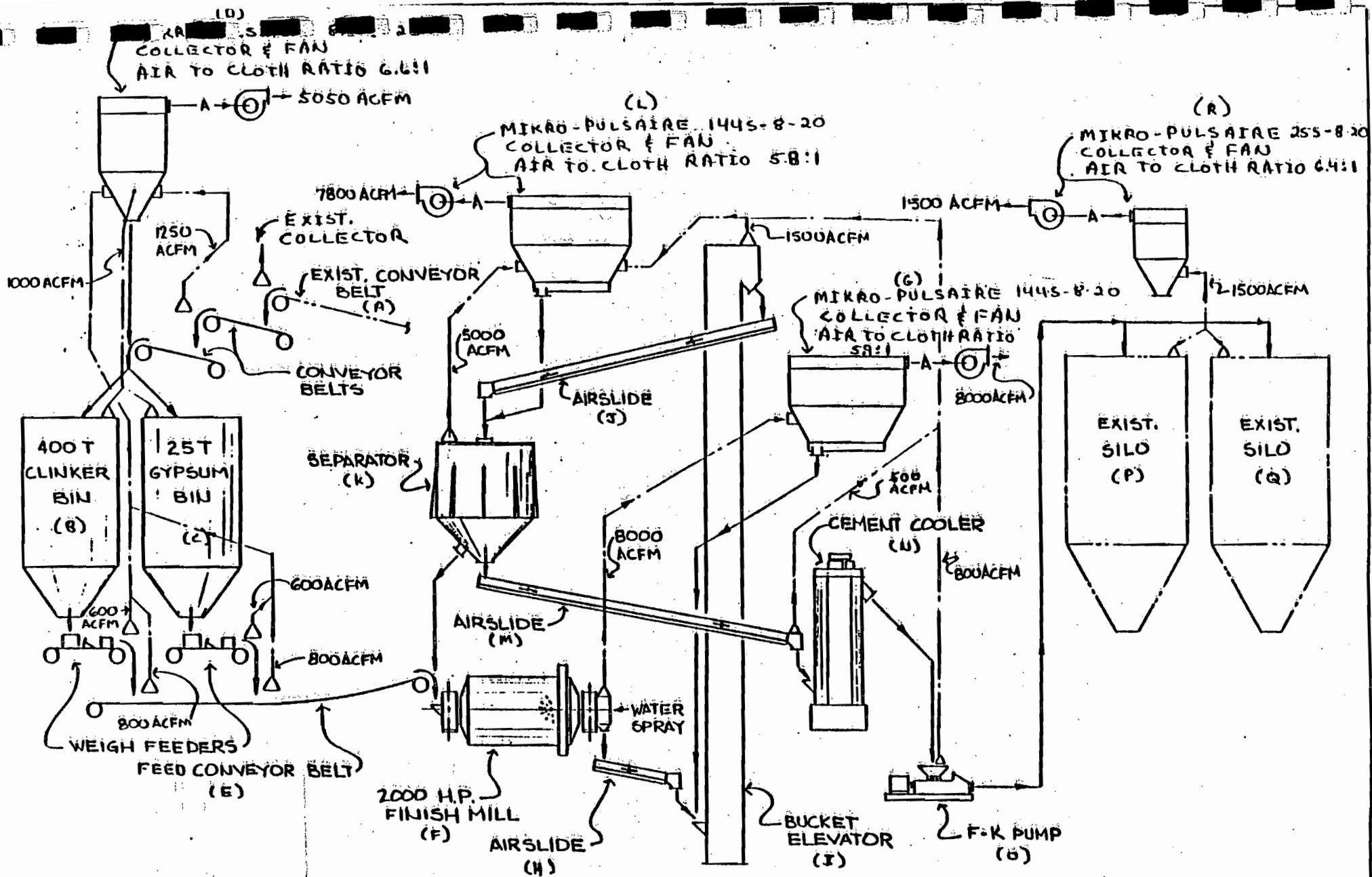
PROJECT DESCRIPTION

National Portland Cement proposes to construct a new 45 TPH cement finishing mill at their Port Manatee facilities. The new mill will be constructed on the west side of the facility, parallel to their present mill. The new mill will have separate clinker and gypsum storage silos which will be filled utilizing the existing covered belt conveyor system from the materials storage building.

The grinding operation will be performed in a new 2000 Hp ball mill equipped with an air separator to classify the material. After the proper fineness is achieved the finished product will be pneumatically transferred to the existing cement storage silos at this facility.

For further details on the mill operations, see the PROCESS DESCRIPTION. Separate dust collection systems will be installed on the equipment of the new finishing mill to control the particulate emissions during grinding operations.

This project will comply with all DER rules and regulations.



NATIONAL PORTLAND CEMENT
COMPANY OF FLORIDA, INC.

FINISH MILL FLOW DIAGRAM
Raymond Kaiser Engineers

Suite 200 Colorado Club Building
4155 East Jewell Avenue
Denver, Colorado 80222
(303) 759-1703 Telex 45818



Calculation of Particulate Emissions
for Existing Facilities

Page 5 of 5

Clinker & Gypsum Storage Silos

$$E_{Pu} = 47.25 \text{ ton/hr (2 lb/ton)}_1 = 94.5 \text{ lb/hr}$$

$$E_{Pc} = 94.5 \text{ lb/hr (1 - 0.998 collector efficiency)} = 0.19 \text{ lb/hr}$$

Ball Mill, Air Slide & Elevator

$$E_{Pu} = 47.25 \text{ ton/hr (96 lb/ton)}_2 = 4536 \text{ lb/hr}$$

$$E_{Pc} = 4536 \text{ lb/hr (1 - 0.998 collector efficiency)} = 9.07 \text{ lb/hr}$$

Cement Storage Silo

$$E_{Pu} = 94,500 \text{ lb/hr (2 \% Dust)} = 1890 \text{ lb/hr}$$

$$E_{Pc} = 1890 \text{ lb/hr (1 - 0.998 collector efficiency)} = 3.78 \text{ lb/hr}$$

Material Unloading System

@ Transfer Tower

$$E_{Pu} = 400 \text{ ton/hr (2 lb/ton)}_1 = 800 \text{ lb/hr}$$

$$E_{Pc} = 800 \text{ ton/hr (1 - 0.998 collector efficiency)} = 1.6 \text{ lb/hr}$$

@ Warehouse

$$E_{Pu} = 400 \text{ ton/hr (2 lb/ton)}_1 = 800 \text{ lb/hr}$$

$$E_{Pc} = 800 \text{ lb/ton (1 - 0.998 collector efficiency)} = 1.6 \text{ lb/hr}$$

¹Uncontrolled emissions based on emissions factors from AP-42 table 8.20-1 for screening, conveying & handling rack.

²Uncontrolled emissions based on emissions factors from AP-42 table 8.6-1 for cement manufacturing dryers, grinders, etc.

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION



SOUTHWEST DISTRICT

7601 HIGHWAY 301 NORTH
TAMPA, FLORIDA 33610-9544

BOB GRAHAM
GOVERNOR

VICTORIA J. TSCHINKEL
SECRETARY

WILLIAM K. HENNESSEY
DISTRICT MANAGER

September 16, 1983

Mr. Thomas E. Brumagin, P.E.
Central Florida Testing Laboratories, Inc.
1400 Starkey Road
Largo, FL 33541

Re: Manatee County - AP
National Portland Cement Company
of Florida, Inc.
Cement Storage Silo (AC41-74307)
Clinker & Gypsum Storage Silo (AC41-74311)
Grinding Mill (AC41-74313)

Dear Mr. Brumagin:

The Department received three construction permit applications to cover the new grinding mill at National Portland Cement Company of Florida, Inc. on August 22, 1983. The following information is being requested pursuant to Section 17-4.07(1), Florida Administrative Code and DER Form 17-1.212(1):

1. Provide a copy of the manufacturer's written guarantee that each proposed baghouse can meet the outlet grain loading and overall efficiency as stated in the application.
2. Based on our telephone conversation regarding the allowable emission limitations, it is my understanding that the facility is committing to the RACT emission standard (0.03 grains/dscf and 5% opacity) for all the new baghouses (including the new cement storage silo). Please confirm this in writing.
3. We briefly discussed the results of the screening model run to determine the impact of the existing facility on the Hillsborough County particulate non-attainment area. How much buffer was allowed when adjusting the allowable emissions for the existing facility? Will the total allowable emissions from the existing plus the proposed sources have a significant impact on the non-attainment area? Do you anticipate any negative impact on the port area due to the increase in particulate emissions?

Mr. Thomas E. Brumagin
Largo, FL

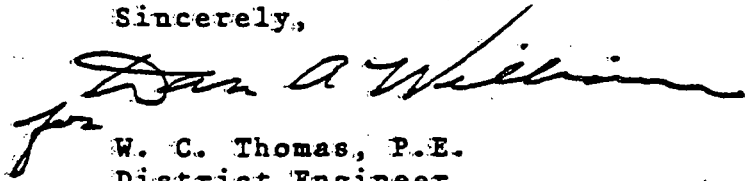
September 16, 1983
Page Two

4. In order for the existing sources to be considered a minor source in terms of the PSD regulations, the allowable emissions should be reduced below 100 TPY. This can be accomplished by reducing the permitted emission rate and/or reducing the hours of operation.

5. It appears that the location of the proposed source as indicated by the location map is incorrect, please resubmit a map with the correct location.

Upon receipt of the information requested above, processing will continue on these applications. Should you have any questions, please call Jim Estler at (813) 985-7402.

Sincerely,



for
W. C. Thomas, P.E.
District Engineer
Air Programs

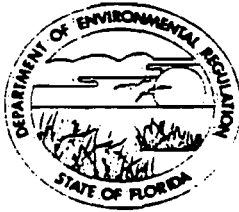
JWE/scm

cc: MCPC

ATTACHMENT 4

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

December 1, 1983

12-1-83

I RECEIVED COPY
TODAY.

Jacob D. Varn

CERTIFIED MAIL - RECEIPT REQUESTED

Mr. Jacob D. Varn, Esquire
Carlton, Fields, Ward, Emanuel,
Smith, & Cutler, P.A.
P. O. Drawer 190
Tallahassee, Florida 32302

Re: National Portland & Cement Company of Florida, Inc.
Cement Storage Silo (AC 41-74307)
Clinker & Gypsum Storage Silo (AC 41-74311)
Grinding Mill (AC 41-74313)

Dear Mr. Varn:

The Bureau of Air Quality Management received three construction permit applications for a new grinding mill, clinker and gypsum storage silo and a modification to a cement storage silo at National Portland Cement Company of Florida, Inc. on November 3, 1983. Based on current information, the applications are being considered a minor modification to a major source. At the present time, the applications are incomplete. Before the applications can be processed, the following questions must be answered. Submit all calculations and all assumptions.

1. Please provide a letter of authorization from National Portland Cement Company of Florida, Inc. naming Mr. Nicholas E. Ryan, Jr. as their authorized representative.
2. The guaranteed collection efficiency of the collector for the Clinker & Gypsum Conveying and Storage Bins is 0.02 grains per ft.³, based on inlet loading of 6 to 8 grains per ft.³ and as stated in a letter from North-Monsen Company dated September 29, 1983. You calculated an inlet loading of 8.66 grains per ft.³. Provide a written guaranteed collection efficiency from the manufacturer for this collector at this loading.


Mr. Jacob D. Varn, Esquire
Page Two
December 1, 1983

3. The guaranteed collection efficiency of the collector for the Air Separator, Air Slide, Elevator and FK Pump Hopper is 0.02 grains per ft.³, based on inlet loading of 25 to 30 grains per ft.³ and as stated in a letter from North-Monsen Company dated September 29, 1983. You calculated an inlet loading of 40.32 grains per ft.³. Provide a written guaranteed collection efficiency from the manufacturer for this collector at this loading.
4. Calculate the inlet grain loading for the Cement Storage Silo.
5. In your calculations you use an efficiency of 99.95%. Provide a written guarantee from the manufacturer that this control equipment will meet an efficiency of 99.95%.
6. In a letter from Mr. Thomas E. Brumagin, P. E., dated October 28, 1983, a table listing actual emissions for the existing facility is presented. Provide data for the last five years showing hours of operation per source, tons of material processed per source and actual emissions for each source cited in this table.
7. The annual operating hours for the new sources and modification includes down time for maintenance. The existing facility, including an existing source that is being modified, are permitted with no down time for maintenance. Explain the discrepancy.
8. Referencing #7, propose how these new sources and modification can be monitored for operating hours and processed raw material tonnage throughput.
9. Referencing #7, explain how you can segregate a part of a total process where the annual operating hours can differ?
10. Applications AC-74307, AC-74311 and AC-74313 all have discrepancies in Section III.C for the Potential Emissions. Recalculate these potential emissions and submit.

Mr. Jacob D. Varn, Esquire
Page Three
December 1, 1983

When the requested information is recieved, we will resume processing your application. In order to expedite the review, we would be glad to meet with you when the above information is ready. If you have any questions or would like to arrange a meeting, please call Edward Svec, Review Engineer, at (904)488-1344.

Sincerely,



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

CHF/ks

cc: Nicholas Ryan, Jr., National Portland
Cement Company of Florida, Inc.
Thomas Brumagin, P.E., Central Florida
Testing Laboratories, Inc.
Jim Estler, SW District

ATTACHMENT 5

Central Florida Testing Laboratories, Inc.

Testing Development and Research

1400 STARKEY ROAD

LARGO, FLORIDA 33541

PH. (813) 585-3006 - 581-7011

December 8, 1983

Mr. Edward Svec, Review Engineer
Florida Department of Environmental Regulation
Bureau of Air Quality Management
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, FL 32301-8241

DER

DEC 12 1983

BAQM

Re: National Portland Cement Company of Florida, Inc.
Cement Storage Silo (AC 41-74307)
Clinker and Gypsum Storage Silo (AC 41-74311)
Grinding Mill (Ac 41-74313)

Dear Mr. Svec,

Please accept the following additional information as requested in Mr. Clair Fancy's December 1, 1983 letter to Mr. Jacob D. Varn, Esquire, legal counsel for National Portland Cement Company of Florida. We hope this information is satisfactory to completely answer all the department's questions posed in Mr. Fancy's letter.

1. Attached please find a letter of authorization for Mr. Nicholas E. Ryan, Jr. to be the authorized representative of National Portland Cement Company of Florida, Inc. in all environmental matters with the State of Florida, Department of Environmental Regulation.
- 2&3. As stated in the applications, the manufacturer is guarantying the outlet grain loading concentration of the collectors is not to exceed 0.02 grains/dscf of exhausted gas. Attached please find a written guarantee from North-Monsen Company, the manufacturer's representative that each new baghouse will meet the criteria stated in the applications.
4. The inlet particulate grain loading to the new collector which will be installed on the cement storage silo is 76.92 grains/dscf as shown in the attached calculations.

December 8, 1983

Re: National Portland Cement Company of Florida, Inc.

5. Based on the manufacturer's guarantee of 0.02 grains/dscf outlet grain loading concentration, the efficiency of the collectors are as follows:

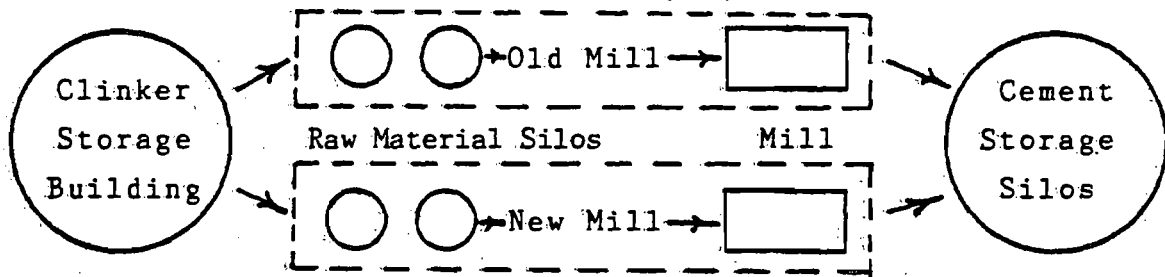
Clinker & Gypsum Storage Silo:	99.77 %
Ball Mill:	99.95 %
Air Slide & Separator, Elevator, F-K Pump:	99.95 %
Cement Storage Silo:	99.97 %

For further information see the attached calculations of collector efficiency.

6. Operation data for the existing facilities at National Portland Cement Company of Florida is provided in the attached tables. These tables reflect the production, operating hours and actual emissions for each source at the facility over the last five years.
7. The existing sources at this facility were originally permitted with no allocation for maintenance down time. Otherwise, year round operation 24 hrs/day, 7 days/wk, 52 wks/yr, 8736 hrs/yr. As shown in the production data from the last 5 years, 8736 hrs/yr is unrealistic. The best production year was 1979 when 307,263 tons of cement was produced. During 1979 the mill was operated for 7493 hours or 86% of the time. With the provision for 10% down time the new mill will be allowed to operate for 7863 hrs/yr which is greater than the actual production time achieved in the facility's history.
8. Individual production and power consumption records can be kept on the existing "old" mill and the new mill. Utilizing these records processed raw materials, cement ground (produced) and production time can be determined through material balances.
9. In this instance we are not segregating a total process. The old and new mills are separate and operate independent of each other. The only facilities they share in common are the raw material "clinker" storage building and the finished product "cement" storage silos. i.e. Parallel operations, as shown in the following diagram.

December 8, 1983

Re: National Portland Cement Company of Florida, Inc.



10. Attached please find the calculations of potential emissions from the sources associated with the construction of a new grinding mill at this facility.

I hope this information will satisfactorily answer the questions posed in Mr. Fancy's letter. I still consider these applications as a minor modification to a minor source, but will not pursue this matter at this time if it will expedite the processing of these applications.

Tentatively, we are planning to set up a meeting with your office on Wednesday, December 14, 1983 to resolve any questions which might remain. We will confirm a time with your office the first of next week. Should you have any questions which you would like us to address or any specific information you would like us to bring to the meeting, do not hesitate to contact our office.

Thank you very much for your time and cooperation in this matter. Any effort which can be made to expedite processing these applications is appreciated.

Respectfully,

CENTRAL FLORIDA TESTING LABORATORIES, INC.

Thomas E. Brumagin
Thomas E. Brumagin, P.E.

TEB/sbh

cc: Mr. Nick Ryan - National Portland
Mr. Jake Varn - Carlton, Fields
Mr. Jim Estler - DER - Tampa
MCDPC

National Portland Cement Co. of Florida, Inc.

ROUTE 1 • PORT MANATEE • PALMETTO, FLORIDA 33561

813-722-7776

December 8, 1983

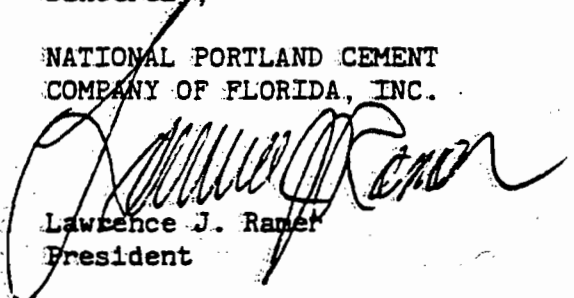
Department of Environmental Regulation
Twin Towers Office Building
2600 Blairstone Road
Tallahassee, FL 33301-8241

Gentlemen:

This letter authorizes Nicholas E. Ryan, Jr., an officer with our company, to represent National Portland Cement Company of Florida in all matters pertaining to environmental regulation and permitting.

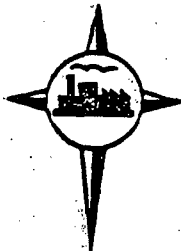
Sincerely,

NATIONAL PORTLAND CEMENT
COMPANY OF FLORIDA, INC.



Lawrence J. Rader
President

LJR:thl



NORTH-MONSEN COMPANY

SALES ENGINEERS

Box 174, 252 ORCHARD PLACE • SALT LAKE CITY, UTAH 84110 • 322-1343

December 7, 1983

National Portland Cement Co.
Route No. 1
Palmetto, Florida 33651

Attention: Mr. Nick Ryan, Jr.

Subject: Finish Mill Project

Dear Mr. Ryan:

In accordance with our discussions with Jack Haeger of Raymond Kaiser Engineers, Denver, Colorado, we are pleased to submit the following guaranteed collection efficiency of the Mikro Pulsaire collector for the following applications.

Finish Mill

Capacity: 8,000 ACFM

Inlet loading: 38.62 grains/acf

Collector Size: 144S-8-20

Filter Ratio: 5.9 cfm per sq. ft. of filter area

Maximum Pressure Drop: 6" wg across the collector

Guaranteed outlet grain loading not to exceed .02 grains/acf

Note: Guaranteed pressure drop based on gas temperature above dewpoint.

Air Separator, Air Slide, Elevator, and FK Pump Hopper

Capacity: 7800 ACFM

Inlet Grain Loading: 40.32 grains/acf

Collector Size: 144S-8-20

Filter Ratio: 5.8 cfm per sq. ft. of filter media

Guaranteed outlet grain loading not to exceed .02 grains/acf

National Portland Cement Co.
December 7, 1983
Page 2

Clinker & Gypsum Conveyors and Storage Bins

Capacity: 5050 ACFM

Inlet Dust Loading: 8.66 grains/acf

Collector Size: 81S-8-20

Filter Ratio: 6.6 cfm per sq. ft. of filter area

Guaranteed outlet grain loading not to exceed .02 grains/acf

Cement Storage Silo

Capacity: 1,500 ACFM

Inlet Grain Loading: 76.92 grains/acf

Collector Size: 25S-8-20

Filter ratio: 6.4 cfm per sq. ft. of filter area

Outlet grain loading not to exceed .02 grains/acf

The performance guarantee of the Mikro Pulsaire collector is based on using a 16-ounce filter media, HCE treated, with a bag size of 4½" dia. x 8' long. The Mikro Pulsaire collector is being used in numerous cement plant installations across the country where EPA tests have been made indicating the performance not to exceed a .02 outlet grain loading.

We sincerely trust this will give you the information you require. If we may be of any further assistance please advise.

Very truly yours,

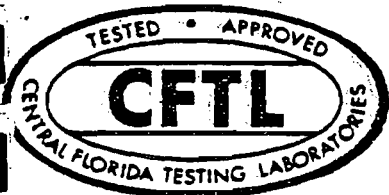
NORTH-MONSEN COMPANY



Kent B. Monsen

KBM/dc

cc: Tom E. Brumagin, P.E.
V.P. Central Florida Testing Lab



NATIONAL PORTLAND CEMENT COMPANY OF FLORIDA

CALCULATION OF COLLECTOR EFFICIENCY

Clinker & Gypsum Storage Silos

Mikro Pulsaire 815-8-20

Inlet Grain loading: 8.66 grains/acf

Outlet grain loading: 0.02 grains/acf

Efficiency: $(1 - \frac{0.02}{8.66}) = 0.9977$ or 99.77 %

Ball Mill

Mikro Pulsaire 1445-8-20

Inlet grain loading: 38.62 grains/acf

Outlet grain loading: 0.02 grains/acf

Efficiency: $(1 - \frac{0.02}{38.62}) = 0.9995$ or 99.95 %

Air Slide & Separator, Elevator, F-K Pump

Mikro Pulsaire 1445-8-20

Inlet grain loading: 40.32 grains/acf

Outlet grain loading: 0.02 grains/acf

Efficiency: $(1 - \frac{0.02}{40.32}) = 0.9995$ or 99.95 %

Cement Storage Silo

Mikro Pulsaire 255-8-20

Inlet grain loading: 76.92 grains/acf

Outlet grain loading: 0.02 grains/acf

Efficiency: $(1 - \frac{0.02}{76.92}) = 0.9997$ or 99.97 %



NATIONAL PORTLAND CEMENT COMPANY OF FLORIDA, INC.
CALCULATION OF INLET AND OUTLET EMISSIONS
FOR NEW DUST COLLECTOR
ON CEMENT STORAGE SILO

Cement manufactured in the new ball mill will be pneumatically conveyed to the existing cement storage silos at the facility utilizing a F-K pump. This is a very clean method of transferring the product with excellent control on the volume of material transferred and conveying air required. It is estimated that during the conveying process one (1) percent of the material (cement) can become entrained in the conveying air and must be vented through a controlled device.

As shown on page 1 of 5 in the supplemental information submitted October 28, 1983 for the new dust collector on the cement storage silo.

Mikro-Pulsaire 255-8-20 Collector

F-K Pump Rating: 600 CFM
Collector Fan Draft: 1500 CFM
Outlet Temperature: 120°F
Air to Cloth Ratio: 6.4 : 1

Collector Efficiency from Manufacturer's Guarantee

Inlet Grain Loading: 60-80 grains/dscf
Outlet Grain Loading: 0.02 grains/dscf
Collector Efficiency: $(1 - \frac{0.02}{80}) = 0.99975$ or 99.975 %

Assuming gas stream at 0% moisture and 120°F

$$SCFM = ACFM (1 - B_w) \left(\frac{T_{Std}}{T_s} \right) \left(\frac{P_s}{P_{Std}} \right)$$

$$SCFM = 1500 (1 - 0) \left(\frac{528}{580} \right) \left(\frac{29.92}{29.92} \right) = 1365 \text{ scfm}$$

Uncontrolled Particulate Emissions

$$E_{pu} = 45 \text{ TPH (1\% Dust entrained w/conveying air)} = 900 \text{ lb/hr}$$
$$C_{pu} = \frac{900 \text{ lb/hr}}{1365 \text{ scfm}} \left(\frac{7000 \text{ grains/lb}}{60 \text{ min/hr}} \right) = 76.92 \text{ grains/dscf}$$

Controlled Particulate Emissions

$$E_{pu} = 900 \text{ lb/hr (1 - 0.99975)} = 0.23 \text{ lb/hr}$$
$$C_{pu} = 76.92 \text{ grains/dscf (1 - 0.99975)} = 0.019 \text{ grains/dscf}$$

Allowable Particulate Emissions (0.03 grains/dscf)

$$E_{pa} = 0.03 \text{ grains/dscf (1365 scfm) (60/7000)} = 0.35 \text{ lb/hr}$$
$$C_{pa} = 0.03 \text{ grains/dscf}$$



NATIONAL PORTLAND CEMENT COMPANY OF FLORIDA, INC.

OPERATION DATA FOR EXISTING FACILITY

SOURCE	PRODUCTION (tons)					
	1982	1981	1980	1979	1978	1977
Raw Material Silos						
Clinker	134,854	223,588	241,348	293,436	238,396	169,962
Gypsum	7,098	11,768	12,703	13,827	11,888	9,512
Ball Mill	141,952	235,356	254,051	307,263	250,284	179,474
Cement Silos	141,952	235,356	254,051	307,263	250,284	179,474
Ship Unloading	106,616	244,448	264,223	321,756	156,416*	0*

*Clinker unloaded at Port Manatee

SOURCE	Actual Operating Hours					
	1982	1981	1980	1979	1978	1977
Clinker & Gyp Silos	3632	5897	6365	7493	5778	4791
Ball Mill	3632	5897	6365	7493	5778	4791
Cement Silos	6045	8736	8736	8736	8736	8736
Ship (Number/days in port)	3/18 days	8/34 days	8/39days	10/44 days	6/22 days	0

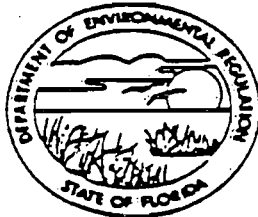
SOURCE	Production Rate (TPH)					
	1982	1981	1980	1979	1978	1977
Clinker & Gyp Silos	Same as Mill					
Ball Mill	39.08	39.91	39.91	41.00	43.32	37.46
Cement Silos	Same as Mill					
Ship Unloading	296	391	355	394	407	0

SOURCE	Particulate Emissions					
	1982	1981	1980	1979	1978	1977
Clinker & Gyp Silos	0.28	0.47	2.71	2.93	2.23	2.2
Ball Mill	13.62	22.59	36.31	39.03	29.80	28.9
Cement Silos	5.68	9.41	2.71	2.93	2.23	2.2
Ships	0.42	0.98	6.08	7.40	3.59	0
Yearly Total	20.00	33.45	47.81	52.29	37.85	33.30

ANNUAL EMISSIONS REPORTS

1977 - 1982

DEPARTMENT OF ENVIRONMENTAL REGULATION



BOB GRAHAM
GOVERNOR

VICTORIA J. TSCHINKEL
SECRETARY

WILLIAM K. HENNESSEY
DISTRICT MANAGER

WEST DISTRICT

1 HIGHWAY 301 NORTH
49 FLORIDA 33610

ANNUAL OPERATION REPORT FORM FOR AIR EMISSIONS SOURCES

For each permitted emission point, please submit a separate report for calendar year 19 82 prior to March 1st of the following year.

GENERAL INFORMATION

1. Source Name: National Portland Cement Company of Florida, Inc.
2. Permit Number: AO 41-6582
3. Source Address: Port Manatee
Palmetto, FL 33561
4. Description of Source: Cement Clinker & Gypsum Storage Silos
controlled with a baghouse

ACTUAL OPERATING HOURS: 24 hrs/day 2-4 days/wk 52 wks/yr 3550 hrs/19

RAW MATERIAL INPUT PROCESS WEIGHT: (List separately all materials put into process and specify applicable units if other than tons/yr)

Raw Material	Input Process Weight	
<u>Clinker</u>	<u>134,854</u>	<u>tons/yr</u>
<u>Gypsum</u>	<u>7,098</u>	<u>tons/yr</u>
		<u>tons/yr</u>
		<u>tons/yr</u>

PRODUCT OUTPUT (Specify applicable units)

Not Applicable

Silos just used for material storage

V TOTAL FUEL USAGE including standby fuels. If fuel is oil, specify type and sulfur content (e.g., No. 6 oil with 1% S). None - All Electric

_____ 10⁶ cubic feet Natural Gas _____ 10³ Kerosene
_____ 10³ gallons _____ Oil, _____ % _____ tons Coal
_____ 10³ gallons Propane _____ tons Carbonaceous
_____ 10⁶ Black Liquor Solids _____ tons Refuse

Other (Specify type and units) _____

I EMISSION RATE(S) (tons/yr)

_____ 0.28 Particulates _____ N/A Sulfur Dioxide _____ N/A Total Reduced Sulfur
_____ N/A Nitrogen Oxide _____ N/A Carbon Monoxide _____ N/A Fluoride
_____ N/A Hydrocarbon _____ Other (Specify type and units) _____

I METHOD OF CALCULATING EMISSION RATES (e.g., use of fuel and materials balance, emission factors drawn from AP 42, etc.)

I CERTIFICATION:

I hereby certify that the information given in this report is correct to the best of my knowledge.

SIGNATURE OF OWNER OR AUTHORIZED REPRESENTATIVE

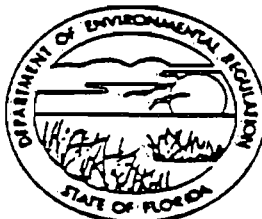
Mr. Nicholas E. Ryan, Jr. Exec. V. Presid
TYPED NAME AND TITLE Operations

DATE



Thomas E. Brumagin, P.E. Consultant

DEPARTMENT OF ENVIRONMENTAL REGULATION

BOB GRAHAM
GOVERNORVICTORIA J. TSCHINKEL
SECRETARYWILLIAM K. HENNESSEY
DISTRICT MANAGER

WEST DISTRICT

HIGHWAY 301 NORTH
PALMETTO, FLORIDA 33610

ANNUAL OPERATION REPORT FORM FOR AIR EMISSIONS SOURCES

For each permitted emission point, please submit a separate report for calendar year 19 82
from January 1st to March 1st of the following year.

GENERAL INFORMATION

1. Source Name: National Portland Cement Company of Florida, Inc.
2. Permit Number: AO 41-6583
3. Source Address: Port Manatee
Palmetto, FL 33561
4. Description of Source: Cement Grinding Operation controlled with
a baghouse

ACTUAL OPERATING HOURS: 24 hrs/day 2-4 days/wk 52 wks/yr 3550 hrs/1982

RAW MATERIAL INPUT PROCESS WEIGHT: (List separately all materials put into process
and specify applicable units if other than tons/yr)

Raw Material	Input Process Weight	tons/yr
Clinker	134,854	tons/yr
Gypsum	7,098	tons/yr
		tons/yr
		tons/yr

PRODUCT OUTPUT (Specify applicable units)

Cement 141,952 ton/1982

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TOTAL FUEL USAGE including standby fuels. If fuel is oil, specify type and sulfur content (e.g., No. 6 oil with 1% S). None - All Electric

10⁶ cubic feet Natural Gas

10³ Kerosene

10³ gallons Oil, %S

tons Coal

10³ gallons Propane

tons Carbonaceous

10⁶ Black Liquor Solids

tons Refuse

Other (Specify type and units)

MISSION RATE(S) (tons/yr)

13.62 Particulates N/A Sulfur Dioxide N/A Total Reduced Sulfur

N/A Nitrogen Oxide N/A Carbon Monoxide N/A Fluoride

N/A Hydrocarbon Other (Specify type and units)

METHOD OF CALCULATING EMISSION RATES (e.g., use of fuel and materials balance, emission factors drawn from AP 42, etc.)

IDENTIFICATION:

I hereby certify that the information given in this report is correct to the best of my knowledge.

SIGNATURE OF OWNER OR AUTHORIZED REPRESENTATIVE

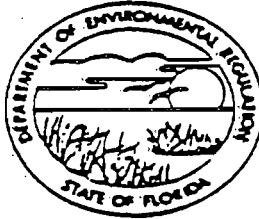
Mr. Nicholas E. Ryan, Jr. Exec. V. President
TYPED NAME AND TITLE Operations

Thomas E. Brumagin

DATE

Thomas E. Brumagin, P.E. Consultant

DEPARTMENT OF ENVIRONMENTAL REGULATION



BOB GRAHAM
GOVERNOR

VICTORIA J. TSCHINKEL
SECRETARY

WILLIAM K. HENNESSEY
DISTRICT MANAGER

WEST DISTRICT
HIGHWAY 301 NORTH
PALM BEACH, FLORIDA 33410

ANNUAL OPERATION REPORT FORM FOR AIR EMISSIONS SOURCES

For each permitted emission point, please submit a separate report for calendar year 19 82 ending on March 1st of the following year.

GENERAL INFORMATION

- 1. Source Name: National Portland Cement Company of Florida, Inc.
- 2. Permit Number: AO 41-6584
- 3. Source Address: Port Manatee
Palmetto, FL 33561
- 4. Description of Source: Cement Storage Silos controlled with a
baghouse

ACTUAL OPERATING HOURS: 12-24 hrs/day 5-7 days/wk 52 wks/yr 6045 hrs/yr

RAW MATERIAL INPUT PROCESS WEIGHT: (List separately all materials put into process and specify applicable units if other than tons/yr)

Raw Material	Input Process Weight	
Cement	141,952	tons/yr
		tons/yr
		tons/yr
		tons/yr
		tons/yr

PRODUCT OUTPUT (Specify applicable units)

Not Applicable

Silos just used for material storage

TOTAL FUEL USAGE including standby fuels. If fuel is oil, specify type and sulfur content (e.g., No. 6 oil with 1% S). None - All Electric

10⁶ cubic feet Natural Gas

10³ Kerosene

10³ gallons Oil, %S

tons Coal

10³ gallons Propane

tons Carbonaceous

10⁶ Black Liquor Solids

tons Refuse

Other (Specify type and units)

EMISSION RATE(S) (tons/yr)

5.68 Particulates N/A Sulfur Dioxide N/A Total Reduced Sulfur

N/A Nitrogen Oxide N/A Carbon Monoxide N/A Fluoride

N/A Hydrocarbon Other (Specify type and units)

METHOD OF CALCULATING EMISSION RATES (e.g., use of fuel and materials balance, emission factors drawn from AP 42, etc.)

CERTIFICATION:

I hereby certify that the information given in this report is correct to the best of my knowledge.

SIGNATURE OF OWNER OR AUTHORIZED REPRESENTATIVE

Mr. Nicholas E. Ryan, Jr. Exec. V. Preside

TYPED NAME AND TITLE Operations

Thomas E. Brumagin

DATE

Thomas E. Brumagin, P.E. Consultant

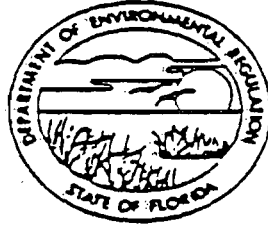
DEPARTMENT OF ENVIRONMENTAL REGULATION

BEST AVAILABLE COPY

BOB GRAH
GOVERNOR

VICTORIA J. TSCHINKA
SECRETARY

WILLIAM K. HENNESSY
DISTRICT MANAGER



DUNN DISTRICT

21 HIGHWAY 301 NORTH
M. FLORIDA 33610

ANNUAL OPERATION REPORT FORM FOR AIR EMISSIONS SOURCES

For each permitted emission point, please submit a separate report for calendar year 1982 prior to March 1st of the following year.

1 GENERAL INFORMATION

1. Source Name: National Portland Cement Company of Florida, Inc.
2. Permit Number: AO 41-43511
3. Source Address: Port Manatee
Palmetto, FL 33561
4. Description of Source: Cement Clinker & Gypsum Conveyor System
controlled with two (2) baghouses at transfer points

2 ACTUAL OPERATING HOURS: 24 hrs/day 3 days/wk 3 wks/yr 216 hrs/1982
(3 ships unloaded)

3 RAW MATERIAL INPUT PROCESS WEIGHT: (List separately all materials put into process and specify applicable units if other than tons/yr)

Raw Material	Input Process Weight	
Clinker	106,616	tons/yr
		tons/yr
		tons/yr
		tons/yr
		tons/yr

4 PRODUCT OUTPUT (Specify applicable units)

Not Applicable

System just used for material transfer

TOTAL FUEL USAGE including standby fuels. If fuel is oil, specify type and sulfur content (e.g., No. 6 oil with 1% S). None - All Electric

10⁶ cubic feet Natural Gas

10³ Kerosene

10³ gallons Oil, _____ %S

tons Coal

10³ gallons Propane

tons Carbonaceous

10⁶ Black Liquor Solids

tons Refuse

Other (Specify type and units) _____

EMISSION RATE(S) (tons/yr)

0.42 Particulates N/A Sulfur Dioxide N/A Total Reduced Sulfur

N/A Nitrogen Oxide N/A Carbon Monoxide N/A Fluoride

N/A Hydrocarbon Other (Specify type and units) _____

METHOD OF CALCULATING EMISSION RATES (e.g., use of fuel and materials balance, emission factors drawn from AP 42, etc.)

CERTIFICATION:

I hereby certify that the information given in this report is correct to the best of my knowledge.

SIGNATURE OF OWNER OR AUTHORIZED REPRESENTATIVE

DATE

Mr. Nicholas E. Ryan, Jr. Exec. V. President

TYPED NAME AND TITLE Operations

Thomas E. Brumagin, P.E. Consultant

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

ANNUAL OPERATIONS REPORT FORM
FOR AIR EMISSIONS SOURCES

For each permitted emission point, please submit a separate report for calendar year 19 81 prior to March 1st of the following

GENERAL INFORMATION

1. Source Name: National Portland Cement
AO41-6582
2. Permit Number: _____
3. Source Address: Port Manatee

4. Description of Source: Clinker & Gypsum Storage Silo

OPERATING SCHEDULE: 24 hrs/day 7 days/wk 52 wks/yr

RAW MATERIAL INPUT PROCESS WEIGHT:

Raw Material	Input Process Weight	
clinker	223,588	tons/yr
gypsum	11,768	tons/yr
_____	_____	tons/yr
_____	_____	tons/yr
_____	_____	tons/yr

TOTAL FUEL USAGE, including standby fuels. If fuel is oil, specify type and sulfur content (e.g., No. 6 oil with 1% S).

10⁶ cubic feet Natural Gas 10³ gallons _____ Oil, _____ %S
10³ gallons Propane 10³ gallons Kerosene _____
 _____ tons Coal 10⁶ lb Black Liquid Solids _____
 _____ tons Carbonaceous _____ tons Refuse _____

Other (Specify type and units) _____

EMISSION LEVEL (tons/yr):

A 0.47 Particulates N/A Sulfur Dioxide N/A Total Reduced Sulfur
N/A Nitrogen Oxide N/A Carbon Monoxide N/A Fluoride
N/A Hydrocarbon Other (Specify type and units) _____

B. Method of calculating emission rates (e.g., use of fuel and materials balance, emission factors drawn from AP 42, etc.)
material balance and efficiency of collector @ 99.8 %

CERTIFICATION:

I hereby certify that the information given in this report is correct to the best of my knowledge.

Nicholas E. Ryan, Jr.
SIGNATURE OF OWNER OR
AUTHORIZED REPRESENTATIVE

Nicholas E. Ryan, Jr.
Executive Vice President - Operations

TYPED NAME AND TITLE

Feb. 22, 1982
DATE

George C. Sinn, Jr. P.E. Consultant

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

ANNUAL OPERATIONS REPORT FORM
FOR AIR EMISSIONS SOURCES

For each permitted emission point, please submit a separate report for calendar year 19 81 prior to March 1st of the following year.

I GENERAL INFORMATION

1. Source Name: National Portland Cement
A041-6583
2. Permit Number: _____
3. Source Address: Port Manatee
4. Description of Source: Grinding, Air Slide, & Elevator

II OPERATING SCHEDULE: 24 hrs/day 7 days/wk 52 wks/yr

III RAW MATERIAL INPUT PROCESS WEIGHT:

Raw Material	Input Process Weight	
<u>cement</u>	<u>235,356</u>	<u>tons/yr</u>
_____	_____	<u>tons/yr</u>
_____	_____	<u>tons/yr</u>
_____	_____	<u>tons/yr</u>
_____	_____	<u>tons/yr</u>

IV TOTAL FUEL USAGE, including standby fuels. If fuel is oil, specify type and sulfur content (e.g., No. 6 oil with 1% S).

<u>10⁶ cubic feet</u> Natural Gas	<u>10³ gallons</u> Oil, _____ %S
<u>10³ gallons</u> Propane	<u>10³ gallons</u> Kerosene
<u>tons</u> Coal	<u>10⁶ lb</u> Black Liquid Solids
<u>tons</u> Carbonaceous	<u>tons</u> Refuse

Other (Specify type and units) _____

V EMISSION LEVEL (tons/yr):

- A. 22.59 Particulates N/A Sulfur Dioxide N/A Total Reduced Sulfur
N/A Nitrogen Oxide N/A Carbon Monoxide N/A Fluoride
N/A Hydrocarbon Other (Specify type and units) _____

B. Method of calculating emission rates (e.g., use of fuel and materials balance, emission factors drawn from AP 42, etc.)
material balance and efficiency of collector @ 99.8 %

VI CERTIFICATION:

I hereby certify that the information given in this report is correct to the best of my knowledge.

Nicholas E. Ryan, Jr.
SIGNATURE OF OWNER OR
AUTHORIZED REPRESENTATIVE

Nicholas E. Ryan, Jr. Executive Vice President
TYPED NAME AND TITLE Operations

Feb. 22, 1982
DATE

George C. Sinn, Jr. P.E. Consultant

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

ANNUAL OPERATIONS REPORT FORM
FOR AIR EMISSIONS SOURCES

of each permitted emission point, please submit a separate report for calendar year 19 81 prior to March 1st of the following year.

I GENERAL INFORMATION

1. Source Name: National Portland Cement

2. Permit Number: A041-6584

3. Source Address: Port Manatee

4. Description of Source: Cement Silo

OPERATING SCHEDULE: 24 hrs/day 7 days/wk 52 wks/yr

II RAW MATERIAL INPUT PROCESS WEIGHT:

Raw Material	Input Process Weight	
<u>cement</u>	<u>235,356</u>	<u>tons/yr</u>
		<u>tons/yr</u>
		<u>tons/yr</u>
		<u>tons/yr</u>
		<u>tons/yr</u>

V TOTAL FUEL USAGE, including standby fuels. If fuel is oil, specify type and sulfur content (e.g., No. 6 oil with 1% S).

<u>10⁶</u> cubic feet Natural Gas	<u>10³</u> gallons Oil, <u> </u> %S
<u>10³</u> gallons Propane	<u>10³</u> gallons Kerosene
<u> </u> tons Coal	<u>10⁶</u> lb Black Liquid Solids
<u> </u> tons Carbonaceous	<u> </u> tons Refuse

Other (Specify type and units)

V EMISSION LEVEL (tons/yr):

A. <u>9.41</u> Particulates	<u>N/A</u> Sulfur Dioxide	<u>N/A</u> Total Reduced Sulfur
<u>N/A</u> Nitrogen Oxide	<u>N/A</u> Carbon Monoxide	<u>N/A</u> Fluoride
<u>N/A</u> Hydrocarbon	Other (Specify type and units) <u> </u>	

B. Method of calculating emission rates (e.g., use of fuel and materials balance, emission factors drawn from AP-42, etc.)
material balance and efficiency of collector @ 99.8 %

VI CERTIFICATION:

I hereby certify that the information given in this report is correct to the best of my knowledge.

Nicholas E. Ryan, Jr.
SIGNATURE OF OWNER OR
AUTHORIZED REPRESENTATIVE

Nicholas E. Ryan, Jr.
Executive Vice President - Operations

TYPED NAME AND TITLE

Feb. 22, 1982

DATE

George C. Sinn, Jr. P.E. Consultant

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION
ANNUAL OPERATIONS REPORT FORM
FOR AIR EMISSIONS SOURCES

For each permitted emission point, please submit a separate report for calendar year 19⁸¹ prior to March 1st of the following year.

I GENERAL INFORMATION

1. Source Name: National Portland Cement
A041-43511
 2. Permit Number: _____
 3. Source Address: Port Manatee

 4. Description of Source: Cement Clinker/Gypsum Handling Operation

OPERATING SCHEDULE: only while ship discharges
 _____ hrs/day _____ days/wk _____ wks/yr

I RAW MATERIAL INPUT PROCESS WEIGHT:

Raw Material	Input Process Weight	
<u>clinker</u>	<u>244,448</u>	<u>tons/yr</u>
_____	_____	tons/yr
_____	_____	tons/yr
_____	_____	tons/yr
_____	_____	tons/yr

TOTAL FUEL USAGE, including standby fuels. If fuel is oil, specify type and sulfur content (e.g., No. 6 oil with 1% S).
 _____ 10⁶ cubic feet Natural Gas _____ 10³ gallons _____ Oil, _____ %S
 _____ 10³ gallons Propane _____ 10³ gallons Kerosene
 _____ tons Coal _____ 10⁶ lb Black Liquid Solids
 _____ tons Carbonaceous _____ tons Refuse
 Other (Specify type and units) _____

EMISSION LEVEL (tons/yr):
 A. 0.98 Particulates N/A Sulfur Dioxide N/A Total Reduced Sulfur
N/A Nitrogen Oxide N/A Carbon Monoxide N/A Fluoride
N/A Hydrocarbon Other (Specify type and units) _____

B. Method of calculating emission rates (e.g., use of fuel and materials balance, emission factors drawn from AP 42, etc.)
 material balance and efficiency of collector @ 99.8 %

CERTIFICATION: I hereby certify that the information given in this report is correct to the best of my knowledge.

Nicholas E. Ryan, Jr.
 SIGNATURE OF OWNER OR
 AUTHORIZED REPRESENTATIVE
Feb. 22, 1982
 DATE

Nicholas E. Ryan, Jr.
 Executive Vice President - Operations
 TYPED NAME AND TITLE
George C. Sinn, Jr. P.E. Consultant

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

ANNUAL OPERATIONS REPORT FORM
FOR AIR EMISSIONS SOURCES

80

For each permitted emission point, please submit a separate report for calendar year 19 80 prior to March 1st of the following year.

I GENERAL INFORMATION

1. Source Name: National Portland Cement
 2. Permit Number: A041-6582
 3. Source Address: Port Manatee
0011-01
 4. Description of Source: Clinker & Gypsum Storage Silo

II OPERATING SCHEDULE: 24 hrs/day 7 days/wk 52 wks/yr

III RAW MATERIAL INPUT PROCESS WEIGHT:

Raw Material	Input Process Weight	
<u>clinker</u>	<u>241,348</u>	<u>tons/yr</u>
<u>gypsum</u>	<u>12,703</u>	<u>tons/yr</u>
		<u>tons/yr</u>
		<u>tons/yr</u>
		<u>tons/yr</u>

V TOTAL FUEL USAGE, including standby fuels. If fuel is oil, specify type and sulfur content (e.g., No. 6 oil with 1% S).

10⁶ cubic feet Natural Gas 10³ gallons Oil, %S
10³ gallons Propane 10³ gallons Kerosene
tons Coal 10⁶ lb Black Liquid Solids
tons Carbonaceous tons Refuse

Other (Specify type and units) _____

V EMISSION LEVEL (tons/yr):

A. 2.71 Particulates _____ Sulfur Dioxide _____ Total Reduced Sulfur _____
 _____ Nitrogen Oxide _____ Carbon Monoxide _____ Fluoride _____
 _____ Hydrocarbon _____ Other (Specify type and units) _____

B. Method of calculating emission rates (e.g., use of fuel and materials balance, emission factors drawn from AP 42, etc.)
material balance and efficiency of collector @99.9%

VI CERTIFICATION:

I hereby certify that the information given in this report is correct to the best of my knowledge.

Nicholas E. Ryan, Jr.
 SIGNATURE OF OWNER OR
 AUTHORIZED REPRESENTATIVE

Nicholas E. Ryan, Jr. Vice President
 TYPED NAME AND TITLE

February 10, 1981
 DATE

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION
ANNUAL OPERATIONS REPORT FORM
FOR AIR EMISSIONS SOURCES

For each permitted emission point, please submit a separate report for calendar year 19 80 prior to March 1st of the following year.

GENERAL INFORMATION

1. Source Name: National Portland Cement
 2. Permit Number: A041-2176
 3. Source Address: 0011-08
 4. Description of Source: Ship Unloading & Clinker Transfer (5 Baghouses)

OPERATING SCHEDULE: _____ hrs/day _____ days/wk _____ wks/yr only while ship discharges

RAW MATERIAL INPUT PROCESS WEIGHT:

Raw Material	Input Process Weight	
<u>clinker</u>	<u>264,223</u>	<u>tons/yr</u>
_____	_____	tons/yr
_____	_____	tons/yr
_____	_____	tons/yr
_____	_____	tons/yr

TOTAL FUEL USAGE, including standby fuels. If fuel is oil, specify type and sulfur content (e.g., No. 6 oil with 1% S).

_____ 10⁶ cubic feet Natural Gas _____ 10³ gallons _____ Oil _____ %S
 _____ 10³ gallons Propane _____ 10³ gallons Kerosene
 _____ tons Coal _____ 10⁶ lb Black Liquid Solids
 _____ tons Carbonaceous _____ tons Refuse
 Other (Specify type and units) _____

EMISSION LEVEL (tons/yr):

A. _____ 6.08 Particulates _____ Sulfur Dioxide Total Reduced Sulfur _____
 _____ Nitrogen Oxide _____ Carbon Monoxide Fluoride _____
 _____ Hydrocarbon Other (Specify type and units) _____

B. Method of calculating emission rates (e.g., use of fuel and materials balance, emission factors drawn from AP 42, etc.)
material balance and efficiency of collector @99.9%

CERTIFICATION:
 I hereby certify that the information given in this report is correct to the best of my knowledge.

Nicholas E. Ryan, Jr. V.P.
 SIGNATURE OF OWNER OR AUTHORIZED REPRESENTATIVE
 TYPE() NAME AND TITLE

February 10, 1981
 DATE

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION
ANNUAL OPERATIONS REPORT FORM
FOR AIR EMISSIONS SOURCES

80

For each permitted emission point, please submit a separate report for calendar year 19 80 prior to March 1st of the following year.

I GENERAL INFORMATION

1. Source Name: National Portland Cement
 2. Permit Number: A041-6584
 3. Source Address: 0011-03
Cement Silo
 4. Description of Source: _____

II OPERATING SCHEDULE: 24 hrs/day 7 days/wk 52 wks/yr

III RAW MATERIAL INPUT PROCESS WEIGHT:

Raw Material	Input Process Weight	
cement	254,051	tons/yr
_____	_____	tons/yr
_____	_____	tons/yr
_____	_____	tons/yr
_____	_____	tons/yr

IV TOTAL FUEL USAGE, including standby fuels. If fuel is oil, specify type and sulfur content (e.g., No. 6 oil with 1% S).

_____ 10⁶ cubic feet Natural Gas _____ 10³ gallons Oil, _____ %S
 _____ 10³ gallons Propane _____ 10³ gallons Kerosene
 _____ tons Coal _____ 10⁶ lb Black Liquid Solids
 _____ tons Carbonaceous _____ tons Refuse
 Other (Specify type and units) _____

V EMISSION LEVEL (tons/yr):

A. 2.71 Particulates _____ Sulfur Dioxide _____ Total Reduced Sulfur
 _____ Nitrogen Oxide _____ Carbon Monoxide _____ Fluoride
 _____ Hydrocarbon _____ Other (Specify type and units) _____

B. Method of calculating emission rates (e.g., use of fuel and materials balance, emission factors drawn from AP-42, etc.)
material balance and efficiency of collector @99.9%

VI CERTIFICATION:

I hereby certify that the information given in this report is correct to the best of my knowledge.

Nicholas E. Ryan, Jr. V.P.
 SIGNATURE OF OWNER OR
 AUTHORIZED REPRESENTATIVE

Nicholas E. Ryan, Jr. Vice President
 TYPED NAME AND TITLE

February 10, 1981

DATE

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION
ANNUAL OPERATIONS REPORT FORM
FOR AIR EMISSIONS SOURCES

each permitted emission point, please submit a separate report for calendar year 19 80 prior to March 1st of the following year.

GENERAL INFORMATION

1. Source Name: National Portland Cement
 2. Permit Number: A041-6583
 3. Source Address: 0011-02
Grinding, Air Slide & Elevator
 4. Description of Source: _____

OPERATING SCHEDULE: 24 hrs/day 7 days/wk 52 wks/yr

RAW MATERIAL INPUT PROCESS WEIGHT:

Raw Material	Input Process Weight	
<u>cement</u>	<u>254,051</u>	<u>tons/yr</u>
_____	_____	<u>tons/yr</u>
_____	_____	<u>tons/yr</u>
_____	_____	<u>tons/yr</u>
_____	_____	<u>tons/yr</u>

TOTAL FUEL USAGE, including standby fuels. If fuel is oil, specify type and sulfur content (e.g., No. 6 oil with 1% S).

_____ 10^6 cubic feet Natural Gas _____ 10^3 gallons _____ Oil _____ %S
 _____ 10^3 gallons Propane _____ 10^3 gallons Kerosene
 _____ tons Coal _____ 10^6 lb Black Liquid Solids
 _____ tons Carbonaceous _____ tons Refuse

Other (Specify type and units) _____

EMISSION LEVEL (tons/yr):

A. 36.31 Particulates _____ Sulfur Dioxide _____ Total Reduced Sulfur
 _____ Nitrogen Oxide _____ Carbon Monoxide _____ Fluoride
 _____ Hydrocarbon _____ Other (Specify type and units) _____

B. Method of calculating emission rates (e.g., use of fuel and materials balance, emission factors drawn from AP-42, etc.)
material balance and efficiency of collector @99.9%

CERTIFICATION:

I hereby certify that the information given in this report is correct to the best of my knowledge.

Nicholas E. Ryan, Jr.
 SIGNATURE OF OWNER OR
 AUTHORIZED REPRESENTATIVE

Nicholas E. Ryan, Jr. Vice President
 (TYPE NAME AND TITLE)

February 10, 1981
 DATE

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION
ANNUAL OPERATIONS REPORT FORM
FOR AIR EMISSIONS SOURCES

For each permitted emission point, please submit a separate report for calendar year 19 80 prior to March 1st of the following year.

I. GENERAL INFORMATION

1. Source Name: National Portland Cement
 2. Permit Number: A041-6583
 3. Source Address: 0011-02
Grinding, Air Slide & Elevator
 4. Description of Source: _____

II. OPERATING SCHEDULE: 24 hrs/day 7 days/wk 52 wks/yr

III. RAW MATERIAL INPUT PROCESS WEIGHT:

Raw Material	Input Process Weight	
<u>cement</u>	<u>254,051</u>	<u>tons/yr</u>
_____	_____	tons/yr
_____	_____	tons/yr
_____	_____	tons/yr
_____	_____	tons/yr

V. TOTAL FUEL USAGE, including standby fuels. If fuel is oil, specify type and sulfur content (e.g., No. 6 oil with 1% S).

_____ 10^6 cubic feet Natural Gas _____ 10^3 gallons Oil _____ %S
 _____ 10^3 gallons Propane _____ 10^3 gallons Kerosene
 _____ tons Coal _____ 10^6 lb Black Liquid Solids
 _____ tons Carbonaceous _____ tons Refuse
 Other (Specify type and units) _____

V. EMISSION LEVEL (tons/yr):

A. 36.31 Particulates _____ Sulfur Dioxide _____ Total Reduced Sulfur
 _____ Nitrogen Oxide _____ Carbon Monoxide _____ Fluoride
 _____ Hydrocarbon _____ Other (Specify type and units) _____

B. Method of calculating emission rates (e.g., use of fuel and materials balance, emission factors drawn from AP 42, etc.)
material balance and efficiency of collector @99.9%

V. CERTIFICATION:

I hereby certify that the information given in this report is correct to the best of my knowledge.

Nicholas E. Ryan, Jr.
 SIGNATURE OF OWNER OR
 AUTHORIZED REPRESENTATIVE

Nicholas E. Ryan, Jr. Vice President
 (TYPE) NAME AND TITLE

February 10, 1981
 DATE

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

ANNUAL OPERATIONS REPORT FORM
FOR AIR EMISSIONS SOURCES

80

For each permitted emission point, please submit a separate report for calendar year 19 ____ prior to March 1st of the following year.

GENERAL INFORMATION

1. Source Name: National Portland Cement
 2. Permit Number: AC41-37673
 3. Source Address: 0011 09
Baghouse for Unloading Clinker
 4. Description of Source: _____

OPERATING SCHEDULE: _____ hrs/day _____ days/wk _____ wks/yr not operational in 1980

RAW MATERIAL INPUT PROCESS WEIGHT:

Raw Material	Input Process Weight	tons/yr
-0-	-0-	tons/yr
_____	_____	tons/yr
_____	_____	tons/yr
_____	_____	tons/yr
_____	_____	tons/yr

TOTAL FUEL USAGE, including standby fuels. If fuel is oil, specify type and sulfur content (e.g., No. 6 oil with 1% S).

_____ 10⁶ cubic feet Natural Gas _____ 10³ gallons _____ Oil _____ %S
 _____ 10³ gallons Propane _____ 10³ gallons Kerosene
 _____ tons Coal _____ 10⁶ lb Black Liquid Solids
 _____ tons Carbonaceous _____ tons Refuse
 Other (Specify type and units) _____

EMISSION LEVEL (tons/yr):

A. _____ Particulates _____ Sulfur Dioxide _____ Total Reduced Sulfur
 _____ Nitrogen Oxide _____ Carbon Monoxide _____ Fluoride
 _____ Hydrocarbon _____ Other (Specify type and units) _____
 B. Method of calculating emission rates (e.g., use of fuel and materials balance, emission factors drawn from AP-42, etc.)

CERTIFICATION:

I hereby certify that the information given in this report is correct to the best of my knowledge.

Nicholas E. Ryan, Jr. V.P.
SIGNATURE OF OWNER OR
AUTHORIZED REPRESENTATIVE

Nicholas E. Ryan, Jr. Vice President
TYPED NAME AND TITLE

February 10, 1981
DATE

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION
ANNUAL OPERATIONS REPORT FORM
FOR AIR EMISSIONS SOURCES

For each permitted emission point, please submit a separate report for calendar year 19 79 prior to March 1st of the following year.

I GENERAL INFORMATION

1. Source Name: National Portland Cement
 2. Permit Number: AO41-6582
 3. Source Address: Rt. 1, Port Manatee
Palmetto, Fla. 33561
 4. Description of Source: Dust Collector for Clinker & Gypsum Storage Silo

OPERATING SCHEDULE: 24 hrs/day 7 days/wk 52 wks/yr

II RAW MATERIAL INPUT PROCESS WEIGHT:

Raw Material	Input Process Weight	
Clinker	293,436	tons/yr
Gypsum	13,827	tons/yr
		tons/yr
		tons/yr
		tons/yr

IV TOTAL FUEL USAGE, including standby fuels. If fuel is oil, specify type and sulfur content (e.g., No. 6 oil with 1% S).

10⁶ cubic feet Natural Gas 10³ gallons Oil, _____ %S
10³ gallons Propane 10³ gallons Kerosene _____
 _____ tons Coal 10⁶ lb Black Liquid Solids _____
 _____ tons Carbonaceous _____ tons Refuse _____
 Other (Specify type and units) no fuels used

V EMISSION LEVEL (tons/yr):

A. 2.93 Particulates* _____ Sulfur Dioxide _____ Total Reduced Sulfur
 _____ Nitrogen Oxide _____ Carbon Monoxide _____ Fluoride
 _____ Hydrocarbon Other (Specify type and units) _____

B. Method of calculating emission rates (e.g., use of fuel and materials balance, emission factors drawn from AP-42, etc.)
material balance and efficiency of collector @99.9%

CERTIFICATION:

I hereby certify that the information given in this report is correct to the best of my knowledge.

Nicholas E. Rvan, Jr.
SIGNATURE OF OWNER OR
AUTHORIZED REPRESENTATIVE

Nicholas E. Rvan, Jr. Vice President
TYPED NAME AND TITLE

February 20, 1980
DATE

*307,263 tons moved in 316 days
 316 days @18.5#/day = 5846#/yr
 = 2.93 tons/yr

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION
ANNUAL OPERATIONS REPORT FORM
FOR AIR EMISSIONS SOURCES

For each permitted emission point, please submit a separate report for calendar year 19 79 prior to March 1st of the following year.

I GENERAL INFORMATION

1. Source Name: National Portland Cement
 2. Permit Number: A053-6583
 3. Source Address: Rt. 1, Port Manatee
Palmetto, Fla. 33561
 4. Description of Source: Dust Collector for grinding, air slide, and elevator

II OPERATING SCHEDULE: 24 hrs/day 7 days/wk 52 wks/yr

III RAW MATERIAL INPUT PROCESS WEIGHT:

Raw Material	Input Process Weight	
<u>cement</u>	<u>307,263</u>	<u>tons/yr</u>
_____	_____	<u>tons/yr</u>
_____	_____	<u>tons/yr</u>
_____	_____	<u>tons/yr</u>
_____	_____	<u>tons/yr</u>

IV TOTAL FUEL USAGE, including standby fuels. If fuel is oil, specify type and sulfur content (e.g., No. 6 oil with 1% S).

_____ 10^6 cubic feet Natural Gas _____ 10^3 gallons _____ Oil, _____ %S
 _____ 10^3 gallons Propane _____ 10^3 gallons Kerosene
 _____ tons Coal _____ 10^6 lb Black Liquid Solids
 _____ tons Carbonaceous _____ tons Refuse

Other (Specify type and units) no fuels used

V EMISSION LEVEL (tons/yr):

A. 39.03 Particulates _____ Sulfur Dioxide _____ Total Reduced Sulfur
 _____ Nitrogen Oxide _____ Carbon Monoxide _____ Fluoride
 _____ Hydrocarbon Other (Specify type and units) _____

B. Method of calculating emission rates (e.g., use of fuel and materials balance, emission factors drawn from AP 42, etc.)
material balance and efficiency of collector @99.9%

VI CERTIFICATION:

I hereby certify that the information given in this report is correct to the best of my knowledge.


 SIGNATURE OF OWNER OR
 AUTHORIZED REPRESENTATIVE

Nicholas E. Ryan, Jr. Vice President
 TYPED NAME AND TITLE

February 20, 1980

DATE

*307,263 tons produced in 316 days
 316 days @ 247#/day = 78,052#/yr
 = 39.03 tons/yr

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION
ANNUAL OPERATIONS REPORT FORM
FOR AIR EMISSIONS SOURCES

For each permitted emission point, please submit a separate report for calendar year 19 79 prior to March 1st of the following year.

I GENERAL INFORMATION

1. Source Name: National Portland Cement
 2. Permit Number: AO41-6584
 3. Source Address: Rt. 1, Port Manatee
Palmetto, Fla. 33561
 4. Description of Source: Dust Collector for Cement Silo

II OPERATING SCHEDULE: 24 hrs/day 7 days/wk 52 wks/yr

III RAW MATERIAL INPUT PROCESS WEIGHT:

Raw Material	Input Process Weight	
<u>cement</u>	<u>307,263</u>	<u>tons/yr</u>
_____	_____	<u>tons/yr</u>
_____	_____	<u>tons/yr</u>
_____	_____	<u>tons/yr</u>
_____	_____	<u>tons/yr</u>

IV TOTAL FUEL USAGE, including standby fuels. If fuel is oil, specify type and sulfur content (e.g., No. 6 oil with 1% S).

_____ 10⁶ cubic feet Natural Gas _____ 10³ gallons _____ Oil, _____ %S
 _____ 10³ gallons Propane _____ 10³ gallons Kerosene
 _____ tons Coal _____ 10⁶ lb Black Liquid Solids
 _____ tons Carbonaceous _____ tons Refuse

Other (Specify type and units) no fuels used

V EMISSION LEVEL (tons/yr):

A. 2.93 Particulates * _____ Sulfur Dioxide _____ Total Reduced Sulfur
 _____ Nitrogen Oxide _____ Carbon Monoxide _____ Fluoride
 _____ Hydrocarbon _____ Other (Specify type and units) _____

B. Method of calculating emission rates (e.g., use of fuel and materials balance, emission factors drawn from AP-42, etc.)
material balance and efficiency of collector @99.9%

VI CERTIFICATION:

I hereby certify that the information given in this report is correct to the best of my knowledge.

Nicholas E. Ryan, Jr.
 SIGNATURE OF OWNER/OR
 AUTHORIZED REPRESENTATIVE
February 20, 1980
 DATE

Nicholas E. Ryan, Jr. Vice President
 TYPED NAME AND TITLE
*307,263 tons produced in 316 days
316 days @ 18.5#/day = 5846 #/yr
= 2.93 tons/yr

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION
ANNUAL OPERATIONS REPORT FORM
FOR AIR EMISSIONS SOURCES

For each permitted emission point, please submit a separate report for calendar year 19 79 prior to March 1st of the following year.

I GENERAL INFORMATION

1. Source Name: National Portland Cement
 2. Permit Number: AO41-2176
 3. Source Address: Rt. 1, Port Manatee
Palmetto, Fla. 33561
 4. Description of Source: Ship unloading & clinker transfer (5 baghouses)

only while ship discharges

II OPERATING SCHEDULE: _____ hrs/day _____ days/wk _____ wks/yr

III RAW MATERIAL INPUT PROCESS WEIGHT:

Raw Material	Input Process Weight	
Clinker	321,756	tons/yr
_____	_____	tons/yr
_____	_____	tons/yr
_____	_____	tons/yr
_____	_____	tons/yr

IV TOTAL FUEL USAGE, including standby fuels. If fuel is oil, specify type and sulfur content (e.g., No. 6 oil with 1% S).

_____ 10⁶ cubic feet Natural Gas _____ 10³ gallons _____ Oil _____ %S
 _____ 10³ gallons Propane _____ 10³ gallons Kerosene
 _____ tons Coal _____ 10⁶ lb Black Liquid Solids
 _____ tons Carbonaceous _____ tons Refuse
 Other (Specify type and units) no fuels used

V EMISSION LEVEL (tons/yr):

A. 7.40 Particulates _____ Sulfur Dioxide _____ Total Reduced Sulfur
 _____ Nitrogen Oxide _____ Carbon Monoxide _____ Fluoride
 _____ Hydrocarbon _____ Other (Specify type and units) _____

B. Method of calculating emission rates (e.g., use of fuel and materials balance, emission factors drawn from AP 42, etc.)
material balance and efficiency of collectors @ 99.9%

VI CERTIFICATION:

I hereby certify that the information given in this report is correct to the best of my knowledge.

Nicholas E. Ryan, Jr.
 SIGNATURE OF OWNER OR AUTHORIZED REPRESENTATIVE
Nicholas E. Ryan, Jr. Vice President
 TYPED NAME AND TITLE

February 20, 1980
 DATE
*487.5 hrs X 30.36 #/hr
= 7.40 ton/yr

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION
ANNUAL OPERATIONS REPORT FORM
FOR AIR EMISSIONS SOURCES

For each permitted emission point, please submit a separate report for calendar year 19 78 prior to March 1st of the following year.

GENERAL INFORMATION

1. Source Name: National Portland Cement Co. of Fla., Inc.
 2. Permit Number: A041-2176
 3. Source Address: UTM East 346.4 North 3058.4

4. Description of Source: Transfer of cement clinker from ships into storage building controlled by five (5) mikro pul baghouses.

OPERATING SCHEDULE: 24 hrs/day 2-3 days/wk 10 wks/yr

RAW MATERIAL INPUT PROCESS WEIGHT:

Raw Material	Input Process Weight	
<u>clinker</u>	<u>156,416</u>	tons/yr
_____	_____	tons/yr
_____	_____	tons/yr
_____	_____	tons/yr
_____	_____	tons/yr

TOTAL FUEL USAGE, including standby fuels. If fuel is oil, specify type and sulfur content (e.g., No. 6 oil with 1% S).

_____ 10^6 cubic feet Natural Gas _____ 10^3 gallons Oil, _____ %S
 _____ 10^3 gallons Propane _____ 10^3 gallons Kerosene
 _____ tons Coal _____ 10^6 lb Black Liquid Solids
 _____ tons Carbonaceous _____ tons Refuse

Other (Specify type and units) no fuels used

EMISSION LEVEL (tons/yr):

A. 3.59 Particulates _____ Sulfur Dioxide _____ Total Reduced Sulfur
 _____ Nitrogen Oxide _____ Carbon Monoxide _____ Fluoride
 _____ Hydrocarbon Other (Specify type and units) _____

B. Method of calculating emission rates (e.g., use of fuel and materials balance, emission factors drawn from AP 42, etc.)

CERTIFICATION: Material balance and efficiency of collectors @99.9%

I hereby certify that the information given in this report is correct to the best of my knowledge.

Nicholas E. Ryan, Jr.
SIGNATURE OF OWNER OR
AUTHORIZED REPRESENTATIVE

Nicholas E. Ryan, Jr., Vice President
TYPED NAME AND TITLE

February 28, 1979
DATE

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

ANNUAL OPERATIONS REPORT FORM
FOR AIR EMISSIONS SOURCES

For each permitted emission point, please submit a separate report for calendar year 19 78 prior to March 1st of the following year.

GENERAL INFORMATION

1. Source Name: National Portland Cement Company of Fla., Inc.
 2. Permit Number: A041-6582
 3. Source Address: Port Manatee, Manatee County
UTM East 346.4 North 3058.4
 4. Description of Source: Dracco Plenum 24-2-500 Baghouse for Clinker
and gypsum storage silos.

OPERATING SCHEDULE: 24 hrs/day 7 days/wk 52 wks/yr downtime for maintenance only

RAW MATERIAL INPUT PROCESS WEIGHT:

Raw Material	Input Process Weight	
clinker	238,396	tons/yr
gypsum rock	11,888	tons/yr
		tons/yr
		tons/yr
		tons/yr

TOTAL FUEL USAGE, including standby fuels. If fuel is oil, specify type and sulfur content (e.g., No. 6 oil with 1% S).

10⁶ cubic feet Natural Gas 10³ gallons Oil, % S
10³ gallons Propane 10³ gallons Kerosene
 tons Coal 10⁶ lb Black Liquid Solids
 tons Carbonaceous tons Refuse
 Other (Specify type and units) no fuels used

EMISSION LEVEL (tons/yr):

A. 2.23 Particulates Sulfur Dioxide Total Reduced Sulfur
 Nitrogen Oxide Carbon Monoxide Fluoride
 Hydrocarbon Other (Specify type and units)

B. Method of calculating emission rates (e.g., use of fuel and materials balance, emission factors drawn from AP-42, etc.)

CERTIFICATION: Material balance and efficiency of collector @99.9%

I hereby certify that the information given in this report is correct to the best of my knowledge.

Nicholas E. Ryan, Jr.
SIGNATURE OF OWNER OR
AUTHORIZED REPRESENTATIVE

Nicholas E. Ryan, Jr., Vice President
TYPED NAME AND TITLE

February 28, 1979
DATE

250,284 tons produced in 5,792.5 hours or 241.35 days.
 241.35 days @ 18.5 lbs/day = 4,464.98 lbs.
 = 2.23 tons/yr

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

ANNUAL OPERATIONS REPORT FORM
FOR AIR EMISSIONS SOURCES

For each permitted emission point, please submit a separate report for calendar year 19 78 prior to March 1st of the following year.

GENERAL INFORMATION

1. Source Name: National Portland Cement
 2. Permit Number: A041-6583
 3. Source Address: Port Manatee, Manatee County
UTM East 346.4 North 3058.4
 4. Description of Source: Dracco Plenum 48-5-2500 Baghouse for
ball mill, airslide and elevator

OPERATING SCHEDULE: 24 hrs/day 7 days/wk 7 wks/yr downtime for maintenance only

RAW MATERIAL INPUT/PROCESS WEIGHT:

Raw Material	Input/Process Weight	
<u>clinker</u>	<u>238,396</u>	<u>tons/yr</u>
<u>gypsum rock</u>	<u>11,888</u>	<u>tons/yr</u>
		<u>tons/yr</u>
		<u>tons/yr</u>
		<u>tons/yr</u>

TOTAL FUEL USAGE, including standby fuels. If fuel is oil, specify type and sulfur content (e.g., No. 6 oil with 1% S).

10⁶ cubic feet Natural Gas 10³ gallons Oil, %S
10³ gallons Propane 10³ gallons Kerosene
 tons Coal 10⁶ lb Black Liquid Solids
 tons Carbonaceous tons Refuse

Other (Specify type and units) no fuels used

EMISSION LEVEL (tons/yr):

A. 29.80 Particulates Sulfur Dioxide Total Reduced Sulfur
 Nitrogen Oxide Carbon Monoxide Fluoride
 Hydrocarbon Other (Specify type and units)

B. Method of calculating emission rates (e.g., use of fuel and materials balance, emission factors drawn from AP 42, etc.)

CERTIFICATION: Material balance and efficiency of collector @99.9%

I hereby certify that the information given in this report is correct to the best of my knowledge.

Nicholas E. Ryan, Jr.
SIGNATURE OF OWNER OR
AUTHORIZED REPRESENTATIVE

Nicholas E. Ryan, Jr., Vice President
TYPED NAME AND TITLE

February 28, 1979
DATE

250,284 tons in 241.35 days
241.35 @ 2471bs/day = 59,613 lbs/yr.
= 29.80 tons/yr.

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

ANNUAL OPERATIONS REPORT FORM
FOR AIR EMISSIONS SOURCES

For each permitted emission point, please submit a separate report for calendar year 19 78 prior to March 1st of the following year.

GENERAL INFORMATION

1. Source Name: National Portland Cement Co. of Fla., Inc.
 2. Permit Number: AO41-6584
 3. Source Address: Port Manatee, Manatee County
UTM East 346.4 North 3058.4
 4. Description of Source: Dracco Plenum 24-2-500 baghouse for
cement storage silo

OPERATING SCHEDULE: 24 hrs/day 7 days/wk 7 wks/yr downtime for maintenance only

RAW MATERIAL INPUT PROCESS WEIGHT:

Raw Material	Input Process Weight	
<u>cement</u>	<u>250284</u>	<u>tons/yr</u>
_____	_____	tons/yr
_____	_____	tons/yr
_____	_____	tons/yr
_____	_____	tons/yr

TOTAL FUEL USAGE, including standby fuels. If fuel is oil, specify type and sulfur content (e.g., No. 6 oil with 1% S).

10⁶ cubic feet Natural Gas 10³ gallons Oil %S
10³ gallons Propane 10³ gallons Kerosene
 tons Coal 10⁶ lb Black Liquid Solids
 tons Carbonaceous tons Refuse
 Other (Specify type and units) no fuels used

EMISSION LEVEL (tons/yr):

A. 2.23 Particulates Sulfur Dioxide Total Reduced Sulfur
 Nitrogen Oxide Carbon Monoxide Fluoride
 Hydrocarbon Other (Specify type and units)

B. Method of calculating emission rates (e.g., use of fuel and materials balance, emission factors drawn from AP 42, etc.)

CERTIFICATION: Material balance and efficiency of collector @99.9%

I hereby certify that the information given in this report is correct to the best of my knowledge.

Nicholas E. Ryan, Jr.
SIGNATURE OF OWNER OR
AUTHORIZED REPRESENTATIVE

Nicholas E. Ryan, Jr., Vice President
TYPED NAME AND TITLE

February 28, 1979
DATE

250,284 tons produced in 241.35 days
 241.35 @ 18.5 lbs/day = 4,464.98 lbs.
 = 2.23 tons/yr.

Best Available Copy

ANNUAL OPERATIONS REPORT FORM
FOR AIR EMISSIONS SOURCES

For each permitted emission point, please submit a separate report for calendar year 1977.

I. GENERAL INFORMATION:

1. Source Name National Portland Cement
2. Permit Number 1041-2000
3. Source Address INDUSTRIAL PARK ROAD 2700W PALM BEACH FL 33408
Route #1, Port Manatee, Palmetto, Florida 33561
4. Description of Source Bag Filter serving Feeder silos

II. OPERATING SCHEDULE: 24 hr/day 5-6 days/wk 52 wks/yr

III. RAW MATERIAL INPUT PROCESS WEIGHT:

Raw Material	Input-Process Weight	Units
<u>Clinker</u>	<u>169,962</u>	<u>tons/yr</u>
<u>Gypsum</u>	<u>9,512</u>	<u>tons/yr</u>
_____	_____	_____
_____	_____	_____

IV. TOTAL FUEL USAGE, including auxiliary fuels. If fuel is oil, specify weight and sulfur content (e.g. 150 Gallons #2).

_____ 10 ³ cubic feet Natural Gas	_____ 10 ³ gallons Fuel Oil #2
_____ 10 ³ gallons Petroleum	_____ 10 ³ gallons Diesel
_____ tons Coal	_____ 10 ³ gallons Kerosene
_____ tons Carbonaceous	_____ 10 ³ gallons Gasoline
_____ tons Lignite	_____ 10 ³ gallons Turbine Oil
_____ tons Wood	_____ 10 ³ gallons Other
_____ tons Other	_____ 10 ³ gallons Other

V. EMISSION LEVEL (tons/yr):

- A. 2.2 Particulate
- _____ Sulfur Dioxide
- _____ Nitrogen Dioxide
- _____ Sulfur Trioxide
- Other (Specify): _____

VI. OTHER INFORMATION:

ANNUAL OPERATIONS REPORT FORM
FOR AIR EMISSIONS SOURCES

Best Available Copy

For each permitted emission point, please submit a separate report for calendar year 19 77 prior to March 1st of the following year.

I GENERAL INFORMATION:

1. Source Name: National Portland Cement
2. Permit Number: AD41-2000
3. Source Address: ~~XXXXXX Office Bldg 278; Palmetto XXXXX XXXXX~~
Route #1 Port Manatee Palmetto, Fla. 33561
4. Description of Source: Bag Filter serving Cement Storage Silo

II OPERATING SCHEDULE: 24 holiday 5-6 days/wk 52 days/yr

III RAW MATERIAL INPUT PROCESS WEIGHT:

Raw Material	Input Process Weight	tons/yr
<u>Cement</u>	<u>172,474</u>	tons
_____	_____	tons
_____	_____	tons
_____	_____	tons
_____	_____	tons

IV TOTAL FUEL USAGE, including stationary fuels. If fuel is not specify weight and sulfur content (lb. S. Gallons 10⁶).

_____ 10 ⁶ cubic feet Natural Gas	_____ 10 ⁶ gallons No. 1 Oil
_____ 10 ³ gallons Propane	_____ 10 ⁶ gallons Kerosene
_____ tons Coal	_____ 10 ⁶ lbs. wood
_____ tons Carbonaceous	_____
Other (Specify type and amount)	_____

V EMISSION LEVEL (tons/yr):

- A 2.2 Particulates
 _____ Nitrogen Oxide
 _____ Hydrocarbon
 _____ Sulfur Dioxide
 Other (Specify type and amount)

B Method of calculation: _____
 or based upon the test: _____

VI CERTIFICATION



NATIONAL PORTLAND CEMENT COMPANY OF FLORIDA, INC.

CALCULATION OF POTENTIAL EMISSIONS

FOR NEW GRINDING MILL

SOURCE	Uncontrolled Particulate Emissions		
	lbs/hr	lbs/yr	tons/yr
Clinker & Gypsum Silos	360	2,830,680	1416
Grinding Mill Ball Mill	2160	16,984,080	8492
Air Slide & Separator, Elevator, F-K Pump	2160	16,984,080	8492
Cement Storage Silo	900	7,076,700	3539

7,862,400

3932

Clink & gyp 8#/ton

48 #/ton

Cement Store 20#/ton

ATTACHMENT 6

Central Florida Testing Laboratories, Inc.

Testing Development and Research

1400 STARKEY ROAD

LARGO, FLORIDA 33541

PH (813) 585-3006 - 581-7019

DEC 19 1983

BAQM

December 16, 1983

Mr. Edward Svec, Review Engineer
Florida Department of Environmental Regulation
Bureau of Air Quality Management
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, FL 32301-8241

Re: National Portland Cement Company of Florida, Inc.

Dear Mr. Svec,

Attached please find the additional calculations you requested verbally in our December 15th meeting at your office.

Since cement manufactured in the existing 47½ TPH mill and the new 45 TPH mill will be simultaneously feed into the existing cement storage silos it will be impossible to delineate the difference between the contaminated air which will be vented through the existing Fuller and new Mikro-Pulse collectors on the cement silos. Therefore, we are willing to restrict the allowable emissions on the existing Fuller collector to 0.03 grains/dscf (5% Opacity).

As shown in the attached information the allowable emissions from the collectors on the cement storage silos will be 0.78 lb/hr from the Fuller collector and 0.35 lb/hr from the new Mikro-Pulse collector. The total allowable emissions from the cement silos will then be 1.13 lb/hr.

As discussed in our meeting this additional information will complete our applications for review. We would appreciate any effort which can be made at this time to expedite the processing of these applications, as it has been four months since we submitted them. It is my understanding that the technical review can be accomplished by the end of the year and at that time we will be able to place the 30-day public notice in the newspaper.

December 16, 1983

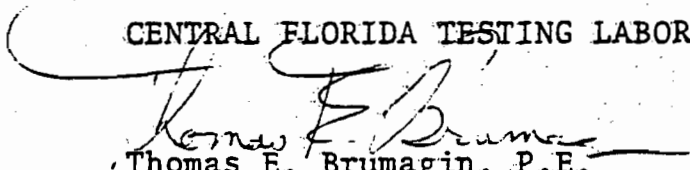
Page2

Re: National Portland Cement Company of Florida, Inc.
Cement Storage Silo (AC 41-74307)

Thank you very much for your time and cooperation in this matter. If there is any matter which I can assist you in to complete your evaluation of these applications, do not hesitate to contact our office.

Respectfully,

CENTRAL FLORIDA TESTING LABORATORIES, INC.


Thomas E. Brumagin, P.E.
Director of Environmental Services

TEB/kmj

attahcment

cc: Mr. Jake Varn - Carlton, Fields
Mr. Nick Ryan - National Portland
Mr. Jim Estler - DER - Tampa
Mr. Jim Mc Donald - MCPCD



NATIONAL PORTLAND CEMENT COMPANY OF FLORIDA, INC.
CALCULATION OF EMISSIONS FROM EXISTING CEMENT
SILOS AFTER CONSTRUCTION OF NEW 45TPH MILL

CEMENT STORAGE SILOS

Existing Fuller Dracco Plenum-Pulse 24-2-500 is controlling silo filling operation from existing 47 1/2 TPH mill as well as the truck loading operations at both silos. New Mikro-Pulse collector will control filling operation from new 45 TPH mill. Therefore, silos will be filled at a rate of 92 1/2 TPH.

Fuller Dracco Plenum-Pulse 24-2-500 Collector

F-K Pump Rating: 600 CFM
Collector Fan Draft: 3000 scfm
Outlet Temperature: 120°F
Air to Cloth Ratio: 6.0 : 1

Design information submitted with original permit application to construct facility (AC 41-2000) in 1973. See Attachment 3 from that application copy attached.

Inlet Grain Loading: 15grains/dscf
Outlet Grain Loading: 0.03 grains/dscf

Controlled Particulate Emissions (Fuller Collector)

$$E_{pa} = 0.03 \text{ grains/dscf (3000scfm) (60/7000) = 0.78 lb/hr}$$

$$C_{pa} = 0.03 \text{ grains/dscf}$$

Controlled Particulate Emissions for Cement Storage Silos with Fuller and Mikro-Pulse Baghouses

$$E_{pa} = 0.03 \text{ grains (3000scfm + 1365scfm) (60/7000) = 1.13 lb/hr}$$

$$E_{pa} = E_{pa} \text{ (Existing Collector) + } E_{pa} \text{ (New Collector)}$$

$$E_{pa} = 0.78 \text{ lb/hr + 0.35 lb/hr = 1.13 lb/hr}$$

$$C_{pa} = 0.03 \text{ grains/dscf or 5% Opacity}$$

ATTACHMENT 3 - From permit application for
existing silos at mill

Dracco Plenum 24-2-500 Bagfilter serving feeder silos

Flow Rate - 3000 scfm; Efficiency - 99.8%

Material handled here is clinker and gypsum both of which are very coarse material. The dust loading to the collector will be maximum when the drop from the top to the bottom of the silo takes place. No information is available on the expected maximum grain loading; however, the best engineering judgment would place the concentration at less than 5 grains per cubic feet. (In the estimation, it was assumed to be 15 grains maximum, a very high number indeed).

Dracco Plenum 48-5-2500 Bagfilter serving Mills

Flow Rate - 12,000 scfm; Efficiency - 99.8%

Public Health Service Publication No. 999-AF-17 entitled "Atmospheric Emissions from the Manufacture of Portland Cement" lists a value of 50 grains per cubic foot as an extremely high number for emissions from mill vents (page 16). In reality, this kind of dust loadings will be unreasonably high. However, this number was assumed in estimating the outlet concentration from this bag filter (again, this is an overestimate).

Flow rate - 3,000 scfm; Efficiency - 99.8%

Engineering judgment would place the inlet dust loading to the collector at a level much lower than the level resulting from the mill. Most probably, it will be similar to the dust loading resulting from a dry process rotary kiln, which loading varies from 6-13 grains per cubic foot (see Table 4 of above reference). It was assumed that the maximum grain loading was 15 grains in this estimation, again an overestimate.

Bagfilter	Eff. %	Volume	Inlet gr/c.f.	Outlet gr/c.f.	Emission, lbs/day
24-2-500	99.8	3,000	15.0	0.03	12.50 (High)
48-5-2500	99.8	12,000	50.0	0.10	247.00 (High)
24-2-500	99.8	3,000	15.0	0.03	12.50 (High)
Total					284 lbs/day

DRACCO PLENUM-PULSE

Automatic, Continuous Dust Collector
Model "A" (24-2-500)
Two Zone, 500 Sq. Ft. Cloth Area

I. APPLICATION

Plenum-Pulse collector provides high throughput with maximum cloth filtering area in a compact unit requiring 1/2 to 1/3 the floor space of conventional collectors for the same application. Numerous in-plant applications. Shipped pre-assembled for quick installation.

II. SPECIFICATION

General

This compact, high air-to-cloth ratio dust collector is divided into two (2) zones of twenty-four (24) bags each. Each zone is pulsed by one 1 1/2" pulse valve for cleaning and is served by one (1) poppet valve to shut off the air flow during cleaning.

Bags

Made from 14 to 16 oz/yd² polyester needled scrim supported felt. Total collector cloth area is 500 square feet or 250 square feet per zone. Bags are 5" diameter by 8' long.

Cages — Fabricated on one (1) piece of 1/8" steel wire.

Plenum Chambers — Made from 12 gauge low carbon steel.

Housing

Made from 12 gauge low carbon steel, good for 18" W.G. differential pressure.

Hopper — Single pyramid type, made from 12 gauge low carbon steel.

Hopper Discharge

By means of 8" shrouded suction type rotary lock, driven by 1/2 HP TE right angle gear motor, complete with chain drive and guard. Motor voltage 3 phase, 230/460 Volts, 60 Hz.

Structural

Fabricated steel supports to provide for 4'-0" clearance below discharge lock; designed for 100 MPH wind load.

Accessories

Solid timer, Model WQS in NEMA IV enclosure for 115 Volts, single phase, 60 Hz.

Outlet manifold assembled to the plenum chamber.

Ladder with safety cage and handrail around perimeter of collector.

U-tube manometer.

Receiver tank and loose piping from receiver tank to pulse valves and pulse pilot valves.

Miscellaneous

200° F. temperature ratings for seals and gaskets. High temperature seals to 450° F. available on request. Single prime coat of Fuller standard red iron oxide primer inside and outside.

Assembly

Housing completely assembled.

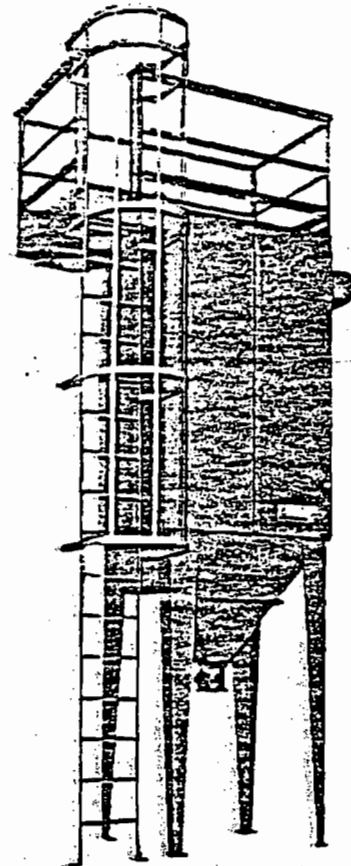
Hopper and supports assembled to housing.

Pulse valves and air header are pre-assembled and shipped in sections.

Bags and cages installed on open bottom units only.

Outside compressed air supply (70 to 100 psig) required.

Note: Any deviation from these specifications and/or Fuller's general arrangement drawings may result in additional engineering and equipment charges and delivery delays.



DRACCO PLENUM-PULSE

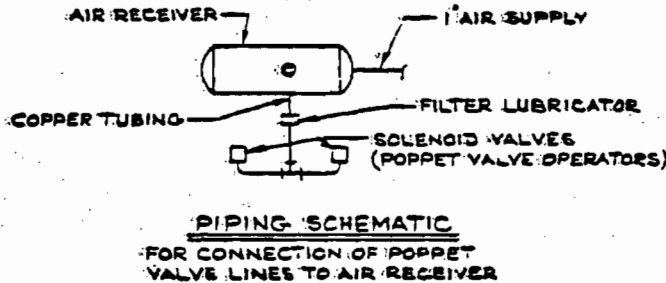
Automatic, Continuous Dust Collector
 Model "A" (24-2-500)
 Two Zone, 500 Sq. Ft. Cloth Area

III. ORDER DATA: Specify the following:

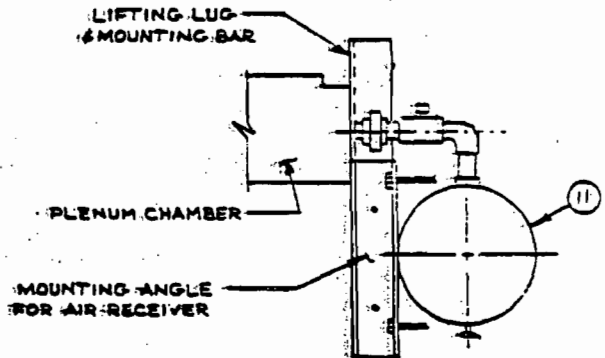
- a) quantity: _____
- b) description: DRACCO PLENUM-PULSE Model "A"
- c) mounting: open bottom or hopper and supports
- d) part no: _____

Model	Part No.	Maximum Cap. SCFM	No. of Bags	Cloth Area Sq. Ft.
Type A — Open Bottom	325-74-4-0391-00	6000	48	500
Type A — with Hopper	325-74-4-0341-00	same	same	same

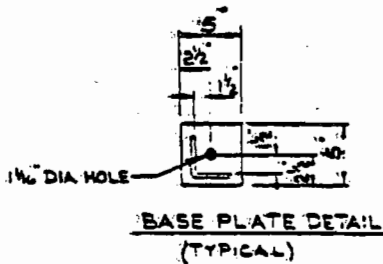
Note: Additional capacity models are available on special order. Consult the ENGINEERED EQUIPMENT SECTION for the full line of DRACCO dust collection equipment.



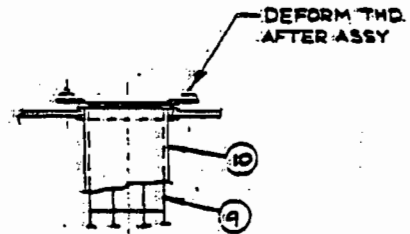
Piping Schematic



Section 'A-A'



Base Plate Detail



Section 'B-B'