Florida Department of Environmental Protection

Bob Martinez Center
2600 Blairstone Road
Tallahassee, Florida 32399-2400

Charlie Crist
Governor
Jeff Kottkamp
Lt. Governor
Michael W. Sole
Secretary

April 4, 2008

Electronically sent – Received Receipt requested.

jimmy.rabon@cemex.com
Jimmy L. Rabon, Plant Manager
CEMEX Cement, Inc.
North Brooksville Cement Plant
16301 Ponce De Leon Boulevard
Brooksville, Florida 34614-0849

Re: DEP File No. 0530010-036-AC
North Brooksville Cement Plant – Kilns 1 and 2
Thallium and Mercury Sampling and Analysis

Dear Mr. Rabon:

On November 15, 2007 CEMEX submitted a proposal to reduce the frequency of thallium sampling and analysis of the filter dust in Kiln 1 and implement mercury sampling and analysis of the raw materials and fuels used in Kilns 1 and 2. The proposal was made in conjunction with the lapse of the extension of time to file a petition in the matter of a previous permit (DEP File No. 0530010-018-AC) that was issued on January 24, 2008. The present file was opened on the same date. Enclosed are the following documents:

- The Technical Evaluation and Preliminary Determination document summarizes the Permitting Authority's technical review of the application and provides the rationale for making the preliminary determination to issue a Draft Permit.
- The proposed Draft Permit includes the specific conditions that regulate the emissions units covered by the proposed project.
- The Written Notice of Intent to Issue Air Permit provides important information regarding: the Permitting Authority's intent to issue an air permit for the proposed project; the requirements for publishing a Public Notice of the Permitting Authority's intent to issue an air permit; the procedures for submitting comments on the Draft Permit; the process for filing a petition for an administrative hearing; and the availability of mediation.
- The Public Notice of Intent to Issue Air Permit is the actual notice that you must have published in the legal advertisement section of a newspaper of general circulation in the area affected by this project.

If you have any questions, please contact the Project Engineer, Teresa Heron, at 850-921-9529 or Alvaro Linero, Program Administrator at (850)921-9523.

Sincerely,

Trina L Vielhauer

Trina Vielhauer, Chief
Bureau of Air Regulation

TLV/aal/th

Enclosures

WRITTEN NOTICE OF INTENT TO ISSUE AIR PERMIT

In the Matter of an
Application for Air Permit by:

Mr. Jimmy L. Rabon, Plant Manager
North Brooksville Cement Plant
CEMEX Cement, Inc.
16301 Ponce De Leon Boulevard
Brooksville, Florida 34614-0849
_____/

DEP File No. 0530010-036-AC
North Brooksville Cement Plant
Portland Cement Kilns 1 and 2
Thallium and Mercury Sampling
Filter Dust, Raw Materials and Fuel
Hernando County, Florida

Facility Location: The applicant, CEMEX Cement, Inc. (CEMEX) operates the existing North Brooksville Cement Plant, which is located in Hernando County at 16301 Ponce De Leon Boulevard, northwest of Brooksville, Florida.

Project: On November 15, 2007 CEMEX submitted a revised proposal to reduce the frequency of thallium sampling and analysis of the Kiln 1 baghouse filter dust and to implement mercury sampling and analysis of the raw materials and fuels used in Kilns 1 and 2. The proposal was made in conjunction with the lapse of the extension of time to file a petition in the matter of a previous permit (DEP File No. 0530010-018-AC) that was subsequently issued on January 24, 2008. The present file was opened on the same date.

The Department will maintain the present daily sampling requirement for thallium but will reduce the requirement to analyze and record those samples to once per week. The Department will also require the applicant to sample mercury in raw materials, baghouse filter dust, and fuels to the process on a daily basis, analyze those samples periodically and calculate the monthly and 12-month mercury throughput.

Permitting Authority: Applications for air construction permits are subject to review in accordance with the provisions of Chapter 403, Florida Statutes (F.S.) and Chapters F.A.C. 62-4, 62-210, and 62-212. The proposed project is not exempt from air permitting requirements and an air permit is required to perform the proposed work. The Bureau of Air Regulation is the Permitting Authority responsible for making a permit determination for this project. The Permitting Authority's physical address is: 111 South Magnolia Drive, Suite 4, Tallahassee, Florida. The Permitting Authority's mailing address is: 2600 Blair Stone Road, Mail Station (MS) 5505, Tallahassee, Florida 32399-2400. The Permitting Authority's telephone number is 850/488-0114.

Project File: A complete project file is available for public inspection during the normal business hours of 8:00 a.m. to 5:00 p.m., Monday through Friday (except legal holidays), at address indicated above for the Permitting Authority. The complete project file includes the Draft Permit, the Technical Evaluation and Preliminary Determination, the application, and the information submitted by the applicant, exclusive of confidential records under Section 403.111, F.S. Interested persons may contact the Permitting Authority's project review engineer for additional information at the address or phone number listed above. In addition, electronic copies of these documents are available by entering the file number provided above where indicted on the following web site:
http://www.dep.state.fl.us/air/eproducts/apds/default.asp .

Notice of Intent to Issue Permit: The Permitting Authority gives notice of its intent to issue an air permit to the applicant for the project described above. The applicant has provided reasonable assurance that operation of the proposed equipment will not adversely impact air quality and that the project will comply with all appropriate provisions of Chapters 62-4, 62-204, 62-210, 62-212, 62-296, and 62-297, F.A.C. The Permitting Authority will issue a Final Permit in accordance with the conditions of the proposed Draft Permit unless a timely petition for an administrative hearing is filed under Sections 120.569 and 120.57, F.S. or unless public comment received in accordance with this notice results in a different decision or a significant change of terms or conditions.

Public Notice: Pursuant to Section 403.815, F.S. and Rules 62-110.106 and 62-210.350, F.A.C., you (the applicant) are required to publish at your own expense the enclosed Public Notice of Intent to Issue Air Permit (Public Notice). The Public Notice shall be published one time only as soon as possible in the legal advertisement section of a newspaper of general circulation in the area affected by this project. The newspaper used must meet the requirements of Sections 50.011 and 50.031, F.S. in the county where the activity is to take place. If you are uncertain that a newspaper meets these requirements, please contact the Permitting Authority at above address or phone number. Pursuant to Rule 62-110.106(5) and (9), F.A.C., the applicant shall provide proof of publication to the Permitting Authority at the above address within 7 days of publication. Failure to publish the notice and provide proof of publication may result in the denial of the permit pursuant to Rule 62-110.106(11), F.A.C.

Comments: The Permitting Authority will accept written comments concerning the proposed Draft Permit for a period of 14 days from the date of publication of the Public Notice. Written comments must be postmarked by the Permitting Authority by close of business (5:00 p.m.) on or before the end of this 14-day period. If written comments received result in a significant change to the Draft Permit, the Permitting Authority shall revise the Draft Permit and require, if applicable, another Public Notice. All comments filed will be made available for public inspection.

Petitions: A person whose substantial interests are affected by the proposed permitting decision may petition for an administrative hearing in accordance with Sections 120.569 and 120.57, F.S. The petition must contain the information set forth below and must be filed with (received by) the Department's Agency Clerk in the Office of General Counsel of the Department of Environmental Protection, 3900 Commonwealth Boulevard, MS 35, Tallahassee, Florida 32399-3000. Petitions filed by the applicant or any of the parties listed below must be filed within 14 days of receipt of this Written Notice of Intent to Issue Air Permit. Petitions filed by any persons other than those entitled to written notice under Section 120.60(3), F.S., must be filed within 14 days of publication of the attached Public Notice or within 14 days of receipt of this Written Notice of Intent to Issue Air Permit, whichever occurs first. Under Section 120.60(3), F.S., however, any person who asked the Permitting Authority for notice of agency action may file a petition within 14 days of receipt of that notice, regardless of the date of publication. A petitioner shall mail a copy of the petition to the applicant at the address indicated above, at the time of filing. The failure of any person to file a petition within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under Sections 120.569 and 120.57, F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention (in a proceeding initiated by another party) will be only at the approval of the presiding officer upon the filing of a motion in compliance with Rule 28-106.205, F.A.C.

A petition that disputes the material facts on which the Permitting Authority's action is based must contain the following information: (a) The name and address of each agency affected and each agency's file or identification number, if known; (b) The name, address, and telephone number of the petitioner; the name, address and telephone number of the petitioner's representative, if any, which shall be the address for service purposes during the course of the proceeding; and an explanation of how the petitioner's substantial interests will be affected by the agency determination; (c) A statement of when and how each petitioner received notice of the agency action or proposed decision; (d) A statement of all disputed issues of material fact. If there are none, the petition must so state; (e) A concise statement of the ultimate facts alleged, including the specific facts the petitioner contends warrant reversal or modification of the agency's proposed action; (f) A statement of the specific rules or statutes the petitioner contends require reversal or modification of the agency's proposed action including an explanation of how the alleged facts relate to the specific rules or statutes; and, (g) A statement of the relief sought by the petitioner, stating precisely the action the petitioner wishes the agency to take with

respect to the agency's proposed action. A petition that does not dispute the material facts upon which the Permitting Authority's action is based shall state that no such facts are in dispute and otherwise shall contain the same information as set forth above, as required by Rule 28-106.301, F.A.C.

Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the Permitting Authority's final action may be different from the position taken by it in this Written Notice of Intent to Issue Air Permit. Persons whose substantial interests will be affected by any such final decision of the Permitting Authority on the application have the right to petition to become a party to the proceeding, in accordance with the requirements set forth above.

Mediation: Mediation is not available in this proceeding.

Executed in Tallahassee, Florida.

Trina L. Vielhauer, Chief
Bureau of Air Regulation

CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this Notice of Intent to Issue Air Permit package (including the Written Notice of Intent to Issue Air Permit, Public Notice of Intent to Issue Air Permit, the Technical Evaluation and Preliminary Determination, and the Draft Permit) was sent by electronic mail with received receipt requested before the close of business on **April 4, 2008** 2008 to the persons listed:

Jimmy L. Rabon, CEMEX: jimmy.rabon@cemexusa.com
Charles Walz, CEMEX: charles.walz@cemexusa.com
Amarjits Gill, CEMEX: amarjits.gill@cemexusa.com
Mara Nasca, DEP SWD: mara.nasca@dep.state.fl.us
John Koogler, P.E. K&A: jkoogler@kooglerassociates.com
Fawn Bergen, P.E., K&A: fbergen@kooglerassociates.com
Administrator, Hernando County gkuhl@hernandocounty.us
Segundo J. Fernandez, Esq., OHF&C: sfernandez@ohfc.com
Jim Little, EPA Region 4: little.james@epamail.epa.gov
Kathy Forney, EPA Region 4: forney.kathleen@epamail.epa.gov

Clerk Stamp

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

(Clerk) 4/4/08 (Date)

PUBLIC NOTICE OF INTENT TO ISSUE AIR PERMIT

Florida Department of Environmental Protection
Division of Air Resource Management, Bureau of Air Regulation
Draft Air Permit No. 0530010-036-AC
CEMEX Cement, Inc., North Cement Plant Kilns 1 and 2
Hernando County

Applicant: The applicant for this project is CEMEX Cement, Inc. The applicant's authorized representative and mailing address is: Mr. Jimmy L. Rabon, Plant Manager, Cemex North Brooksville Cement Plant, 16301 Ponce De Leon Boulevard, Brooksville, Florida 34614-0849.

Facility and Location: The applicant, CEMEX, operates the existing North Brooksville Cement Plant, located in Hernando County at 16301 Ponce De Leon Boulevard, northwest of Brooksville, Florida. The plant currently consists of: two portland cement lines designated as Lines 1 and 2, including two Polysius GEPOL preheater kilns (Kilns 1 and 2), two clinker coolers, associated raw mills, finish mills, cement and clinker handling equipment, coal handling equipment, silos, air pollution control devices, raw material extraction and receiving facilities and product shipping facilities.

Project: CEMEX submitted a proposal to reduce the frequency of thallium (Tl) sampling and analysis of the Kiln 1 baghouse filter dust and to implement mercury (Hg) sampling and analysis of the raw materials and fuels used in Kilns 1 and 2.

The Department will maintain the present daily sampling requirement for thallium but will reduce the requirement to analyze and record those samples to once per week. The Department will also require the applicant to sample mercury in raw materials, baghouse filter dust, and fuels to the process on a daily basis, analyze those samples periodically and calculate the monthly and 12-month mercury throughput.

Permitting Authority: Applications for air construction permits are subject to review in accordance with the provisions of Chapter 403, Florida Statutes (F.S.) and Chapters F.A.C. 62-4, 62-210, and 62-212. The proposed project is not exempt from air permitting requirements and an air permit is required to perform the proposed work. The Bureau of Air Regulation is the Permitting Authority responsible for making a permit determination for this project. The Permitting Authority's physical address is: 111 South Magnolia Drive, Suite 4, Tallahassee, Florida. The Permitting Authority's mailing address is: 2600 Blair Stone Road, Mail Station (MS) 5505, Tallahassee, Florida 32399-2400. The Permitting Authority's telephone number is 850/488-0114.

Project File: A complete project file is available for public inspection during the normal business hours of 8:00 a.m. to 5:00 p.m., Monday through Friday (except legal holidays), at address indicated above for the Permitting Authority. The complete project file includes the Draft Permit, the Technical Evaluation and Preliminary Determination, the application, and the information submitted by the applicant, exclusive of confidential records under Section 403.111, F.S. Interested persons may contact the Permitting Authority's project review engineer for additional information at the address or phone number listed above. In addition, electronic copies of these documents are available by entering the file number provided above where indicted on the following web site:
http://www.dep.state.fl.us/air/eproducts/apds/default.asp .

Notice of Intent to Issue Permit: The Permitting Authority gives notice of its intent to issue an air permit to the applicant for the project described above. The applicant has provided reasonable assurance that operation of the proposed equipment will not adversely impact air quality and that the project will comply with all appropriate provisions of Chapters 62-4, 62-204, 62-210, 62-212, 62-296, and 62-297, F.A.C. The Permitting Authority will issue a Final Permit in accordance with the conditions of the proposed Draft Permit unless a timely petition for an administrative hearing is filed under Sections

120.569 and 120.57, F.S. or unless public comment received in accordance with this notice results in a different decision or a significant change of terms or conditions.

Comments: The Permitting Authority will accept written comments concerning the proposed Draft Permit for a period of 14 days from the date of publication of the Public Notice. Written comments must be postmarked by the Permitting Authority by close of business (5:00 p.m.) on or before the end of this 14-day period. If written comments received result in a significant change to the Draft Permit, the Permitting Authority shall revise the Draft Permit and require, if applicable, another Public Notice. All comments filed will be made available for public inspection.

Petitions: A person whose substantial interests are affected by the proposed permitting decision may petition for an administrative hearing in accordance with Sections 120.569 and 120.57, F.S. The petition must contain the information set forth below and must be filed with (received by) the Department's Agency Clerk in the Office of General Counsel of the Department of Environmental Protection at 3900 Commonwealth Boulevard, Mail Station 35, Tallahassee, Florida 32399-3000. Petitions filed by any persons other than those entitled to written notice under Section 120.60(3), F.S. must be filed within 14 days of publication of this Public Notice or receipt of a written notice, whichever occurs first. Under Section 120.60(3), F.S., however, any person who asked the Permitting Authority for notice of agency action may file a petition within 14 days of receipt of that notice, regardless of the date of publication.

A petitioner shall mail a copy of the petition to the applicant at the address indicated above, at the time of filing. The failure of any person to file a petition within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under Sections 120.569 and 120.57, F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention (in a proceeding initiated by another party) will be only at the approval of the presiding officer upon the filing of a motion in compliance with Rule 28-106.205, F.A.C.

A petition that disputes the material facts on which the Permitting Authority's action is based must contain the following information: (a) The name and address of each agency affected and each agency's file or identification number, if known; (b) The name, address, and telephone number of the petitioner; the name, address and telephone number of the petitioner's representative, if any, which shall be the address for service purposes during the course of the proceeding; and an explanation of how the petitioner's substantial interests will be affected by the agency determination; (c) A statement of when and how each petitioner received notice of the agency action or proposed decision; (d) A statement of all disputed issues of material fact. If there are none, the petition must so state; (e) A concise statement of the ultimate facts alleged, including the specific facts the petitioner contends warrant reversal or modification of the agency's proposed action;
(f) A statement of the specific rules or statutes the petitioner contends require reversal or modification of the agency's proposed action including an explanation of how the alleged facts relate to the specific rules or statutes; and, (g) A statement of the relief sought by the petitioner, stating precisely the action the petitioner wishes the agency to take with respect to the agency's proposed action. A petition that does not dispute the material facts upon which the Permitting Authority's action is based shall state that no such facts are in dispute and otherwise shall contain the same information as set forth above, as required by Rule 28-106.301, F.A.C.

Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the Permitting Authority's final action may be different from the position taken by it in this Public Notice. Persons whose substantial interests will be affected by any such final decision of the Permitting Authority on the application have the right to petition to become a party to the proceeding, in accordance with the requirements set forth above.

Mediation: Mediation is not available in this proceeding.

(Public Notice to be Published in the Newspaper)

TECHNICAL EVALUATION

CEMEX Cement, Inc.
North Brooksville Cement Plant

Thallium and Mercury Sampling and Analysis

Kilns 1 and 2

Hernando County

DEP File No. 0530010-036-AC

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

April 4, 2008

I. APPLICATION INFORMATION

A. Applicant

Jimmy L. Rabon, Plant Manager
CEMEX Cement, Inc.
North Brooksville Cement Plant
16301 Ponce de Leon Blvd.
Brooksville, Florida 34601

B. Processing Schedule

- The Department's Bureau of Air Regulation (BAR) received an application (0530010-018-AC) on October 14, 2005 that included several requests, one of which was to remove the Kiln 1 filter dust thallium (Tl) sampling and analysis requirement from the applicable permits.
- On August 3, 2007 the Department distributed the Public Notice package for project 0530010-018-AC approving the requests with the exception of the request to remove Tl requirements.
- Cemex requested several extensions of time to file a petition with the Department Office of General Counsel. The final extension expired on November 15, 2007. A petition was not filed and the OGC case file was closed on December 5, 2007.
- On November 15, 2007 CEMEX submitted a proposal to reduce the frequency of thallium sampling and analysis of the filter dust in Kiln 1 and to implement mercury sampling and analysis of the raw materials and fuels used in Kilns 1 and 2.
- The Department issued the final permit on January 24, 2008. By previous agreement the present project (0530010-036-AC) was opened simultaneously to address CEMEX's proposal on thallium and mercury.
- The Department distributed the Public Notice Package for project 0530010-036-AC on April 4, 2008.

C. Facility Location

The CEMEX North Brooksville Cement Plant is located on Highway 98, northwest of Brooksville in Hernando County. The following figure shows the location of the facility.

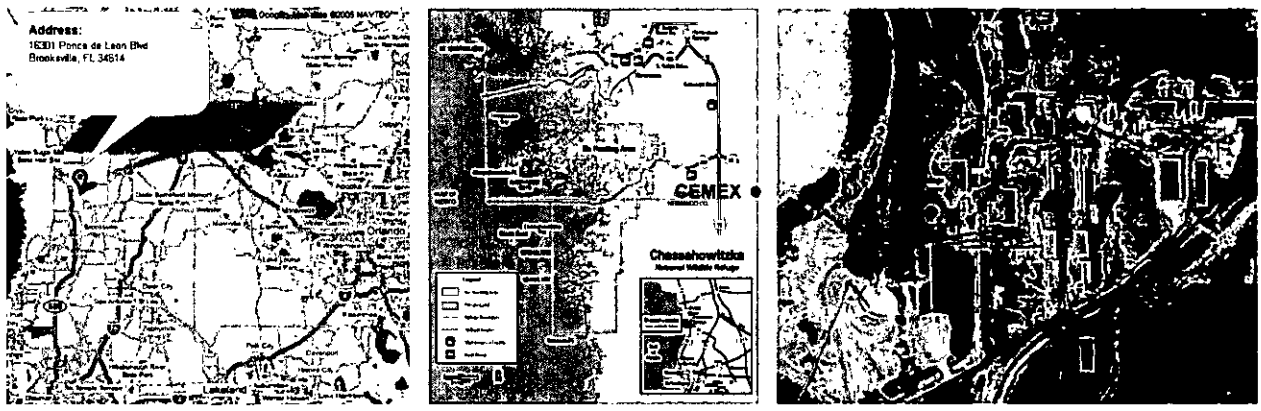

Figure 1. Location of CEMEX N. Brooksville Plant, Chassahowitzka NWR, Aerial Photograph

D. Facility Classification Code (SIC)

Major Group No. 32, Clay, Glass, and Concrete Products
Industry Group No. 324 Cement, Hydraulic

E. Regulatory Categories

This project is subject to the applicable environmental laws in Section 403 of the Florida Statutes (F.S.). The Florida Statutes authorize the Department of Environmental Protection (Department) to establish rules regarding air quality in the Florida Administrative Code (F.A.C.). The facility is classified according to the following major regulatory categories.

- The facility is a major source of hazardous air pollutants (HAP).
- The facility does not operate units subject to the acid rain provisions of the Clean Air Act.
- The facility is a Title V major source of air pollution in accordance with Chapter 213, F.A.C.
- The facility is a major stationary source pursuant to Rule 62-212.400, F.A.C. for the Prevention of Significant Deterioration (PSD) of Air Quality.

F. Facility Description

The existing North Brooksville Cement Plant consists of two lines (Lines 1 and 2). Lines 1 and 2 include Polysius GEPOL preheater kilns (Kilns 1 and 2) and clinker cooler (Coolers 1 and 2). A picture of one of the kilns with preheater tower and raw meal homogenizing silo can be seen in Figure 2. Lines 1 and 2 are separately permitted with respect to preheater material feed rates and fuel heat input rates. Ancillary equipment at the plant includes a quarry, raw material handling and conveying equipment, raw mills, finish mills, cement and clinker handling equipment, coal handling equipment and silos, and particulate control/dust collection and recycling equipment.

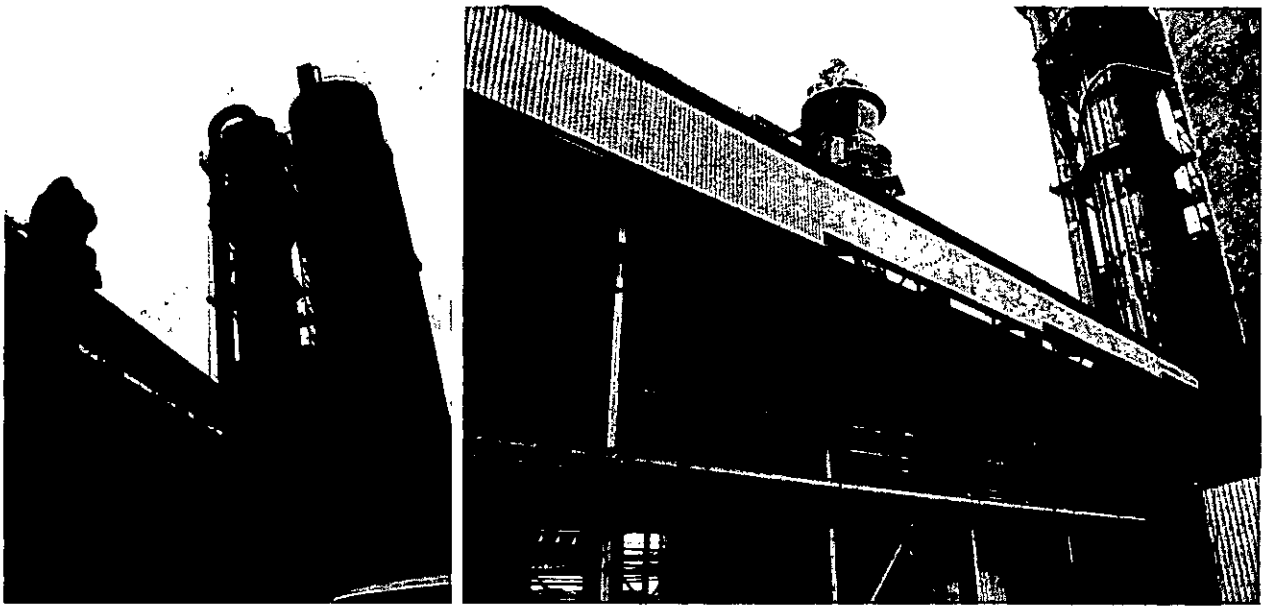

Figure 2. Polysius GEPOL Preheater Kiln at CEMEX North Brooksville Plant

Large, fabric filter systems (baghouses) are used to capture PM/PM_{10} from each kiln and from each clinker cooler (four total). Smaller baghouses are used to limit particulate emissions from other process emissions points. Raw material properties, chemical reactions in the kilns,

absorption into the clinker, and combustion controls minimize emissions of NO_X, SO_2, CO, and VOC.

Both CEMEX North Brooksville kilns are limited to 150 tons dry preheater feed per hour (30 day average) with a maximum of 165 tons preheater feed in any given hour. Both kilns are permitted to burn a variety of fuels, including coal, No. 2 fuel oil, No. 4 fuel oil, No. 5 fuel oil, No. 6 fuel oil, natural gas, and on-site generated, non-hazardous waste used oil, grease, and rags. Kiln No. 1 is also permitted to fire whole tire derived fuel (TDF) at a rate up to 20 percent of the total heat input.

G. Application Requests

Simultaneously with the expiration of the extension of time to file a petition (November 15, 2007), the applicant submitted a proposal to reduce the frequency of Tl sampling of the Kiln 1 baghouse filter dust and to add requirements for Hg sampling of raw materials and fuel used in Kilns 1 and 2.

The present condition applicable to Kiln 1 is given in the facility Title V operating permit as:

B.20. *Daily sampling and recording of the baghouse dust for the No. 1 kiln is required. The concentration of thallium in the baghouse dust shall not exceed 1.5%, per sample. Compliance shall be demonstrated using the "Thallium Concentration Monitoring and Analysis Procedure" as described in Mr. Bob Roger's letter to Dr. John Koogler, dated January 12, 1994 (Attachment #9 of Construction Permit AC27-240349). [Air Construction Permit AC27-240349]*

Originally the applicant requested removal of the Tl requirement. The language in the November 15, 2007 proposal is as follows:[1]

Mercury and Thallium Compliance Demonstration: The permittee shall determine monthly and annual emission rates for mercury (Hg) and monthly concentrations of thallium (Tl) by using the following procedures:

Weekly samples shall be taken of raw material components and coal fed to Kiln No. 1 and 2. A monthly composite sample will be made from weekly samples of raw material components and coal feed. Each monthly composite raw materials components sample shall be analyzed to determine Hg (Kilns 1 and 2) and Tl (Kiln 1 only) concentrations representative for the month and each monthly composite sample shall be analyzed to determine Hg concentrations representative for the month. The analytical methods used to determine Hg concentration shall be EPA or ASTM methods such as EPA 1631 or 7471A and to determine Tl concentration shall be by current in-house quality control (QC) laboratory x-ray analysis. If the concentrations are below the method detection limits or below the limits of quantification, the method detection limit will be assumed for the concentration of the raw material components or coal.

For mercury only: The monthly rate (lbs/month) shall be the product of the Hg concentration of the monthly samples and the respective mass of raw material components feed and coal introduced into the pyroprocessing system. The consecutive 12-month Hg throughput rate shall be the sum of the individual monthly records for the current month and the preceding eleven months (pounds of Hg per consecutive 12-months). Such records, including calculations and data, shall be completed no later than 30 days following each month.

II. DEPARTMENT REVIEW OF REQUEST

A. Behavior of Mercury and Tl in a Cement Kiln

Some of the following discussion was extracted from a report prepared by the Institut für Ökologie und Politik GmbH (Ökopol).[2] For the purposes of the discussion, the figure below was taken from a European Cement Bureau report and modified by the Department. The design shown includes a cyclone preheater rather than the GEPOL design used on Kilns 1 and 2.

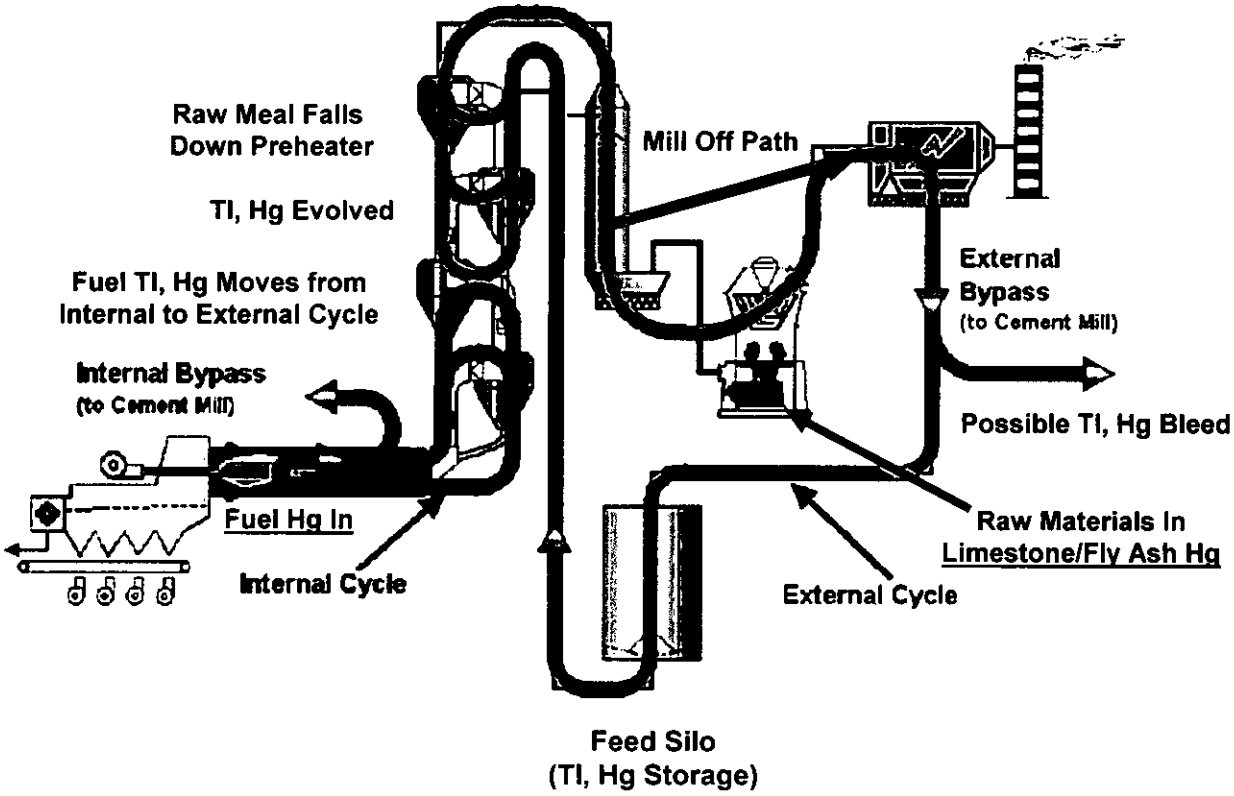

Figure 3. Cycles and Behavior of Tl and Hg in a Cement Kiln including possible Bleed Streams

A fundamental feature of cement production in rotary kilns is the counter-current principle: solid material moves in one direction from the cold side to the hot end of the system (top to bottom and right to left in the diagram) while hot gases are moving the opposite way towards the cold end of the system. In a preheater, the solid material passes through a temperature gradient from roughly 300 °C at the entrance of the preheater to more than 800 °C at the point where the material enters the rotary kiln.

Some chemical elements (and also organic substances) will be absorbed to the solid material at 300 °C but will eventually evaporate as the material moves down to hotter zones of the preheater. The evaporated substances are transported back upwards in the preheater by the hot gases that come from the main burner of the rotary kiln. At lower temperatures, they will condense again on the surface of new raw material and thus travel down the preheater, until they evaporate again.[3]

The most prominent element which is trapped inside the preheater by this mechanism is Tl. Continuous addition of traces of Tl contained in natural raw materials can thus lead to an enormous enrichment in the "inner circuit" of the preheater within the external cycle shown in the figure above. This leads to an increase of Tl emissions over time.[4]

The described phenomenon can be visualized from Figure 4 below that was taken from Dr. Siegbert Sprung's highly respected cement industry book.[5] The Tl material flows within the process are indicated by the width of the various lines. By comparison with the incoming raw materials and fuel, the flows trapped within the system are enriched by at least an order of magnitude. If there is no bypass such as shown in Figure 3, enrichment will continue until the Tl flows in with the raw materials and fuel equal the Tl flows out with the filtered exhaust gas and the clinker.

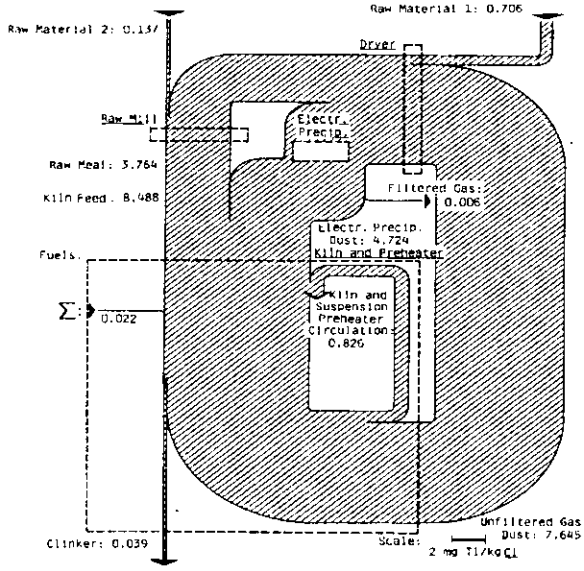

Figure 4. Tl in Preheater Kiln with Mill on

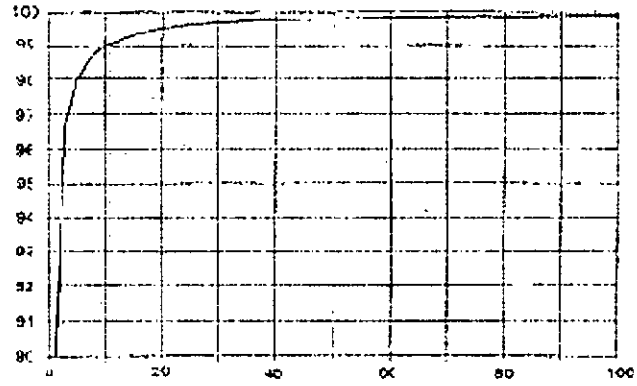

Figure 5. Hg removed (%) versus Electrostatic Precipitator Dust removed (%)

Hg is even more volatile than Tl and depending on operating conditions will form its own inner circuit or be almost completely emitted. Depending on their physico-chemical properties, the maximum enrichment levels of different elements will be at different positions along the temperature gradient inside the preheater.[6] The maximum enrichment point can also occur in the raw mill, raw meal recovery equipment and the final particulate matter control device (PMCD) such as an electrostatic precipitator (ESP) or fabric filter baghouse.

In order to interrupt the continuous enrichment of elements, Dr. Sprung suggested removal of a certain proportion of dust from the preheater and adding it directly to the product cement without passing it through the hot rotary kiln. This operational procedure is usually called a bypass and is regularly installed in many cement kilns in Europe.

Figure 5 above was developed during testing conducted at the Siggenthal Cement Plant in Switzerland.[7] It suggests that relatively low level ESP dust withdrawal (external bypass) is very effective in reducing Hg emissions for that particular installation. According to a report regarding the Siggenthal Plant:

"The purposeful partial removal of the finest particle fractions from the electrostatic precipitator bin relieves the Hg cycle. This collected dust (as direct addition to clinker or cement) comprises approximately 2 tons per hour of the cement supplied for concrete production."

Similarly, the following paraphrased abstract is from a paper by the Forschungsinstitut der Verein Deutscher Zementindustrie (VDZ) regarding operational factors that affected Hg emissions from two German cement kilns.[8]

"Because of its vapor pressure characteristics, the Hg is not retained in the kiln or preheater. Depending on exhaust gas temperature it passes with the raw gas into the downstream systems. The Hg which has been introduced builds up in the external recirculation system between the preheater, PMCD and raw mill. The feed silo serves as a temporary buffer which feeds the Hg back into the preheater after a time delay. To limit the external Hg recirculating system and to minimize the Hg emissions it is expedient to remove some of the meal (actually dust) from the PMCD especially during periods of direct (raw mill down) operation."

B. Present Mercury and Thallium Sampling Requirements

There are no sampling, analysis and reporting requirements for Hg under the present permits applicable to the North Brooksville Cement Plant. The requirement (previously described as condition B.20) to conduct daily sampling for Tl in the control equipment dust was included in a 1993 permit at the request of the Hernando County Board of County Commissioners. The permit was issued as an approval by the Department of a request by the previous owner (Florida Mining and Manufacturing) to burn tires in Kiln 1. According to the previous operator:

"[t]he Tl concentration is in the kiln/mill baghouse dust. We monitor the concentration of Tl on a daily basis and as we see the concentration increase, we remove a portion of the dust from the system and dispose of it in an authorized landfill. The removal is generally done on a day when the raw mill is down and the baghouse load is at minimum level, which conversely brings the Tl concentration in the dust to maximum level. This allows us to remove maximum Tl from the system.

"Immediately upon taking the raw mill down, we start to take samples of the baghouse dust every hour. These samples are analyzed by X-Ray Fluorescence (XRF) and the indicated concentration is recorded. When concentration level reaches approximately 0.8% we begin to load a tanker truck with the dust. We continue to monitor the concentration as the truck is being loaded and the final dust sample is taken at the end of the loading operation. The indicated concentration at the end of the truck loading will generally be in the 0.3% to 0.4% range. We average the first and last sample that went into the truck for the average concentration of the load. The normal average will be approximately 0.5% to 0.6% on the truck load of 14 to 16 tons of dust."

The purpose of the requirement was to control the tendency of Tl to build up in the external cycle comprised of the upper preheater, raw mill, control equipment and feed silo. As described in the previous section, relief of the Tl buildup via a bypass reduces both short term maximum Tl emissions and long term emissions. The sampling and analysis does not directly or indirectly measure Tl emissions; however the effect is to reduce both short term and long term average emissions of Tl by removing the dust based upon the analysis.

The above discussion is consistent with the behavior of Tl as described in the previous section and the concept of dust removal is similar to that proposed by Dr. Sprung. Finally, it is also noted that 14 to 16 tons of dust in the described truckload from Kiln 1 would represent about 165 pounds (lb) of Tl at the average concentration of 0.5 to 0.6% Tl. This is a seemingly large amount of Tl.

Assuming 1,400,000 tons per year of raw materials and fuel used in Kiln 1 per year and 1 part per million (ppm) by weight of Tl in the fuels and raw materials there would be approximately 1.4 tons (2,800 lb) of Tl introduced into the system per year. The removal rate for a truck seems consistent with such an assumption. However, the origin of the Tl would most likely be skewed towards one of two specific raw material or fuel sources.

C. Dust Removal Practices from Kiln 1.

The permit requires daily Tl sampling and recording and limits the Tl concentration in the dust to 1.5% (15,000 ppm). It does not actually specify dust removal, which was already routinely practiced and apparently triggered by much lower Tl concentrations than 1.5% before that value was included in the permit. A concentration of 1.5% if actually reached would represent a much than the degree of enrichment than the scenario shown in Figure 4.

CEMEX stated in a response to a request for additional information (RAI) that they have not wasted baghouse dust for the past four years (as of March 2006) for purpose of controlling the thallium concentration of the dust or for any other purpose.[9, 10] They also stated:

"Tl monitoring for the past two years (as of March 1, 2006) has shown that the concentration of Tl in kiln dust has consistently been below the action level of 1.5%. The monthly average Tl concentration for the two year period has been 0.31% and the range of individual Tl concentrations has been 0.02-1.33%."

In a subsequent letter, CEMEX further updated previous comments as follows:[11]

"Currently, the sampling of Kiln No. 1 baghouse dust for thallium concentrations is performed daily. In the last 5 years (as of March 2007) none of these tests have shown any thallium concentrations that would exceed the permit limit of 1.5%. The area currently being mined for limestone on the plant property has gradually turned toward the southwest over the last 6 years. The old mining area directly west of the plant was mined out and closed in the mid to late 1990's.

"It seems as CEMEX has moved its' mining area toward the south/southwest of the plant area, the thallium levels have dropped in the limestone, therefore, the thallium concentrations in the baghouse dust have also dropped. Because of this, CEMEX is requesting removal of the sampling requirement, or a less frequent sampling schedule ***(e.g., quarterly sampling)*** *for thallium concentrations in Kiln No. 1." (Bolding and underlining by the Department)*

D. Typical Mercury Monitoring and Analysis Practices for Cement Kilns in Florida

The CEMEX North Brooksville Cement Plant and recently acquired South Brooksville Cement Plant are the only ones Florida that do not sample and analyze raw material and fuel samples as a surrogate to long term Hg emissions measurement.

While the existing CEMEX South Brooksville Cement Plant does not have Hg monitoring requirements, CEMEX is presently completing construction of a new kiln at the South Brooksville Cement Plant. The new kiln is actually subject to annual Hg emission limit based on Hg sampling, analysis and reporting of the incoming raw materials and fuels.

Following is a graphic representation of the manner by which samples of the Hg inputs are collected by most operators of cement kilns in Florida.[12]

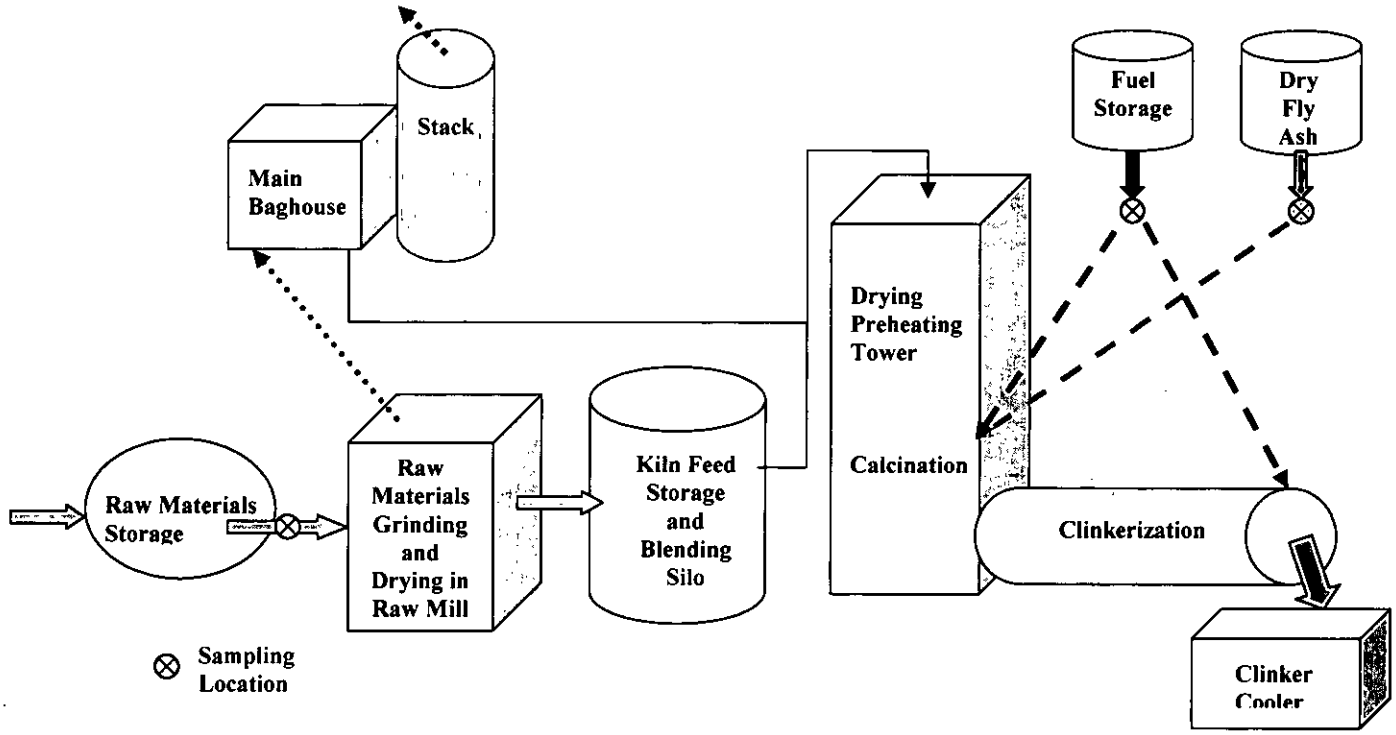

Figure 6. Hg Monitoring Sampling Locations.

The following figure shows a typical breakdown (though not necessarily representative of the CEMEX plant) of the raw material and fuel sources of Hg entering the cement process.

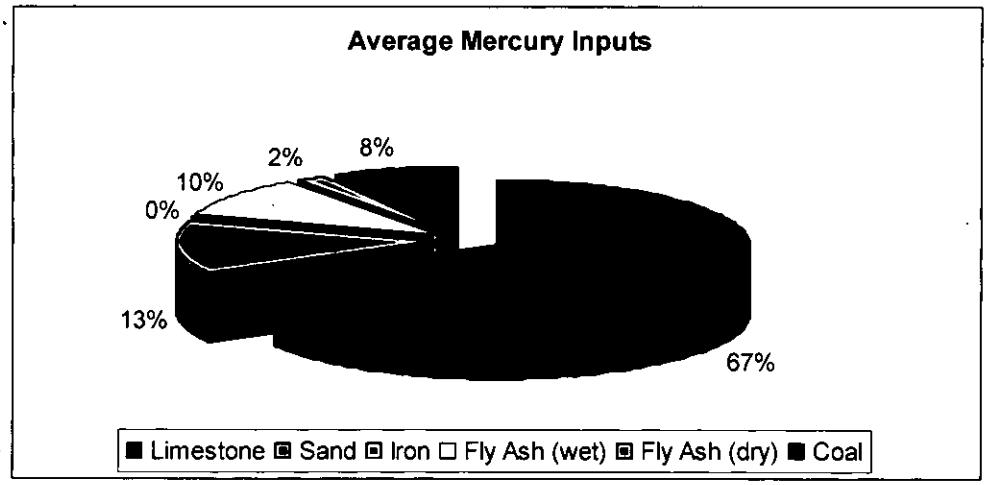

Figure 7. Sources of Hg into Cement Process

Several samples are collected on a **daily** basis from all of the material inputs to the process and then made into a daily composite. The daily composites are made into monthly composites. These monthly composites are then analyzed for Hg concentrations.

If a monthly sample is below the detection limit, the operator assumes the detection limit which overestimates the amount of Hg input. By assuming that all input Hg exits via the stack and no mercury exits via the clinker, conservative estimates of emissions are made that insure annual emissions will be less than the permitted annual Hg limit. According to operators who rely on this method of compliance, the limestone is the primary source of Hg inputs to the system and comprises about 2/3 of the total.

E. Potential Impacts from use of High Carbon Fly Ash in Pyroprocessing

The contribution from power plant fly ash shown in the above diagram is on the order of 23 percent (%) of total Hg input. Because of the controls to be implemented at power plants pursuant to the Clean Air Interstate Rule (CAIR) and the recently vacated Clean Air Mercury Rule (CAMR) there is reason to believe that more fly ash will become available as raw material or even as fuel to the cement industry as less is directly useful as a concrete product. The subject fly ash will tend to contain more Hg than what has been generally available in the past. This topic is discussed in detail in a recent paper prepared by a Department expert.[13]

A more specific example is derived from annual audit reports (covering 2005-2007) routinely submitted by one operator in Florida for a single kiln that is subject to a Hg input limit. Because the plant does not practice dust removal, the Hg emissions are equal to the Hg input. It is clear from the following figure that the Hg contribution of both typical fly ash and high carbon fly ash (HCFA) to the total Hg input has progressively increased to more than 50%. That value is for a kiln that, unlike CEMEX North Brooksville Kilns 1 and 2, has a Hg limit.

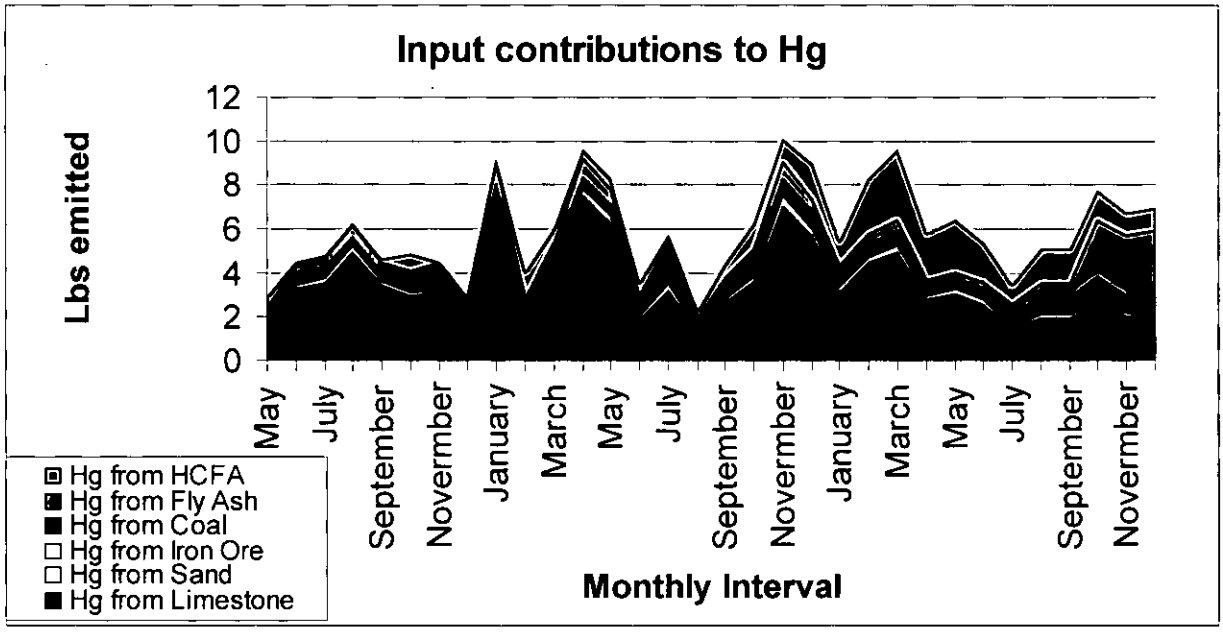

Figure 8. Feed Material and Fuel Contributions to monthly Hg Inputs and Emissions.

The Department does not have details regarding the characteristics of Hg in the raw materials and fuels used at the CEMEX North Brooksville Cement Plant. However, based on past publications it is clear that HCFA (also known as high loss on ignition - high LOI) fly ash was used to a high degree in the past at the plant.

According to Figure 9, about 225,000 tons of fly ash were used in a year at the North Brooksville Cement Plant.[14] According to Figure 10, there can be significant Hg concentrations in high LOI fly ash (>6% LOI) available from coal-fueled power plants in Florida.[15]

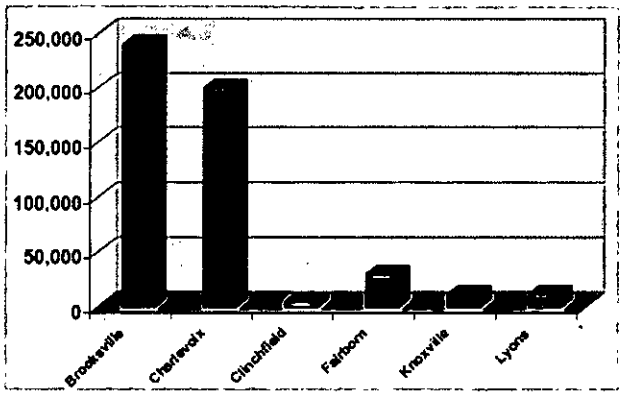

Figure 9. CEMEX Flyash Use Circa 2002

Plant	Unit	Coal Hg	Flyash Hg	Flyash LOI	Gypsum Hg
A	1	0.039	0.151	Under Review	0.259
	2	0.054	0.107		0.342
B	1 HS	0.069	0.038	~10%	No Scrubber
	1 CS	0.069	0.850	~20%	
	2 HS	0.071	0.007	~10%	
	2 CS	0.071	0.456	~10%	
	3	0.065	0.850	~20%	
	4	0.076	0.456	~10%	

Figure 10. Flyash from two Florida Power Plants

Assuming 0.5 ppm of Hg in the fly ash used at the North Brooksville Cement Plant, yields 225 lb Hg/year circa 2002 from fly ash alone. Interestingly, according to the U.S. Environmental Protection Agency Toxic Release Inventory (EPA TRI) 235 lb of Hg were emitted in 2005 from the North Brooksville Cement Plant. TRI Hg emissions were listed as zero (possibly less than reporting threshold) during 2000-2004 and 2006.

Stack test results for Hg, beryllium and lead were submitted to the Department by CEMEX in 2000. When extrapolated to annual estimates, the results reported for Hg suggested emissions << 1 lb Hg/year for Kiln 1 and 0.28 lb Hg/year for Kiln 2.[16] The purpose was to confirm as required by Permit No. 0530010-003-AC that emissions "are less than the PSD threshold levels".

III. COMMENTS FROM HERNANDO COUNTY PLANNING DEPARTMENT

The Hernando County Planning Department (the County) was an original contributor to the present requirement to sample Tl from the Kiln 1 baghouse dust. The County submitted the following comments regarding this issue during the prior permit process:[17]

"Hernando County Planning Staff have reviewed the Technical Evaluation associated with the pending CEMEX Cement Air Construction Permit, and specifically the issue of thallium sampling. Per the Technical Evaluation, the Department does not propose to make the applicant's requested change with respect to thallium sampling. The County supports DEP's position to potentially modify the applicant's request with respect to thallium sampling, however, we would be more amenable to a modification if the applicant agreed to Hg sampling which is currently not required for this facility. The County would prefer a permit condition for continuous emissions stack monitoring system (CEMS), a sorbent trap, or at the very least, require Hg monitoring in the raw materials being processed (a mass balance approach that includes fuels)."

IV. DEPARTMENT PROPOSAL AND RATIONALE

Tl is not a regulated air pollutant. For example, it is not on the list of hazardous air pollutants (HAP) maintained by the EPA pursuant to 40 Code of Federal Regulations Part 63 (40CFR63). Accordingly, Tl was not addressed in the EPA cement industry maximum achievable control technology (MACT) development pursuant to 40CFR63, Subpart LLL-National Emission Standards for Hazardous Air Pollutants From the Portland Cement Manufacturing Industry.

Over the years, the plant operators have curtailed the practice of dust removal from Kiln 1 that seems to have been conducted even when Tl concentrations were less than the threshold value of 1.5%. Ultimately all Tl exits the stack via the finest particles not captured by the baghouse. For at least five years, the applicant claims that measurements of Tl in the dust have not been great enough to trigger dust removal.

For the two years preceding submittal of the first application to remove the Tl limit, the applicant stated that Tl levels as high as 1.33% were measured. The Department has requested the actual data but has not yet received it. Without the actual sampling data, the Department cannot conclude that elimination or even reduction of sampling is appropriate at this time.

CEMEX has proposed to conduct raw materials and fuel Tl sampling on a *weekly* rather than a *daily* basis and to initiate *weekly* sampling of Hg. As proposed, it appears that CEMEX would discontinue Tl sampling of the baghouse dust.

The Department proposes continuation of sampling of baghouse dust from Kiln 1 for Tl in the present manner and frequency, but actually conducting the analysis on a weekly basis for Tl and on a monthly basis for Hg. The company can review the weekly and monthly summaries and determine the necessity of reinstituting dust removal practices. Additionally the Department proposes initiation of raw material and fuel sampling for Hg as required by other kilns in Florida at this time (including the new CEMEX kiln at the South Brooksville Cement Plant that will start up in the summer of 2008.

There is no presently applicable Hg limit on the CEMEX North Brooksville Cement Plant. However, it is imperative that all cement companies in Florida collect information regarding Hg flows into their facilities, especially given the changing character of the fly ash available as a raw material for cement pyroprocessing.

All facilities, however, must be mindful that any physical change or change in the method of operation that increases Hg by 200 lb is subject to PSD. The data for the CEMEX facility is quite variable as stated previously. It appears that a change could have occurred increasing Hg by 200 or more lb/yr between 2000 and 2005. The Department and CEMEX need to have accurate sampling data to ensure PSD is not triggered in light of operational changes in raw materials (like high LOI fly ash) and the cessation of bleeding off dust some time ago.

The Department proposes to issue an air construction permit with a condition that will in effect revise the present condition (previously cited as condition B.20) as follows in strikethrough (~~strikethrough~~) and <u>double underline</u> format:

1. <u>Thallium Concentration in the Kiln 1 Baghouse Dust:</u> The concentration of thallium in the baghouse dust shall not exceed 1.5%, per sample. [Air Construction Permit AC27-240349]

2. Kiln 1 Thallium Sampling and Recording Requirements: Daily sampling and weekly analysis and recording of the baghouse dust for the No. 1 kiln is required. Compliance shall be demonstrated using the "Thallium Concentration Monitoring and Analysis Procedure" as described in Mr. Bob Roger's letter to Dr. John Koogler, dated January 12, 1994 (Attachment #9 of Construction Permit AC27-240349 and included as Appendix Tl of this permit). [Applicant Request; Rule 62-4.070, F.A.C.; Air Construction Permit AC27-240349]
3. Kilns 1 and 2 Mercury Material Balances: The owner or operator shall determine monthly and rolling 12-month mercury thoughput for Kilns 1 and 2 and maintain the records as an estimate of mercury emissions using the material balance method as follows:
   a. Samples of the raw mill feed, kiln baghouse dust and all fuels, including fly ash, shall be collected each day. A monthly composite sample shall be made from each of the daily composite samples. Each monthly composite sample shall be analyzed to determine the mercury concentration of the materials representative for the month.
   b. For each raw material and fuel, the monthly mercury throughput rate (pounds per month) shall be the product of the mercury concentration from the monthly composite sample and the mass of raw material or fuel used during the month. If the mercury concentration is below detection limit or below the limits of quantification, the detection limit will be assumed for the concentration of the raw material or fuel.
   c. The permittee shall have the option of collecting, compositing, analyzing and calculating the Hg leaving the process via the clinker. If the Hg concentration is below the detectable limit or limits of quantification, a value of zero will be assumed for the concentration in the clinker.
   d. The permittee shall collect, composite and analyze the Hg in the kiln baghouse dust for a period of 12 months. The permittee shall have the option of calculating the Hg leaving the process via the permanent withdrawal of baghouse dust. If the Hg concentration is below the detectable limit or limits of quantification, a value of zero will be assumed for the concentration in the dust when calculating the amount of Hg leaving the system.
   e. For each month, the mass of mercury introduced into the pyroprocessing system (pounds per month) shall be the sum of the monthly mercury throughput rate for each raw material and fuel minus the amounts in the clinker and permanently withdrawn dust if any. The consecutive 12-month mercury throughput rate shall be the sum of the individual monthly records for the current month and the preceding eleven months (pounds of mercury per consecutive 12-months). Such records, including calculations and data, shall be completed no later than 25 days following the month of the records.
   f. The analytical methods used to determine mercury concentration shall be EPA or ASTM methods such as EPA Method 7471A (Mercury in Solid or Semisolid Waste) or EPA Method 1631. No other methods may be used unless prior written approval is received from the Department.

References

[1] Letter. Lee, M., PhD. to Linero, A.A. Permit Projects 0530010-018-AC and 019-AC; Outstanding questions. CMEX Cement Inc., Brooksville facility. November 15, 2007.

[2] Lohse, J. Dr.; Wulf-Schnabel, J. "Expertise on the Environmental Risk Associated with the Co-Incineration of Wastes in the Cement Kiln "Four E" of CBR Usine de Lixhe, Belgium." Institut für Ökologie und Politik GmbH. Report compiled for Greenpeace, Nederland. Circa 1996.

[3] Winteler, S.; Lohse, J. Dr. Gefährlicher Kreislauf. "Der Schadstoffeintrag in Zementwerke muß verringert werden." - Müllmagazin, Heft 1/1994, p. 66-70.

[4] Sprung, S. Dr. "Spurenelemente - Anreicherung und Minderungsmaßnahmen." Zement-Kalk-Gips Nr. 5/1988, p. 251-257.

[5] Sprung, S. Dr. Technological Problems in Pyroprocessing Cement Clinker: Cause and Solution. Beton Verlag. 1982.

[6] Jost, D., 1996: "Die neue TA Luft. Aktuelle immissionsschutzrechtliche Anforderungen an den Anlagenbetreiber." Praxishandbuch, Stand Oktober 1996, Teil 5 Kapitel 3.8.3.1.

[7] de Quervain, B., Ph.D., "Umweltfreundliche Klarschlammverbrunnung am Beispiel des PCW Portand-Cement-Werks," GWA des Schweizerichen Vereins des Gas und Wasserfaches, 1992, Sonderdruck No. 1258.

[8] Schaefer, S.; Hoenig, V. "Betriebstechninische Einflüsse auf die Quecksilber-Emissionen aus Drehrohröfen der Zementindustrie." Zement Kalk Gips International, 2001, No. 11, 591-601.

[9] Request for Additional Information (RAI). Linero, A.A. to Gonzales, M.A. File 0530010-018-AC, Projects at CEMEX Brooksville Plant. November 15, 2005.

[10] Response to RAI. Bergen, F. to Linero, A.A. File 0530010-018-AC, Projects at CEMEX Brooksville Plant. March 1, 2006.

[11] Letter. Bergen, F. to Linero, A.A. File 0530010-018-AC, Projects at CEMEX Brooksville Plant. March 2007.

[12] Presentation. Mercury Study. Presented at Public Meeting in Center Hill. Sumter Cement Company. 2005.

[13] Linero, A.A. "Follow that Mercury! - Avoiding Release of Mercury Captured by Power Plant Pollution Control Equipment". Ash at Work. American Coal Ash Association. Issue 1, 2008.

[14] Presentation. Attributes and Benefits of Using High-LOI Fly Ash in Cement Manufacture. NETL 2003 Conference on Unburned Carbon on Utility Fly Ash. October 2003.

[15] Linero, A.A.; Read, D.; DeRosa, R.. "Will the Hg Cycle be Unbroken? An Air and a Waste Management Issue!" Draft paper submitted for presentation at the 101st Annual Air and Waste Management Association Conference and Exhibition. Portland, Oregon. June 2008.

[16] Report. Kilns 1 and 2 Metals Tests. Southdown Brooksville Plant. K&A. August 2000.

[17] Letter. Velsor, D. to Linero, A.A. File 0530010-018-AC, Kilns 1 and 2 Cooling dampers and Operational Changes. October 17, 2007.

PERMITTEE:

CEMEX Cement, Inc.
16301 Ponce De Leon Boulevard
Brooksville, Florida 34614-0849

Authorized Representative:
Mr. Jimmy L. Rabon, Plant Manager
CEMEX North Brooksville Cement Plant

Air Permit No 0530010-036-AC
North Brooksville Cement Plant Kilns 1 and 2
Facility ID No. 0530010
SIC No. 3241, Cement, Hydraulic
Thallium and Mercury Sampling
Filter Dust, Raw Materials and Fuel
Permit Expires: September 30, 2008

PROJECT AND LOCATION

This permit is for the modification of the thallium sampling and analysis methods applicable to the Kiln 1 baghouse filter dust and for the introduction of mercury sampling, analysis and reporting requirements for Kilns 1 and 2.

The CEMEX North Brooksville Cement Plant is located on Highway 98, northwest of Brooksville, in Hernando County, Florida.

STATEMENT OF BASIS

This permit is issued under the provisions of Chapter 403 of the Florida Statutes (F.S.), and Chapters 62-4, 62-204, 62-210, 62-212, 62-296, and 62-297 of the Florida Administrative Code (F.A.C.). The permittee is authorized to perform the proposed work in accordance with the conditions of this permit and as described in the application, approved drawings, plans, and other documents on file with the Department of Environmental Protection (Department).

CONTENTS

Section 1. General Information
Section 2. Administrative Requirements
Section 3. Emissions Units Specific Conditions
Section 4. Appendices

(DRAFT)

Joseph Kahn, Director
Division of Air Resource Management

(Date)

FACILITY AND PROJECT DESCRIPTION

The existing facility consists of two Portland cement lines (Lines 1 and 2) including: two Polysius GEPOL preheater kilns (Kilns 1 and 2), two clinker coolers and associated raw mills, finish mills, cement and clinker handling equipment, coal handling equipment, silos, and air pollution control devices. The nominal capacity of each kiln is 780,000 tons per year of clinker.

This permit is for the modification of the thallium sampling and analysis methods applicable to the Kiln 1 baghouse filter dust and for the introduction of mercury sampling, analysis and reporting requirements for Kilns 1 and 2.

The emissions units affected by this action are:

EU ID	Emissions Unit Description
003	Cement Kiln No. 1
014	Cement Kiln No. 2

REGULATORY CLASSIFICATION

The facility is a major source of hazardous air pollutants (HAPs).

The facility is a Title V major source of air pollution in accordance with Chapter 213, F.A.C.

The facility is a major stationary source (PSD-major source) in accordance with Rule 62-212.400, F.A.C.

The facility operates units subject to the Standards of Performance for New Stationary Sources pursuant to 40 CFR Part 60.

The facility operates units subject to National Emissions Standards for Hazardous Air Pollutants pursuant to 40 CFR Part 63.

RELEVANT DOCUMENTS

The following relevant documents are not a part of this permit, but helped form the basis for this permitting action:

- Permit application related to the previous DEP File 0530010-018-AC and responses to requests for additional information;
- Comments from the Hernando County Planning Department dated October 17, 2007;
- Proposal dated November 15, 2007 submitted on behalf of CEMEX by Koogler and Associates;
- Final Determination accompanying Permit 0530010-018 that opened DEP File 0530010-036-AC; and
- Department's Technical Evaluation and Preliminary Determination accompanying Draft Permit 0530010-036-AC.

1. Permitting Authority: The Permitting Authority for this project is the Bureau of Air Regulation in the Division of Air Resource Management of the Department. The mailing address for the Bureau of Air Regulation is 2600 Blair Stone Road, MS #5505, Tallahassee, Florida 32399-2400.
2. Compliance Authority: All documents related to compliance activities such as reports, tests, and notifications shall be submitted to the Southwest District Office. The mailing address and phone number of the Southwest District Office is: 13051 N. Telecom Parkway, Temple Terrace, FL 33637-0926; 813-632-7600.
3. Appendices: The following Appendices are attached as part of this permit: Appendix GC (General Conditions); Appendix SC (Standard Conditions); and Appendix Tl (Thallium Concentration Monitoring and Analysis Procedure).
4. Applicable Regulations, Forms and Application Procedures: Unless otherwise specified in this permit, the construction and operation of the subject emissions units shall be in accordance with the capacities and specifications stated in the application. The facility is subject to all applicable provisions of: Chapter 403, F.S.; and Chapters 62-4, 62-204, 62-210, 62-212, 62-213, 62-296, and 62-297, F.A.C. Issuance of this permit does not relieve the permittee from compliance with any applicable federal, state, or local permitting or regulations.
5. New or Additional Conditions: For good cause shown and after notice and an administrative hearing, if requested, the Department may require the permittee to conform to new or additional conditions. The Department shall allow the permittee a reasonable time to conform to the new or additional conditions, and on application of the permittee, the Department may grant additional time. [Rule 62-4.080, F.A.C.]
6. Modifications: No emissions unit shall be constructed or modified without obtaining an air construction permit from the Department. Such permit shall be obtained prior to beginning construction or modification. [Rules 62-210.300(1) and 62-212.300(1)(a), F.A.C.]
7. Title V Permit: A Title V operation permit is required for regular operation of the permitted emissions unit. The permittee shall apply for a Title V operation permit at least 90 days prior to expiration of this permit, but no later than 180 days implementing the changes to thallium sampling and testing requirements and the implementation of mercury sampling and testing requirements. To apply for a Title V operation permit, the applicant shall submit the appropriate application form, compliance test results, and such additional information as the Department may by law require. The application shall be submitted to the submitted to the Southwest District Office at the address given in Condition 2 above.
8. Bureau of Air Regulation with copies to the Compliance Authority.
[Rules 62-4.030, 62-4.050, 62-4.220, and Chapter 62-213, F.A.C.]

This section of the permit addresses the following existing emissions units.

Emissions Unit 003 and 014 (Kilns 1 and 2)

Description: Dry preheater process kiln and clinker cooler systems employing the Polysius GEPOL preheater design.

Fuels: Each kiln is limited to a fuel heat input of 300 million British thermal units (MMBtu) per hour. Allowable fuels include: coal, Nos. 2, 4, 5, and 6 fuel oil, natural gas, and on-site generated non-hazardous waste used oil and grease. Kiln No. 1 is also permitted to fire whole tire derived fuel.

Capacity: Each kiln is limited to 150 tons of preheater feed per hour (rolling 30-day average), with a maximum of 165 tons in any one hour, and a maximum annual limit of 1,300,000 TPY.

Controls: A baghouse is used on each kiln for the control of particulate matter (PM) emissions. Raw material properties, chemical reactions in the kiln, absorption into the clinker, and combustion controls minimize emissions of nitrogen oxides (NO_X), sulfur dioxide (SO_2), carbon monoxide (CO) and volatile organic compounds (VOC). Selective non catalytic reduction (SNCR) systems have been installed on each kiln for NO_X control.

Monitors: Emissions of CO and NO_X are continuously monitored on both kilns.

Stack Parameters:

The stack for Kiln 1 has the following characteristics: stack height is 150 feet, exit diameter is 13 feet, exit temperature is 285 °F, and actual volumetric flow rate is approximately 315,000 actual cubic feet per minute (acfm).

The stack for Kiln 2 has the following characteristics: stack height is 105 feet, exit diameter is 14 feet, exit temperature is 250 °F, and actual volumetric flow rate is approximately 315,000 acfm.

Administrative Requirements

1. Relation to Other Permits: The conditions of this permit subsection, supplement all previously issued air construction and operation permits for this emissions unit. Unless otherwise specified, these conditions are in addition to all other applicable permit conditions and regulatory requirements. The permittee shall continue to comply with the conditions of these permits, which include restrictions and standards regarding capacities, production, operation, fuels, emissions, monitoring, record keeping, reporting, etc.
   [Rule 62-4.070, F.A.C.]

Thallium Limits and Thallium/Mercury Sampling, Testing and Reporting Requirements

[Deletions and additions compared with the relevant conditions of previous permits are shown in strikethrough (~~strikethrough~~) and double underline format.]

2. Thallium Concentration in the Kiln 1 Baghouse Dust: The concentration of thallium in the baghouse dust shall not exceed 1.5%, per sample.
   [Air Construction Permit AC27-240349]

3. Kiln 1 Thallium Sampling and Recording Requirements: Daily sampling and weekly analysis and recording of the baghouse dust for the No. 1 kiln is required. Compliance shall be demonstrated using the "Thallium Concentration Monitoring and Analysis Procedure" as described in Mr. Bob Roger's letter to Dr. John Koogler, dated January 12, 1994 (Attachment #9 of Construction Permit AC27-240349 and included as Appendix Tl of this permit). [Applicant Request; Rule 62-4.070, F.A.C.; Air Construction Permit AC27-240349]
4. Kilns 1 and 2 Mercury Material Balances: The owner or operator shall determine monthly and rolling 12-month mercury thoughput for Kilns 1 and 2 and maintain the records as an estimate of mercury emissions using the material balance method as follows:
   a. Samples of the raw mill feed, kiln baghouse dust and all fuels, including fly ash, shall be collected each day. A monthly composite sample shall be made from each of the daily composite samples. Each monthly composite sample shall be analyzed to determine the mercury concentration of the materials representative for the month.
   b. For each raw material and fuel, the monthly mercury throughput rate (pounds per month) shall be the product of the mercury concentration from the monthly composite sample and the mass of raw material or fuel used during the month. If the mercury concentration is below detection limit or below the limits of quantification, the detection limit will be assumed for the concentration of the raw material or fuel.
   c. The permittee shall have the option of collecting, compositing, analyzing and calculating the Hg leaving the process via the clinker. If the Hg concentration is below the detectable limit or limits of quantification, a value of zero will be assumed for the concentration in the clinker.
   d. The permittee shall collect, composite and analyze the Hg in the kiln baghouse dust for a period of 12 months. The permittee shall have the option of calculating the Hg leaving the process via the permanent withdrawal of baghouse dust. If the Hg concentration is below the detectable limit or limits of quantification, a value of zero will be assumed for the concentration in the dust when calculating the amount of Hg leaving the system.
   e. For each month, the mass of mercury introduced into the pyroprocessing system (pounds per month) shall be the sum of the monthly mercury throughput rate for each raw material and fuel minus the amounts in the clinker and permanently withdrawn dust if any. The consecutive 12-month mercury throughput rate shall be the sum of the individual monthly records for the current month and the preceding eleven months (pounds of mercury per consecutive 12-months). Such records, including calculations and data, shall be completed no later than 25 days following the month of the records.
   f. The analytical methods used to determine mercury concentration shall be EPA or ASTM methods such as EPA Method 7471A (Mercury in Solid or Semisolid Waste) or EPA Method 1631. No other methods may be used unless prior written approval is received from the Department.

GENERAL CONDITIONS

The permittee shall comply with the following general conditions from Rule 62-4.160, F.A.C.

1. The terms, conditions, requirements, limitations, and restrictions set forth in this permit are "Permit Conditions" and are binding and enforceable pursuant to Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is placed on notice that the Department will review this permit periodically and may initiate enforcement action for any violation of these conditions.
2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the Department.
3. As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey and vested rights or any exclusive privileges. Neither does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit is not a waiver 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 acknowledgment of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the State. Only the Trustees of the Internal Improvement Trust Fund may express State opinion as to title.
5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, or plant life, or property caused by the construction or operation of this permitted source, or from penalties therefore; nor does it allow the permittee to cause pollution in contravention of Florida Statutes and Department rules, unless specifically authorized by an order from the Department.
6. The permittee shall properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by Department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by Department rules.
7. The permittee, by accepting this permit, specifically agrees to allow authorized Department personnel, upon presentation of credentials or other documents as may be required by law and at a reasonable time, access to the premises, where the permitted activity is located or conducted to:

   a. Have access to and copy and records that must be kept under the conditions of the permit;
   b. Inspect the facility, equipment, practices, or operations regulated or required under this permit, and,
   c. Sample or monitor any substances or parameters at any location reasonably necessary to assure compliance with this permit or Department rules.

   Reasonable time may depend on the nature of the concern being investigated.
8. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately provide the Department with the following information:

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

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

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

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

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

11. This permit is transferable only upon Department approval in accordance with Florida Administrative Code Rules 62-4.120 and 62-730.300, F.A.C., as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the Department.

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

13. This permit also constitutes:

    a. Determination of Best Available Control Technology ( );
    b. Determination of Prevention of Significant Deterioration ( );
    c. Compliance with National Emission Standards for Hazardous Air Pollutants ( ); and
    d. Compliance with New Source Performance Standards ( ).

14. The permittee shall comply with the following:

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

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

    c. Records of monitoring information shall include:

        1) The date, exact place, and time of sampling or measurements;
        2) The person responsible for performing the sampling or measurements;
        3) The dates analyses were performed;
        4) The person responsible for performing the analyses;
        5) The analytical techniques or methods used; and
        6) The results of such analyses.

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

STANDARD CONDITIONS

Unless otherwise specified in the permit, the following conditions apply to all emissions units and activities at this facility.

EMISSIONS AND CONTROLS

1. Plant Operation - Problems: If temporarily unable to comply with any of the conditions of the permit due to breakdown of equipment or destruction by fire, wind or other cause, the permittee shall notify each Compliance Authority as soon as possible, but at least within one working day, excluding weekends and holidays. The notification shall include: pertinent information as to the cause of the problem; steps being taken to correct the problem and prevent future recurrence; and, where applicable, the owner's intent toward reconstruction of destroyed facilities. Such notification does not release the permittee from any liability for failure to comply with the conditions of this permit or the regulations. [Rule 62-4.130, F.A.C.]

2. Circumvention: The permittee shall not circumvent the air pollution control equipment or allow the emission of air pollutants without this equipment operating properly. [Rule 62-210.650, F.A.C.]

3. Excess Emissions Allowed: Excess emissions resulting from startup, shutdown or malfunction of any emissions unit shall be permitted providing (1) best operational practices to minimize emissions are adhered to and (2) the duration of excess emissions shall be minimized but in no case exceed two hours in any 24 hour period unless specifically authorized by the Department for longer duration. [Rule 62-210.700(1), F.A.C.]

4. Excess Emissions Prohibited: Excess emissions caused entirely or in part by poor maintenance, poor operation, or any other equipment or process failure that may reasonably be prevented during startup, shutdown or malfunction shall be prohibited. [Rule 62-210.700(4), F.A.C.]

5. Excess Emissions - Notification: In case of excess emissions resulting from malfunctions, the permitee shall notify the Department or the appropriate Local Program in accordance with Rule 62-4.130, F.A.C. A full written report on the malfunctions shall be submitted in a quarterly report, if requested by the Department. [Rule 62-210.700(6), F.A.C.]

6. VOC or OS Emissions: No person shall store, pump, handle, process, load, unload or use in any process or installation, volatile organic compounds or organic solvents without applying known and existing vapor emission control devices or systems deemed necessary and ordered by the Department. [Rule 62-296.320(1), F.A.C.]

7. Objectionable Odor Prohibited: No person shall cause, suffer, allow or permit the discharge of air pollutants, which cause or contribute to an objectionable odor. An "objectionable odor" means any odor present in the outdoor atmosphere which by itself or in combination with other odors, is or may be harmful or injurious to human health or welfare, which unreasonably interferes with the comfortable use and enjoyment of life or property, or which creates a nuisance. [Rules 62-296.320(2) and62-210.200(203), F.A.C.]

8. General Visible Emissions: No person shall cause, let, permit, suffer or allow to be discharged into the atmosphere the emissions of air pollutants from any activity equal to or greater than 20 percent opacity. [Rule 62-296.320(4)(b)1, F.A.C.]

9. Unconfined Particulate Emissions: During the construction period, unconfined particulate matter emissions shall be minimized by dust suppressing techniques such as covering and/or application of water or chemicals to the affected areas, as necessary. [Rule 62-296.320(4)(c), F.A.C.]

TESTING REQUIREMENTS

10. Required Number of Test Runs: For mass emission limitations, a compliance test shall consist of three complete and separate determinations of the total air pollutant emission rate through the test section of the stack or duct and three complete and separate determinations of any applicable process variables corresponding to the three distinct time periods during which the stack emission rate was measured; provided, however, that three complete and separate determinations shall not be required if the process variables are not subject to variation during a compliance test, or if three determinations are not necessary in order to calculate the unit's emission rate. The three required test runs shall be completed within one consecutive five-day period. In the event that a sample is lost or one of the three runs must be discontinued because of circumstances beyond the control of the owner or operator, and a valid third run cannot be obtained within the five-day period allowed for the test, the Secretary

or his or her designee may accept the results of two complete runs as proof of compliance, provided that the arithmetic mean of the two complete runs is at least 20% below the allowable emission limiting standard. [Rule 62-297.310(1), F.A.C.]

11. Operating Rate During Testing: Testing of emissions shall be conducted with the emissions unit operating at permitted capacity. Permitted capacity is defined as 90 to 100 percent of the maximum operation rate allowed by the permit. If it is impractical to test at permitted capacity, an emissions unit may be tested at less than the maximum permitted capacity; in this case, subsequent emissions unit operation is limited to 110 percent of the test rate until a new test is conducted. Once the unit is so limited, operation at higher capacities is allowed for no more than 15 consecutive days for the purpose of additional compliance testing to regain the authority to operate at the permitted capacity. [Rule 62-297.310(2), F.A.C.]

12. Calculation of Emission Rate: For each emissions performance test, the indicated emission rate or concentration shall be the arithmetic average of the emission rate or concentration determined by each of the three separate test runs unless otherwise specified in a particular test method or applicable rule. [Rule 62-297.310(3), F.A.C.]

13. Test Procedures: Tests shall be conducted in accordance with all applicable requirements of Chapter 62-297, F.A.C.

    a. Required Sampling Time. Unless otherwise specified in the applicable rule, the required sampling time for each test run shall be no less than one hour and no greater than four hours, and the sampling time at each sampling point shall be of equal intervals of at least two minutes. The minimum observation period for a visible emissions compliance test shall be thirty (30) minutes. The observation period shall include the period during which the highest opacity can reasonably be expected to occur.

    b. Minimum Sample Volume. Unless otherwise specified in the applicable rule or test method, the minimum sample volume per run shall be 25 dry standard cubic feet.

    c. Calibration of Sampling Equipment. Calibration of the sampling train equipment shall be conducted in accordance with the schedule shown in Table 297.310-1, F.A.C.

    [Rule 62-297.310(4), F.A.C.]

14. Determination of Process Variables

    a. Required Equipment. The owner or operator of an emissions unit for which compliance tests are required shall install, operate, and maintain equipment or instruments necessary to determine process variables, such as process weight input or heat input, when such data are needed in conjunction with emissions data to determine the compliance of the emissions unit with applicable emission limiting standards.

    b. Accuracy of Equipment. Equipment or instruments used to directly or indirectly determine process variables, including devices such as belt scales, weight hoppers, flow meters, and tank scales, shall be calibrated and adjusted to indicate the true value of the parameter being measured with sufficient accuracy to allow the applicable process variable to be determined within 10% of its true value.

    [Rule 62-297.310(5), F.A.C.]

15. Sampling Facilities: The permittee shall install permanent stack sampling ports and provide sampling facilities that meet the requirements of Rule 62-297.310(6), F.A.C.

16. Special Compliance Tests: When the Department, after investigation, has good reason (such as complaints, increased visible emissions or questionable maintenance of control equipment) to believe that any applicable emission standard contained in a Department rule or in a permit issued pursuant to those rules is being violated, it shall require the owner or operator of the emissions unit to conduct compliance tests which identify the nature and quantity of pollutant emissions from the emissions unit and to provide a report on the results of said tests to the Department. [Rule 62-297.310(7)(b), F.A.C.]

17. Test Reports: The owner or operator of an emissions unit for which a compliance test is required shall file a report with the Department on the results of each such test. The required test report shall be filed with the Department as soon as practical but no later than 45 days after the last sampling run of each test is completed. The test report shall provide sufficient detail on the emissions unit tested and the test procedures used to allow

the Department to determine if the test was properly conducted and the test results properly computed. As a minimum, the test report, other than for an EPA or DEP Method 9 test, shall provide the following information:

1) The type, location, and designation of the emissions unit tested.
2) The facility at which the emissions unit is located.
3) The owner or operator of the emissions unit.
4) The normal type and amount of fuels used and materials processed, and the types and amounts of fuels used and material processed during each test run.
5) The means, raw data and computations used to determine the amount of fuels used and materials processed, if necessary to determine compliance with an applicable emission limiting standard.
6) The type of air pollution control devices installed on the emissions unit, their general condition, their normal operating parameters (pressure drops, total operating current and GPM scrubber water), and their operating parameters during each test run.
7) A sketch of the duct within 8 stack diameters upstream and 2 stack diameters downstream of the sampling ports, including the distance to any upstream and downstream bends or other flow disturbances.
8) The date, starting time and duration of each sampling run.
9) The test procedures used, including any alternative procedures authorized pursuant to Rule 62-297.620, F.A.C. Where optional procedures are authorized in this chapter, indicate which option was used.
10) The number of points sampled and configuration and location of the sampling plane.
11) For each sampling point for each run, the dry gas meter reading, velocity head, pressure drop across the stack, temperatures, average meter temperatures and sample time per point.
12) The type, manufacturer and configuration of the sampling equipment used.
13) Data related to the required calibration of the test equipment.
14) Data on the identification, processing and weights of all filters used.
15) Data on the types and amounts of any chemical solutions used.
16) Data on the amount of pollutant collected from each sampling probe, the filters, and the impingers, are reported separately for the compliance test.
17) The names of individuals who furnished the process variable data, conducted the test, analyzed the samples and prepared the report.
18) All measured and calculated data required to be determined by each applicable test procedure for each run.
19) The detailed calculations for one run that relate the collected data to the calculated emission rate.
20) The applicable emission standard, and the resulting maximum allowable emission rate for the emissions unit, plus the test result in the same form and unit of measure.
21) A certification that, to the knowledge of the owner or his authorized agent, all data submitted are true and correct. When a compliance test is conducted for the Department or its agent, the person who conducts the test shall provide the certification with respect to the test procedures used. The owner or his authorized agent shall certify that all data required and provided to the person conducting the test are true and correct to his knowledge.

[Rule 62-297.310(8), F.A.C.]

RECORDS AND REPORTS

18. Records Retention: All measurements, records, and other data required by this permit shall be documented in a permanent, legible format and retained for at least five (5) years following the date on which such measurements, records, or data are recorded. Records shall be made available to the Department upon request. [Rules 62-4.160(14) and 62-213.440(1)(b)2, F.A.C.]

19. Annual Operating Report: The permittee shall submit an annual report that summarizes the actual operating rates and emissions from this facility. Annual operating reports shall be submitted to the Compliance Authority by March 1st of each year. [Rule 62-210.370(2), F.A.C.

Brooksville Cement
A Southdown Company

January 12, 1994

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

RE: Thallium Concentration Monitoring and Analysis Procedure

Dear Dr. Koogler:

This letter is in response to your recent request for details of the monitoring and analysis procedure which is followed in controlling Thallium concentration at the Southdown's Brooksville Cement Plant.

As you know, the Thallium concentration is in the Kiln/Mill Baghouse dust. We monitor the concentration of Thallium in this dust on a daily basis and as we see the concentration increase we remove a portion of the dust from the system and dispose of it in an authorized landfill. The removal is generally done on a day when the Raw Mill is down and the baghouse load is at minimum level, which conversely brings the Thallium concentration in the dust to maximum level. This allows us to remove maximum Thallium from the system with minimum dust disposal.

Immediately upon taking the Raw Mill down, we start to take samples of the baghouse dust every hour. These samples are analyzed by XRF and the indicated concentration is recorded. When concentration level reaches approximately .8% we begin to load a tanker truck with the dust. We continue to monitor the concentration as the truck is being loaded and the final dust sample is taken at the end of the loading operation. The indicated concentration at the end of the truck loading will generally be in the 0.3% to 0.4% range. We average the first and last samples that went into the truck for the average concentration of the load. The normal average will be approximately 0.5% to 0.6% on the truck load of 14 to 16 tons of dust.

All dust samples are collected and analyzed in accordance to the following procedure:

1. A representative dust sample is retrieved from the baghouse dust conveying system through sample ports and placed in a clean sample vial for transport to the laboratory.

2. Sample vial is clearly labeled with all pertinent identification and given to laboratory technician.
3. Approximately 8 grams of dust is placed in a clean stainless steel die and compressed at 54,000 p.s.i. for 60 seconds.
4. The sample is removed from the die and is now in the form of a pellet approximately 31 mm in diameter and 5 mm thick. The pellet is also labeled and is now ready for analysis.
5. Analysis is performed by X-ray Fluorescence (XRF). XRF machine energy is set at 100 micro-amps and 25 KV for Thallium analysis.
6. Prior to sample analysis an aluminum/copper drift standard is run to correct for any variation in the X-ray analyzer. This is basically a calibration procedure which insures that the X-ray instrument is aligned as it was when the Thallium XRF analysis curve was originally established.
7. After the drift procedure is completed, a laboratory prepared kiln dust standard with a known concentration of Thallium is also analyzed to further verify instrument accuracy.
8. At this point the kiln mill baghouse dust sample pellet is placed in the sample chamber of the X-ray Fluorescence instrument. Once a vacuum is achieved in the sample chamber the sample is analyzed by means of XRF for 50 seconds.
9. Analysis results are printed out via computer interface with X-Ray instrument, documented and filed for future reference.

To further verify the accuracy of our Thallium analysis method, two Kiln/Mill baghouse dust samples were sent to an independent laboratory for analysis in late December, 1993. Thornton Laboratories of Tampa, Florida was used in this instance.

Thallium concentrations were reported as follows:

	Brooksville Cement Laboratory	Thornton Laboratory
Sample "A"	5521 ppm	4450 ppm
Sample "B"	9354 ppm	7230 ppm

It should be noted that if Thornton Lab's results are more accurate than Brooksville's, which we do not believe to be the case, then we are actually controlling concentrations at even lower and safer levels than we are claiming.

Sincerely,

Bob Rogers

Bob Rogers
Production Manager

Harvey, Mary

From: Harvey, Mary

Sent: Friday, April 04, 2008 12:25 PM

To: 'jimmy.rabon@cemex.com'; 'charles.walz@cemex.com'; 'amarjits.gill@cemex.com'; Nasca, Mara; 'jkoogler@kooglerassociates.com'; 'fbergen@kooglerassociates.com'; 'gkuhl@hernandocounty.us'; 'sfernandez@ohfc.com'; 'little.james@epamail.epa.gov'; 'forney.kathleen@epamail.epa.gov'; 'jimmy.rabon@cemexusa.com'; 'charles.walz@cemexusa.com'; 'amarjits.gill@cemexusa.com'

Cc: Heron, Teresa; Linero, Alvaro; Walker, Elizabeth (AIR); Gibson, Victoria

Subject: CEMEX Cement, Inc. - 0530010-036-AC-DRAFT

Attachments: 036APP.pdf; 036COVER.pdf; 036DPERMIT.pdf; 036INTENT.pdf; 036NOTICE.pdf; 036TECHNICAL.pdf

Tracking:

Recipient	Delivery	Read
'jimmy.rabon@cemex.com'		
'charles.walz@cemex.com'		
'amarjits.gill@cemex.com'		
Nasca, Mara	Delivered: 4/4/2008 12:26 PM	Read: 4/4/2008 12:34 PM
'jkoogler@kooglerassociates.com'		
'fbergen@kooglerassociates.com'		
'gkuhl@hernandocounty.us'		
'sfernandez@ohfc.com'		
'little.james@epamail.epa.gov'		
'forney.kathleen@epamail.epa.gov'		
'jimmy.rabon@cemexusa.com'		
'charles.walz@cemexusa.com'		
'amarjits.gill@cemexusa.com'		
Heron, Teresa	Delivered: 4/4/2008 12:26 PM	Read: 4/4/2008 2:15 PM
Linero, Alvaro	Delivered: 4/4/2008 12:26 PM	Read: 4/4/2008 12:33 PM
Walker, Elizabeth (AIR)	Delivered: 4/4/2008 12:26 PM	
Gibson, Victoria	Delivered: 4/4/2008 12:26 PM	Read: 4/4/2008 12:27 PM

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The document is in Adobe Portable Document Format (pdf). Adobe Acrobat Reader can be downloaded for free at the following internet site: http://www.adobe.com/products/acrobat/readstep.html.

Harvey, Mary

From: Charles E Walz [charles.walz@cemex.com]
Sent: Monday, April 07, 2008 12:11 PM
To: Harvey, Mary
Subject: Re: CEMEX Cement, Inc. - 0530010-036-AC-DRAFT

Charles E Walz

Environmental Manager - Brooksville Plant - United States of America
Office : +1352(799)2011 , Fax: +1352(754)9836 , Mobile: +1352(279)1415
Address: 16301 Ponce De Leon Blvd Brooksville, Florida 34614
E-Mail: Charles.Walz@CEMEX.com

www.cemex.com

"Harvey, Mary" <Mary.Harvey@dep.state.fl.us>

04/04/2008 12:25 PM

To <jimmy.rabon@cemex.com>, <charles.walz@cemex.com>, <amarjits.gill@cemex.com>, "Nasca, Mara" <Mara.Nasca@dep.state.fl.us>, <jkoogler@kooglerassociates.com>, <fbergen@kooglerassociates.com>, <gkuhl@hernandocounty.us>, <sfernandez@ohfc.com>, <little.james@epamail.epa.gov>, <forney.kathleen@epamail.epa.gov>, <jimmy.rabon@cemexusa.com>, <charles.walz@cemexusa.com>, <amarjits.gill@cemexusa.com>

cc "Heron, Teresa" <Teresa.Heron@dep.state.fl.us>, "Linero, Alvaro" <Alvaro.Linero@dep.state.fl.us>, "Walker, Elizabeth \(AIR\)" <Elizabeth.Walker@dep.state.fl.us>, "Gibson, Victoria" <Victoria.Gibson@dep.state.fl.us>

Subject CEMEX Cement, Inc. - 0530010-036-AC-DRAFT

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The document is in Adobe Portable Document Format (pdf). Adobe Acrobat Reader can be downloaded for free at the following internet site:
http://www.adobe.com/products/acrobat/readstep.html.

Harvey, Mary

From: Charles E Walz [charles.walz@cemex.com]
Sent: Sunday, April 06, 2008 2:01 PM
To: Harvey, Mary
Subject: CEMEX Cement, Inc. - 0530010-036-AC-DRAFT

Return Receipt

Your document:	CEMEX Cement, Inc. - 0530010-036-AC-DRAFT
was received by:	charles.walz@cemex.com
at:	04/06/2008 14:00:46 EDT

Harvey, Mary

From: Forney.Kathleen@epamail.epa.gov
Sent: Friday, April 04, 2008 1:24 PM
To: Harvey, Mary
Subject: Re: CEMEX Cement, Inc. - 0530010-036-AC-DRAFT

thanks

Katy R. Forney
Air Permits Section
EPA - Region 4
61 Forsyth St., SW
Atlanta, GA 30303

Phone: 404-562-9130
Fax: 404-562-9019

"Harvey, Mary" <Mary.Harvey@dep.state.fl.us>
04/04/2008 12:25 PM

To: <jimmy.rabon@cemex.com>, <charles.walz@cemex.com>, <amarjits.gill@cemex.com>, "Nasca, Mara" <Mara.Nasca@dep.state.fl.us>, <jkoogler@kooglerassociates.com>, <fbergen@kooglerassociates.com>, <gkuhl@hernandocounty.us>, <sfernandez@ohfc.com>, James Little/R4/USEPA/US@EPA, Kathleen Forney/R4/USEPA/US@EPA, <jimmy.rabon@cemexusa.com>, <charles.walz@cemexusa.com>, <amarjits.gill@cemexusa.com>

cc: "Heron, Teresa" <Teresa.Heron@dep.state.fl.us>, "Linero, Alvaro" <Alvaro.Linero@dep.state.fl.us>, "Walker, Elizabeth \(AIR\)" <Elizabeth.Walker@dep.state.fl.us>, "Gibson, Victoria" <Victoria.Gibson@dep.state.fl.us>

Subject: CEMEX Cement, Inc. - 0530010-036-AC-DRAFT

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Harvey, Mary

From: Segundo J. Fernandez [sfernandez@ohfc.com]
To: undisclosed-recipients
Sent: Friday, April 04, 2008 12:41 PM
Subject: Read: CEMEX Cement, Inc. - 0530010-036-AC-DRAFT

Your message

To: sfernandez@ohfc.com
Subject:

was read on 4/4/2008 12:41 PM.

Harvey, Mary

From: Amarjit S Gill [amarjits.gill@cemex.com]
Sent: Friday, April 04, 2008 12:36 PM
To: Harvey, Mary
Subject: CEMEX Cement, Inc. - 0530010-036-AC-DRAFT

Return Receipt

Your document:	CEMEX Cement, Inc. - 0530010-036-AC-DRAFT
was received by:	amarjits.gill@cemex.com
at:	04/04/2008 10:33:58

Harvey, Mary

From: Nasca, Mara
To: Harvey, Mary
Sent: Friday, April 04, 2008 12:34 PM
Subject: Read: CEMEX Cement, Inc. - 0530010-036-AC-DRAFT

Your message

To:	'jimmy.rabon@cemex.com'; 'charles.walz@cemex.com'; 'amarjits.gill@cemex.com'; Nasca, Mara; 'jkoogler@kooglerassociates.com'; 'fbergen@kooglerassociates.com'; 'gkuhl@hernandocounty.us'; 'sfernandez@ohfc.com'; 'little.james@epamail.epa.gov'; 'forney.kathleen@epamail.epa.gov'; 'jimmy.rabon@cemexusa.com'; 'charles.walz@cemexusa.com'; 'amarjits.gill@cemexusa.com'
Cc:	Heron, Teresa; Linero, Alvaro; Walker, Elizabeth (AIR); Gibson, Victoria
Subject:	CEMEX Cement, Inc. - 0530010-036-AC-DRAFT
Sent:	4/4/2008 12:25 PM

was read on 4/4/2008 12:34 PM.

Harvey, Mary

From: Linero, Alvaro
To: Harvey, Mary
Sent: Friday, April 04, 2008 12:33 PM
Subject: Read: CEMEX Cement, Inc. - 0530010-036-AC-DRAFT

Your message

To:	'jimmy.rabon@cemex.com'; 'charles.walz@cemex.com'; 'amarjits.gill@cemex.com'; Nasca, Mara; 'jkoogler@kooglerassociates.com'; 'fbergen@kooglerassociates.com'; 'gkuhl@hernandocounty.us'; 'sfernandez@ohfc.com'; 'little.james@epamail.epa.gov'; 'forney.kathleen@epamail.epa.gov'; 'jimmy.rabon@cemexusa.com'; 'charles.walz@cemexusa.com'; 'amarjits.gill@cemexusa.com'
Cc:	Heron, Teresa; Linero, Alvaro; Walker, Elizabeth (AIR); Gibson, Victoria
Subject:	CEMEX Cement, Inc. - 0530010-036-AC-DRAFT
Sent:	4/4/2008 12:25 PM

was read on 4/4/2008 12:33 PM.

Harvey, Mary

From: Gibson, Victoria
To: Harvey, Mary
Sent: Friday, April 04, 2008 12:27 PM
Subject: Read:

Your message

To: Gibson, Victoria
Subject:
Sent: 4/4/2008 12:26 PM

was read on 4/4/2008 12:27 PM.

Harvey, Mary

From: Heron, Teresa
To: Harvey, Mary
Sent: Friday, April 04, 2008 2:15 PM
Subject: Read: CEMEX Cement, Inc. - 0530010-036-AC-DRAFT

Your message

To:	'jimmy.rabon@cemex.com'; 'charles.walz@cemex.com'; 'amarjits.gill@cemex.com'; Nasca, Mara; 'jkoogler@kooglerassociates.com'; 'fbergen@kooglerassociates.com'; 'gkuhl@hernandocounty.us'; 'sfernandez@ohfc.com'; 'little.james@epamail.epa.gov'; 'forney.kathleen@epamail.epa.gov'; 'jimmy.rabon@cemexusa.com'; 'charles.walz@cemexusa.com'; 'amarjits.gill@cemexusa.com'
Cc:	Heron, Teresa; Linero, Alvaro; Walker, Elizabeth (AIR); Gibson, Victoria
Subject:	CEMEX Cement, Inc. - 0530010-036-AC-DRAFT
Sent:	4/4/2008 12:25 PM

was read on 4/4/2008 2:15 PM.

Harvey, Mary

From: Jimmy L Rabon [jimmy.rabon@cemex.com]
Sent: Friday, April 04, 2008 2:29 PM
To: Harvey, Mary
Subject: CEMEX Cement, Inc. - 0530010-036-AC-DRAFT

Return Receipt

Your document:	CEMEX Cement, Inc. - 0530010-036-AC-DRAFT
was received by:	jimmy.rabon@cemex.com
at:	04/04/2008 13:28:41 EST

Harvey, Mary

From: Gibson, Victoria
To: Harvey, Mary
Sent: Friday, April 04, 2008 12:27 PM
Subject: Read: CEMEX Cement, Inc. - 0530010-036-AC-DRAFT

Your message

To:	'jimmy.rabon@cemex.com'; 'charles.walz@cemex.com'; 'amarjits.gill@cemex.com'; Nasca, Mara; 'jkoogler@kooglerassociates.com'; 'fbergen@kooglerassociates.com'; 'gkuhl@hernandocounty.us'; 'sfernandez@ohfc.com'; 'little.james@epamail.epa.gov'; 'forney.kathleen@epamail.epa.gov'; 'jimmy.rabon@cemexusa.com'; 'charles.walz@cemexusa.com'; 'amarjits.gill@cemexusa.com'
Cc:	Heron, Teresa; Linero, Alvaro; Walker, Elizabeth (AIR); Gibson, Victoria
Subject:	CEMEX Cement, Inc. - 0530010-036-AC-DRAFT
Sent:	4/4/2008 12:25 PM

was read on 4/4/2008 12:27 PM.

Harvey, Mary

From: John Koogler [jkoogler@kooglerassociates.com]
Sent: Monday, April 07, 2008 1:54 PM
To: Harvey, Mary
Subject: RE: CEMEX Cement, Inc. - 0530010-036-AC-DRAFT

Mary, I don't recall if I sent a reply verifying receipt or not. But, it has been received.

Thanks, John

John B Koogler
Koogler & Associates, Inc
4014 NW 13th St
Gainesville, Fl 32609
352/377-5822
jkoogler@kooglerassociates.com

From: Harvey, Mary [mailto:Mary.Harvey@dep.state.fl.us]
Sent: Friday, April 04, 2008 12:25 PM
To: jimmy.rabon@cemex.com; charles.walz@cemex.com; amarjits.gill@cemex.com; Nasca, Mara; jkoogler@kooglerassociates.com; fbergen@kooglerassociates.com; gkuhl@hernandocounty.us; sfernandez@ohfc.com; little.james@epamail.epa.gov; forney.kathleen@epamail.epa.gov; jimmy.rabon@cemexusa.com; charles.walz@cemexusa.com; amarjits.gill@cemexusa.com
Cc: Heron, Teresa; Linero, Alvaro; Walker, Elizabeth (AIR); Gibson, Victoria
Subject: CEMEX Cement, Inc. - 0530010-036-AC-DRAFT

Dear Sir/Madam:

Please send a "reply" message verifying receipt of the attached document(s); this may be done by selecting "Reply" on the menu bar of your e-mail software and then selecting "Send". We must receive verification of receipt and your reply will preclude subsequent e-mail transmissions to verify receipt of the document(s).

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Thank you,

DEP, Bureau of Air Regulation