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VIA HAND-DELIVERY

October 26, 1993

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

Re: Southdown, Inc. d/b/a Florida Mining and Materials
Permit Amendments to Allow the use of
Tire Derived Fuel

Dear Mr. Fancy:

On October 12, 1993, Southdown, Inc., d/b/a Florida Mining and Materials ("FMM") submitted to the Department its letter request seeking authorization to utilize tire derived fuel at its Brooksville facility. Hernando County had previously provided to FMM and the Department the report of its consultants, KBN Engineering and Applied Sciences, Inc. (KBN). This report concluded that the use of tire derived fuel by FMM would be appropriate if the permit included six conditions recommended by KBN.

FMM, in its letter of October 12, 1993, accepted all of KBN's conditions except for condition number 5 which dealt with potential changes to the tire feed mechanism. Subsequent to the test burn a question has also arisen concerning the presence of thallium in FMM cement kilns. On October 19, 1993, the Hernando County Board of County Commissioners reviewed the FMM request for permit modification, the KBN report, and the thallium issue. At that time both FMM and Hernando County agreed that a modification to KBN's proposed condition 5 and the inclusion of an additional condition addressing thallium would resolve these issues.

Accordingly, Hernando County has no objection to the issuance of a permit amendment allowing the use of tire derived fuel in FMM Cement Kiln No. 1 if conditioned as proposed by KBN, and as further modified below:

Condition 5, as proposed by KBN Engineering in its September, 1993, report will be modified to provide as follows:

> This permit is valid only for the specific WTDF feed mechanism used during the test burn of WTDF/coal. Any physical modification to the WTDF feed mechanism <u>which involves a change to the feed rate, the point of introduction or the double air lock system</u> will require a modification of this permit and a clear point of entry will be provided for Hernando County and other substantially affected parties. If the WTDF feed mechanism is to be physically modified, a description of such modifications shall be submitted to FDEP and HCBCC 90 days prior to actual modification. FDEP and HCBCC shall review this information and determine if further information or stack testing is required in order to determine if such modifications will result in an increase in actual emissions, and it shall be FMM's burden to provide reasonable assurances that such modifications will not affect the conclusions derived from the test burn of May and June, 1993. (New language underlined.)

An additional condition regarding thallium, which will provide as follows, will be included in the permit:

> To ensure that thallium emission levels will not exceed ambient no-threat levels, daily sampling of the baghouse dust for each kiln is required. The concentration of thallium in the baghouse dust shall not exceed 1.5%.

As previously stated, FMM and the County have agreed on these specific conditions, and request that they be included in the proposed permit.

Please give me a telephone call if you have any questions regarding this letter or if I can be of further assistance in this regard.

Sincerely,

C. Anthony Cleveland

CAC/dg/1579
C:\Work1\FancyLtr.CAC

xc: Mr. Charles Hetrick
David Dee, Esquire

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To Claire Fancy	From Segundo Fernandez
Co.	Co.
Dept.	Phone #
Fax # 922-6979	Fax #

October 18, 1993

Mr. Segundo Fernandez
Oertel, Hoffman, Fernandez and Cole, P.A.
2700 Blair Stone Road, Suite C
Tallahassee, FL 32301

Re: Thallium Issue at Florida Mining & Materials

Dear Mr. Fernandez:

Based on my conversation with you last week, KBN has investigated the issue regarding thallium in regards to the Florida Mining & Materials (FMM) whole tire-derived fuel (WTDF) test burn. I have spoken to John Koogler and he has relayed the following information to me:

1) Thallium content in coal.
2) Ambient impact analysis of thallium due to FMM cement plant.

We have reviewed these materials, and have conducted our own in-house investigation of the thallium content of both coal and tires. Based on these analysis, we offer the following observations:

1) FMM did not test for thallium emissions from Kiln No. 1 during the WTDF test burn. According to Dr. Koogler, they have never tested for thallium emissions from the kilns at FMM.

2) The thallium content of bituminous coal is low, with an average of about 0.2 ppm, with the highest values being about 1 ppm. This concentration is much lower than some other metals in coal which are of more concern, such as arsenic (5 ppm avg.), chromium (20 ppm avg.), and lead (7 ppm). During the test burn, emissions of these metals from Kiln No. 1 at FMM were below detectable levels.

3) No data has been located concerning the thallium content of waste tires. Various references and articles were researched, and the Scrap Tire Management Council in Washington, D.C., was contacted. Dr. Koogler was also questioned. None of these sources could locate any information related to the thallium content of tires.

4) KBN is attempting to contact Goodyear or Firestone to obtain information on thallium in tires. In the absence of such data, the following analogy can be made. The concentrations of arsenic, chromium, and lead, as well as other trace metals, in waste tires has been found to be lower than concentrations in coal. By analogy, it is likely that the thallium content of waste tires is also lower than that of coal. There is no reason to suspect that high levels of thallium exists in tires, based on the available information. Assuming this to be correct, the burning waste tires should not result in higher emissions than burning of coal in the cement kiln. Therefore, our conclusions concerning the FMM test burn would not change from that presented in KBN's final report dated September, 1993.

5) In regard to the potential ambient impact of thallium emissions from the FMM cement plant, Dr. Koogler's modeling information was reviewed. His analysis demonstrates that with PM emissions of up to 100 lb/hr from the facility (reflective of total permitted PM emissions) and assuming a 1% thallium concentration in the PM, the FDEP ambient no-threat levels (NTLs) would not be exceeded. Dr. Koogler indicated that FMM now monitors the thallium content of the kiln dust collected in the baghouse, and when the concentration reaches 1% (10,000 ppm), they remove a portion of the kiln dust instead of recycling it back into the kiln. The thallium content of the kiln dust apparently increases with time as the kiln dust is recycled back into the system. Dr. Koogler did not mention the frequency of monitoring, or how often the kiln dust is wasted.

Our analysis of the modeling results further shows that the 24-hour ambient NTL of 0.24 $\mu g/m^3$ could be exceeded if the thallium concentration in the PM emissions reached 1.5%. Therefore, it seems important to insure the thallium content of the kiln dust does not exceed 1.5% on a daily basis.

Please call if you have any questions concerning this matter

Sincerely,

David A. Buff, M.E., P.E.
Principal Engineer

Bruce -

10/20

Tony Cleveland call me yesterday and wanted me to react to this letter. I told him that we would look into this thallium upon our review. I looked in the CAA list of 189 and did not see it listed. I told Tony that those were the pollutants that we would be looking into in the future.

widely distributed poisonous metallic element that resembles ~~lead~~ in physical properties and is used chiefly in the form of compounds in photoelectric cells and as a poison

Tl	204.37 (at. wt.)	81 (at. #)
Pb	207.2 (at. wt.)	82 (at. #)

10-20-93
Sincerely Kathy
Miles - 2:40-3:10

P.S. Hope you feel better soon —

1.5% in the cement kiln dust bag house recirculation dust [< 1.0 μm, FMM plants bleeding off to avoid RCRA regs.]
Procedural