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J. P. SUBRAMANI, Ph. D., P. E.  
ENVIRONMENTAL CONSULTANT  
(NOT A MEMBER OF THE FLORIDA BAR)

April 12, 1994

RECEIVED

Mr. Bruce Mitchell  
Bureau of Air Regulation  
Florida Department of  
Environmental Protection  
2600 Blair Stone Road  
Tallahassee, Florida 32399-2400

RECEIVED APR 12 1994

APR 12 1994

Bureau of  
Air Regulation

Bureau of  
Air Regulation

Dear Mr. Mitchell:

Hernando County and Florida Mining and Material have agreed to the following language being added to Specific Condition Number 10 of the draft permit:

Any physical modifications to the WTDF feed mechanism utilized during the test burn of WTDF/coal that results in an increased feed rate, a change in the location where WTDF is introduced into the kiln, or the introduction of WTDF into the kiln through the use of a mechanism other than a double air lock feed system may require a modification to this permit. If the WTDF feed mechanism is to be physically modified in this manner a description of such modifications shall be submitted to FDEP and HCBC 90 days prior to actual modification. FDEP and HCBC shall review this information and prior to any modification determine whether further stack testing is required in order to determine if such modifications will result in an increase in actual emissions, whether a permit modification is necessary and/or what the terms of any modified permit shall be. FDEP will provide a clear point of entry for Hernando County and any other substantially-affected parties to challenge any of FDEP's proposed determinations in this regard. FM&M shall bear the burden to provide reasonable assurances that such modifications will not affect the conclusions derived from the test burn of May and June 1993.

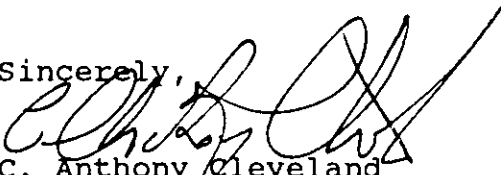
With regard to the issue of CO emission testing, Hernando County agrees with the testing procedure outlined in John Koogler's memorandum of March 28, 1994, to David Buff. I enclose a copy of

Mr. Bruce Mitchell  
April 12, 1994  
Page 2

this memorandum. It is my understanding that compliance testing for CO will be required on an annual basis by the permit. It is my further understanding that you agree with annual testing and that this provision will also appear in the permit to be issued by the Department.

Thank you very much for your assistance in regard to this matter. Please give me a telephone call if you have any questions or if I can provide you with any additional information.

Sincerely,



C. Anthony Cleveland

CAC/dg/1579  
C:\Work1\Mitch4Lt.CAC

Encl. a/s

xc: David Dee, Esq.

## MEMORANDUM

VIA FAX

TO: Dave Buff  
FROM: John Koogler  
DATE: March 28, 1994  
SUBJECT: Carbon Monoxide Limit for the  
Florida Mining & Materials Kiln No. 1  
While Using Tire Derived Fuel

RECEIVED

APR 12 1994

Bureau of  
Air Regulation

I talked with Bruce Mitchell regarding the carbon monoxide emission limit for Kiln No. 1 at Florida Mining and Materials (FM&M) while the kiln was utilizing TDF as a fuel supplement. Bruce has arrived at a baseline emission rate of 34.9 pounds per hour (see attached for derivation). To this, he has added a 22.8 pounds per hour increase (99.9 tons per year annualized) and arrived at an emission limit of 57.7 pounds per hour (somehow Bruce arrived at 57.8 pounds per hour). I spoke with Bruce at some length regarding the averaging time and an acceptable method of demonstrating compliance. Bruce stated he did not care what averaging time was selected; 1-hour, 8-hours, 24-hours, etc., but whatever averaging time was selected, compliance would be demonstrated by three test runs over the selected averaging period. In other words, if FM&M selected an 8-hour averaging period, the Department would require three 8-hour test runs for compliance. Bruce stated that this has been the position taken by John Brown and others and, hence, the position he would follow.

I discussed this matter with FM&M personnel and it has been decided to select a 1-hour averaging time for the 57.7 pounds per hour limit, with compliance being demonstrated by three 1-hour test runs. In selecting this averaging period, we recognized that there were periods of time during the compliance test conducted on June 8, 1993, when the carbon monoxide limit exceeded 57.7 pounds per hour and also times when the average of three successive 1-hour emission rates exceeded 57.7 pounds per hour. As pointed out in our report comparing emission rates under baseline and TDF firing conditions (pages 26-31), it is our opinion that the carbon monoxide emission rates measured on June 8, 1993, were the result of a minor upset in kiln operations. The carbon monoxide emission rates measured on June 9, 1993, also while TDF was used as a fuel supplement, are well below 57.7 pounds per hour and are consistent with emission rates measured on Kilns 1 and 2 when the kilns were fired with coal and/or coal and Flo-lite. We are confident that FM&M can comply with the 57.7 pounds per hour (1-hour average) carbon monoxide emission limits except under upset conditions. Certainly, over an annual period, the increase in carbon monoxide emissions as a result of burning tire derived fuel will be much less than 100 tons per year.

Give me a call with your comments on this matter when you get back into the office. We need to get this matter resolved this week.



CARBON MONOXIDE DATA REVIEW  
 FLORIDA MINING & MATERIALS  
 BROOKSVILLE, FLORIDA  
 MAY 5 AND JUNE 9, 1993

3/23/94

Baseline Data - (No TDF)					Coal/TDF Data						
Kiln Number	Test Date	Fuel Type	Preheater Feed Rate (tph)	Hourly Average Carbon Monoxide (lb/hr)	Kiln Number	Test Date	Preheater Feed Rate (tph)	Hourly Average Carbon Monoxide (lb/hr)			
1	02/28/92	Coal	144	40.1 37.5 40.7	1	06/08/93	140-142	64.2			
				39.4				67.9			
								32.9			
1	02/28/92	Coal/Flolite	144	32.6 37.5 40.7				46.2			
				36.9				52.4			
2	03/24/92	Coal	139	38.6 40.7				80.9			
				38.2 - 1992 avg				55.5			
								43.9			
2	02/10/93	Coal	139	41.4 41.6 47.3 41.8				44.8			
								50.5			
								71.3			
								68.8			
			Set Average	40.0			Set Average	56.6			
1	05/04/93	Coal	139-145	27.0 29.2 31.5 30.0 32.0 30.4 32.8 34.3 35.1 37.4 33.5 28.8	1	06/09/93	101-143	56.1			
								47.9			
								37.7			
								44.6			
								39.6			
								39.9			
								35.1			
								39.2			
								38.6			
								39.7			
								34.8			
								44.2			
			Set Average	31.8						Set Average	41.5
1	05/05/93	Coal	105-146	33.8 28.0 30.7 35.3 29.1 30.7 32.3 32.3 32.9 29.0 30.7 32.5	1						
				31.8							
				31.4							
				31.6 - 1993 avg							
			Set Average	31.4							

$$1992-93 Avg$$

$$= (38.2 + 31.6) / 2$$

$$= 34.9 lb/hr$$

Max Increase

$$= 99.9 tpy \times 2000 / 8760$$

$$= 22.8 lb/hr$$

Proposed Emission Rate

$$= 34.9 + 22.8$$

$$= 57.7 lb/hr$$

MEMORANDUM

VIA FAX

TO: Don Kelly  
Anetha Lue  
David Dee

FROM: John Koogler

DATE: March 23, 1994

SUBJECT: TDF Carbon Monoxide Limit  
and "Modification" Condition

*FM&M proposes  
1-hr avg limit.  
Dave Buff indicated  
conformance 4/1/94  
3 1-hour test  
runs for  
compliance*

I received a phone call from Bruce Mitchell during which time Bruce stated that he has finalized his position regarding the carbon monoxide emission limit for Kiln No. 1. Bruce stated that to establish a baseline carbon monoxide emission rate for Kiln No. 1, he would take the average of the 1992 test data of 38.2 pounds per hour (see attached data summary) and the average of the 1993 baseline test data of 31.6 pounds per hour and average these two averages to obtain a two-year average of 34.9 pounds per hour. Bruce stated that this is the rationale that the Department has used in several cases to establish a baseline emission rate, and hence, the rationale that he would use to establish the carbon monoxide baseline emission rate for Kiln No. 1.

To the baseline emission rate of 34.9 pounds per hour, Bruce proposed to add 22.8 pounds per hour (99.9 tons per year, annualized). This would result in a maximum carbon monoxide emission rate for Kiln No. 1 of 57.7 pounds per hour. Bruce stated that it made no difference to him whether FM&M interpreted this emission rate to be a 1-hour average or an 8-hour average emission rate.

I spoke with Dave Buff regarding Bruce's position on this date (March 23, 1994). Dave suggested, based on a condition he had seen in another permit, that the 57.7 pounds per hour be accepted as a 24-hour average emission limit with compliance to be demonstrated by three 2-hour compliance tests. I am trying to get back in touch with Bruce Mitchell to see if this type of limit and method of compliance demonstration is acceptable with him.

*Bruce - this is next point now*

*JAC 4/1/94*

On the matter of the specific condition related to modification, I am proposing the following wording based upon comments by David Dee.

Any physical modification to the WTDF feed mechanism that results in an increased feed rate, or a change in the location where WTDF is introduced into the kiln, or the introduction of WTDF into the kiln through the use of a mechanism other than a double air lock feed system, may require a modification to this permit. A description of such modifications shall be submitted to FDEP and HCBC. FDEP and HCBC shall have 90 days to 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 FM&M's burden to provide reasonable assurance that such modifications will not affect the conclusions derived from the test burn of May and June 1993.

I will be out of the office Thursday and Friday (March 24 and 25). I will be in phone contact with my office during this period, however.

CARBON MONOXIDE DATA REVIEW  
 FLORIDA MINING & MATERIALS  
 BROOKSVILLE, FLORIDA  
 MAY 5 AND JUNE 9, 1993

3/23/94

Baseline Data - (No TDF)					Coal/TDF Data				
Kiln Number	Test Date	Fuel Type	Preheater Feed Rate (tph)	Hourly Average Carbon Monoxide (lb/hr)	Kiln Number	Test Date	Preheater Feed Rate (tph)	Hourly Average Carbon Monoxide (lb/hr)	
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								39.9	
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								39.2	
								38.6	
								39.7	
								34.8	
								44.2	
			Set Average	31.4			Set Average	41.5	

31.8  
 31.4  
31.6 - 1993 avg  
1992 - 93 Avg  
 = (38.2 + 31.6) / 2  
 = 34.9 lb/hr  
Max Increase  
 = 99.9 tph x 2000 / 8760  
 = 22.8 lb/hr  
Proposed Emission Rate  
 = 34.9 + 22.8  
 = 57.7 lb/hr





I N T E R O F F I C E   M E M O R A N D U M

**Date:** 07-Feb-1994 09:22am ES  
**From:** Holly Burnaman TAL  
BURNAMAN\_H  
**Dept:** Office General Counsel  
**Tel No:** 904/488-9730  
**SUNCOM:**

**TO:** Patty Adams TAL

( ADAMS\_P )

**Subject:** RE: Florida Mining and Materials

I found the package thanks!!

I N T E R O F F I C E   M E M O R A N D U M

**Date:** 07-Feb-1994 08:32am ES  
**From:** Holly Burnaman TAL  
BURNAMAN\_H  
**Dept:** Office General Counsel  
**Tel No:** 904/488-9730  
**SUNCOM:**

**TO:** Duane Revell TPA  
**TO:** Patty Adams TAL  
**TO:** Jim McDonald TPA

( REVELL\_D @ A1 @ TPA1 )  
( ADAMS\_P )  
( MCDONALD\_J @ A1 @ TPA1 )

**subject:** Florida Mining and Materials

On February 3, 1994, we received a Motion for Extension of Time from Hernando County, a third party, challenging the Intent to Issue for Florida Mining and Materials permit No. AC27-240349. Jim, can I please get a copy of the Intent?

I N T E R O F F I C E   M E M O R A N D U M

**Date:** 07-Feb-1994 08:32am ES  
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**Dept:** Office General Counsel  
**Tel No:** 904/488-9730  
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**TO:** Duane Revell TPA  
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( REVELL\_D @ A1 @ TPA1 )  
( ADAMS\_P )  
( MCDONALD\_J @ A1 @ TPA1 )

**Subject:** Florida Mining and Materials

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0530010

CARLTON, FIELDS, WARD, EMMANUEL, SMITH & CUTLER, P. A.

ATTORNEYS AT LAW

ONE HARBOUR PLACE P.O. BOX 3239 TAMPA, FLORIDA 33601 (813) 223-7000 FAX (813) 229-4133	FIRSTATE TOWER P.O. BOX 1171 ORLANDO, FLORIDA 32802 (407) 849-0300 FAX (407) 648-9099	HARBOURVIEW BUILDING P.O. BOX 12426 PENSACOLA, FLORIDA 32582 (904) 434-0142 FAX (904) 434-5366	FIRST FLORIDA BANK BUILDING P.O. DRAWER 190 TALLAHASSEE, FLORIDA 32302 (904) 224-1585 FAX (904) 222-0398	ESPERANTE P.O. BOX 150 WEST PALM BEACH, FLORIDA 33402 (407) 659-7070 FAX (407) 659-7368	BARNETT TOWER P.O. BOX 2861 ST. PETERSBURG, FLORIDA 33731 (813) 821-7000 FAX (813) 822-3768
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PLEASE REPLY TO :

February 4, 1994

Tallahassee  
**RECEIVED**

FEB 07 1994

Bureau of  
Air Regulation

Bruce Mitchell  
Department of Environmental  
Protection  
Twin Towers Office Building  
2600 Blair Stone Road  
Tallahassee, Florida 32399

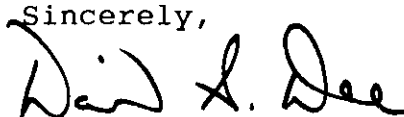
Re: Florida Mining & Materials  
Permit AC27-240349

Dear Bruce:

Southdown, Inc., is doing business as Florida Mining & Materials (FMM) and it operates two dry cement kilns at its Brooksville cement plant in Hernando County, Florida. This firm has been assisting Southdown with its efforts to obtain the necessary DEP permits and approvals for the use of tire derived fuel. Nonetheless, the Department inadvertently omitted us from the list of people to receive copies of the draft permit modification for Southdown. Please make a note in your file to show that we are counsel of record for Southdown and, therefore, we would like to receive copies of any correspondence concerning this project.

Parenthetically, the Department sent a copy of the permit modification to Mr. Larry Sellers of the Holland & Knight law firm and he then sent it to me. Mr. Sellers represents Florida Crushed Stone, not Southdown.

Thank you for your assistance.

Sincerely,  
  
David S. Dee

cc: Don Kelly  
John Koogler  
Larry Sellers  
Tony Cleveland



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

KA 521-93-03

February 1, 1994

RECEIVED

FEB 04 1994

Bureau of  
Air Regulation

VIA FAX

Mr. Bruce Mitchell  
Florida Department of  
Environmental Protection  
Twin Towers Office Building  
2600 Blair Stone Road  
Tallahassee, Florida 32399-2400

Subject: Florida Mining & Materials  
Permit AC27-240349  
Comments on Proposed Permit to Allow  
Allow the Use of TDF in the FM&M  
No. 1 Cement Kiln

Dear Mr. Mitchell:

I would like to offer the following comments on Permit AC27-240349 that the Department intends to issue to Southdown, Inc., DBA Florida Mining & Materials, authorizing the continuous use of TDF in the company's No. 1 cement kiln. In general, we find the permit conditions acceptable. However, there are a few details that we request be amended.

First, Specific Condition No. 12 of the proposed permit limits carbon monoxide emissions to 51 pounds per hour and 223.4 tons per year. These are limits that we requested to avoid the New Source Review Requirements. The derivation of these emission limits was presented in my letter to Mr. Clair Fancy dated October 12, 1993 (copy attached). On page 2 of that letter, I state:

"... FM&M proposes to establish a carbon monoxide emission rate from the No. 1 cement kiln of 51.0 pounds per hour (31.6 pounds per hour measured during the baseline tests plus a 22.4 pound per hour increase). The 22.4 pound per hour increase would result in an annual increase of carbon monoxide emissions of 98.1 tons per year if the plant operated continuously for 8760 hours per year."

It is apparent that if you add the 31.6 pounds per hour emission rate measured during the baseline test and the requested 22.4 pounds per hour increase, the resulting emission rate will be 54.0 pounds per hour (not 51.0 pounds per hour). On an annual basis, the carbon monoxide emission rate corresponding to 54.0 pounds per hour will be 236.5 tons per year

(rather than 223.4 tons per year). Correcting this mathematical error will not result in any increase in actual carbon monoxide emissions but will require that the limits in Specific Condition No. 12 be amended to 54.0 pounds per hour and 236.5 tons per year for carbon monoxide. Also, the annual carbon monoxide emission rate referenced in Specific Condition No. 13 should also be corrected to 236.5 tons per year, and to be consistent with the revised carbon monoxide emission limits, page 1 of 3 of the Notice of Intent to Issue should be amended to reflect the corrected annual carbon monoxide emission rate.

We would also like to request that the hourly carbon monoxide emission rate of 54.0 pounds per hour be an 8-hour average emission limit. This request is made because of fluctuations in the carbon monoxide emission rates. These fluctuations were demonstrated during the TDF test period. Attached is a summary of the 2-hour average carbon monoxide emission rates measured both during the baseline and TDF test periods. It will be noted that during the TDF test period, there were three 2-hour periods when the carbon monoxide emission rate exceed 54.0 pounds per hour. The averaging of this emission rate over an eight hour period will allow FM&M to average out some of the short-term peak carbon monoxide levels which often occur during the operation of a Portland cement plant. This requested change in the averaging period will not result in an increase in annual emissions and is not expected to have any significant affect on ambient carbon monoxide concentrations.

Regarding Specific Condition No. 14, the compliance testing requirement for carbon monoxide, we would request that this condition be a condition of the construction permit and be required by the operating permit only in the year that the operating permit is to be renewed. In our opinion, this testing requirement will adequately demonstrate compliance with the proposed carbon monoxide emission limit.

There are two editorial changes that I would like to suggest. The first applies to Specific Condition No. 10. It seems it would be more appropriate if the condition read:

"If there is any change in the method of operation ...."

This change will make the condition grammatically correct. A similar change is suggested in Specific Condition No. 13 where the suggested wording is:

"Pursuant to Rule 17-212.400(2)(g), F.A.C., if there is any net increase ...."

Again, this suggested change will make the condition more grammatically correct.



Mr. Bruce Mitchell  
Florida Department of  
Environmental Protection

February 1, 1994  
Page 3

One other matter that we discussed was the expiration date of the permit. The proposed permit is to expire June 30, 1994 and FM&M has no problem with this date. The compliance test, including that required by Specific Condition No. 14, will be conducted during the month of February 1994 and the Certificate of Completion of Construction will be submitted shortly thereafter. Based on this schedule, the Department should have adequate time to issue an operating permit prior to the June 30, 1994, expiration date.

I appreciate your review of these matters and will be more than happy to answer any questions or provide any additional information should it be required.

Very truly yours,

KOGLER & ASSOCIATES

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

JBK:wa

c: Mr. Don Kelly  
Ms. Anetha Lue  
Mr. David Dee





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

KA 521-92-01

October 12, 1993

**RECEIVED**

OCT 15 1993

Division of Air  
Resources Management

VIA FAX AND MAIL

Mr. Clair Fancy  
Florida Department of  
Environmental Protection  
Twin Towers Office Building  
2600 Blair Stone Road  
Tallahassee, Florida 32399-2400

Subject: Hernando County-AP  
Southdown, Inc. dba Florida Mining  
and Materials  
Permit Amendment to Allow the Use  
of Tire Derived Fuel

Dear Mr. Fancy:

Southdown, Inc. dba Florida Mining and Materials (FM&M) operates two dry process cement kilns at their Brooksville cement plant located on Highway 98 northwest of Brooksville in Hernando County, Florida. On behalf of FM&M, we are requesting authorization for a minor modification to the No. 1 cement kiln to allow the use of tire derived fuel (TDF) as a fuel supplement.

The No. 1 cement kiln was permitted by AC27-186923 to operate at a kiln feed rate of 130 tons per hour (equivalent to a clinker production rate of 79.6 tons per hour) and a maximum heat input rate of 300 MMBTU per hour. The primary fuel authorized by AC27-186923 is coal with a sulfur content of 1.0 percent. FM&M is also authorized by the referenced air construction permit to use No. 6 fuel oil as a backup fuel and to use Flolite (a re-refined oil blend) as a fuel supplement during normal kiln operations, for kiln preheating and during kiln idle times.

FM&M is presently operating Kiln No. 1 under Air Operating Permit A027-213207 issued June 16, 1992 and expiring June 15, 1997. On February 5, 1993, FM&M was granted an amendment to this permit authorizing performance tests for pollutant emissions on the No. 1 cement kiln while using TDF as a fuel supplement. The amendment authorized the use of TDF to provide up to 20 percent of the total heat input to the kiln; or up to 2.14 tons of TDF per hour.



The emission measurements to evaluate TDF were conducted during the periods May 4-5 (baseline tests) and June 8-9 (TDF firing tests), 1993. The results of these tests have been reported to the Department and to Hernando County (see reports by Koogler & Associates entitled, *Summary of Particulate Matter, Sulfur Dioxide, Total Hydrocarbons, Carbon Monoxide, Nitrogen Oxides, Hydrogen Chloride, Speciated Volatile Organics, Metals, Dioxins/Furans and Visible Emission Measurements under Baseline and Coal/TDF Firing Conditions and Comparison of Particulate Matter, Sulfur Dioxide, Total Hydrocarbons, Carbon Monoxide, Nitrogen Oxides, Hydrogen Chloride, Speciated Volatile Organics, Metals and Dioxins/Furans Emission Measurements and Opacities of Emissions Under Baseline and Coal/TDF Firing Conditions*; both dated May 4-5 and June 8-9, 1993). Comments prepared on behalf of Hernando County are included in the report entitled, *Whole Tire Derived Fuel Test Burn, Florida Mining and Materials, Brooksville, Florida*, prepared by KBN and dated September 1993. A copy of the KBN report has been submitted to the Department.

The emission measurements conducted in May and June of 1993 demonstrated that there were day-to-day fluctuations in the emission rates of many constituents from the No. 1 cement kiln. Further, the tests demonstrated that the use of TDF had no significant affect on most of the emissions from the kiln. However, the testing did indicate the possibility that there might be small increases in the emission rates of some non-regulated organic and inorganic constituents as well as a possible increase in the carbon monoxide emission rate.

The carbon monoxide emission rate averaged 49.1 pounds per hour during the two day test in June 1993 when TDF was used as a fuel supplement. This average was 17.5 pounds per hour greater than the average carbon monoxide emission rate measured during the two day test in May 1993 when the kiln was fired with 100 percent coal. The 17.5 pound per hour increase in carbon monoxide emissions, when annualized (8760 hours per year), results in a possible carbon monoxide emission rate increase of 76.6 tons per year. This potential increase is not "significant," as defined in Rule 17-212.400 and Table 17-212.400-2, FAC. The referenced rule and table define a carbon monoxide emission rate increase of 100 tons per year or more as significant for PSD purposes. An increase of 100 tons per year is equivalent to approximately 22.8 pounds per hour for 8760 hours per year.

For purposes of the permit amendment requested by this letter and for PSD tracking purposes, FM&M proposes to establish a carbon monoxide emission rate from the No. 1 cement kiln of 51.0 pounds per hour (31.6 pounds per hour measured during the baseline tests plus a 22.4 pound per hour increase). The 22.4 pound per hour increase would result in an annual increase in carbon monoxide emissions of 98.1 tons per year if the plant operated continuously for 8760 hours per year. This proposed increase is not significant and it takes into consideration and provides for normal fluctuations in the carbon monoxide emission rates such as those measured during the June 8, 1993, test period. The total annual carbon monoxide emission rate proposed for Kiln No. 1 for PSD tracking purposes is 223.4 tons per year. Of course, the kiln will experience scheduled and unscheduled outages which will reduce the actual operating time to less than 8760 hours per year and, hence, will reduce the actual annual carbon monoxide emissions.

$$54 = 31.6 + 22.4$$

230.5



FM&M is willing to accept and comply with the permit conditions set forth in the report prepared on behalf of Hernando County, with one exception. The County suggested that, "Any physical modification to the WTDF feed mechanism will require a modification to this permit, ...." It is our opinion that this proposed condition is unnecessary and unwarranted.

FM&M has considered physical changes to the tire feed system but, as discussed with Mr. Bruce Mitchell of your staff, the physical changes will not constitute a "modification" as defined by Department rule because there will be no change in emissions (Rule 17-212.200(46), FAC). Any feed system used by FM&M will result in the TDF being introduced to the No. 1 kiln at the base of the preheater through a double air lock feed system. This is the point where TDF was introduced during the compliance tests and this is the type of feed system used during the compliance tests. Any physical changes made to the feed system by FM&M will not change the point nor the manner in which the TDF is introduced nor the type of mechanism used to introduce the WTDF. There is no reason, therefore, to believe that any equipment change within these constraints will affect emissions. Hence, such changes should not require an amendment to the permit for the kiln.

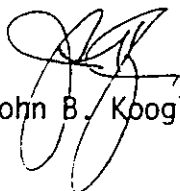
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A check in the amount of \$4,500 will be provided by Southdown under separate cover. This is the fee required for a non-PSD permit review when the emission rate increase is in the range of 50-100 tons per year.

We appreciate your consideration of this matter and will be happy to provide additional information should it be required.

Very truly yours,

KOOGLER & ASSOCIATES

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

JBK:wa

c: Mr. Bruce Mitchell, FDEP, Tallahassee  
Mr. Don Kelly, FM&M  
Ms. Anetha Lue, Southdown  
Mr. David Dee, Carlton et al



TABLE 12  
 COMPARISON OF CARBON MONOXIDE EMISSION RATES  
 BASELINE AND COAL/TDF CONDITIONS

FLORIDA MINING & MATERIALS  
 BROOKSVILLE, FLORIDA  
 MAY 4-5 AND JUNE 8-9, 1993

Run	Baseline lb/hr	TDF lb/hr
1	28.10	66.08
2	30.73	39.91
3	31.21	66.63
4	33.56	49.7
5	36.24	47.63
6	31.17	70.04
7	30.9	52
8	33.06	41.16
9	29.9	39.76
10	30.32	37.11
11	30.97	39.13
12	31.56	39.51
Mean	31.48	49.06
S var	4.19	146.81
n	12.00	12.00
Pooled est	8.69	
t stat.	4.96	
t' (95% C.I.)	1.717	
Difference is significant		

*2hr avg*

↑  
*2-hour average  
 emission rates*



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

PROJECT 521-93-03

FAX TRANSMITTAL FORM

TO: Bruce Mitchell

FROM: John Kougler

SENT BY: Mealy

DATE: 2/2/94

FAX PHONE: 904-377-7158 VOICE PHONE: 904-377-5822

The text being transmitted consists of 7 pages PLUS this one.

REMARKS:

- cc: B. Thomas
- Q. Harper, EPA
- Q. Bunyat, NPS
- J. Cleveland
- C. Metrick, Kennedy Co



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

PROJECT 521-93-03

FAX TRANSMITTAL FORM

TO: Bruce Mitchell

FROM: John Kougler

SENT BY: Wendy

DATE: 2/2/94

FAX PHONE: 904-377-7158 VOICE PHONE: 904-377-5822

The text being transmitted consists of 7 pages PLUS this one.

REMARKS: 2-2-94  
give FAX and copies to distribute

EPA, NPS, SWD, Hernando Co & DHFC  
spoke to John Brown about comments - to address  
in the Final Determination - NOT Reissue,  
Called Wendy and advised that we do not  
intend to reissue the "Interim" etc



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

KA 521-93-03

February 1, 1994

VIA FAX

Mr. Bruce Mitchell  
Florida Department of  
Environmental Protection  
Twin Towers Office Building  
2600 Blair Stone Road  
Tallahassee, Florida 32399-2400

Subject: Florida Mining & Materials  
Permit AC27-240349  
Comments on Proposed Permit to Allow  
Allow the Use of TDF in the FM&M  
No. 1 Cement Kiln

Dear Mr. Mitchell:

I would like to offer the following comments on Permit AC27-240349 that the Department intends to issue to Southdown, Inc., DBA Florida Mining & Materials, authorizing the continuous use of TDF in the company's No. 1 cement kiln. In general, we find the permit conditions acceptable. However, there are a few details that we request be amended:

First, Specific Condition No. 12 of the proposed permit limits carbon monoxide emissions to 51 pounds per hour and 223.4 tons per year. These are limits that we requested to avoid the New Source Review Requirements. The derivation of these emission limits was presented in my letter to Mr. Clair Fancy dated October 12, 1993 (copy attached). On page 2 of that letter, I state:

"... FM&M proposes to establish a carbon monoxide emission rate from the No. 1 cement kiln of 51.0 pounds per hour (31.6 pounds per hour measured during the baseline tests plus a 22.4 pound per hour increase). The 22.4 pound per hour increase would result in an annual increase of carbon monoxide emissions of 98.1 tons per year if the plant operated continuously for 8760 hours per year."

It is apparent that if you add the 31.6 pounds per hour emission rate measured during the baseline test and the requested 22.4 pounds per hour increase, the resulting emission rate will be 54.0 pounds per hour (not 51.0 pounds per hour). On an annual basis, the carbon monoxide emission rate corresponding to 54.0 pounds per hour will be 236.5 tons per year

Mr. Bruce Mitchell  
Florida Department of  
Environmental Protection

February 1, 1994  
Page 2

(rather than 223.4 tons per year). Correcting this mathematical error will not result in any increase in actual carbon monoxide emissions but will require that the limits in Specific Condition No. 12 be amended to 54.0 pounds per hour and 236.5 tons per year for carbon monoxide. Also, the annual carbon monoxide emission rate referenced in Specific Condition No. 13 should also be corrected to 236.5 tons per year, and to be consistent with the revised carbon monoxide emission limits, page 1 of 3 of the Notice of Intent to Issue should be amended to reflect the corrected annual carbon monoxide emission rate.

We would also like to request that the hourly carbon monoxide emission rate of 54.0 pounds per hour be an 8-hour average emission limit. This request is made because of fluctuations in the carbon monoxide emission rates. These fluctuations were demonstrated during the TDF test period. Attached is a summary of the 2-hour average carbon monoxide emission rates measured both during the baseline and TDF test periods. It will be noted that during the TDF test period, there were three 2-hour periods when the carbon monoxide emission rate exceed 54.0 pounds per hour. The averaging of this emission rate over an eight hour period will allow FM&M to average out some of the short-term peak carbon monoxide levels which often occur during the operation of a Portland cement plant. This requested change in the averaging period will not result in an increase in annual emissions and is not expected to have any significant affect on ambient carbon monoxide concentrations.

Regarding Specific Condition No. 14, the compliance testing requirement for carbon monoxide, we would request that this condition be a condition of the construction permit and be required by the operating permit only in the year that the operating permit is to be renewed. In our opinion, this testing requirement will adequately demonstrate compliance with the proposed carbon monoxide emission limit.

There are two editorial changes that I would like to suggest. The first applies to Specific Condition No. 10. It seems it would be more appropriate if the condition read:

"If there is any change in the method of operation ...."

This change will make the condition grammatically correct. A similar change is suggested in Specific Condition No. 13 where the suggested wording is:

"Pursuant to Rule 17-212.400(2)(g), F.A.C., if there is any net increase ...."

Again, this suggested change will make the condition more grammatically correct.



Mr. Bruce Mitchell  
Florida Department of  
Environmental Protection

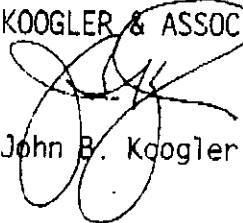
February 1, 1994  
Page 3

One other matter that we discussed was the expiration date of the permit. The proposed permit is to expire June 30, 1994 and FM&M has no problem with this date. The compliance test, including that required by Specific Condition No. 14, will be conducted during the month of February 1994 and the Certificate of Completion of Construction will be submitted shortly thereafter. Based on this schedule, the Department should have adequate time to issue an operating permit prior to the June 30, 1994, expiration date.

I appreciate your review of these matters and will be more than happy to answer any questions or provide any additional information should it be required.

Very truly yours,

KOOGLER & ASSOCIATES

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

JBK:wa

c: Mr. Don Kelly  
Ms. Anetha Lue  
Mr. David Dee







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

KA 521-92-01

October 12, 1993

RECEIVED

OCT 15 1993

Division of Air  
Resources Management

VIA FAX AND MAIL

Mr. Clair Fancy  
Florida Department of  
Environmental Protection  
Twin Towers Office Building  
2600 Blair Stone Road  
Tallahassee, Florida 32399-2400

Subject: Hernando County-AP  
Southdown, Inc. dba Florida Mining  
and Materials  
Permit Amendment to Allow the Use  
of Tire Derived Fuel

Dear Mr. Fancy:

Southdown, Inc. dba Florida Mining and Materials (FM&M) operates two dry process cement kilns at their Brooksville cement plant located on Highway 98 northwest of Brooksville in Hernando County, Florida. On behalf of FM&M, we are requesting authorization for a minor modification to the No. 1 cement kiln to allow the use of tire derived fuel (TDF) as a fuel supplement.

The No. 1 cement kiln was permitted by AC27-186923 to operate at a kiln feed rate of 130 tons per hour (equivalent to a clinker production rate of 79.6 tons per hour) and a maximum heat input rate of 300 MMBTU per hour. The primary fuel authorized by AC27-186923 is coal with a sulfur content of 1.0 percent. FM&M is also authorized by the referenced air construction permit to use No. 6 fuel oil as a backup fuel and to use Fiolite (a re-refined oil blend) as a fuel supplement during normal kiln operations, for kiln preheating and during kiln idle times.

FM&M is presently operating Kiln No. 1 under Air Operating Permit A027-213207 issued June 16, 1992 and expiring June 15, 1997. On February 5, 1993, FM&M was granted an amendment to this permit authorizing performance tests for pollutant emissions on the No. 1 cement kiln while using TDF as a fuel supplement. The amendment authorized the use of TDF to provide up to 20 percent of the total heat input to the kiln or up to 2.14 tons of TDF per hour.

The emission measurements to evaluate TDF were conducted during the periods May 4-5 (baseline tests) and June 8-9 (TDF firing tests), 1993. The results of these tests have been reported to the Department and to Hernando County (see reports by Koogler & Associates entitled, *Summary of Particulate Matter, Sulfur Dioxide, Total Hydrocarbons, Carbon Monoxide, Nitrogen Oxides, Hydrogen Chloride, Speciated Volatile Organics, Metals, Dioxins/Furans and Visible Emission Measurements under Baseline and Coal/TDF Firing Conditions and Comparison of Particulate Matter, Sulfur Dioxide, Total Hydrocarbons, Carbon Monoxide, Nitrogen Oxides, Hydrogen Chloride, Speciated Volatile Organics, Metals and Dioxins/Furans Emission Measurements and Opacities of Emissions Under Baseline and Coal/TDF Firing Conditions*; both dated May 4-5 and June 8-9, 1993). Comments prepared on behalf of Hernando County are included in the report entitled, *Whole Tire Derived Fuel Test Burn, Florida Mining and Materials, Brooksville, Florida*, prepared by KBN and dated September 1993. A copy of the KBN report has been submitted to the Department.

The emission measurements conducted in May and June of 1993 demonstrated that there were day-to-day fluctuations in the emission rates of many constituents from the No. 1 cement kiln. Further, the tests demonstrated that the use of TDF had no significant affect on most of the emissions from the kiln. However, the testing did indicate the possibility that there might be small increases in the emission rates of some non-regulated organic and inorganic constituents as well as a possible increase in the carbon monoxide emission rate.

The carbon monoxide emission rate averaged 49.1 pounds per hour during the two day test in June 1993 when TDF was used as a fuel supplement. This average was 17.5 pounds per hour greater than the average carbon monoxide emission rate measured during the two day test in May 1993 when the kiln was fired with 100 percent coal. The 17.5 pound per hour increase in carbon monoxide emissions, when annualized (8760 hours per year), results in a possible carbon monoxide emission rate increase of 76.6 tons per year. This potential increase is not "significant," as defined in Rule 17-212.400 and Table 17-212.400-2, FAC. The referenced rule and table define a carbon monoxide emission rate increase of 100 tons per year or more as significant for PSD purposes. An increase of 100 tons per year is equivalent to approximately 22.8 pounds per hour for 8760 hours per year.

For purposes of the permit amendment requested by this letter and for PSD tracking purposes, FM&M proposes to establish a carbon monoxide emission rate from the No. 1 cement kiln of 51.0 pounds per hour (31.6 pounds per hour measured during the baseline tests plus a 22.4 pound per hour increase). The 22.4 pound per hour increase would result in an annual increase in carbon monoxide emissions of 98.1 tons per year if the plant operated continuously for 8760 hours per year. This proposed increase is not significant and it takes into consideration and provides for normal fluctuations in the carbon monoxide emission rates such as those measured during the June 8, 1993, test period. The total annual carbon monoxide emission rate proposed for Kiln No. 1 for PSD tracking purposes is 223.4 tons per year. Of course, the kiln will experience scheduled and unscheduled outages which will reduce the actual operating time to less than 8750 hours per year and, hence, will reduce the actual annual carbon monoxide emissions.

$$54 = 31.6 + 22.4$$

236.5



FM&M is willing to accept and comply with the permit conditions set forth in the report prepared on behalf of Hernando County, with one exception. The County suggested that, "Any physical modification to the WTDF feed mechanism will require a modification to this permit, ...." It is our opinion that this proposed condition is unnecessary and unwarranted.

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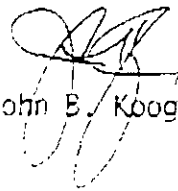
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66.63  
49.7  
47.63  
70.04

2hr avg

↑  
2-hour average  
emission rates