



Florida Department of Environmental Protection

Lawton Chiles
Governor

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Virginia B. Wetherell
Secretary

FAX TRANSMITTAL SHEET

TO: John Koogler

DATE: 4-12-94

PHONE: 904-377-7158

TOTAL NUMBER OF PAGES, INCLUDING COVER PAGE: 3

FROM: Bruce Mitchell

DIVISION OF AIR RESOURCES MANAGEMENT

COMMENTS: comments related to FMD, M's TDF proposal.

PHONE: 904-921-9506

FAX NUMBER: 904/922-6979

If there are any problems with this fax transmittal, please call the above phone number.

Printed on recycled paper.

MESSAGE CONFIRMATION

APR-12-'94 TUE 16:30

TERM ID:

F-9999

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| NO. | DATE | ST. TIME | TOTAL TIME | ID | DEPT CODE | OK | NG |
|-----|-------|----------|------------|--------------|-----------|----|----|
| 135 | 04-12 | 18:18 | 00:01:52 | 904 377 7158 | | 03 | 00 |



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

PROJECT _____

FAX TRANSMITTAL FORM

TO: Bruce Mitchell
FDEP - Tallahassee

FROM: John Kougler

SENT BY: _____

DATE: 3/10/94

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

The text being transmitted consists of 1 pages PLUS this one.

REMARKS: Bruce:

Kiln #1 CO data for FHM.
When reviewing the CO data
please realize that Kiln #1 &
Kiln #2 are identical Kilns.
For this reason I believe there
is some justification for combining
the two data sets to establish
a CO baseline emission rate for
Kiln #1. Please call after your
reviewed Thankyou

TABLE 13
CARBON MONOXIDE DATA REVIEW

FLORIDA MINING & MATERIALS
BROOKSVILLE, FLORIDA

MAY 5 AND JUNE 9, 1993

Kiln 1 Baseline Data (No TDF)

| Kiln Number | Test Date | Fuel Type | Preheater Feed Rate (tph) | Hourly Average Carbon Monoxide (lb/hr) |
|-------------|-----------|--------------|---------------------------|--|
| 1 | 02/28/92 | Coal | 144 | 40.1 37.5 40.7 |
| 1 | 02/28/92 | Coal/Flolite | 144 | 32.6 37.5 40.7 |
| | | | Set Average | 38.2 |
| 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 |
| | | | Set Average | 31.8 |
| 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 |
| | | | Set Average | 31.4 |

Average all non-TDF data = 32.9
 Standard deviation = 3.7
 98.1 tpy average increase
 = $98.1 \times 2000/8760$ = 22.4
 Adjusted average
 = $32.9 + 22.4$ = 55.3
 95th Percentile
 = $58.2 + 1.96 (3.7)$ = 62.6 lb/hr

CARBON MONOXIDE DATA REVIEW

FLORIDA MINING & MATERIALS
BROOKSVILLE, FLORIDA

Baseline Data (No TDF)

| Kiln Number | Test Date | Fuel Type | Preheater Feed Rate (tph) | Hourly Average Carbon Monoxide (lb/hr) |
|-------------|-----------|--------------|---------------------------|--|
| 1 | 02/28/92 | Coal | 144 | 40.1 37.5 |
| 1 | 02/28/92 | Coal/Flolite | 144 | 40.7 32.6 37.5 |
| 2 | 03/24/92 | Coal | 139 | 40.7 38.6 40.7 |
| 2 | 02/10/93 | Coal | 139 | 41.4 41.6 47.3 |
| 2 | 01/25/94 | Coal | 142 | 41.8 52.0 43.2 |
| | | | Set Average | <u>60.1</u> 40.4 |
| 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 |
| | | | Set Average | <u>28.8</u> 31.8 |
| 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 |
| | | | Set Average | <u>32.5</u> 31.4 |

Average all non-TDF data = 35.8

Standard deviation = 6.9

98.1 tpy average increase
= $98.1 \times 2000/8760$ = 22.4Adjusted average
= $35.8 + 22.4$ = 58.295th Percentile
= $58.2 + 1.96 (6.9)$ = 71.7 lb/hr



PROJECT 521-92-01

FAX TRANSMITTAL FORM

RECEIVED

TO: BRUCE MITCHELL
DEP

JAN 14 1994

Bureau of
Air Regulation

FROM: JOHN KOOGLER

SENT BY: _____

DATE: 1/14/94

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

The text being transmitted consists of 4 pages PLUS this one.

REMARKS: BRUCE

Please review attached Thallium test method used by FHM and comparative test results. FHM method is used daily by plant personnel to control Thallium to ~ 1.0% level (i.e. 100 ppm). Comparative tests show FHM method to provide conservatively low results. Call after you've had an opportunity to review



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:

| | <u>Brooksville Cement Laboratory</u> | <u>Thornton Laboratory</u> |
|------------|--------------------------------------|----------------------------|
| 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

01/14/94 11:26
JAN-14-94 FRI 11:54

904 377 7158
BROOKSVILLE CEMENT

KOGLER & ASSOC. --- FDER TALL
FAX NO. 9047549836

004/005
F. UC



THORNTON LABORATORIES, INC.
MARINE, ANALYTICAL AND ENVIRONMENTAL SERVICES

1145 EAST CASS STREET, TAMPA, FLORIDA 33602
P.O. BOX 2880, TAMPA, FLORIDA 33601-2880
HRS# 84147 HRS# E84100, E84324

TELEPHONE (813) 223-8702
FAX (813) 223-8332

3-Jan-1994
Page 1

Report For: Florida Mining
PO Box 6
Brooksville Fl 34298

Sample Identification:

Kiln Mill Baghouse Dust attn: Marty Davidson
Thallium Sample "A" (12/22/93)

Date Received: 23-Dec-1993

Laboratory Number: 894375

CERTIFICATE OF ANALYSIS

| Method | Parameter | Result | Units |
|----------|----------------------|--------|-------|
| EPA 7840 | Thallium (Tl), Total | 4450 | mg/Kg |

THORNTON LABORATORIES, INC.
Ann Russo



THORNTON LABORATORIES, INC.
MARINE, ANALYTICAL AND ENVIRONMENTAL SERVICES

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TELEPHONE (813) 223-9702
FAX (813) 223-9332

3-Jan-1994
Page 1

Report For: Florida Mining
PO Box 6
Brooksville Fl 34298

Sample Identification:

Kiln Mill Baghouse Dust
Thallium Sample "B" (12/22/93)

attn: Marty Davidson

Date Received: 23-Dec-1993

Laboratory Number: 894376

CERTIFICATE OF ANALYSIS

| Method | Parameter | Result | Units |
|----------|----------------------|--------|-------|
| EPA 7840 | Thallium (Tl), Total | 7230 | mg/Kg |

THORNTON LABORATORIES, INC.
Ann Russo

Post-It™ brand fax transmittal memo 7671 # of pages 2

| | |
|------------------|------------------|
| To: John Koogler | From: Bob Rogers |
| Co. | Co. |
| Dept. | Phone # |
| | Fax # |