



KOGLER & ASSOCIATES
ENVIRONMENTAL SERVICES

4014 NW THIRTEENTH STREET
GAINESVILLE, FLORIDA 32609
352/377-5822 • FAX/377-7158

PROJECT 187-99-08


FAX TRANSMITTAL FORM

TO: John Reynolds
FDEP - Tallahassee

FAX NO. _____
FROM: Pradeep Raval for John Kogler
DATE: 3-16-01 SENT BY: PR

The text being transmitted consists of 3 page(s) PLUS this one. If you do not receive all of the pages or if there are difficulties with this transmission, please call (352) 377-5822.

REMARKS: Per John Kogler's request, I'm forwarding the comments by fax & original by regular mail.

Hope all is well on your end. Regards, 

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ENVIRONMENTAL SERVICES

4014 NW THIRTEENTH STREET
GAINESVILLE, FLORIDA 32609
352/377-5822 ■ FAX/377-7158

KA 187-99-08

MEMORANDUM

To: John Reynolds
FDEP Tallahassee

From: John Koogler

Date: March 16, 2001

Subject: Comments on FRI permits
0010087-003-AC/PSD-FL-228A and
0010087-002-AV

This is to provide you with our understanding of the resolutions of the matters that were discussed during our March 14, 2001 meeting in Tallahassee related to the above captioned permits. The numeric designation of each matter is from my letter to Clair Fancy dated March 8, 2001; the letter that provided the framework for our March 14, 2001 discussion. Comments are separated into those related to the Construction Permit and those related to the Title V permit.

CONSTRUCTION PERMIT COMMENTS

- 1.1 The terminology "Multi-Stage Calciner" will be changed to "Multi-Stage Combustion Calciner.
- 2.1 Suggested change will be adopted. The rule citations will be checked and corrected if necessary.
- 2.2 Requirement for oxygen monitor will be deleted from permit. A statement regarding the frequency of reporting (i.e, quarterly; semi-annual, etc.) may be added.
Explain how mass emissions derived from conc.
- 2.3 The 45-day reporting requirement will be adopted.
- 3.1 The averaging time for VOC emission limit will be a 30-day rolling average hourly rate and the VOC monitoring will be providing reasonable assurance.
we agreed on a cap *need to define "operating"*
- 3.2 The language clarifying the description of the whole tire feed system is acceptable. DARM will confirm the acceptability of this language for Title V purposes to the NE District office of FDEP.

✓

✓

✓

✓

✓

Asashua City requested 1 hr and 24 hr avg.

Mr. John Reynolds
FDEP Tallahassee

March 16, 2001

- ✓ 3.3 The requirement for additional beryllium testing and the necessity of a beryllium emission limit in the AC and AV will be addressed at another time.
- ✓ 4.1 The pre-heater feed rate issue will be addressed at another time.
- ✓ 4.2 There is an error in "Revised Table II" of the amended air construction permit. In Footnote** the correct date should be March 31, 2002. This will be corrected both in the AC and AV.

Further, it is understood that the Compliance Plan of the Title V Permit will allow the installation and certifications of any necessary CEMS, the installation and debugging of the Multi-Stage Combustion system (both by December 30, 2001) and the review of monitoring data collected after the MSC system is operational (by March 31, 2002).

TITLE V PERMIT COMMENTS

- 1.1 See comment 1.1 under AC comments
- 1.2 OK
- 1.3 OK
- 1.4 Comment will be reviewed by the NE District.
- 1.5 OK/OK
- 1.6 Scott Sheplak will review and provide comments to the NE District.
- 1.7 OK
- 1.8 OK
- 1.9; 1.11 and 1.16:

To be consistent with the AC, the Title V Permit will use the terminology "pounds per ton of dry feed". The understanding is that this is dry feed to the pre-heater of the pyro processing system; the only place feed is measured.

- 1.10 OK
- 1.12 OK, NE District may seek clarification from DARM.
- 1.13 OK; Scott Sheplak may have to provide assurance as the Title V permit language follows the AC permit language.

New language on chlorine rate used in Revised

Mr. John Reynolds
FDEP Tallahassee

March 16, 2001

- 1.14 OK/Reference to P.S. 8 or 8A will be checked to determine which is correct.
- 1.15 OK
- 1.17 OK
- 1.18 Footnote will be corrected to be consistent with Footnote ** of Table II, Revised of the amended AC permit; as this table will be corrected (see comment 4.2).
- 1.19 OK
- 2.4 OK
- 2.5 See comment 1.6
- 2.6 OK

If your understanding of the resolution of any of the matters differs from my understanding, please give me a call. We appreciate the time everybody has spent reviewing and discussing these matters.

cc: C.H. Fancy, FDEP Tallahassee
 A. A. Linero, FDEP Tallahassee
 Scott Sheplak, FDEP Tallahassee
 Chris Kirts, FDEP Jacksonville
 Fred Cohrs, FRI Jacksonville
 Cary Cohrs, FRI Newberry
 Segundo Fernandez, OHFC, Tallahassee



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GAINESVILLE, FLORIDA 32609
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PROJECT 187-99-08

FAX TRANSMITTAL FORM

TO: John Reynolds
FDEP

FAX NO. 850-922-6979

FROM: Dr Koogler

DATE: 4-2-01 SENT BY: JTM

The text being transmitted consists of 6 page(s) PLUS this one. If you do not receive all of the pages or if there are difficulties with this transmission, please call (352) 377-5822.

REMARKS: Florida Rock Industries

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**ENVIRONMENTAL SERVICES**4014 NW THIRTEENTH STREET
GAINESVILLE, FLORIDA 32609
352/377-5822 • FAX/377-7158187-99-08
April 2, 2001VIA FAX: 850-922-6979
and VIA USPS

Mr. John Reynolds
Florida Department of
Environmental Protection
Division of Air Resources Management
111 S. Magnolia Drive, Suite 23
Tallahassee, Florida 32301

Subject: Florida Rock Industries, Inc.
Comments on Draft Amended Air Construction
Permit No. 0010087-003-AC/PSD-FL-228A
Draft Title V Permit No. 0010087-002-AV

Dear Mr. Reynolds:

As a follow-up to my memorandum to you dated March 16, 2001 and our subsequent telephone conversations, I would like to provide our final comments to resolve the few remaining issues regarding the above captioned Draft Amended Air Construction Permit and provide my understanding of matters related to the Draft Title V Permit. The comments on the construction permit are all directly or indirectly related to the VOC CEMS and to VOC monitoring and reporting requirements.

1. Averaging Time for VOC Emission Limit

It is my understanding that there is full agreement that the VOC emission limit for the kiln/raw mill will be 0.12 pounds per ton of clinker or a maximum of 11.5 pounds per hour expressed as a 30-day a rolling average. This is the numeric VOC emission limit contained in the original Air Construction Permit issued to Florida Rock (AC01-267311/PSD-FL-228) with an averaging time agreed to by Florida Rock and the Department during the negotiations which resulted in the installation of the VOC Continuous Emission Monitoring System (CEMS). It is also my understanding that the only unresolved issue is an expressed concern regarding the potential magnitude of short-term VOC emission rates. As we have discussed, concerns about short-term VOC emission excursions are unfounded when one understands the nature of the operation of the Florida Rock Cement Plant.

VOC emissions from the Florida Rock Cement Plant, as discussed in previous correspondence with the Department, arise from two independent sources; inefficiencies in the combustion process of the pyro-processing system and organic compounds in the materials fed to the preheater. Testing conducted by Florida Rock during the summer of 2000, conclusively demonstrated that VOC emissions resulting from inefficiencies in the pyro-processing system are a small fraction of the

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maximum permitted VOC emission rate for the plant. Emission measurements conducted by Florida Rock immediately after the startup of the plant (June - July, 2000) and emission measurements and tests conducted by Florida Rock over the next few months (through September 2000) demonstrated that hydrocarbon products in off-site feed materials (mill scale in particular) contributed most significantly to VOC emissions.

As a result of these findings, Florida Rock has established supplies of feed materials that result in VOC emissions from the kiln/raw mill that are well within the permit limits. Florida Rock continues to monitor the hydrocarbon content of off-site feed materials, but to provide the Department with assurance that feed materials free of hydrocarbon products are continually used and that VOC emissions from the kiln/raw mill stack are continually in compliance with permit limits, Florida Rock has further agreed to install a VOC CEMS on the kiln/raw mill stack.

Understanding that the major source of VOC emissions from the kiln/raw mill is hydrocarbons in the feed materials and further understanding that the feed materials are uniformly blended in quantities that will provide feed to the raw mill for approximately two days (7,000 + tons) makes it quite clear that there will not be unexpected, short-term VOC emission rate excursions. A short-term VOC emission rate excursion as a result of hydrocarbons in the feed material is not possible because of the blending and the amount of material blended. The other testing conducted by Florida Rock has demonstrated that VOC emissions from the pyro-processing system are not significant.

Another factor to consider is that VOC emissions from the kiln/raw mill under normal operating conditions are in the range of 0.08 - 0.09 pounds per ton of clinker (7.5 - 8.5 pounds per hour). This emission rate is comfortably below the permitted VOC emission limit of 0.12 pounds per ton of clinker, or 11.5 pounds per hour but the marginal difference does not allow Florida Rock much leeway to compensate for VOC emissions above the permitted rate, either in terms of magnitude of excess emissions or the duration of excess emissions, and still meet the 30-day rolling average hourly VOC limit. As Florida Rock is committed to operating within permit limits, the company will take every measure necessary to assure that suitable feed materials are used so that excess VOC emissions will not occur even for short durations of time because once excess emissions occur there is little opportunity to lower the resulting 30-day average emission rate.

Coupling the aforementioned facts with the facts that there is no ambient air quality standard for VOCs, and the fact that the VOC emissions from the plant are not HAPs, should provide the Department with assurance that, even if a slight VOC excursion occurred for a short time, there would be neither an exceedence of an air quality standard, nor a potential health-related risk to the general public.



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Based upon all of the aforementioned facts, it is our position that the 30-day rolling average hourly VOC emission limit that the Department and Florida Rock agreed upon, along with the operation of the VOC CEMS and the record of data this monitor will provide, is reasonable assurance to the Department and any other interested parties of continuing compliance by Florida Rock and reasonable assurance that there are no environmental or health related risks associated with VOC emissions from the plant.

Reporting or record keeping of VOC emissions other than on the aforementioned and agreed upon basis is unwarranted. Understanding the operation of the cement plant, the potential sources of VOC emissions and the ramifications of excess VOC emissions to Florida Rock makes the establishment of an arbitrary, short-term VOC emission limit unnecessary.

2. Requirement for Oxygen CEMS Associated with the VOC CEMS

As I have pointed out in previous correspondence and in discussions with you and Department staff, the requirement for an oxygen CEMS associated with the VOC CEMS at the Florida Rock plant is unnecessary as all VOC limits for the plant are mass based; i.e., pounds per ton of clinker, pounds per ton of preheater feed or pounds per hour. To demonstrate the fact that the oxygen monitor is not required, and as we have discussed, I have attached an example calculation showing that the mass VOC emission rate is independent of the oxygen concentration of the stack gas.

The attached calculations present a hypothetical measured stack gas flow rate, stack gas temperature, stack gas moisture content, stack gas oxygen concentration, and stack gas VOC concentration. Based on these hypothetical conditions, a VOC emission rate is calculated based on the wet stack gas flow rate at the measured stack gas oxygen and VOC concentrations (both measured on a wet basis). The calculated VOC emission rate on this basis is 9.3 pounds per hour.

The second set of calculations show the stack gas VOC concentration corrected to a 7% oxygen concentration and also show the stack gas flow rate corrected to the same 7% oxygen concentration. Based on the oxygen corrected VOC concentration and stack gas flow rate, a VOC emission rate, corrected 7% oxygen, is calculated. This emission rate is also shown to be 9.3 pounds per hour. This demonstrates that the mass VOC emission rate is independent of the oxygen concentration of the stack gas and thus demonstrates an oxygen CEMS is not required as a counterpart to the VOC CEMS.



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3. Definition of "Operating Time" for Calculating 30-day Rolling Average Hourly VOC Emission Rate

In calculating the 30-day rolling average hourly VOC emission rate, Florida Rock has agreed to use only data collected when the cement plant is operating. This commitment by Florida Rock was in response to a stated concern that the pyro-processing system (the preheater, precalciner and kiln) might be operated with excess VOC emissions and that these excess emissions might be averaged with zero emissions recorded during plant down time to arrive at a 30-day rolling average hourly VOC emission rate well within permit limits.

For purposes of this commitment, FRI proposes that pyro-processing "operating time" be defined as all hours during a 30-day rolling averaging period when raw meal is fed to the preheater. This definition corresponds with the method that Florida Rock presently uses to define plant operating time and it accounts for all potential sources of VOC formation from the pyro-processing system feed and fuel.

4. Factor to Convert Preheater Feed to Clinker Production

At the Florida Rock Cement Plant, the measured parameter for determining the plant production rate on an hourly basis is the preheater feed rate. On a short-term (hourly) basis, clinker production is determined by dividing the preheater feed rate by an empirical factor. For permitting purposes, Florida Rock used an average factor of 1.56. In other words, the permitted feed rate to the Florida Rock preheater of 149.9 tons per hour divided by 1.56 results in the permitted clinker production rate of 95.8 tons per hour.

This empirical factor can typically range from 1.5 to 1.7 for various cement plants depending upon the chemistry of the feed material. Variations can also be expected at any given plant because of the natural variability in site feed materials, variability or changes in off-site feed materials and/or changes in the feed material mix ratios.

This empirical factor plays a role in compliance demonstration in that mass emission rates of regulated pollutants are measured during compliance tests in terms of pounds of emissions per hour. This reported emission rate is then divided by the clinker production rate (tons per hour) to arrive at an emission rate expressed as pounds per ton of clinker. These limits are also permit conditions. As the preheater feed rate is measured (tons per hour), the emission rates are measured (pounds per hour) and clinker production rates are calculated based upon the empirical factor (tons per hour), it is apparent that variations in the empirical factor could affect the emission rates reported as pounds per ton of clinker.

For all compliance testing conducted at Florida Rock prior to this date and all compliance testing that will be conducted in the foreseeable future, Florida Rock elects to use the average empirical factor of 1.56 to convert preheater feed to clinker production rate. The use of this single empirical factor will negate the need



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to determine a site-specific factor on a periodic basis and to report this time-dependent empirical factor to the Department prior to any compliance test.

5. Comments on Draft Title V Permit

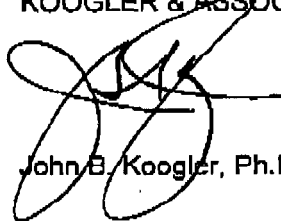
It is my understanding, based on conversations with Department staff that the comments expressed in my March 8, 2001 letter to Clair Fancy will be addressed as noted in my memo to you dated March 16, 2001 and that the confirmation, comments and/or assurance that the Northeast District Office is expecting from DARM has been provided or will be forthcoming.

~ ~ ~

To the best of my understanding, the comments and information provided herein should resolve any outstanding matters related to both the above captioned Amended Air Construction Permit and Draft Title V Permit. If further discussion or information is necessary, please do not hesitate to contact me.

Very truly yours,

KOOGLER & ASSOCIATES



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

JBK/jhm
Enclosure

cc: C.H. Fancy, FDEP Tallahassee
A.A. Linero, FDEP Tallahassee
Scott Sheplak, FDEP Tallahassee
Chris Kirts, FDEP Jacksonville
Doug Beason, FDEP OGC, Tallahassee
Fred Cohrs, FRI Jacksonville
Cary Cohrs, FRI Newberry
Segundo Fernandez, OHFC, Tallahassee



**CALCULATION DEMONSTRATING INDEPENDENCE
OF MASS (VOC) EMISSION RATES TO THE
OXYGEN CONCENTRATION OF STACK GAS**

Basis of Calculations:

Measured:	Stack Gas Flow	–	80,000 acfm at 11.0% O ₂
	(Flow) _s	–	135,771 scfm, wet 11.0% O
		–	115,406 scfm, dry
	Stack Gas Temp.	–	240° F
	Stack Gas Moist.	–	15%
	Stack Gas Oxygen	–	11.0%, wet gas
	VOC Conc. (C _(VOC-S))	–	10.0 ppm, wet gas

VOC Emission Rate (Stack Conditions):

$$\begin{aligned}
 E_{(VOC-S)} &= (135,771 \text{ ft}^3/\text{min}) \times (60 \text{ min/hr}) \\
 &\quad \times (10.0 \times 10^{-6} \text{ ft}^3 \text{ VOC}/\text{ft}^3 \text{ stack gas}) \\
 &\quad \times (1/385 \text{ ft}^3/\text{lb-mole}) \times (44 \text{ lb VOC}^*/\text{lb-mole}) \\
 &= 9.3 \text{ lb/hr}^*
 \end{aligned}$$

* as propane

Oxygen Correction:

VOC Concentration at 7% Oxygen

$$\begin{aligned}
 C_{(VOC-7)} &= C_{(VOC-S)} (20.9 - 7) / (20.9 - \text{Stack Gas O}_2) \\
 &= 10.0 (13.9) / (20.9 - 11.0) \\
 &= 14.0 \text{ ppm}
 \end{aligned}$$

Stack Gas Flow (scfm, wet) at 7% Oxygen

$$\begin{aligned}
 (\text{Flow})_7 &= (\text{Flow})_s (20.9 - \text{Stack Gas O}_2) / (20.9 - 7) \\
 &= 135,771 (20.9 - 11.0) / (13.9) \\
 &= 96,700 \text{ scfm, wet at 7.0 \% O}
 \end{aligned}$$

VOC Emission Rate (at 7% Oxygen)

$$\begin{aligned}
 E_{(VOC-7)} &= (96,700 \text{ ft}^3/\text{min}) \times (60 \text{ min/hr}) \\
 &\quad \times (14.0 \times 10^{-6} \text{ ft}^3 \text{ VOC}/\text{ft}^3 \text{ Stack Gas @ 7\% O}_2) \\
 &\quad \times (1/385 \text{ ft}^3/\text{lb - mole}) \times (44 \text{ lb VOC}^*/\text{lb-mole}) \\
 &= 9.3 \text{ lb/hr}^*
 \end{aligned}$$

* as propane

OERTEL, HOFFMAN, FERNANDEZ & COLE, P.A.

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 M. CHRISTOPHER BRYANT
 C. ANTHONY CLEVELAND
 TERRY COLE
 SEGUNDO J. FERNANDEZ
 SCOTT W. FOLTZ
 KENNETH F. HOFFMAN
 CHRISTOPHER D. JOHNSTON
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 PATRICIA A. RENOVITCH

RECEIVED

MAY 07 2001

May 4, 2001

VIA HAND DELIVERY

BUREAU OF AIR REGULATION

Douglas W. Beason, Assistant General Counsel
 Office of General Counsel
 Florida Department of Environmental Protection
 3900 Commonwealth Blvd.
 Tallahassee, FL 32399-3000

Re: Fourth Request for Extension of Time to File Petition for Administrative Hearing
 Draft Modified Air Construction Permit Modification: FDEP File No.: 0010087-003-
 AC/PSD-FL-228-A
 Draft Title V Permit No.: 0010087-002-AV
 Thompson S. Baker Cement Plant, Newberry, Alachua County, Florida

Dear Doug:

As you know, we represent Florida Rock Industries, Inc. with respect to the Air Construction Permit and Title V Permit for the above-referenced facility. The company received the Department's Intent to Issue the draft Air Construction Permit Modification and the draft Title V Permit on January 30, 2001. On February 8, 2001, and again on March 1, 2001, we requested extensions of time to file a petition for administrative hearing on both draft permits, the air construction permit and the Title V permits. The Department has not acted on any of Florida Rock's previous extension requests regarding these permits. As such, the extensions have remained effective, and this request is timely made. Since that time, Florida Rock has continued to exchange information with the Department concerning the draft Modified Air Construction Permit and draft Title V Permit, and appreciates the cooperative nature of such discussions.

On behalf of Florida Rock Industries, Inc., and pursuant to Rule 28-106.111, Florida Administrative Code, we hereby file this request for an extension of time to file a petition for administrative hearing with respect to the draft Air Construction Permit Modification and with respect to the draft Title V Permit, both referenced above, up to and including Tuesday, July 31, 2001. The applicant needs additional time to review the draft permits, which are quite lengthy and detailed, and the Department needs additional time to

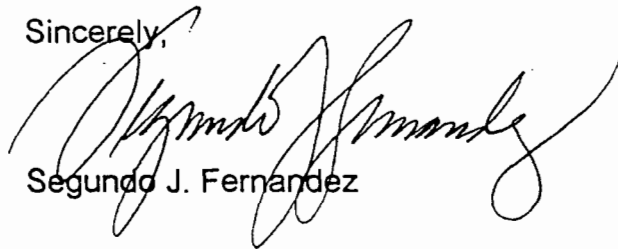
Douglas W. Beason, Assistant General Counsel
May 4, 2001
Page 2

formulate language to address the matters that remain under discussion.

We understand that you will be in contact with Chris Kirts and Al Linero concerning this third extension request, and that you will call me following your discussions with them.

Thank you for your consideration. If you have any questions, please do not hesitate to call me.

Sincerely,

A handwritten signature in black ink, appearing to read 'Segundo J. Fernandez', written in a cursive style.

Segundo J. Fernandez

F:\Document\TPA\LTR\FRI Petition Extension Requests4.wpd

c: Kirby B. Green, III
Howard Rhodes
C. H. Fancy, P.E.
Al Linero, P.E.
Chris Kirts
Fred W. Cohrs
John Koogler, Ph.D., P.E.