KOOGLER & ASSOCIATES
ENVIRONMENTAL SERVICES
4014 NW THIRTEENTH STREET
GAINESVILLE, FLORIDA 32609
352/377-5822 ▪ FAX 377-7158

April 16, 1997

Mr. Al Linero
Administrator, NSR Section
FDEP -- Division of Air Resources
2600 Blair Stone Road
Tallahassee, FL 32399-2400

SUBJECT: Rinker Materials Corporation -- Miami Cement Plant
FDEP File No. 0250014-002-AC
Additional Information per Meeting of April 10, 1997

Dear Mr. Linero:

This letter shall provide information pertaining to the subject matter discussed at the referenced meeting between FDEP staff and Rinker representatives. The information is presented in the same format as the earlier response to the request for additional information. This letter contains the most current information.

GENERAL

1. Pursuant to Rule 62-212.400(2)(e), F.A.C., please recalculate the net emission increases (sum of all 5 year contemporaneous creditable increases and decreases in the actual emissions of the facility) for all affected PSD pollutants listed in Table 62-212.400-2, F.A.C., to determine PSD applicability.

   Response: The net emissions increase for all the PSD pollutants are calculated below, using the methodology presented in the EPA document *New Source Review Workshop Manual* (October 1990).

   Step 1: Determine the emissions increases from the proposed project.

Pollutant	Increase (TPY)	PSD Threshold (TPY)
Carbon Monoxide = [3.011 lb/ton clinker @ 1.2 MMTPY clinker]	1807	100
Nitrogen Oxides = [4.95 lb/ton clinker @ 1.2 MMTPY clinker = 1.55 lb/MMBtu]	2970	40
Sulfur Dioxide = [2.23 lb/ton clinker = 0.7 lb/MMBtu @ 437 MMBtu/hr]	1340	40
Particulate Matter (PM) =	353	25
Particulate Matter (PM10) =	285	15
Volatile Organics (VOC) = [0.1 lb/ton clinker @ 1.2 MMTPY clinker]	60	40
Lead =	0.045	0.6
Asbestos =	Not Applicable	0.007
Beryllium =	0.000396	0.0004

Mercury =	0.014	0.1
Vinyl Chloride =	Not Applicable	1
Fluorides =	0.54	3
Sulfuric Acid Mist =	8.4 as SO_3	7
Hydrogen Sulfide/TRS =	Not Applicable	10

Therefore, further review is necessary for CO, NOX, SO2, PM, PM10, VOC and SAM.

Step 2: Determine the beginning and ending dates of the contemporaneous period as it relates to the proposed modification.

The application to construct was received by the Department on December 4, 1996, and deemed incomplete on December 31, 1996. At the meeting of April 10, 1997, the Department stated that it would consider the application complete upon receipt of this information. Rule 62-212.400(2)(e)3., FAC, states that the contemporaneous period is:

"...the period beginning five years prior to the date on which the owner or operator of the of the facility submits a complete application for a permit to modify the facility and ending on the date on which the owner or operator of the modified facility projects the new or modified emissions unit(s) to begin operation."

Therefore the contemporaneous window is defined by:

Beginning Date ~April 18, 1992
Ending Date ~April 1, 2000

Step 3: Determine which emissions units at the source have experienced an increase or decrease in emissions during the contemporaneous period.

Increases

Emissions Unit 014: Stone Dryer/Soil Thermal Treatment Unit
Certification of Completion of Construction for AC13-187599A = June 25, 1993
Compliance testing: November 18-19, 1992
Nature of Modification: To allow processing of contaminated soils in existing stone dryer.

Pollutant	PTE (TPY)	ACTUAL 1992 (TPY)	Δ
Carbon Monoxide =	9.2	0.85	8.4
Nitrogen Oxides =	27.8	4.73	23.1
Sulfur Dioxide =	40.2	5.47	34.7

Particulate Matter (PM) =	4.4	1.64	2.8
Particulate Matter (PM10) =	4.4	1.64	2.8
Volatile Organics (VOC) =	24.0	6.13	17.9

Emissions Unit 008: Kiln #1
AC13-213153 issued June 9, 1993 and AO13-233208 issued July 29, 1993
Nature of Modification: To allow the burning of tires in Kiln #1.
Comments: FDEP Final Determination states:

"...there was no demonstrated increase in actual pollutant emissions..."

No contemporaneous creditable increases or decreases are associated with this permit amendment.

Emissions Unit (No Corresponding ID): Portable Crushing Unit
Compliance testing for completion of construction for 7770250-001/002-AC = April 12, 1996.
Nature of Modification: The construction and operation of a new portable crushing unit for use at this facility and other Rinker facilities.

Pollutant	PTE (TPY)
Carbon Monoxide =	7.0
Nitrogen Oxides =	32.6
Sulfur Dioxide =	2.1
Particulate Matter (PM) =	20.7
Particulate Matter (PM10) =	5.5
Volatile Organics (VOC) =	2.6

Decreases

Emissions Units 008 & 009: Kilns #1 & #2
Nature of Decrease: The issuance of the AC for the proposed project will shutdown the existing kilns in a federally-enforceable manner.

Pollutant	1995	1996	Average
Carbon Monoxide =	1739.78	1789.84	1764.81
Nitrogen Oxides =	4827.29	4966.17	4896.73*
Sulfur Dioxide =	1459.04	1510.65	1484.84
Particulate Matter (PM) =	126.6	118.73	122.66
Particulate Matter (PM10) =	107.6	100.92	104.26
Volatile Organics (VOC) =	46.97	48.32	47.64
Sulfuric Acid Mist =	21.65	21.88	21.77

*NOTE: See Step 4 for discussion of creditable decrease for NOX.

Emissions Units 010 & 011: Clinker Coolers #1 and #2
Nature of Decrease: The issuance of the AC for the proposed project will shutdown the clinker conveyor and clinker box in a federally-enforceable manner.

Pollutant	1995	1996	Average
Particulate Matter (PM) =	50.4	50.4	50.4
Particulate Matter (PM10) =	42.8	42.8	42.8

Emissions Units (No Corresponding ID): Clinker Conveyor/Clinker Box
Nature of Decrease: The issuance of the AC for the proposed project will shutdown the clinker conveyor and clinker box in a federally-enforceable manner.

Pollutant	1995	1996	Average
Particulate Matter (PM) =	8.96	9.22	9.09
Particulate Matter (PM10) =	7.61	7.83	7.72

Emissions Units (No Corresponding ID): Fugitive Emissions from Unpaved Roads
Nature of Decrease: The issuance of the AC for the proposed project will allow the construction of an in-pit crusher with belt conveying system. This will drastically reduce emissions from unpaved haul roads, as rock from the pit is currently hauled to the primary crusher at the plant by haul trucks.

This discussion uses an emissions inventory prepared for the 1992-1993 production period, and scaled with relation to clinker production.

Clinker Production for 1992-1993 = 534309 TPY
[PM = 377.51 TPY & PM10 = 135.9 TPY]
Clinker Production for 1995-1996 = 506166 TPY

Pollutant	Average, 1995-1996
Particulate Matter (PM) =	357.63
Particulate Matter (PM10) =	128.74

Step 4: Determine which emissions changes are creditable.

All of the above emissions changes are creditable, except some portion of the NOX decrease associated with the existing kilns. The RACT rule required compliance with the standard by May 31, 1995.

Fuel Type	1994 MMBtu	1995 MMBtu	1996 MMBtu
Coal	2126020	1119898	0
Coke	376038	770661	1850572
Tires	13994	40794	1805
Tot. Solid	2516052	1931353	1852378
Waste Oil	372695	486701	624672
Tot. Liquid	372695	486701	624672
Natural Gas	60730	50267	48862
TOTAL MMBTU	2949477	2468321	2525911

NOX was limited for 7/12 of 1995 (June - December):

5/12 x 4827.12 = 2011.3 TPY
2,468,321 MMBtu x 7/12 x 2.0 lb/MMBtu = 1439.9 TPY

Therefore, creditable NOX decrease for 1995 = 2011.3 + 1439.9 = 3451.2 TPY.

Creditable NOX for purposes of PSD applicability was limited to 2.0 lb/MMBtu by the RACT rule for 1996.

Creditable NOX decrease for 1996 = 2,525,911 MMBtu x 2.0 lb/MMBtu x 1.0 ton/2000 lb = 2525.9 TPY.

Dade County Code 24-17 contains limits on SO2 emissions while burning solid fuels (1.5 lb/MMBtu) and liquid fuels (1.1 lb/MMBtu).

For 1995, allowable SO2 emissions would be:

[(1931353 MMBtu x 1.5 lb/MMBtu)/2000] + [(486701 MMBtu x 1.1 lb/MMBtu)/2000] = 1449 + 268 = 1717 TPY

As actual emissions were 1459 TPY, the entire decrease is creditable.

For 1996, allowable SO2 emissions would be:

[(1852378 MMBtu x 1.5 lb/MMBtu)/2000] + [(624672 MMBtu x 1.1 lb/MMBtu)/2000] = 1389 + 344 = 1733 TPY

As actual emissions were 1511 TPY, the entire decrease is creditable.

Step 5: Determine, on a pollutant-by-pollutant basis, the amount of each contemporaneous and creditable emissions increase and decrease.

Pollutant Increases (TPY)
Carbon Monoxide = 8.4 + 7.0 = 15.4
Nitrogen Oxides = 23.1 + 32.6 = 55.7
Sulfur Dioxide = 34.7 + 2.1 = 36.8
Particulate Matter (PM) = 2.8 + 20.7 = 23.5
Particulate Matter (PM10) = 2.8 + 5.5 = 8.3
Volatile Organics (VOC) = 17.9 + 2.6 = 20.5
Sulfuric Acid Mist = 0 + 0 = 0

Pollutant Decreases (TPY)	1995	1996	Average
Carbon Monoxide	1739.78	1789.84	1764.8
Nitrogen Oxides	3451.2	2525.9	2988.6
Sulfur Dioxide	1459.04	1510.65	1484.8
Volatile Organics (VOC)	46.97	48.32	47.6
Sulfuric Acid Mist	21.65	21.88	21.8

Particulate Matter (PM) = 122.7 + 50.4 + 9.1 + 357.6 = 539.8
Particulate Matter (PM10) = 104.3 + 42.8 + 7.7 + 128.74 = 283.5

Step 6: Sum all contemporaneous and creditable increases and decreases with the increase from the proposed modification to determine if a significant net emissions increase will occur.

Sum of Contemporaneous Creditable Changes (TPY)	PSD Threshold (TPY)
Example = Modification + Increases - Decreases = Total	
Carbon Monoxide = 1807 + 15.4 - 1764.8 = 57.6	100
Nitrogen Oxides = 2970 + 55.7 - 2988.6 = 37.1	40
Sulfur Dioxide = 1340 + 36.8 - 1484.8 = -108.0	40
Particulate Matter (PM) = 353 + 23.5 - 539.8 = -163.3	25
Particulate Matter (PM10) = 285 + 8.3 - 283.5 = 9.8	15
Volatile Organics (VOC) = 60 + 20.5 - 47.6 = 32.9	40
Sulfuric Acid Mist = 8.4 + 0 - 21.8 = -13.4	7

The detailed analysis above shows that there will be no significant net emissions increases for any PSD pollutants.

2. Pursuant to Rule 62-212.400(2)(d)4.(ii), F.A.C., if the facility to be modified is within 10 km of a Class I area and if the proposed modification results in a net emission increase (as set forth in Rule 62-212.400(2)(e)1., F.A.C.) of any pollutant regulated under the Act, which increase would have an impact on the affected *Class I area* equal to or greater than 1.0 microgram per cubic meter (24-hour average), this

modification shall be subject to the preconstruction review requirements of the PSD regulations. Calculate the impact of any emission increase on the Everglades National Park.

Response: The USGS Hialeah SW quadrangle map , and a map of the Everglades National Park (obtained from Park staff 2/11/1997) were reviewed. The northeast corner of the Park, bounded by U.S. 41 to the north and Levee No. 31N to the east, is the nearest point to the Rinker facility. The distance between the Rinker facility and the Park was determined to be 8.2 kilometers.

It is noted that the main stack height (other parameters are unchanged) has been changed from 130 feet to approximately 330 feet, as this main stack will be alongside the preheater tower. However, the GEP stack height of 65 meters (213 feet) was used in the dispersion modeling. This is a conservative analysis, because the increased stack height will effectively reduce ambient concentrations.

The net emissions increases for NOX, CO, PM10, and VOC were used for the emission rate parameter in dispersion modeling runs using the SCREEN2 model. The impacts resulting from the net emissions increases were determined to be less than 1.0 microgram per cubic meter (24-hour average) at the Park boundary, as follows:

NOX concentration at 8.2 km = 0.37 $\mu g/m^3$, 24-hour average
CO concentration at 8.2 km = 0.58 $\mu g/m^3$, 24-hour average
VOC concentration at 8.2 km = 0.33 $\mu g/m^3$, 24-hour average
PM10 concentration at 8.2 km = 0.10 $\mu g/m^3$, 24-hour average

Therefore, no PSD review is required for these pollutants or for this project. The model output for NOX is included with this letter as Attachment 2; model output for CO, PM10, and VOC was previously provided to the Department.

I trust that this letter is responsive to your request. If further information is required, please do not hesitate to contact me at (352) 377-5822.

Sincerely,

Steven C. Cullen, P.E.
Koogler & Associates

cc: SED
Dade Co.
T. Heron

copies to: Mike Vardeman -- Rinker

Attachment 1: Replacement Application Pages for NOX
Attachment 2: SCREEN2 Modeling for NOX

ATTACHMENT 1

REPLACEMENT APPLICATION PAGES FOR NOX

Emissions Unit Information Section 2 of 4 [Kiln, Cooler, Raw Mill]

Pollutant Detail Information: Pollutant 3 of 5

1. Pollutant Emitted: **NOX**	
2. Total Percent Efficiency of Control: **NA**	%
3. Potential Emissions:	**678.15** lb/hour **2970.3** tons/year
4. Synthetically Limited? [ ] Yes [**X**] No	
5. Range of Estimated Fugitive/Other Emissions: **NA** [ ] 1 [ ] 2 [ ] 3	_____ to _____ tons/year
6. Emission Factor: **4.95 lb/ton clinker = 1.55 lb/MMBtu** Reference: **Process Knowledge**	
7. Emissions Method Code: **[X]** 0 [ ] 1 [ ] 2 [ ] 3 [ ] 4 [ ] 5	
8. Calculation of Emissions (limit to 600 characters): **4.95 lb/MMBtu x 137 MMBtu/hr = 678.15 lb/hr** **@ 8760 hrs/yr = 2970.3 tons/yr**	
9. Pollutant Potential/Estimated Emissions Comment (limit to 200 characters):	

Allowable Emissions (Pollutant identified on front of page)

A.

1. Basis for Allowable Emissions Code: **ESCPSD**		
2. Future Effective Date of Allowable Emissions: **NA**		
3. Requested Allowable Emissions and Units: **4.95 lb/ton clinker = 1.55 lb/MMBtu**		
4. Equivalent Allowable Emissions:	**678.15** lb/hour	**2970.3** tons/year
5. Method of Compliance (limit to 60 characters): **EPA Method 7**		
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode) (limit to 200 characters): **The proposed emission limit is more stringent than that required by the NOx RACT in Rule 62-296.570(4)(b)8., FAC (2.0 lb/MMBtu).**		

B.

1. Basis for Allowable Emissions Code: **NA**		
2. Future Effective Date of Allowable Emissions: **NA**		
3. Requested Allowable Emissions and Units: **NA**		
4. Equivalent Allowable Emissions: **NA**	lb/hr	tons/year
5. Method of Compliance (limit to 60 characters): **NA**		
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode) (limit to 200 characters): **NA**		

ATTACHMENT 2

SCREEN2 MODELING FOR NOX

04/16/97
11:53:19

*** SCREEN2 MODEL RUN ***
*** VERSION DATED 95121 ***

RINKER NOX, GEP, MILL ON, NET+ = 37.1 TPY

SIMPLE TERRAIN INPUTS:

SOURCE TYPE	=	POINT
EMISSION RATE (G/S)	=	1.07000
STACK HEIGHT (M)	=	65.0000
STK INSIDE DIAM (M)	=	2.4400
STK EXIT VELOCITY (M/S)	=	27.2513
STK GAS EXIT TEMP (K)	=	363.0000
AMBIENT AIR TEMP (K)	=	293.0000
RECEPTOR HEIGHT (M)	=	.0000
URBAN/RURAL OPTION	=	RURAL
BUILDING HEIGHT (M)	=	.0000
MIN HORIZ BLDG DIM (M)	=	.0000
MAX HORIZ BLDG DIM (M)	=	.0000

STACK EXIT VELOCITY WAS CALCULATED FROM
VOLUME FLOW RATE = 270000.00 (ACFM)

BUOY. FLUX = 76.700 M**4/S**3; MOM. FLUX = 892.188 M**4/S**2.

*** FULL METEOROLOGY ***

ANEMOMETER HEIGHT IS: 10.0 METERS

****
*** SCREEN AUTOMATED DISTANCES ***
****

BRODE OPTION 2 WAS EXERCISED. RESULTS ARE ASSUMED TO
BE MORE CONSERVATIVE WITH RESPECT TO ISCST2 RESULTS.

*** TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGMA Z (M)	DWASH
1.	.0000	1	1.0	1.1	529.2	523.98	7.00	6.99	NO
100.	.1360E-09	5	1.0	1.9	10000.0	166.51	22.58	22.02	NO
200.	.2753E-04	5	1.0	1.9	10000.0	166.51	31.25	29.67	NO
300.	.6686E-02	1	3.0	3.4	300.0	217.99	76.14	53.84	NO
400.	.2530	1	3.0	3.4	300.0	217.99	97.70	77.56	NO
500.	1.108	1	3.0	3.4	300.0	217.99	118.56	110.60	NO
600.	2.382	1	2.0	2.3	300.4	294.49	146.04	165.44	NO
700.	3.267	1	2.0	2.3	300.4	294.49	165.82	223.18	NO
800.	3.329	1	2.0	2.3	300.4	294.49	183.51	290.50	NO
900.	3.118	1	1.5	1.7	376.6	370.99	209.32	373.51	NO
1000.	2.926	1	1.5	1.7	376.6	370.99	226.28	462.19	NO
1100.	2.725	1	1.5	1.7	376.6	370.99	243.25	562.14	NO
1200.	2.548	1	1.5	1.7	376.6	370.99	260.19	673.29	NO
1300.	2.408	1	1.0	1.1	529.2	523.98	293.82	801.63	NO
1400.	2.284	1	1.0	1.1	529.2	523.98	309.76	934.39	NO
1500.	2.172	1	1.0	1.1	529.2	523.98	325.72	1078.60	NO
1600.	2.097	2	3.0	3.4	231.1	217.99	238.43	188.19	NO

1700.	2.047	2	3.0	3.4	231.1	217.99	251.21	200.46	NO
1800.	2.010	2	2.5	2.8	261.0	248.59	265.50	214.80	NO
1900.	1.966	2	2.5	2.8	261.0	248.59	278.07	227.16	NO
2000.	1.914	2	2.5	2.8	261.0	248.59	290.57	239.63	NO
2100.	1.872	2	2.0	2.3	306.3	294.49	305.56	255.24	NO
2200.	1.835	2	2.0	2.3	306.3	294.49	317.85	267.75	NO
2300.	1.793	2	2.0	2.3	306.3	294.49	330.08	280.34	NO
2400.	1.747	2	2.0	2.3	306.3	294.49	342.27	293.02	NO
2500.	1.700	2	2.0	2.3	306.3	294.49	354.42	305.79	NO
2600.	1.669	3	3.5	4.2	208.8	188.98	247.76	150.74	NO
2700.	1.659	3	3.5	4.2	208.8	188.98	256.17	155.74	NO
2800.	1.643	3	3.5	4.2	208.8	188.98	264.55	160.74	NO
2900.	1.626	3	3.0	3.6	228.5	209.64	273.74	167.10	NO
3000.	1.615	3	3.0	3.6	228.5	209.64	282.05	172.04	NO
3500.	1.530	3	2.5	3.0	256.5	238.57	324.37	198.59	NO
4000.	1.442	3	2.5	3.0	256.5	238.57	364.85	222.86	NO
4500.	1.365	3	2.0	2.4	298.9	281.96	406.56	249.80	NO
5000.	1.286	3	2.0	2.4	298.9	281.96	445.97	273.58	NO
5500.	1.210	3	1.5	1.8	370.2	354.28	488.06	302.26	NO
6000.	1.158	3	1.5	1.8	370.2	354.28	526.51	325.49	NO
6500.	1.101	3	1.5	1.8	370.2	354.28	564.65	348.68	NO
7000.	1.044	3	1.5	1.8	370.2	354.28	602.51	371.80	NO
7500.	.9887	3	1.5	1.8	370.2	354.28	640.08	394.85	NO
8000.	.9421	3	1.0	1.2	513.9	498.92	683.68	427.94	NO
8500.	.9132	3	1.0	1.2	513.9	498.92	720.42	450.34	NO
9000.	.8822	3	1.0	1.2	513.9	498.92	756.96	472.72	NO
9500.	.8506	3	1.0	1.2	513.9	498.92	793.30	495.07	NO
10000.	.8194	3	1.0	1.2	513.9	498.92	829.45	517.40	NO

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 1. M:

757.	3.369	1	2.0	2.3	300.4	294.49	176.08	260.85	NO

DWASH= MEANS NO CALC MADE (CONC = 0.0)
DWASH=NO MEANS NO BUILDING DOWNWASH USED
DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED
DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED
DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3*LB

****
*** SCREEN DISCRETE DISTANCES ***
****

*** TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGMA Z (M)	DWASH
8200.	.9309	3	1.0	1.2	513.9	498.92	698.40	436.90	NO

DWASH= MEANS NO CALC MADE (CONC = 0.0)
DWASH=NO MEANS NO BUILDING DOWNWASH USED
DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED
DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED
DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3*LB

****
*** SUMMARY OF SCREEN MODEL RESULTS ***
****

CALCULATION	MAX CONC	DIST TO	TERRAIN

24-hour averaging time multiplier = 0.4; max. concentration = 0.37 ug/m3