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November 23, 2004

Mr. Al Linero
Florida Department of Environmental Protection
Twin Towers Office Building
2600 Blair Stone Road, MS 5500
Tallahassee, FL 32399-2400

Subject: Proposed Production Increase at Rinker Materials Corporation Miami Cement Plant

Dear Al,

The Department has requested that I offer comments on the reports of Mr. John Koogler of Koogler and Associates, F.L. Smidth and Co. (Mr. Brian Keefe), and Rinker Materials Corporation (Mr. Mike Aller), relative to the mechanical, process and environmental effects projected from a proposed production increase to 267 short tons per hour of kiln feed, corresponding to a clinker production rate of 162 short tons per hour.

In general, I feel that the proposed increase is unlikely to affect emissions, other that possible minor increases in CO. There may be some quality effects arising from the higher production, but this will be an issue for the Rinker quality department, rather than an environmental effect. I do not believe that the proposed increase in production will have any significant safety ramifications, or any effect on the structural and mechanical operation of the kiln system.

Mr. Koogler refers to a specific heat consumption of about 3.00 MMBtu/short ton clinker, which seems reasonable for a production unit of this capacity, normal feed burnability, and normal heat losses from the cooler, kiln shell, and preheater exit gas.

- The replacement of the ID fan with another unit capable of the design revolution rate of 900 rpm does not seem to me to constitute a change; I accept Mr. Koogler's claim that such replacement would merely provide equipment capable of the original design operation.
- The injection of fly ash directly into the calciner would probably reduce CO and VOC emissions. Yet to be determined is whether the raw mix homogeneity would be adequate to produce a quality product; however, this is an issue for the plant to resolve, and does not (apparently) impact FDEP.

The FLS report deals principally with the structural capability of the unit to achieve the desired production. As Mr. Keefe says, "...specifically excludes any commentary on process (e.g.

system stability, burnability, adequacy of the auxiliary equipment, etc.) and the pound per hour emissions limits...". He indicates that the additional production can be obtained "without major structural failure to the kiln, cooler, and preheater, proper." This is a very conservative approach, in my view. He indicates that the kiln drive can be taken up to over 4 rpm, as opposed to the "100% speed" of 3.11 rpm. He does not address whether the kiln can be loaded slightly heavier, increasing the residence time of the charge in the kiln, and thereby potentially reducing the free lime levels at the higher production rate. I believe that this is in fact possible despite the high specific loading of 6.0 mtph/m^3.

- The cooler structure, assuming a higher grate speed, will not be compromised by the higher grate speeds needed to handle the greater clinker quantity. No mention is made of the higher temperature clinker exiting the cooler, and the potentially higher cooler exhaust temperature. It seems likely, however, that these can be managed.
- The ID fan will have a more negative static pressure to handle; Mr. Keefe believes that this will be manageable. He also points out that the material residence time in the calciner will be reduced by the greater production, and this will increase the potential for higher CO emissions. I agree with his statement.

Mr. Koogler goes on to give actual emission data from the plant with higher production rates than normal, but not as high as desired. All pollutants were well below the limits. We will need to verify that this is still true at 162 stph clinker production, as well as the documented rates at 147 stph.

Mr. Aller verifies that the equipment is mechanically capable of dealing with the higher feed rates.

- He indicates for example, that the kiln drive can be taken to 4.0 rpm. He does not indicate the potential quality effects associated with the shorter kiln residence time. This is, of course, primarily a Rinker issue. He does address the potential to modify the feed rate as a function of the C3S content of the clinker. This is the main factor affecting mix burnability.
- He indicates that they have experienced elevated clinker discharge temperatures at higher production rates, but they are still acceptable. Yet to be determined is whether the higher temperatures can be tolerated over long durations.
- He comments on the fan capability by mentioning that the ID fan damper operates up to 95% open at 250 stph feed rate. I believe this fan may ultimately limit production, when material collects in the tower or on the fan blades. Again, this will not be an emission issue.
- He also comments on the capacity of the raw mill at the increased tonnage. He indicates that the raw fineness can be decreased without adverse effects on burnability or product quality. Frankly, I think reductions in raw and fuel fineness are bound to eventually impact product quality. However, again, this is a Rinker parameter, and does not impact emissions unless the fuel is ground so coarse that CO emissions increase. This seems unlikely to me.

I hope this evaluation is of use to the Department. As always, it is a pleasure to work with you and the Department.

Sincerely,

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Section III. Emissions Unit(s) and Conditions.

Subsection A: (Reserved)
{Permitting note: Section III, Subsection A is omitted from this permit revision since it is only valid until June 9, 2002, rendering the entire subsection obsolete.

Section III. Emissions Unit(s) and Conditions.

Subsection B. This section addresses the following emissions units.

E.U. ID No.	Brief Description
-018	In-Line Kiln/Raw Mill & Clinker Cooler

General

B.0. The following Specific Conditions are in effect beginning at 12:01 a.m. of June 10, 2002. [Rule 62-204.800, F.A.C.; and, 40 CFR 63, Subpart LLL]

B.1. Exemption From New Source Performance Standards. Except as provided in paragraphs 40 CFR 63.1356(a)(1) and (a)(2), any affected source subject to the provisions of 40 CFR 63, Subpart LLL is exempted from any otherwise applicable new source performance standard contained in 40 CFR Part 60, Subpart F.
[Rule 62-204.800, F.A.C.; and, 40 CFR 63.1356]

B.2. Attachment "40 CFR 63, Subpart A" is incorporated by reference.

Essential Potential to Emit (PTE) Parameters

B.3. Design Capacities.

Emissions Unit 018	Maximum Capacity
Kiln Preheater Feed Rate (kiln $_{ph}$) (TPH) on a 24-hour basis	~~220~~ 267
Kiln Heat Input (MMBtu/hr) on a 24-hour basis	~~437~~ 485
Clinker Production Rate; 24-hr avg./Annual	~~137~~ 162 TPH/1,300,000 TONS
Cooler Throughput Rate; 24-hr avg./Annual	~~137~~ 162 TPH/1,300,000 TONS
Flyash Injection to Precalciner(TPH) on a 24-hour basis	35

[0250014-002-AC dated September 11, 1997]

B.4. Hours of Operation.

Emissions Unit 018	Maximum Allowable Hours of Operation	Permit
Kiln System	8,760	[0250014-002-AC dated September 11, 1997]

Rules 62-4.160(2) and 62-210.200(PTE), F.A.C.

B.5. Methods of Operation - Fuels.

Fuels fired in the pyroprocessing system (kiln and precalciner) shall not exceed a total heat input rate of ~~437~~ 485 MMBtu/hr and shall consist only of the following:

1. Start-Up Fuels

Bituminous coal, natural gas, petroleum coke, propane, No. 2 fuel oil, residual fuel oil, and on-specification and off-specification used oil.
[0250014-002-AC dated September 11, 1997]

a. Coal and Petroleum Coke

The coal usage rate shall not exceed ~~16.8~~ 18.7 TPH based on a 24-hour average. The petroleum coke usage rate shall not exceed ~~14.6~~ 16.3 TPH on a 24 hour basis.
[0250014-002-AC dated September 11, 1997]

b. Used Oil

i. The constituents and properties of the *on-spec used oil* shall comply with the following allowable concentration levels, as stipulated and defined in 40 CFR 279.11, which is adopted by reference in Rule 62-710.210, F.A.C.

Constituent/Property	Allowable Concentration
Cadmium	2 ppm maximum
Arsenic	5 ppm maximum
Chromium	10 ppm maximum
Lead	100 ppm maximum
Total Halogens	4000 ppm maximum
Flash Point	100 ° F minimum
Polychlorinated Byphenyls (PCBs)	Not Allowed (EQCB Board Order 99-55, Miami-Dade County)

[0250014-002-AC dated September 11, 1997]

ii. (*On-specification/Off-specification used oil* burned at this facility shall not be a hazardous waste as defined by Rule 62-730.030, F.A.C., or 40 CFR Part 261 (July 1, 1996 version). It shall not include fuels or blended fuels consisting in whole or in part of hazardous waste or which include mixture of any solid waste generated from the treatment, storage, or disposal of hazardous waste. The on-spec used oil shall be burned in compliance with Section 403.769(3), F.S.

[0250014-002-AC dated September 11, 1997]

iii. *On-specification/Off-specification used oil* samples from Specific Condition No. A.4(b) shall be analyzed by EPA Recommended Analytical Procedures for Used Oil for

the following constituent/property, associated unit, and using the test methods indicated:

Constituent/Property	Unit	Test Method
Cadmium	ppm	EPA SW-846(6010)
Arsenic	ppm	EPA SW-846(6010)
Chromium	ppm	EPA SW-846(6010)
Lead	ppm	EPA SW-846(6010)
Total Halogens	ppm	EPA SW-846(9252)
Sulfur	percent	ASTM D129 or ASTM D1552
Flash Point	degree F	EPA SW-846(1010)
Heat of Combustion	Btu/gal	ASTM D240
Polychlorinated Byphenyls (PCBs)	ppm	EPA SW-846 (0010) and EPA 680

NOTE: Other test methods may be used only after receiving written prior approval from the Department.
[0250014-002-AC dated September 11, 1997, Revision Effective Month day, year]

iv. The maximum annual consumption rate of used oil shall not exceed 31,886,000 gallons.
[0250014-002-AC dated September 11, 1997, Revision Effective Month day, year]

2. Supplemental Fuels/Non Start-Up Fuels

a. The following permitted non-hazardous solid waste may be used as supplemental fuel: tires, tire-derived fuels, oil filters, booms and rags from spill clean up, generated on site, unused paper by-products, and clean non-chlorinated plastic by-products. This non-hazardous solid waste material shall not be used as a start-up fuel.
[Miami-Dade County Environmental Quality Control Board, Board Order 99-55 dated December 9, 1999 & 0250014-002-AC dated September 11, 1997]

b. The permitted non-hazardous solid waste may be fed continuously at the kiln inlet at the base of the precalciner at a rate not to exceed ~~132~~ 48.5 MMBtu/hr (10% of total kiln and precalciner fuel input) on a 24-hour basis.
[Miami-Dade County Environmental Quality Control Board, Board Order 99-55 dated December 9, 1999; Revision Effective Month day, yearMonth day, year]

c. Before initiating tire firing the gases exiting the kiln shall reach a minimum temperature of 1,400 degrees F for one hour and the oxygen level in the kiln, as measured at the cement plant induced draft fan, shall reach at least 3 percent (1-hour average). Upon reaching steady state conditions, and within 6 hours, gases exiting the kiln shall be maintained at an outlet temperature of at least 1,750 degrees F.
[0250014-002-AC dated September 11, 1997]

Emission Limitations and Standards

B.6. In-line Kiln /Raw Mill /Clinker Cooler Allowable Emissions [1]:

Pollutant ID	Fuel(s) [2]	Allowable Emissions [3] Permit limits	lb/hr	Equivalent Emissions [4] TPY	Basis
PM	coal/gas/WTDF/oil	~~0.20~~ 0.152lb/ton $kiln_{ph}$ feed *	~~44~~ 40.6	~~193~~ 163	RMC[5] -Data
PM10	coal/gas/WTDF/oil	~~0.17~~ 0.121lb/ton $kiln_{ph}$ feed *	~~37.40~~ 32.30	~~164~~ 130	RMC - Data
SO_2	coal/gas/WTDF/oil	~~2.23~~ 0.50lb/ton of clinker	~~306~~ 81.0	~~1340~~ 325	RMC - Data
NO_x	coal/gas/WTDF/oil	~~4.9~~ 4.00lb/ton of clinker	~~671~~ 648	~~2940~~ 2600	RMC - Data
CO	coal/gas/WTDF/oil	~~3.01~~ 2.81lb/ton clinker	~~412~~ 455	~~1807~~ 1827	RMC - Data
VOC	coal/gas/WTDF/oil	~~0.12~~ 0.17lb/ton clinker	~~16.4~~ 27.5	~~72~~ 110.5	BACT
H_2SO_{4mist}	coal/gas/WTDF/oil	~~0.014~~ 0.020lb/ton clinker	~~1.92~~ 3.24	~~8.4~~ 13.0	<7tpy increase
Mercury	coal/gas/WTDF/oil	~~2.4~~ 14.0x10^{-5} lb/ton clinker	~~3.30 E-03~~ 0.023	~~0.014~~ 0.091	<200 lb/yr
Lead	coal/gas/WTDF/oil	~~7.5~~ 30.0x10^{-5} lb/ton clinker	~~0.01~~ 0.049	~~0.045~~ 0.195	<1200 lb/yr
VE	coal/gas/WTDF/oil	10% opacity			NSPS
Dioxins/Furans	coal/gas/WTDF/oil	0.20 ng/dscm or 0.40 ng/dscm (see specific condition B.8)			40 CFR 63, Subpart LLL

* Kiln preheater feed rate (Kiln)ph

NOTES

[1] At a maximum design clinker production rate of ~~137~~ 162 TPH and preheater feed rate of ~~220~~ 267 TPH, utilizing a conversion factor of 0.607: (267x0.607=162).

[2] Fuel combustion as specified in Specific Condition No. B.5, and the protocols established by DERM. See also Specific Condition B.21.

[3] Compliance Units. This facility shall demonstrate compliance based on these standards.

[4] "Equivalent Emissions" are based on ~~annual emissions at 8760 hrs/yr~~ Clinker Production of 1,300,000 TPY. The "Equivalent Emissions" are also listed for informational purpose and for PSD and recordkeeping tracking purposes.

[5] RMC-Rinker Materials Corporation Data

~~[6] AP-42 - Emission Factors~~

[0250014-002-AC dated September 11, 1997; Permit No. 0250014-008-AC/PSD-FL-324; and Revision Effective Month day, year]

B.7. Maximum Visible Emissions .

Emissions Unit 018	Maximum Visible Emissions Limits
In line Kiln / Raw Mill/ Clinker Cooler	10%

[0250014-002-AC dated September 11, 1997]

B.8. Dioxins/Furans. No owner or operator of an existing in-line kiln/raw mill shall cause to be discharged into the atmosphere from these affected emissions units, any gases which contain dioxins/furans in excess of 0.20 ng/dscm (8.7×10^{-11} gr/dscf) (TEQ) corrected to seven percent oxygen; or 0.40 ng/dscm (1.7×10^{-10} gr/dscf) (TEQ) corrected to seven percent oxygen, when the average of the performance test run average temperatures at the inlet to the particulate control device is 204° C (400° F) or less.
[Rule 62-204.800, F.A.C.; and, 40 CFR 63.1343(a) and (b)(3)(i)and (ii)]

B.9. Dioxin/Furans Operating Limits for Kilns and In-line Kiln/Raw Mills.
(a) The owner or operator of a kiln subject to a D/F emission limitation under 40 CFR 63.1343 must operate the kiln such that the temperature of the gas at the inlet to the kiln particulate matter control device (PMCD) does not exceed the applicable temperature limit specified in paragraph 40 CFR 40.1344(b). The owner or operator of an in-line kiln/raw mill subject to a D/F emission limitation under 40 CFR 63.1343 must operate the in-line kiln/raw mill, such that,

(1) When the raw mill of the in-line kiln/raw mill is operating, the applicable temperature limit for the main in-line kiln/raw mill exhaust, specified in paragraph 40 CFR 63.1344(b) and established during the performance test when the raw mill was operating is not exceeded.

(2) When the raw mill of the in-line kiln/raw mill is not operating, the applicable temperature limit for the main in-line kiln/raw mill exhaust, specified in paragraph 40 CFR 63.1344(b) and established during the performance test when the raw mill was not operating, is not exceeded.

(b) The temperature limit for affected sources meeting the limits above is determined in accordance with the following: the run average temperature must be calculated for each run, and the average of the run average temperature must be determined and included in the performance test report and will determine the applicable temperature limit.
[40 CFR 63.1344(a)(1) & 2 and (b)]

Excess Emissions
{Permitting note: The Excess Emissions Rule at Rule 62-210.700, F.A.C., cannot vary any requirement of an NSPS, NESHAP, or Acid Rain program provision.}

B.10. Excess emissions resulting from startup, shutdown or malfunction of any emissions unit shall be permitted providing (1) best operational practices to minimize emissions are adhered to and (2) the duration of excess emissions shall be minimized but in no case exceed two hours in any 24 hour period unless specifically authorized by the Department for longer duration.
[Rule 62-210.700(1), F.A.C.]

B.11. Excess emissions which are caused entirely or in part by poor maintenance, poor operation, or any other equipment or process failure which may reasonably be prevented during startup, shutdown, or malfunction shall be prohibited.
[Rule 62-210.700(4), F.A.C.]

B.12. Excess Visible Emissions. For the purpose of reports under 40 CFR 60.65, periods of excess emissions that shall be reported are defined as all 6-minute periods during which the average opacity exceeds 10% opacity. See Specific Conditions B.7 and B.15.
[Rule 62-204.800, F.A.C.; and, 40 CFR 60.63(d)]

Test Methods and Procedures

B.13. Compliance with the allowable emission limiting standards listed in B.6. shall be determined by using the following reference methods as described in 40 CFR 60, Appendix A and 40 CFR 61 Appendix B adopted by reference in Chapter 62-204, F.A.C.

These emission units shall comply with all applicable requirements of Rule 62-297.310, F.A.C. General Test Requirements

Description	Pollutant Name or parameter	Fuel(s) [1]	EPA/Reference Method/CMS *	Time Frequency	Compliance Test Duration	CMS * Compliance
Kiln/Cooler/Raw Mill	PM/PM10	Oil/Coal /Gas/WTDF	5 or 201/201A	Initial/annual [8]	3 one-hr run	
Kiln/Cooler/Raw Mill	VE	Oil/Coal/Gas/WTDF	9/COMS	Initial/annual/ COMS	3 one-hr run	No [4]
Kiln/Cooler/Raw Mill	SO_2	Oil/Coal/Gas/WTDF	CEMS	daily average	Continuous	Yes [6]
Kiln/Cooler/Raw Mill	NOx	Oil/Coal/Gas/WTDF	CEMS	daily average	Continuous	Yes [3]
Kiln/Cooler/Raw Mill	CO	Oil/Coal/Gas/WTDF	10 [4]	Initial/annual	3 one-hr run	
Kiln/Cooler/Raw Mill	VOC	Oil/Coal/Gas/WTDF	25A [2]	Initial/annual	3 one-hr run	No [2]
Kiln/Cooler/Raw Mill	H2SO4 mist	Oil/Coal/Gas/WTDF	8	Initial	3 one-hr run	
Kiln/Cooler/Raw Mill	Hg, Pb,	Oil/Coal/Gas/WTDF	29	Initial	3 one-hr run	
Fugitive Sources	VE		9	Protocol [7]		
Minor Sources	VE		9	Initial/annual	3 one-hr run	
Kiln/Cooler/Raw Mill	Dioxins/Furans	Oil/Coal/Gas/WTDF	23	Initial/every 30 months	3 one-hr run	

Notes:

[1] Annual testing of emissions shall be conducted during the worst case scenario that this facility would normally operate under and according to specific condition B.17. Test frequency after initial compliance shall be determined by DERM. Fuels to be burned are specified in Specific Condition B.5.

[2] To comply with the conditions of this permit, VOC emission shall be tested initially, quarterly until the total hydrocarbon (THC) monitor is installed and certified, and annually thereafter At Rinker's option, Method 25A can be corrected for methane through a concurrently conducted Method 18 determination or through another method approved by DERM. If a concurrent demonstration of methone is not performed, then the results of the Method 25A determination shall be used to demonstrate compliance with the VOC emission limit. In other words, Rinker has the option of using Method 25A alone if they stipulate that all of the THC is VOC.

[3] NOx - The continuous emission monitoring system (CEMS) data shall be used to demonstrate compliance with the kiln/cooler/raw mill emissions limits. The CEMS calibration and maintenance shall meet the applicable requirements of 40 CFR 60, Appendix B and Appendix F.

[4] Pursuant to 40 CFR 60, Subpart F, the kiln/cooler/raw mill exhaust system shall be equipped with continuous opacity monitoring system (COMS) to record the opacity at the stack to indicate proper maintenance and operation. Monitoring of the opacity of emissions shall be demonstrated by COMS pursuant to 40 CFR 60.63. Notification and recordkeeping shall be in accordance with 40 CFR 60.7 and 40 CFR 60.65.

[5] Continuous process monitors for CO and/or O_2 to optimize combustion conditions for pollution control shall be part of the process.

[6] SO_2 - The continuous emission monitoring system (CEMS) data shall be used for the Kiln/cooler/raw mill compliance requirement. The CEMS calibration and maintenance shall meet the applicable requirements of 40 CFR 60, Appendix B and Appendix F.

[7] Protocol as approved by the Permitting Authority (DERM)

[8] Rinker has the option of using Method 5 if they stipulate that all of the PM is PM10.

* CMS [=] compliance demonstrated by a continuous monitoring system: CEMS or COMS.

The permittee shall provide DERM with a *protocol* that will outline the different fuel scenarios (% of total heat input) that this unit will be burning. Rinker shall obtain the test data necessary to determine whether this kiln is capable of accommodating the burning of coal or petroleum coke and all of the other supplemental fuels specified on Specific Condition B.5. Fuel Combustion. The fuel scenarios tested shall represent the actual combustion percentage (% of total heat input) that is going to be maintained while burning supplemental fuels during normal operation.

[0250014-002-AC dated September 11, 1997; Permit No. 0250014-008-AC/PSD-FL-324; and Revision Effective Month day, year]

B.13. PM, PM10 , CO, and Visible Emissions. The permittee shall annually (prior to December 31 of each year) conduct performance tests on all emissions units and their corresponding pollutant emissions listed below:

Kiln: PM, PM10, CO, and visible emissions;
Cooler : PM and visible emissions;
[Rule 62-297.310(7), F.A.C.]

B.14. Initial and Subsequent Performance Testing

(a) The owner or operator of an affected emissions unit subject to 40 CFR 63, Subpart LLL, shall demonstrate initial compliance with the emission limits of 40 CFR 63.1343 and 40 CFR 63.1345 (See Specific Condition B.6.) using the test methods and procedures in paragraph 40 CFR 63.1349(b) and 40 CFR 63.7. Performance test results shall be documented in complete test reports that contain the information required by paragraphs 40 CFR 63.1349(a)(1) through (a)(10), as described below, as well as all other relevant information. The plan to be followed during testing shall be made available to the Administrator prior to testing, if requested.

(1) A brief description of the process and the air pollution control system;
(2) Sampling location description(s);
(3) A description of sampling and analytical procedures and any modifications to standard procedures;
(4) Test results;
(5) Quality assurance procedures and results;
(6) Records of operating conditions during the test, preparation of standards, and calibration procedures;
(7) Raw data sheets for field sampling and field and laboratory analyses;
(8) Documentation of calculations;
(9) All data recorded and used to establish parameters for compliance monitoring; and
(10) Any other information required by the test method.

(b) Performance tests to demonstrate initial compliance with 40 CFR 63, Subpart LLL, shall be conducted as specified as follows: [40 CFR 63.1349(b)(1) through (b)(3)].

(1) The owner or operator of an in-line kiln/raw mill subject to limitations on particulate matter emissions shall demonstrate initial compliance by conducting separate performance tests as specified in paragraphs (b)(1)(i) through (b)(1)(iii) while the raw mill of the in-line kiln/raw mill is under normal operating conditions and while the raw mill of the in-line kiln/raw mill is not operating. The owner or operator of a clinker cooler subject to limitations on particulate matter emissions shall demonstrate initial compliance by conducting a performance test as specified in paragraphs (b)(1)(i) through (b)(1)(iii). The opacity exhibited during the period of the Method 5 of Appendix A, 40 CFR Part 60 performance tests required by paragraph (b)(1)(i) shall be determined as required in paragraph (b)(1)(v).

(i) EPA Method 5 of Appendix A, 40 CFR Part 60, shall be used to determine PM emissions. Each performance test shall consist of three separate runs under the conditions that exist when the affected emission unit is operating at the highest load or capacity level reasonably expected to occur (See Specific Condition B.17.). Each run shall be conducted for at least one hour, and the minimum sample volume shall be 0.85 dscm (30 dscf). The average of the three runs shall be used to determine compliance. A determination of the particulate matter collected in the impingers ("back half") of the Method 5 particulate sampling train is not required to demonstrate initial compliance with the PM standards of 40 CFR 63, Subpart LLL. However this shall not preclude the permitting authority from requiring a determination of the "back half" for other purposes.

(ii) Suitable methods shall be used to determine the kiln or in-line kiln/raw mill feed rate, except for fuels, for each run.

(iii) The emission rate, E, of PM shall be computed for each run using Equation 1:

$E = (c_s Q_{sd}) / P$ **(Equation 1)**

Where: E = emission rate of particulate matter, kg/Mg (lb/ton) of kiln feed.

c_s = concentration of PM, kg/dscm (g/dscf), as determined by Method 5.

Q_{sd} = volumetric flow rate of effluent gas, dscm/hr (dscf/hr), as determined by Method 5.

P = total kiln feed (dry basis), Mg/hr (ton/hr), as confirmed by material balance over the production system.

(iv) Except as provided in paragraph 40 CFR 63.1349(b)(1)(vi) the opacity exhibited during the period of the Method 5 performance tests required by paragraph 40 CFR 63.1349(b)(1)(i) shall be determined through the use of a continuous opacity monitor (COM). The maximum six-minute average opacity during the three Method 5 test runs shall be determined during each Method 5 test run, and used to demonstrate initial compliance with the applicable opacity limits of 40 CFR 63.1343(b)(2) or 40 CFR 63.1345(a)(2). See Specific Conditions B.7. and B.13.

(2) The owner or operator of an affected emissions unit subject to limitations on D/F emissions shall demonstrate initial compliance with the D/F emission limit by conducting a performance test using Method 23 of Appendix A, 40 CFR Part 60. The owner or operator of an in-line kiln/raw mill shall demonstrate initial compliance by conducting separate performance tests while the raw mill of the in-line kiln/raw mill is under normal operating conditions and while the raw mill of the in-line kiln/raw mill is not operating (See Specific Condition B.17).

(i) Each performance test shall consist of three separate runs; each run shall be conducted under the conditions that exist when the affected source is operating at the highest load or capacity level reasonably expected to occur (See Specific Condition B.17.). The duration of each run shall be at least three hours and the sample volume for each run shall be at least 2.5 dscm (90 dscf). The concentration shall be determined for each run and the arithmetic average of the concentrations measured for the three runs shall be calculated and used to determine compliance.

(ii) The temperature at the inlet to the kiln or in-line kiln/raw mill PMCD, and where applicable, the temperature at the inlet to the alkali bypass PMCD, must be continuously recorded during the period of the Method 23 test, and the continuous temperature record(s) must be included in the performance test report.

(iii) One-minute average temperatures must be calculated for each minute of each run of the test.

(iv) The run average temperature must be calculated for each run, and the average of the run average temperatures must be determined and included in the performance test report and will determine the applicable temperature limit in accordance with B.9(b) [40 CFR 63.1344 (a) & (b)].

Except as provided in paragraph 40 CFR 63.1349(e), performance tests required under paragraphs 40 CFR 63.1349(b)(1) shall be repeated annually. See Specific Conditions B.13.

D/F performance tests required under paragraph 40 CFR 63.1349 Table 1 Summary of Performance Test Requirements shall be repeated every 30 months.

(e) The owner or operator is required to repeat the performance tests for kilns or in-line kiln/raw mills as specified in paragraphs 40 CFR 63.1349(b)(1) and (b)(3) within 90 days of initiating any significant change in the feed or fuel from that used in the previous performance test.
[Rules 62-204.800 and 62-297.310(7)(a)4., F.A.C.; and, 40 CFR 63.1349(a); (b)(1)(i), (ii), (iii) & (v); (b)(2); (b)(3)(i), (ii), (iii) & (iv); (c); (d); and, (e)]

B.15. Visible Emissions. Visible emissions performance testing shall be demonstrated using EPA Method 9 pursuant to 40 CFR 60, Appendix A, and Chapter 62-297, F.A.C. See Specific Conditions B. 7,and B.21.
[Rules 62-204.800, 62-297.310(7) & 62-297.401, F.A.C.]

B.16. Required Number of Test Runs. For mass emission limitations, a compliance test shall consist of three complete and separate determinations of the total air pollutant emission rate through the test section of the stack or duct and three complete and separate determinations of any applicable process variables corresponding to the three distinct time periods during which the stack emission rate was measured provided, however, that three complete and separate determinations shall not be required if the process variables are not subject to variation during a compliance test, or if three determinations are not necessary in order to calculate the unit's emission rate. The three required test runs shall be completed within one consecutive five-day period. In the event that a sample is lost or one of the three runs must be discontinued because of circumstances beyond the control of the owner or operator, and a valid third run cannot be obtained within the five day period allowed for the test, the Secretary or his or her designee may accept the results of the two complete runs as proof of compliance, provided that the arithmetic mean of the results of the two complete runs is at least 20 percent below the allowable emission limiting standards.
[Rule 62-297.310(1), F.A.C.]

B.17. Operating Rate During Testing. Testing of emissions shall be conducted with each emissions unit operation at permitted capacity, which is defined as 90 to 100 percent of the maximum operation rate allowed by the permit. If it is impracticable to test at permitted capacity, an emissions unit may be tested at less than the minimum permitted capacity; in this case, subsequent emissions unit operation is limited to 110 percent of the test load until a new test is conducted. Once the emissions unit is so limited, operation at higher capacities is allowed for no more than 15 consecutive days for the purpose of additional compliance testing to regain the authority to operate at the permitted capacity.
[Rules 62-297.310(2) & (2)(b), F.A.C.]

B.18. Calculation of Emission Rate. The indicated emission rate or concentration shall be the arithmetic average of the emission rate or concentration determined by each of the separate test runs unless otherwise specified in a particular test method or applicable rule.
[Rule 62-297.310(3), F.A.C.]

B.19. Applicable Test Procedures.
(a) Required Sampling Time.

1. Unless otherwise specified in the applicable rule, the required sampling time for each test run shall be no less than one hour and no greater than four hours, and the sampling time at each sampling point shall be of equal intervals of at least two minutes.
2. Opacity Compliance Tests. When EPA Method 9 is specified as the applicable opacity test method, the required minimum period of observation for a compliance test shall be sixty (60) minutes for emissions units which emit or have the potential to emit 100 tons per year or more of particulate matter, and thirty (30) minutes for emissions units which have potential emissions less than 100 tons per year of particulate matter and are not subject to a multiple-valued opacity standard. The opacity test observation period shall include the period during which the highest opacity emissions can reasonably be expected to occur. Exceptions to these requirements are as follows:

The minimum observation period for opacity tests conducted by employees or agents of the Department to verify the day-to-day continuing compliance of a unit or activity with an applicable opacity standard shall be twelve minutes.

(b) Minimum Sample Volume. Unless otherwise specified in the applicable rule, the minimum sample volume per run shall be 25 dry standard cubic feet.

(c) Required Flow Rate Range. For EPA Method 5 particulate sampling, acid mist/sulfur dioxide, and fluoride sampling which uses Greenburg Smith type impingers, the sampling nozzle and sampling time shall be selected such that the average sampling rate will be between 0.5 and 1.0 actual cubic feet per minute, and the required minimum sampling volume will be obtained.

(d) Calibration of Sampling Equipment. Calibration of the sampling train equipment shall be conducted in accordance with the schedule shown in Table 297.310-1 (attached).

(e) Allowed Modification to EPA Method 5. When EPA Method 5 is required, the following modification is allowed: the heated filter may be separated from the impingers by a flexible tube.
[Rule 62-297.310(4), F.A.C.]

B.20. Required Stack Sampling Facilities. When a mass emissions stack test is required, the permittee shall comply with the requirements contained in Appendix SS-1, Stack Sampling Facilities, attached to this permit.
[Rule 62-297.310(6), F.A.C.]

B.21. Frequency of Compliance Tests. The following provisions apply only to those emissions units that are subject to an emissions limiting standard for which compliance testing is required.

(a) General Compliance Testing.
1. The owner or operator of an emissions unit that is subject to any emission limiting standard shall conduct a compliance test that demonstrates compliance with the applicable emission limiting standard prior to obtaining a renewed operation permit. Emissions units that are required to conduct an annual compliance test may submit the most recent annual compliance

cc: J. Coscia
J. Heron
M. Matthias

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PLANT OPERATIONAL OBSERVATIONS

Production Increase Evaluation

RINKER MATERIALS CORPORATION
MIAMI, FLORIDA

Mike Aller
Production Manager

November 15, 2004

The following observations were made during the production testing of Rinker Materials' Miami Cement plant during which the kiln was operated at feed rates as high as 255 TPH. It will address issues covered in the "Preliminary Technical Assessment" provided by FLS, the main process equipment manufacturer. During this testing, the plant has been able to operate at over 3500 ton of clinker per day and there appears to be no major hurdles that would prevent it being able to sustain these production levels.

Rotary Kiln, Size ø4.15m x 48m:

- Considering the Kiln structure: By adjusting the main drive, a typical feed/speed ratio (~70 tph feed per revolution) has been maintained in the testing to date. Some adjustment to the feed/speed ratio may be required to obtain improved stability, but as FLS points out, the kiln cannot be structurally overloaded.

- Considering the Kiln main drive: Adjustment of the field of a direct current motor to increase the output speed results in reduced output torque. The highest torque requirement is at initial start of the kiln. To date, we have not experienced any difficulties starting the kiln with the field adjusted for a maximum speed of 3.6 rpm. There is further field adjustment available which will allow us to maintain the current feed/speed ratio at higher kiln feed rates.

- Considering the Kiln drive: There is sufficient field adjustment to take the kiln drive to 4.0 rpm. This will allow us to maintain the current feed/speed ratio at higher kiln feed rates.

- Aside: While the specific loading in the kiln is high, we have not experienced any significant kiln instability not related to swings in kiln feed chemistry. During such swings, the instability can be dampened by either decreasing (elevated C3S) or increasing (low C3S) the feed rate. Chemistry control procedures have been modified to minimize swings in C3S.

Clinker Cooler, Size 807CIS – 1014 CFG – 1006 RFT / 1025 RFT:

- Considering the Cooler structure: We have experienced elevated clinker discharge temperatures at higher production rates, but they are still acceptable.

- Considering the Cooler drives: During the testing to date, the cooler hydraulic drive motors have operated at approximately 40% of the full load amp limits, indicating more than adequate power at rates up to 3500 tpd.

Preheater, Size ø5.7 m Stages 1 & 2, ø6.0 m Stages 3, 4, & 5, ILC Calciner ø6.9 m x 16.0 m:

- Considering the Preheater structure: To date we have not experienced any problems with the additional pressure drop across the preheater. While kiln ID fan power draw has increased, the power consumption per ton of clinker has only increased marginally due to the increased pressure drop. The kiln ID fan capacity appears to be adequate for the increased production rates. The kiln ID fan damper typically operated between 75% and 85% open when operating at a kiln feed rate of 245 tph and from 80% to 95% when operating at 250 tph. Higher damper positions have occurred during periods when there was excessive build up in the riser. This build up was caused by pitted refractory in the riser that was replaced during a recent kiln outage.

- Considering the Calciner structure: Stack testing performed during the testing period showed that CO emissions remained well within compliance. Additionally, CO readings on the downcomer gas only increased approximately 100 ppm when the kiln feed rate was increased from 220 tph to 250 tph. No significant variations in downcomer CO were observed at the increased production rates. Proportionally, CO emissions should remain within our permit limits at feed rates over 250 tph.

Raw Mill – FRM 38/190:

- Considering the Raw Mill: During initial testing, the raw meal fineness target was reduced with no adverse effects on burnability or product quality. The raw mill averaged 256 tph dry raw meal at the current fineness target. This is adequate to support a kiln feed rate of 267 tph. If additional raw meal capacity is required, the fineness target can be reduced further, as it is still above the original design specification.

Coal Mill – FRM 16/18:

- Considering the Coal Mill: The coal mill performed well during the testing, with production rates up to 17 tph of pulverized coal. This was more than adequate to support 3500 tpd clinker. Some adjustment to the fineness target was made during the testing.

General:

During the testing to date, the kiln has operated at 3500 tpd clinker (245 tph kiln feed rate) or above for nearly 650 hours. There has been approximately 190 hours of operation at 3575 tpd (250 tph kiln feed rate). The feed rate was taken as high as 255 tph during the testing to date. During this testing, there were no problems with stack emissions or product quality and there were no mechanical/electrical problems that could be tied directly to the increased production rates. The raw mill production rates were more than adequate to sustain 3500 tpd clinker. The coal mill adequately sustained the increased production rates.

There are two future projects that are currently under consideration. One is the implementation of the tire burning/alternate fueling system originally proposed in the construction permit. The second is the injection of elevated loss on ignition flyash directly into the calciner. However, both the main process equipment and the auxiliary support equipment have demonstrated the ability to maintain the requested production rate within the proposed emission limits.

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263-03-10
November 16, 2004

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BUREAU OF AIR REGULATION

Mr. Al Linero
FDEP
Twin Towers Office Bldg
2600 Blair Stone Road, MS 5500
Tallahassee, FL 32399-2400

Subject: ***Rinker Materials Corporation***
Miami Cement Plant, Miami, Florida
Production Rate Increase

Dear Al:

The attached materials are submitted in support of the permit application previously submitted to you requesting that the production rate of the Rinker Miami Cement Plant be increased to a preheater feed rate of 267 tons per hour and a corresponding clinker production rate of 162 tons per hour. Along with this request was a request to increase the heat input rate of the plant from 437 mmBTU per hour to 485 mmBTU per hour using presently permitted fuels.

The materials transmitted herewith, in accordance with your requests, include documentation that the plant is physically capable of operating at a preheater feed rate of 267 tons per hour and a clinker production rate of 162 tons per hour, emission data showing that the plant can operate well within permitted emission limiting standards while operating at

90-100 percent of the requested preheater feed rate of 267 tons per hour, and long-term (June-November 2004) production rate data and corresponding emission rate data to demonstrate long-term operating characteristics of the plant.

As previously discussed with you and addressed in the permit application, Rinker is requesting the increased production rate and increased fuel firing rate but will not undertake physical plant modifications to achieve the higher rate. Production rate tests conducted under Department approval have demonstrated that the requested production rate can be achieved with the existing plant.

The one change that will be made, as we've discussed with you, is the replacement of the fan wheel on the main baghouse fan or the fan itself; the fan exhausting the kiln, raw mill, and clinker cooler. This fan was designed and installed to operate at 900 rpm. It was found during the production rate tests, however, that the fan has a resonance problem that begins at a fan speed of approximately 850 rpm. It is anticipated that a replacement fan or fan wheel will be necessary to achieve the designed fan speed of 900 rpm. This will allow the plant to operate at the higher requested production rate in a more reliable manner. As we've discussed, Rinker is of the opinion that the replacement of the fan or fan wheel is not a modification; it is the replacement of a defective piece of equipment with a like-kind piece of equipment without a defect.

Another project that Rinker may elect to undertake as part of the production rate increase is the injection of high carbon (40-50 percent carbon) flyash directly into the

precalciner. Flyash is presently one of the raw materials used in the preparation of the preheater feed. It is presently ground with the other raw materials and introduced at the top of the preheater. By introducing the flyash directly into the precalciner, two benefits are realized. First the material feed rate through the preheater is reduced. This allows Rinker to operate at the requested higher clinker production rate while maintaining a substantial margin of safety in the feed rate of raw material through the preheater. It should be noted that the injection of flyash into the precalciner is not a prerequisite of achieving the requested production rate increase. Secondly, the injection of fly ash directly into the precalciner allows the use of high carbon flyash, a commodity that is becoming much more prevalent as power plants strive to reduce their emissions, without the potential of increased CO and/or VOC emissions. By introducing the high carbon flyash directly into the precalciner, Rinker can take advantage of the heating value of the flyash and also minimize the potential CO and/or VOC emissions that might occur if the high carbon flyash was introduced into the preheater.

The other permit modification requested along with the production rate increase, as previously addressed in the permit application, is the increased heat input rate to the kiln. Rinker is not requesting approval to use any fuels other than presently permitted fuels to achieve this increased heat input rate.

The attached supplemental material that you have requested to support the permit application includes:

- Documentation from F.L. Smidth, the plant designer and Mike Aller, the

Rinker Production Manager commenting on the capability of the plant to operate at the requested production rate,

- A summary of emission measurements conducted in August 2004 demonstrating compliance with all permitted emission limiting standards while the plant was operating within 90-100 percent of the requested production rate, and
- Long-term production rate data and emission rate data (from continuous monitors) demonstrating the long-term operating and emission characteristics of the plant while operating at approved production rates above the presently permitted rate.

I appreciate your attention to this matter. If additionally information is required or if there are questions regarding the information provided herein, please do not hesitate to contact me.

Sincerely,

KOOGLER & ASSOCIATES

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

JBK/lt

Attachment 1

F.L.Smidth Inc.
2040 Avenue C • Bethlehem, PA 18017-2188 • USA
Tel +1 610 264 6011 • Fax +1 610 264 6701
www.flsmidth.com

FLSmidth

PRELIMINARY TECHNICAL ASSESSMENT
Production Increase Evaluation

CSR RINKER MATERIALS CORPORATION
MIAMI, FLORIDA

October 11, 2004

F.L.Smidth Inc.
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FLSmidth

BACKGROUND

The kiln system supplied by F.L.Smidth in 1997, under contract # 97-20179, was rated for a clinker production of 2,755 STPD. Rinker Materials is currently evaluating the feasibility for a permanent clinker production rate increase to 3,500 STPD or more by conducting a continuous production capacity test program at the Miami Cement Plant through October 31, 2004.

Currently the plant is operating under Title V Operation Permit which limits the preheater feed rate to 220 tons per hour and the clinker production rate to 137 tons per hour on a 24-hour basis (3,288 STPD). Rinker is in the process of conducting short-term production capacity tests at production rates higher than 3,288 STPD in an attempt to determine the actual production limitations of the kiln system.

The following preliminary technical assessment is taken with respect to the physical size of the original equipment supply only. It specifically excludes any commentary on process (e.g. system stability, burnability, adequacy of the auxiliary equipment, etc.) and the pound per hour emissions limits. It is important that the emissions at the higher capacity be continuously monitored and recorded during the production capacity test program.

KILN PRODUCTION CAPACITY

The kiln has already been producing clinker at its authorized production limit of 3,288 short tons per day. Although this is well above the rated capacity of 2,755 STPD, F.L.Smidth typically provides for additional capacity above and beyond the guarantees provided by the manufacturer.

F.L.Smidth provides reasonable assurance that the kiln system can physically produce substantially more clinker than allowed by the present production limitations. Apart from the inherent "over design" of the original configuration, F.L.Smidth provides reasonable assurance that the kiln system is physically capable of being fed at a preheater feed rate of up to 267 short tons per hour without major structural failure to the kiln, cooler and preheater, proper.

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Rotary Kiln, Size ø4.15m x 48m:

- Considering the kiln structure: Provided that the kiln will be operated at a higher speed than originally designed, by maintaining a constant feed/speed ratio, the actual load of material in the kiln will not change. In fact, the kiln was designed using a material load corresponding to 10% fill and the back end of the kiln has an opening corresponding to 8%, so the kiln cannot be overloaded with material. This means the stresses in the shell, riding rings, supports, etc. will not exceed those originally calculated due to this capacity increase.

- Considering the main drive: The main drive has a 400 HP motor, which was sized based on the original capacity of 2,750 STPD. The actual calculated motor size required for 3,500 STPD clinker would be 368 HP (184 HP brake) so there was an extra cushion of 8.5% on the motor size. For 3,500 STPD, F.L.Smidth's calculated motor size is 467 HP (234 HP brake). When the motor is taken over speed to increase the kiln speed, the power output remains constant while the available torque reduces proportionately as the speed increases. This means the extra margin in the motor size compared to the brake power required will be lessened with the increased capacity. Rinker will necessarily have somewhat less safety margin on the motor power, an expected draw of 234 HP compared to 400 HP motor power. In other words, the power draw will be ~59% of the available motor power compared to the standard 50% ratio used for new designs. This is not too much of a concern since this is a two-support kiln, so misalignment cannot cause extra power draw, which is one of the main reasons for having margin on the motor power. Since the torque of the motor will not exceed the original maximum design figure and the drive components are designed for that amount, the components of the drive will not be more heavily loaded than original design. There is no concern here.

- Considering the kiln drive: The 100% speed of the kiln is 3.11 rpm. Rinker reports they have already taken their kiln to a speed of 3.7 rpm or so and can take it up over 4 rpm.

- Aside: As mentioned above, this review of the physical equipment specifically excludes any commentary on process stability of the system. It is noted, however, that the kiln has an internal volume of 530 m^3 inside brick, which gives a specific loading of 6.0 mtpd/m^3, which, from a process stability standpoint, would make it one of the heaviest loaded kilns in the world.

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Clinker Cooler, Size 807CIS – 1014 CFG – 1006 RFT / 1025 RFT:

- Considering the cooler structure: Provided that the cooler drives will be operated at a higher speed (strokes per minute) than originally designed, by increasing the drive speeds in proportion to the capacity increase, the actual load of material in the cooler will not change. That is, apart from the higher heat load, the stresses in the cooler will not exceed those originally calculated due to this capacity increase as long as the cooler's bed height is maintained. However, due to the increased strokes per minute, there will necessarily be reduced longevity of the wear components. The inlet width loading remains reasonable at 1079 MTPD/m, and therefore the grate speed would still run at acceptable levels. The higher heat load into the cooler will necessarily result in higher clinker discharge temperatures resulting from the diminished retention time of the material in the cooler.

- Considering the cooler drives: An investigation of the current hydraulic drive to support the increased speed should be made to determine mechanical modifications which may be required to the power unit. Increased motor sizes may be indicated.

Preheater, Size ø5.7 m Stages 1 & 2, ø6.0 m Stages 3, 4, & 5, ILC Calciner ø6.9 m x 16.0 m:

- Considering the preheater structure: The existing cyclones could support 3,500 STPD, but this will come at the cost of higher velocities and pressure drop. The expected operating pressure at the inlet to the I.D. fan will be well over -800 mmwg (-31.5 inwg) at the higher production.

- Considering the calciner structure: The retention time in the existing calciner will decrease to approximately 2.6 seconds at 3,500 STPD. As a result, the pound per hour CO emissions should be carefully monitored to ensure continued compliance within the established emissions limits.

Brian P. Keefe
Vice President of Engineering

Attachment 2

KOCGLER & ASSOCIATES
ENVIRONMENTAL SERVICES

Summary of Emission Rates While Operating at Targeted Increased Production Rate
Rinker Materials Corporation
Miami Cement Plant

In August 2004, emission measurements were conducted at the Rinker Miami Cement Plant to demonstrate compliance with permitted emission limiting standards while operating within 90-100 percent of the targeted increased production rate of 267 tons per hour preheater feed and 162 tons per hour of clinker. The emission measurements also satisfied the compliance demonstration requirement for the plant for fiscal year 2003-2004.

The emission measurements were conducted during the period August 4-8, 2004 while the plant was operating at a nominal preheater feed rate of 245 tons per hour and a nominal clinker production rate of 147 tons per hour. The results of the measurements have previously been submitted to Miami-Dade County DERM and to FDEP. The results of the measurements are summarized herein in Table 1.

The emission measurements were conducted while the plant was operating at approximately 92 percent of the requested increased production rate of 267 tons per hour of preheater feed. The measured emission rates of regulated pollutants show that the plant operated at emission rates (expressed as pounds per ton of preheater feed or clinker) ranging from approximately 21-56 percent of the permitted emission rates for particulate matter, NOx, CO, sulfuric acid mist, mercury and lead; at less than two percent of the permitted SO_2 emission rate; and at 75 percent of the permitted VOC emission rate. Dioxin/furan measurements were also conducted with the raw mill running and with the raw mill offline. These measurements demonstrated that the plant operated in compliance with the permitted emission limits for these pollutants. The mass emission rates (pounds per hour) of all pollutants were also well below the permitted mass emission rates.

Also summarized in Table 1 are emission rates of several pollutants measured during compliance testing in September 2003 while the plant operated at a preheater feed rate of approximately 210 tons per hour and a clinker production rate of approximately 128 tons per

hour. These rates are within 90-100 percent of the currently permitted preheater feed rate and clinker production rate. It is interesting to note that there was no substantial change in emissions (expressed as pounds per ton of feed or clinker) between the two test periods; one with the plant operating at a preheater feed rate of 210 tons per hour and the other with the plant operating at a preheater feed rate of 245 tons per hour.

Both the 2003 and 2004 emission measurements demonstrate that the plant routinely operates well within emission limiting standards. The 2004 measurements demonstrate that pollutant emission rates are not a limiting factor in increasing the production rate to 267 tons per hour of preheater feed and 162 tons per hour of clinker.

A separate attachment summarizes long-term emission rate data and production rate data for the Rinker Miami Cement Plant. These data generally cover periods when the plant was operating at approved production rates above the currently permitted rates.

Test Date: August 2004

Nominal Rate:

Preheater Feed - 245 tph
Clinker Production - 147 tph

Pollutant	(lb/hr)		(lb/ton)		2003 Measured (lb/ton)
	Measured	Limit	Measured	Limit	
PM10 (1)	9.2/15.1	37.4	0.04/0.07	0.17 (2)	0.04 (2)
SO_2	4.3	306	0.03	2.23 (3)	0.16 (3)
NOx	346	671	2.35	4.9 (3)	2.29 (3)
CO	249	412	1.69	3.01 (3)	1.84 (3)
VOC	13.4	16.4	0.09	0.12 (3)	0.09 (3)
SAM	0.44	1.92	0.003	0.014 (3)	
Hg	0.0010	0.0033	0.7 E-05	2.4 E-05 (3)	
Pb	0.0026	0.0100	1.8 E-05	7.5 E-05 (3)	
D/F			0.122/0.113 (4)	0.4/0.2 (4)	

(1) Total PM reported as PM10 with Raw Mill Up/Raw Mill Down
(2) lb/ton feed
(3) lb/ton clinker
(4) ng/dscm @ 7% O_2

11/16/04

ENVIRONMENTAL SERVICES

Attachment 3

24-HOUR NOx AVERAGES
JUNE 7 – NOV 10, 2004

26-Jun-04	Average Nox	N/A	lb/ton clinker
6-Jul-04	Average Nox	N/A	lb/ton clinker
7-Jul-04	Average Nox	N/A	lb/ton clinker
8-Jul-04	Average Nox	N/A	lb/ton clinker
19-Aug-04	Average Nox	N/A	lb/ton clinker
12-Sep-04	Average Nox	N/A	lb/ton clinker
15-Oct-04	Average Nox	N/A	lb/ton clinker
16-Oct-04	Average Nox	N/A	lb/ton clinker
17-Oct-04	Average Nox	N/A	lb/ton clinker
18-Oct-04	Average Nox	N/A	lb/ton clinker
19-Oct-04	Average Nox	N/A	lb/ton clinker
20-Oct-04	Average Nox	N/A	lb/ton clinker
1-Nov-04	Average Nox	N/A	lb/ton clinker
14-Jul-04	Average Nox	5.89	lb/ton clinker
21-Oct-04	Average Nox	4.35	lb/ton clinker
13-Sep-04	Average Nox	4.04	lb/ton clinker
22-Oct-04	Average Nox	3.89	lb/ton clinker
20-Sep-04	Average Nox	3.79	lb/ton clinker
9-Jul-04	Average Nox	3.66	lb/ton clinker
11-Oct-04	Average Nox	3.66	lb/ton clinker
10-Jul-04	Average Nox	3.59	lb/ton clinker
13-Jul-04	Average Nox	3.59	lb/ton clinker
4-Nov-04	Average Nox	3.58	lb/ton clinker
12-Jul-04	Average Nox	3.56	lb/ton clinker
24-Oct-04	Average Nox	3.54	lb/ton clinker
4-Sep-04	Average Nox	3.52	lb/ton clinker
10-Oct-04	Average Nox	3.51	lb/ton clinker
11-Jul-04	Average Nox	3.51	lb/ton clinker
27-Jun-04	Average Nox	3.49	lb/ton clinker
21-Sep-04	Average Nox	3.48	lb/ton clinker
23-Oct-04	Average Nox	3.47	lb/ton clinker
20-Aug-04	Average Nox	3.45	lb/ton clinker
5-Nov-04	Average Nox	3.40	lb/ton clinker
22-Sep-04	Average Nox	3.34	lb/ton clinker
7-Jun-04	Average Nox	3.32	lb/ton clinker
3-Nov-04	Average Nox	3.30	lb/ton clinker
10-Sep-04	Average Nox	3.30	lb/ton clinker
14-Sep-04	Average Nox	3.29	lb/ton clinker
6-Nov-04	Average Nox	3.28	lb/ton clinker
12-Jun-04	Average Nox	3.27	lb/ton clinker
5-Jul-04	Average Nox	3.25	lb/ton clinker
31-Oct-04	Average Nox	3.25	lb/ton clinker
28-Oct-04	Average Nox	3.23	lb/ton clinker
9-Jun-04	Average Nox	3.22	lb/ton clinker
30-Jun-04	Average Nox	3.19	lb/ton clinker
14-Jun-04	Average Nox	3.16	lb/ton clinker

25-Oct-04	Average Nox	3.16	lb/ton clinker
18-Jun-04	Average Nox	3.13	lb/ton clinker
29-Oct-04	Average Nox	3.10	lb/ton clinker
16-Jun-04	Average Nox	3.09	lb/ton clinker
8-Nov-04	Average Nox	3.08	lb/ton clinker
11-Jun-04	Average Nox	3.07	lb/ton clinker
17-Jun-04	Average Nox	3.05	lb/ton clinker
8-Jun-04	Average Nox	3.05	lb/ton clinker
15-Jun-04	Average Nox	3.04	lb/ton clinker
20-Jun-04	Average Nox	3.04	lb/ton clinker
13-Jun-04	Average Nox	3.04	lb/ton clinker
29-Aug-04	Average Nox	3.03	lb/ton clinker
3-Oct-04	Average Nox	3.02	lb/ton clinker
27-Oct-04	Average Nox	3.02	lb/ton clinker
21-Jul-04	Average Nox	3.02	lb/ton clinker
17-Jul-04	Average Nox	2.95	lb/ton clinker
5-Oct-04	Average Nox	2.95	lb/ton clinker
5-Sep-04	Average Nox	2.95	lb/ton clinker
10-Jun-04	Average Nox	2.93	lb/ton clinker
9-Sep-04	Average Nox	2.92	lb/ton clinker
20-Jul-04	Average Nox	2.91	lb/ton clinker
19-Jun-04	Average Nox	2.90	lb/ton clinker
26-Oct-04	Average Nox	2.90	lb/ton clinker
29-Jun-04	Average Nox	2.87	lb/ton clinker
17-Sep-04	Average Nox	2.86	lb/ton clinker
18-Jul-04	Average Nox	2.85	lb/ton clinker
10-Nov-04	Average Nox	2.82	lb/ton clinker
7-Nov-04	Average Nox	2.80	lb/ton clinker
15-Sep-04	Average Nox	2.79	lb/ton clinker
9-Oct-04	Average Nox	2.79	lb/ton clinker
28-Sep-04	Average Nox	2.78	lb/ton clinker
12-Oct-04	Average Nox	2.78	lb/ton clinker
30-Aug-04	Average Nox	2.78	lb/ton clinker
2-Oct-04	Average Nox	2.76	lb/ton clinker
16-Jul-04	Average Nox	2.75	lb/ton clinker
22-Jul-04	Average Nox	2.73	lb/ton clinker
1-Jul-04	Average Nox	2.73	lb/ton clinker
2-Nov-04	Average Nox	2.71	lb/ton clinker
30-Jul-04	Average Nox	2.70	lb/ton clinker
23-Sep-04	Average Nox	2.69	lb/ton clinker
30-Oct-04	Average Nox	2.67	lb/ton clinker
28-Jun-04	Average Nox	2.65	lb/ton clinker
15-Jul-04	Average Nox	2.64	lb/ton clinker
1-Aug-04	Average Nox	2.63	lb/ton clinker
31-Aug-04	Average Nox	2.62	lb/ton clinker
15-Aug-04	Average Nox	2.61	lb/ton clinker
19-Jul-04	Average Nox	2.61	lb/ton clinker
19-Sep-04	Average Nox	2.59	lb/ton clinker
1-Sep-04	Average Nox	2.59	lb/ton clinker
4-Oct-04	Average Nox	2.57	lb/ton clinker

27-Sep-04	Average Nox	2.57	lb/ton clinker
2-Sep-04	Average Nox	2.56	lb/ton clinker
18-Sep-04	Average Nox	2.55	lb/ton clinker
9-Nov-04	Average Nox	2.54	lb/ton clinker
23-Jun-04	Average Nox	2.53	lb/ton clinker
26-Jul-04	Average Nox	2.52	lb/ton clinker
1-Oct-04	Average Nox	2.52	lb/ton clinker
21-Aug-04	Average Nox	2.51	lb/ton clinker
24-Sep-04	Average Nox	2.51	lb/ton clinker
25-Sep-04	Average Nox	2.50	lb/ton clinker
26-Sep-04	Average Nox	2.50	lb/ton clinker
25-Jun-04	Average Nox	2.49	lb/ton clinker
7-Sep-04	Average Nox	2.49	lb/ton clinker
6-Sep-04	Average Nox	2.48	lb/ton clinker
29-Sep-04	Average Nox	2.48	lb/ton clinker
30-Sep-04	Average Nox	2.44	lb/ton clinker
8-Oct-04	Average Nox	2.44	lb/ton clinker
23-Jul-04	Average Nox	2.44	lb/ton clinker
10-Aug-04	Average Nox	2.44	lb/ton clinker
7-Oct-04	Average Nox	2.43	lb/ton clinker
24-Aug-04	Average Nox	2.42	lb/ton clinker
4-Jul-04	Average Nox	2.41	lb/ton clinker
2-Jul-04	Average Nox	2.40	lb/ton clinker
8-Sep-04	Average Nox	2.38	lb/ton clinker
13-Oct-04	Average Nox	2.37	lb/ton clinker
18-Aug-04	Average Nox	2.35	lb/ton clinker
29-Jul-04	Average Nox	2.35	lb/ton clinker
27-Aug-04	Average Nox	2.34	lb/ton clinker
14-Oct-04	Average Nox	2.34	lb/ton clinker
11-Aug-04	Average Nox	2.31	lb/ton clinker
22-Aug-04	Average Nox	2.30	lb/ton clinker
16-Aug-04	Average Nox	2.28	lb/ton clinker
21-Jun-04	Average Nox	2.27	lb/ton clinker
6-Aug-04	Average Nox	2.26	lb/ton clinker
22-Jun-04	Average Nox	2.25	lb/ton clinker
16-Sep-04	Average Nox	2.24	lb/ton clinker
7-Aug-04	Average Nox	2.24	lb/ton clinker
27-Jul-04	Average Nox	2.22	lb/ton clinker
31-Jul-04	Average Nox	2.20	lb/ton clinker
9-Aug-04	Average Nox	2.18	lb/ton clinker
24-Jun-04	Average Nox	2.17	lb/ton clinker
24-Jul-04	Average Nox	2.16	lb/ton clinker
13-Aug-04	Average Nox	2.15	lb/ton clinker
28-Jul-04	Average Nox	2.15	lb/ton clinker
6-Oct-04	Average Nox	2.14	lb/ton clinker
14-Aug-04	Average Nox	2.13	lb/ton clinker
3-Jul-04	Average Nox	2.10	lb/ton clinker
11-Sep-04	Average Nox	2.10	lb/ton clinker
12-Aug-04	Average Nox	2.08	lb/ton clinker
3-Aug-04	Average Nox	2.08	lb/ton clinker

2-Aug-04	Average Nox	2.07	lb/ton clinker
25-Aug-04	Average Nox	2.05	lb/ton clinker
23-Aug-04	Average Nox	1.99	lb/ton clinker
17-Aug-04	Average Nox	1.98	lb/ton clinker
4-Aug-04	Average Nox	1.97	lb/ton clinker
25-Jul-04	Average Nox	1.93	lb/ton clinker
3-Sep-04	Average Nox	1.93	lb/ton clinker
8-Aug-04	Average Nox	1.92	lb/ton clinker
5-Aug-04	Average Nox	1.91	lb/ton clinker
26-Aug-04	Average Nox	1.89	lb/ton clinker
28-Aug-04	Average Nox	1.80	lb/ton clinker
	AVG =	**2.77**	**lb/ton clinker**

24-HOUR SO2 AVERAGES
JUNE 7 – NOV 10, 2004

26-Jun-04ave SO2	N/A	lbs/ton Clinker
1-Nov-04ave SO2	N/A	lbs/ton Clinker
25-Jun-04ave SO2	0.1784	lbs/ton Clinker
3-Jul-04ave SO2	0.0718	lbs/ton Clinker
24-Jun-04ave SO2	0.0600	lbs/ton Clinker
5-Jul-04ave SO2	0.0546	lbs/ton Clinker
4-Jul-04ave SO2	0.0509	lbs/ton Clinker
1-Jul-04ave SO2	0.0424	lbs/ton Clinker
8-Aug-04ave SO2	0.0380	lbs/ton Clinker
2-Jul-04ave SO2	0.0146	lbs/ton Clinker
30-Sep-04ave SO2	0.0138	lbs/ton Clinker
14-Jun-04ave SO2	0.0137	lbs/ton Clinker
11-Jul-04ave SO2	0.0128	lbs/ton Clinker
10-Jul-04ave SO2	0.0120	lbs/ton Clinker
14-Jul-04ave SO2	0.0118	lbs/ton Clinker
12-Jul-04ave SO2	0.0117	lbs/ton Clinker
20-Jul-04ave SO2	0.0117	lbs/ton Clinker
6-Aug-04ave SO2	0.0117	lbs/ton Clinker
27-Jun-04ave SO2	0.0115	lbs/ton Clinker
19-Jul-04ave SO2	0.0114	lbs/ton Clinker
29-Jun-04ave SO2	0.0113	lbs/ton Clinker
20-Aug-04ave SO2	0.0112	lbs/ton Clinker
30-Jun-04ave SO2	0.0111	lbs/ton Clinker
21-Jul-04ave SO2	0.0108	lbs/ton Clinker
28-Jun-04ave SO2	0.0103	lbs/ton Clinker
5-Aug-04ave SO2	0.0100	lbs/ton Clinker
10-Nov-04ave SO2	0.0097	lbs/ton Clinker
2-Aug-04ave SO2	0.0096	lbs/ton Clinker
1-Oct-04ave SO2	0.0095	lbs/ton Clinker
16-Jul-04ave SO2	0.0094	lbs/ton Clinker
9-Jun-04ave SO2	0.0094	lbs/ton Clinker
21-Aug-04ave SO2	0.0091	lbs/ton Clinker
23-Sep-04ave SO2	0.0091	lbs/ton Clinker
26-Oct-04ave SO2	0.0085	lbs/ton Clinker
21-Sep-04ave SO2	0.0084	lbs/ton Clinker
25-Sep-04ave SO2	0.0081	lbs/ton Clinker
5-Nov-04ave SO2	0.0080	lbs/ton Clinker
22-Aug-04ave SO2	0.0080	lbs/ton Clinker
7-Jun-04ave SO2	0.0080	lbs/ton Clinker
22-Sep-04ave SO2	0.0079	lbs/ton Clinker
24-Sep-04ave SO2	0.0079	lbs/ton Clinker
17-Jul-04ave SO2	0.0079	lbs/ton Clinker
23-Jul-04ave SO2	0.0078	lbs/ton Clinker
15-Jun-04ave SO2	0.0077	lbs/ton Clinker

13-Oct-04ave SO2	0.0077	lbs/ton Clinker
18-Jul-04ave SO2	0.0076	lbs/ton Clinker
27-Jul-04ave SO2	0.0073	lbs/ton Clinker
18-Sep-04ave SO2	0.0072	lbs/ton Clinker
4-Sep-04ave SO2	0.0071	lbs/ton Clinker
24-Jul-04ave SO2	0.0070	lbs/ton Clinker
9-Nov-04ave SO2	0.0069	lbs/ton Clinker
17-Sep-04ave SO2	0.0068	lbs/ton Clinker
5-Sep-04ave SO2	0.0068	lbs/ton Clinker
10-Sep-04ave SO2	0.0066	lbs/ton Clinker
25-Jul-04ave SO2	0.0064	lbs/ton Clinker
8-Jun-04ave SO2	0.0063	lbs/ton Clinker
15-Jul-04ave SO2	0.0063	lbs/ton Clinker
7-Nov-04ave SO2	0.0063	lbs/ton Clinker
7-Oct-04ave SO2	0.0063	lbs/ton Clinker
13-Jun-04ave SO2	0.0062	lbs/ton Clinker
3-Aug-04ave SO2	0.0059	lbs/ton Clinker
22-Jul-04ave SO2	0.0058	lbs/ton Clinker
4-Nov-04ave SO2	0.0058	lbs/ton Clinker
26-Jul-04ave SO2	0.0057	lbs/ton Clinker
24-Oct-04ave SO2	0.0056	lbs/ton Clinker
13-Jul-04ave SO2	0.0056	lbs/ton Clinker
14-Oct-04ave SO2	0.0055	lbs/ton Clinker
4-Aug-04ave SO2	0.0055	lbs/ton Clinker
6-Nov-04ave SO2	0.0054	lbs/ton Clinker
29-Sep-04ave SO2	0.0054	lbs/ton Clinker
27-Aug-04ave SO2	0.0054	lbs/ton Clinker
12-Jun-04ave SO2	0.0054	lbs/ton Clinker
26-Aug-04ave SO2	0.0053	lbs/ton Clinker
2-Oct-04ave SO2	0.0053	lbs/ton Clinker
10-Jun-04ave SO2	0.0052	lbs/ton Clinker
20-Sep-04ave SO2	0.0052	lbs/ton Clinker
26-Sep-04ave SO2	0.0052	lbs/ton Clinker
28-Jul-04ave SO2	0.0051	lbs/ton Clinker
27-Oct-04ave SO2	0.0050	lbs/ton Clinker
23-Aug-04ave SO2	0.0050	lbs/ton Clinker
31-Jul-04ave SO2	0.0049	lbs/ton Clinker
1-Sep-04ave SO2	0.0049	lbs/ton Clinker
9-Sep-04ave SO2	0.0047	lbs/ton Clinker
1-Aug-04ave SO2	0.0047	lbs/ton Clinker
9-Jul-04ave SO2	0.0044	lbs/ton Clinker
11-Sep-04ave SO2	0.0044	lbs/ton Clinker
7-Aug-04ave SO2	0.0044	lbs/ton Clinker
19-Sep-04ave SO2	0.0044	lbs/ton Clinker
25-Oct-04ave SO2	0.0043	lbs/ton Clinker
29-Jul-04ave SO2	0.0042	lbs/ton Clinker
25-Aug-04ave SO2	0.0041	lbs/ton Clinker
30-Jul-04ave SO2	0.0041	lbs/ton Clinker
11-Jun-04ave SO2	0.0041	lbs/ton Clinker
22-Oct-04ave SO2	0.0039	lbs/ton Clinker

22-Jun-04ave SO2	0.0037	lbs/ton Clinker
8-Oct-04ave SO2	0.0037	lbs/ton Clinker
4-Oct-04ave SO2	0.0036	lbs/ton Clinker
23-Oct-04ave SO2	0.0035	lbs/ton Clinker
21-Oct-04ave SO2	0.0033	lbs/ton Clinker
6-Oct-04ave SO2	0.0032	lbs/ton Clinker
2-Sep-04ave SO2	0.0031	lbs/ton Clinker
21-Jun-04ave SO2	0.0031	lbs/ton Clinker
20-Jun-04ave SO2	0.0030	lbs/ton Clinker
29-Oct-04ave SO2	0.0029	lbs/ton Clinker
31-Aug-04ave SO2	0.0028	lbs/ton Clinker
30-Oct-04ave SO2	0.0028	lbs/ton Clinker
8-Nov-04ave SO2	0.0027	lbs/ton Clinker
16-Jun-04ave SO2	0.0026	lbs/ton Clinker
18-Jun-04ave SO2	0.0024	lbs/ton Clinker
7-Sep-04ave SO2	0.0022	lbs/ton Clinker
19-Jun-04ave SO2	0.0021	lbs/ton Clinker
3-Oct-04ave SO2	0.0021	lbs/ton Clinker
27-Sep-04ave SO2	0.0021	lbs/ton Clinker
17-Jun-04ave SO2	0.0020	lbs/ton Clinker
28-Aug-04ave SO2	0.0020	lbs/ton Clinker
6-Sep-04ave SO2	0.0018	lbs/ton Clinker
31-Oct-04ave SO2	0.0018	lbs/ton Clinker
11-Aug-04ave SO2	0.0017	lbs/ton Clinker
5-Oct-04ave SO2	0.0017	lbs/ton Clinker
16-Sep-04ave SO2	0.0016	lbs/ton Clinker
28-Oct-04ave SO2	0.0016	lbs/ton Clinker
24-Aug-04ave SO2	0.0015	lbs/ton Clinker
9-Aug-04ave SO2	0.0015	lbs/ton Clinker
10-Aug-04ave SO2	0.0015	lbs/ton Clinker
15-Aug-04ave SO2	0.0014	lbs/ton Clinker
8-Sep-04ave SO2	0.0012	lbs/ton Clinker
15-Sep-04ave SO2	0.0011	lbs/ton Clinker
29-Aug-04ave SO2	0.0011	lbs/ton Clinker
16-Aug-04ave SO2	0.0010	lbs/ton Clinker
17-Aug-04ave SO2	0.0009	lbs/ton Clinker
9-Oct-04ave SO2	0.0009	lbs/ton Clinker
12-Aug-04ave SO2	0.0009	lbs/ton Clinker
14-Aug-04ave SO2	0.0008	lbs/ton Clinker
28-Sep-04ave SO2	0.0008	lbs/ton Clinker
12-Oct-04ave SO2	0.0007	lbs/ton Clinker
14-Sep-04ave SO2	0.0007	lbs/ton Clinker
2-Nov-04ave SO2	0.0007	lbs/ton Clinker
13-Aug-04ave SO2	0.0006	lbs/ton Clinker
10-Oct-04ave SO2	0.0005	lbs/ton Clinker
18-Aug-04ave SO2	0.0005	lbs/ton Clinker
3-Nov-04ave SO2	0.0004	lbs/ton Clinker
30-Aug-04ave SO2	0.0003	lbs/ton Clinker
3-Sep-04ave SO2	0.0003	lbs/ton Clinker
11-Oct-04ave SO2	0.0001	lbs/ton Clinker

13-Sep-04	ave SO2	0.0000	lbs/ton Clinker
23-Jun-04	ave SO2	0.0000	lbs/ton Clinker
6-Jul-04	ave SO2	0.0000	lbs/ton Clinker
7-Jul-04	ave SO2	0.0000	lbs/ton Clinker
8-Jul-04	ave SO2	0.0000	lbs/ton Clinker
19-Aug-04	ave SO2	0.0000	lbs/ton Clinker
12-Sep-04	ave SO2	0.0000	lbs/ton Clinker
15-Oct-04	ave SO2	0.0000	lbs/ton Clinker
16-Oct-04	ave SO2	0.0000	lbs/ton Clinker
17-Oct-04	ave SO2	0.0000	lbs/ton Clinker
18-Oct-04	ave SO2	0.0000	lbs/ton Clinker
19-Oct-04	ave SO2	0.0000	lbs/ton Clinker
20-Oct-04	ave SO2	0.0000	lbs/ton Clinker
	AVG =	**0.0079**	**lbs/ton Clinker**

24 – HOUR VOC AVERAGES
JUNE 7 – NOV 10, 2004

26-Jun-04	ave. VOC	N/A	lb/ton clinker
6-Jul-04	ave. VOC	N/A	lb/ton clinker
7-Jul-04	ave. VOC	N/A	lb/ton clinker
8-Jul-04	ave. VOC	N/A	lb/ton clinker
19-Aug-04	ave. VOC	N/A	lb/ton clinker
15-Oct-04	ave. VOC	N/A	lb/ton clinker
16-Oct-04	ave. VOC	N/A	lb/ton clinker
17-Oct-04	ave. VOC	N/A	lb/ton clinker
18-Oct-04	ave. VOC	N/A	lb/ton clinker
19-Oct-04	ave. VOC	N/A	lb/ton clinker
20-Oct-04	ave. VOC	N/A	lb/ton clinker
1-Nov-04	ave. VOC	N/A	lb/ton clinker
21-Oct-04	ave. VOC	0.111	lb/ton clinker
22-Oct-04	ave. VOC	0.109	lb/ton clinker
10-Oct-04	ave. VOC	0.108	lb/ton clinker
23-Oct-04	ave. VOC	0.106	lb/ton clinker
31-Oct-04	ave. VOC	0.105	lb/ton clinker
14-Oct-04	ave. VOC	0.105	lb/ton clinker
25-Oct-04	ave. VOC	0.103	lb/ton clinker
16-Jul-04	ave. VOC	0.102	lb/ton clinker
24-Oct-04	ave. VOC	0.102	lb/ton clinker
17-Jul-04	ave. VOC	0.102	lb/ton clinker
13-Oct-04	ave. VOC	0.100	lb/ton clinker
26-Oct-04	ave. VOC	0.099	lb/ton clinker
4-Nov-04	ave. VOC	0.097	lb/ton clinker
18-Jul-04	ave. VOC	0.096	lb/ton clinker
12-Oct-04	ave. VOC	0.096	lb/ton clinker
19-Jul-04	ave. VOC	0.095	lb/ton clinker
7-Sep-04	ave. VOC	0.095	lb/ton clinker
22-Jul-04	ave. VOC	0.095	lb/ton clinker
9-Sep-04	ave. VOC	0.094	lb/ton clinker
21-Jul-04	ave. VOC	0.094	lb/ton clinker
11-Oct-04	ave. VOC	0.093	lb/ton clinker
19-Sep-04	ave. VOC	0.092	lb/ton clinker
20-Jul-04	ave. VOC	0.092	lb/ton clinker
6-Sep-04	ave. VOC	0.092	lb/ton clinker
3-Nov-04	ave. VOC	0.092	lb/ton clinker
10-Nov-04	ave. VOC	0.091	lb/ton clinker
7-Oct-04	ave. VOC	0.091	lb/ton clinker
30-Oct-04	ave. VOC	0.090	lb/ton clinker
23-Jul-04	ave. VOC	0.090	lb/ton clinker
6-Oct-04	ave. VOC	0.089	lb/ton clinker

18-Sep-04	ave. VOC	0.089	lb/ton clinker
10-Sep-04	ave. VOC	0.089	lb/ton clinker
5-Oct-04	ave. VOC	0.089	lb/ton clinker
22-Sep-04	ave. VOC	0.089	lb/ton clinker
20-Sep-04	ave. VOC	0.088	lb/ton clinker
17-Sep-04	ave. VOC	0.088	lb/ton clinker
7-Aug-04	ave. VOC	0.088	lb/ton clinker
29-Oct-04	ave. VOC	0.088	lb/ton clinker
9-Oct-04	ave. VOC	0.088	lb/ton clinker
8-Oct-04	ave. VOC	0.088	lb/ton clinker
3-Oct-04	ave. VOC	0.087	lb/ton clinker
24-Sep-04	ave. VOC	0.087	lb/ton clinker
8-Sep-04	ave. VOC	0.086	lb/ton clinker
2-Oct-04	ave. VOC	0.086	lb/ton clinker
4-Oct-04	ave. VOC	0.086	lb/ton clinker
2-Nov-04	ave. VOC	0.085	lb/ton clinker
23-Sep-04	ave. VOC	0.085	lb/ton clinker
15-Jul-04	ave. VOC	0.085	lb/ton clinker
27-Oct-04	ave. VOC	0.085	lb/ton clinker
28-Oct-04	ave. VOC	0.084	lb/ton clinker
24-Jul-04	ave. VOC	0.084	lb/ton clinker
12-Jul-04	ave. VOC	0.084	lb/ton clinker
12-Sep-04	ave. VOC	0.083	lb/ton clinker
9-Jul-04	ave. VOC	0.083	lb/ton clinker
30-Jul-04	ave. VOC	0.082	lb/ton clinker
21-Sep-04	ave. VOC	0.082	lb/ton clinker
5-Nov-04	ave. VOC	0.082	lb/ton clinker
6-Aug-04	ave. VOC	0.082	lb/ton clinker
8-Aug-04	ave. VOC	0.082	lb/ton clinker
25-Sep-04	ave. VOC	0.081	lb/ton clinker
23-Jun-04	ave. VOC	0.080	lb/ton clinker
13-Sep-04	ave. VOC	0.080	lb/ton clinker
27-Sep-04	ave. VOC	0.080	lb/ton clinker
9-Nov-04	ave. VOC	0.079	lb/ton clinker
1-Oct-04	ave. VOC	0.079	lb/ton clinker
6-Nov-04	ave. VOC	0.079	lb/ton clinker
16-Sep-04	ave. VOC	0.079	lb/ton clinker
27-Jul-04	ave. VOC	0.079	lb/ton clinker
5-Aug-04	ave. VOC	0.078	lb/ton clinker
31-Jul-04	ave. VOC	0.076	lb/ton clinker
10-Jun-04	ave. VOC	0.076	lb/ton clinker
11-Jul-04	ave. VOC	0.075	lb/ton clinker
28-Sep-04	ave. VOC	0.075	lb/ton clinker
15-Sep-04	ave. VOC	0.075	lb/ton clinker
4-Aug-04	ave. VOC	0.075	lb/ton clinker
7-Nov-04	ave. VOC	0.075	lb/ton clinker
8-Jun-04	ave. VOC	0.074	lb/ton clinker
9-Aug-04	ave. VOC	0.073	lb/ton clinker
14-Sep-04	ave. VOC	0.073	lb/ton clinker
13-Jul-04	ave. VOC	0.073	lb/ton clinker

10-Jul-04	ave. VOC	0.073 lb/ton clinker
11-Sep-04	ave. VOC	0.072 lb/ton clinker
9-Jun-04	ave. VOC	0.071 lb/ton clinker
14-Jul-04	ave. VOC	0.071 lb/ton clinker
1-Aug-04	ave. VOC	0.071 lb/ton clinker
4-Sep-04	ave. VOC	0.071 lb/ton clinker
29-Sep-04	ave. VOC	0.071 lb/ton clinker
8-Nov-04	ave. VOC	0.071 lb/ton clinker
12-Jun-04	ave. VOC	0.070 lb/ton clinker
26-Sep-04	ave. VOC	0.070 lb/ton clinker
2-Aug-04	ave. VOC	0.069 lb/ton clinker
3-Sep-04	ave. VOC	0.069 lb/ton clinker
20-Aug-04	ave. VOC	0.069 lb/ton clinker
30-Sep-04	ave. VOC	0.068 lb/ton clinker
24-Jun-04	ave. VOC	0.068 lb/ton clinker
3-Aug-04	ave. VOC	0.067 lb/ton clinker
21-Aug-04	ave. VOC	0.067 lb/ton clinker
2-Sep-04	ave. VOC	0.067 lb/ton clinker
5-Sep-04	ave. VOC	0.067 lb/ton clinker
7-Jun-04	ave. VOC	0.066 lb/ton clinker
14-Jun-04	ave. VOC	0.066 lb/ton clinker
10-Aug-04	ave. VOC	0.066 lb/ton clinker
15-Jun-04	ave. VOC	0.066 lb/ton clinker
13-Jun-04	ave. VOC	0.064 lb/ton clinker
1-Sep-04	ave. VOC	0.064 lb/ton clinker
24-Aug-04	ave. VOC	0.064 lb/ton clinker
29-Jun-04	ave. VOC	0.064 lb/ton clinker
26-Aug-04	ave. VOC	0.063 lb/ton clinker
22-Aug-04	ave. VOC	0.063 lb/ton clinker
16-Jun-04	ave. VOC	0.062 lb/ton clinker
18-Aug-04	ave. VOC	0.062 lb/ton clinker
1-Jul-04	ave. VOC	0.061 lb/ton clinker
27-Aug-04	ave. VOC	0.061 lb/ton clinker
29-Aug-04	ave. VOC	0.061 lb/ton clinker
23-Aug-04	ave. VOC	0.061 lb/ton clinker
25-Jul-04	ave. VOC	0.061 lb/ton clinker
16-Aug-04	ave. VOC	0.060 lb/ton clinker
25-Aug-04	ave. VOC	0.060 lb/ton clinker
12-Aug-04	ave. VOC	0.060 lb/ton clinker
25-Jun-04	ave. VOC	0.060 lb/ton clinker
21-Jun-04	ave. VOC	0.059 lb/ton clinker
17-Jun-04	ave. VOC	0.059 lb/ton clinker
31-Aug-04	ave. VOC	0.059 lb/ton clinker
28-Jul-04	ave. VOC	0.059 lb/ton clinker
15-Aug-04	ave. VOC	0.059 lb/ton clinker
4-Jul-04	ave. VOC	0.059 lb/ton clinker
22-Jun-04	ave. VOC	0.058 lb/ton clinker
2-Jul-04	ave. VOC	0.058 lb/ton clinker
28-Jun-04	ave. VOC	0.058 lb/ton clinker
11-Aug-04	ave. VOC	0.058 lb/ton clinker

17-Aug-04	ave. VOC	0.058	lb/ton clinker
28-Aug-04	ave. VOC	0.057	lb/ton clinker
20-Jun-04	ave. VOC	0.057	lb/ton clinker
30-Aug-04	ave. VOC	0.056	lb/ton clinker
30-Jun-04	ave. VOC	0.055	lb/ton clinker
13-Aug-04	ave. VOC	0.054	lb/ton clinker
5-Jul-04	ave. VOC	0.054	lb/ton clinker
14-Aug-04	ave. VOC	0.054	lb/ton clinker
3-Jul-04	ave. VOC	0.053	lb/ton clinker
19-Jun-04	ave. VOC	0.053	lb/ton clinker
18-Jun-04	ave. VOC	0.052	lb/ton clinker
27-Jun-04	ave. VOC	0.052	lb/ton clinker
11-Jun-04	ave. VOC	0.052	lb/ton clinker
29-Jul-04	ave. VOC	0.047	lb/ton clinker
26-Jul-04	ave. VOC	0.030	lb/ton clinker
	AVG =	**0.076**	**lb/ton clinker**

ANNUAL CO AND VOC COMPLIANCE TEST AND ANNUAL RELATIVE ACCURACY TEST AUDITS (RATA) FOR CONTINUOUS NO_X, SO_2, METHANE/NON-METHANE VOC, FLOW AND OPACITY MONITORS

Kiln/Raw Mill/Clinker Cooler Stack

RINKER MATERIALS CORPORATION
Miami, Florida

Permit No. 0250014-009-AV

Test Dates: August 4-5 and September 16, 2004
Report Date: September 16, 2004
Amended: October 8, 2004

263-04-05

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

ANNUAL CO AND VOC COMPLIANCE TEST
AND
ANNUAL RELATIVE ACCURACY TEST AUDITS (RATA) FOR CONTINUOUS NO_x, SO_2, METHANE/NON-METHANE VOC, FLOW AND OPACITY MONITORS

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Gainesville, Florida 32609
(352) 377-5822

263-04-05

KOOGLER & ASSOCIATES
ENVIRONMENTAL SERVICES

ANNUAL CO AND VOC COMPLIANCE TEST
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Responsible Official Certification:

I certify that, based upon information and belief formed after reasonable inquiry, the statements and information in the attached documents are true, accurate and complete.

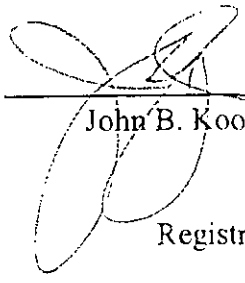
Ed Allsopp, Vice President, Cement Operations

Signature

Date:

263-04-05

To the best of my knowledge, all applicable field and analytical procedures comply with the Florida Department of Environmental Protection requirements and all test data and plant operating data are true and correct.



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

State of Florida
Registration No. 12925

09/16/04

Date

KOOGLER & ASSOCIATES
ENVIRONMENTAL SERVICES

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1.0 INTRODUCTION

Rinker Materials Corporation (Rinker) owns and operates a preheater/precalciner Portland cement plant at 1200 NW 137th Avenue, Miami, Dade County, Florida. During the period August 4-5, 2004, Koogler & Associates, Inc. of Gainesville, Florida performed Relative Accuracy Test Audits (RATA) on the Continuous Emission Monitoring Systems (CEMS) located on the kiln/raw mill/clinker cooler stack for nitrogen oxides (NOx), sulfur dioxide (SO_2) and methane/non-methane hydrocarbons (CH_4/NMHC). An annual RATA was also performed on the Continuous Flow Rate Monitoring System (CFRMS). On September 16, 2004, the annual RATA was conducted on the Continuous Opacity Monitor. The RATAs were conducted in accordance with the requirements of 40 CFR 60, Appendix F in conjunction with 40 CFR 60, Appendix B, Performance Specification 6 (for Flow Rate), Performance Specification 2 (for NO_X and SO_2), and Performance Specification 8A (for CH_4/NMHC). Additionally, annual compliance tests were conducted for carbon monoxide (CO) with EPA Method 10 and CH_4/VOC with EPA Method 25A.

Prior to the test date, the Metropolitan Dade County Environmental Resources Management in Miami, Florida, was notified of the scheduled air emission performance tests.

The results of the certifications are reported in the following Sections.

2.0 LOCATION OF CEMS

The locations of the CEMS, COMS, and CFRMS are shown in Figure 1. The monitors are located 203.5 feet (18.4 diameters) above the point where the stack gas enters the stack and 101.7 feet (9.3 diameters) below the top of the stack. The path length of the COMS is adjusted to the 132.4 inch diameter of the stack. The installation of the monitors satisfies the requirements of Performance Specifications 1, 2, 6, and 8A, 40 CFR 60, Appendix B.

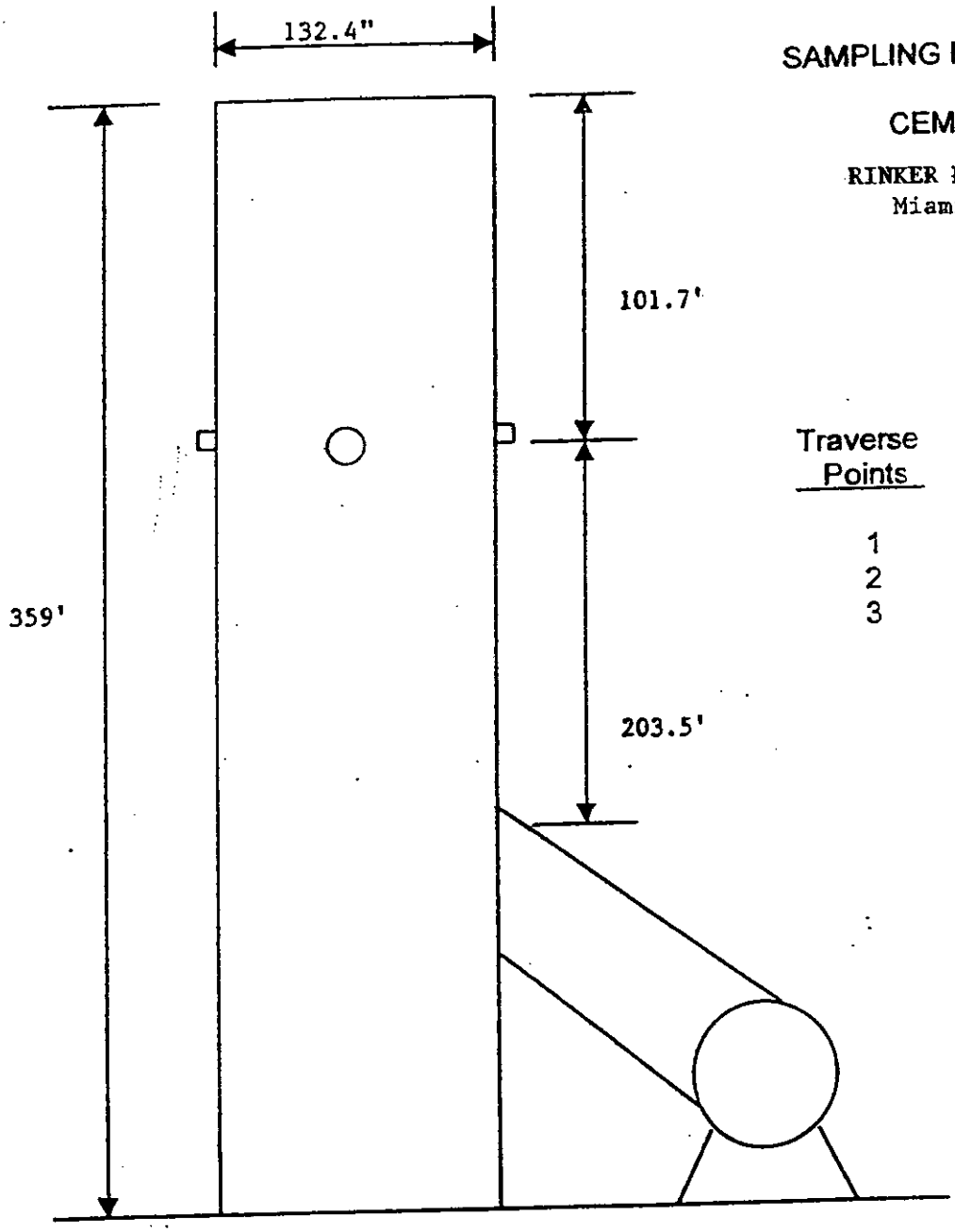
The sample ports for the CO and CH_4/VOC tests are also located at the same level in the stack as the continuous monitoring systems.

FIGURE 1

SAMPLING POINT LOCATIONS

CEMENT PLANT

RINKER MATERIALS CORP
Miami, Florida



Traverse Points	Distance from Inside Stack Wall
1	6.01
2	19.9
3	40.4

KODDLER & ASSOCIATES
ENVIRONMENTAL SERVICES

3.0 RATA SUMMARIES

3.1 Nitrogen Oxides CEMS

During the period August 4-5, 2004, Koogler & Associates, Inc. of Gainesville, Florida performed Relative Accuracy Test Audit (RATA) on the continuous emission monitoring system (CEMS) for NOx installed on the kiln/raw mill/clinker cooler stack. These tests were conducted in accordance with CEMS certification procedures published in 40 CFR 60, Appendix B, Performance Specification 2 and Appendix F. This monitor successfully met the EPA performance specifications, as summarized below:

Parameter	Limit	Observed
Relative Accuracy	20% of RM	19.9% of RM

The NOx CEMS is a Hartmann & Braun, Model Uras 14, serial number 24511-0-224110202002 multi-component (SO_2 and NO_x) gas analyzer. The NOx CEMS measures the NOx concentration on a dry gas basis. The span of the instrument is 2000 ppm NOx (v/v); which is approximately four times the equivalent NOx standard.

The relative accuracy test procedure published in Section 7.0 of Performance Specification 2 requires at least nine sets of NOx concentration measurements; one series of measurements made with the CEMS and one

series of measurements made with the NOx reference method. For this RATA, nine sets of measurements were made. The NOx reference method used for these measurements was EPA Method 7E as described in 40 CFR 60, Appendix A.

As required by Performance Specification 2, each NOx concentration measurement with the CEMS and reference method was made over at least a 21-minute period. The reference method sampling consisted of a three-point traverse across the stack with sampling conducted at each traverse point for seven minutes.

The RATA data were analyzed as prescribed in Section 7.0 of Performance Specification 2. The data are summarized in Table 1. The error associated with the relative accuracy of NOx CEMS was 19.9 percent of the reference method mean. The relative accuracy error limit specified by Performance Specification 2 is 20 percent of the mean of the reference method measurements (equivalent to about 40 ppm NOx) or 10 percent of the standard (about 50 ppm NOx) ; whichever is greater.

3.2 Sulfur Dioxide CEMS

During the period August 4-5, 2004, Koogler & Associates, Inc. of Gainesville, Florida conducted the RATA on the CEMS for SO_2 installed on the kiln/raw mill/clinker cooler stack. These tests were conducted in

accordance with CEMS certification procedures published in 40 CFR 60, Appendix B, Performance Specification 2 and Appendix F. This monitor successfully met the EPA performance specifications, as summarized below:

Parameter	Limit	Observed
Relative Accuracy	20% of RM or 10% of std.	1.5% of std.

The SO_2 CEMS Hartmann & Braun, Model Uras 14, serial number 24511-0-224110202002 multi-component (SO_2 and NO_x) gas analyzer. The SO_2 CEMS measures the SO_2 concentration on a dry gas basis. The span of the instrument is 500 ppm SO_2 (v/v); which is approximately three times the equivalent SO_2 standard.

The relative accuracy test procedure published in Section 7.0 of Performance Specification 2 requires at least nine sets of SO_2 concentration measurements; one series of measurements made with the CEMS and one series of measurements made with the SO_2 reference method. During this RA test, 10 sets of measurements were made. The SO_2 reference method used for these measurements was EPA Method 6C as described in 40 CFR 60, Appendix A.

The Performance Specifications require the RA error to be within 20 percent of the Reference Method test average or within 10 percent of the standard.

Because of the very low levels of SO_2 in the stack gas (<15 ppm, v/v), the 10 percent of standard criterium was used to evaluate the relative accuracy of the SO_2 CEMS.

At an allowable SO_2 emission rate of 360 pounds per hour and a typical stack gas flow rate of 200,000 dscfm, the equivalent SO_2 concentration standard is about 131 ppm, v/v. The Relative Accuracy error is within 1.5 percent of the equivalent SO_2 concentration standard compared with the 10 percent limit specified by the performance specification. These data are summarized in Table 2.

3.3 Non-Methane Hydrocarbon (NMHC) CEMS

The NMHC CEMS was installed on the kiln/raw mill stack in accordance with revised Air Construction Permit No. 0250014-008-AC. The purpose of the CEMS is to provide the Department reasonable assurance that the kiln/raw mill operates in compliance with the permitted VOC emission limiting standard. Compliance with the VOC standard is to be demonstrated annually using EPA Method 25A as the referenced test method. These tests are reported herein.

The NMHC CEMS is J.U.M. Methane/Non-methane FID Analyzer, Model HFID 109A. The CEMS measure the THC concentration in the stack gas on a wet gas basis using flame ionization detection (FID) technology. System

software combines the measured NMHC concentration with the continuously monitored stack gas flow rate to calculate the mass emission rate of NMHC based on a propane standard. The VOC emission limiting standard for the kiln/raw mill stack, for which the NMHC CEMS is to provide compliance reassurance, is 13.7 pounds per hour. Based on a typical stack gas flow rate, this VOC mass emission limit is equivalent to a VOC stack gas concentration of 15-20 ppm, as propane. The span of the NMHC CEMS is 100 ppm NMHC (v/v, wet basis as propane).

During the period August 4-5, 2004, Koogler & Associates, Inc. of Gainesville, Florida conducted the RATA on the THC CEMS. The RATA were conducted in accordance with 40 CFR 60, Appendix B, Performance Specification 8A and succesfully met the performance criteria.

Parameter	Limit	Observed
Relative Accuracy NMHC	20% of RM or 10% of std.	14.0% of std.

The Relative Accuracy test required by Performance Specification 8A requires at least nine sets of NMHC concentration measurements; one series of measurements made with the CEMS and one series of measurements made with the Reference Method. The Reference Method used for these measurements was EPA Method 25A as described in 40 CFR 60, Appendix A.

As required by Performance Specification 8A, each NMHC concentration measurement with the CEMS and Reference Method was made over a 21-minute period. The Reference Method sampling consisted of a three-point traverse across the stack with sampling conducted at each traverse point for seven minutes.

The relative accuracy test data were analyzed as prescribed in Performance Specification 8A. The error associated with the relative accuracy of the NMHC CEMS was 14.0 percent of the standard. The relative accuracy error limit specified by Performance Specification 8A is 20 percent of the mean of the Reference Method measurements or 10 percent of the standard (about 0.91 ppm as propane); whichever is greater. The RATA data are summarized in Table 3.

3.4 Flow Rate Monitor (CFRMS)

During the period August 4-5, 2004, Koogler & Associates, Inc. of Gainesville, Florida conducted a Relative Accuracy Test Audit (RATA) on the Continuous Stack Gas Flow Rate Monitoring Systems (CFRMS) installed on the kiln/raw mill/clinker cooker stack. These tests were conducted in accordance with CFRMS RATA procedures published in 40 CFR 60, Appendix B, Performance Specification 6 and 40 CFR 75, Appendix A. The flow rate data from the plant CFRMS is provided in the Appendix.

Parameter	Limit	Observed	CFRMS Biased Low
Flow	10% of RM	5.52%	No

The CFRMS is a Monitor Labs Ultra Flow, Model 100, serial number 1001038 gas velocity measuring system. The system measures the actual stack gas velocity of wet gas per unit of time basis. The signal from this monitoring system is incorporated with the cross sectional area of the stack, the stack gas moisture (from wet and dry stack gas O_2 measurements) and the stack gas temperature in the Mass Flow Computer to provide a volumetric flow rate of dry stack gas at standard (68°F and 29.92 in. Hg) conditions.

The Mass Flow Computer of the CFRMS also has the capability of accepting adjustment factors to correct observed CFRMS volumetric flow rates to flow rates measured with a reference method (EPA Method 2, 40 CFR 60, Appendix A). Once these factors are entered, the Mass Flow Computer will calculate an adjusted (corrected) flow rate.

The instrument span is equivalent to a stack gas velocity of 150 actual feet per second, wet. This velocity is equivalent to a stack gas flow rate of 800,000 actual cubic feet per minute, wet, which is approximately 280 percent of the maximum flow rate of observed during the certification period.

The flow rate of 375,000 actual cubic feet per minute wet or 250,000 standard cubic feet per minute, dry was used as the instrument span as it is less than 125 percent of the maximum flow rate observed (see Section 2.1.4, 40 CFR 75, Appendix A).

The relative accuracy of the CFRMS is a comparison of the CFRMS response to stack gas flow measurements made in accordance with a reference method (EPA Method 2, 40 CFR 60, Appendix A). For the RATA, nine sets of flow rate measurements are required at a single representative flow rate. The relative accuracy of the CFRMS cannot exceed 10.0 percent (see Section 3.3.4, 40 CFR 75, Appendix A). Data from the Flow RA test are summarized in Table 4.

The certification of the CERMS includes the certifications of the CFRMS and the NOx and SO_2 CEMS. Signals from these certified systems are input to the plant CERMS computer, and mass emission rates (pounds per hour) of NOx and SO_2 are calculated. As the NO_x and SO_2 CERMS are dependent upon signals from the NO_x and SO_2 CEMS and the CFRMS, the certification of both the NO_x and SO_2 CEMS and the CFRMS represent a certification of the two CERMS.

3.5 Opacity

On September 16, 2004, Koogler & Associates, Inc. conducted a Relative Accuracy Audit on the Continuous Opacity Monitoring System (COMS) installed on the kiln/raw mill/clinker cooler stack. These tests were conducted in accordance with COMS certification procedures published in 40 CFR 60, Appendix B, Performance Specification 1. This monitor successfully met the EPA Performance Specifications, as summarized below:

Parameter	Limit	Observed
Calibration Error:		
Low	3% Opacity	0.32%
Mid	3% Opacity	0.66%
High	3% Opacity	2.54%

The COMS is a United Sciences, Inc. (USI) Model 500C, serial number 7971657 compliance transmissometer. The span of the instrument is 100 percent opacity.

In accordance with Section 7.1.4, 40 CFR 60, Appendix B, Performance Specification 1, three calibrated filters were inserted in the transmissometer path. Each filter was inserted a total of five times and the instrument

response was recorded for each insertion; a total of 15 responses. The attenuation represented by the filter was 9.7, 24.2, and 63.5 percent opacity. The data are summarized in Table 5a. The calibration errors ranged from 0.32 to 2.54 percent opacity. The maximum acceptable calibration error is 3.0 percent.

Response time was determined in accordance with Section 7.1.5. Table 5b summarizes these data.

4.0 COMPLIANCE TESTING

On August 5, 2004, Koogler & Associates, Inc. conducted the annual compliance tests for carbon monoxide and methane and non-methane hydrocarbons. These tests were conducted on the stack exhausting the kiln, raw mill, and clinker cooler. During the test period, the feed rate to the preheater averaged 245.5 tons per hour and the clinker production rate averaged 147.4 tons per hour. The kiln was fired primarily with coal during the test period with a small amount of fuel oil also being fired. The heat input rate to the kiln averaged approximately 355 mmBTU per hour.

During the test period, the stack gas flow rate averaged 247,438 dry standard cubic feet per minute at a temperature of 286°F and a moisture content of 12.7 percent.

The emission data for carbon monoxide and hydrocarbons are summarized in Table 6.

4.1 Carbon Monoxide

The carbon monoxide emission measurements were conducted in accordance with EPA Method 10 (40 CFR 60, Appendix A). Three complete test runs were conducted during the test period with carbon monoxide emissions ranging from 241-259 pounds per hour. The average carbon monoxide emission rate was 249 pounds per hour or 1.69 pounds per ton of

clinker. The permit limits the carbon monoxide emission rate to 412 pounds per hour or 3.01 pounds per ton of clinker.

4.2 Methane and Non-Methane Hydrocarbons

Emission measurements were conducted for both methane and non-methane hydrocarbons in accordance with EPA Method 25A (40 CFR 60, Appendix A). Three complete test runs were conducted with an average methane emission rate of 1.7 pounds per hour and an average non-methane hydrocarbon emission rate of 13.4 pounds per hour. The non-methane hydrocarbon (VOC) emission rate is equivalent to 0.091 pounds per ton of clinker. The permitted VOC emission rate from the plant is 16.4 pounds per hour or 0.12 pounds per ton of clinker.

4.3 Sulfur Dioxide and Nitrogen Oxides

Emission measurements were also conducted for sulfur dioxide (EPA Method 6C) and nitrogen oxides (EPA Method 7E), even though compliance with these compounds is demonstrated with Continuous Emission Monitoring Systems. The measured sulfur dioxide emission rate during the test period averaged 4.3 pounds per hour or 0.03 pounds per ton of clinker. The nitrogen oxide emission rate averaged 346 pounds per hour or 2.35 pounds per ton of clinker. The permitted emission rate of sulfur dioxide is 306 pounds per hour or 2.23 pounds per ton of clinker. The permitted emission rate of nitrogen oxides is 671 pounds per hour or 4.90 pounds per ton of clinker.

5.0 CONCLUSION

Based upon the data reported herein, it can be concluded that the Continuous Monitoring Systems on the kiln/raw mill/cooler stack of the Rinker Miami Cement Plant met the Relative Accuracy Test Audit criteria set forth in 40 CFR 60, Appendix B. It can further be concluded that the emission rates of carbon monoxide, hydrocarbons, SO_2, and NOx were well within permitted limits.

The Appendix of this report contains all calculations, field and laboratory data sheets, equipment calibration data, and plant operating data.

Table 1

RELATIVE ACCURACY TEST RESULTS

Plant: Rinker Materials, Miami, Florida
Source/Unit: Kiln/Rawmill/Clinker Cooler
Test Date: 8/4/04 and 8/05/04
Test Type: NOx CEM RATA
Units: ppm
Accuracy: 20.0 Less than %
Method 40 CFR 60, Appendix B, P.S. 2

Run	Rinker Materials, Miami, Florida ppm	K&A Reference Method ppm	di ppm	CC	RA %	Relative Accuracy Less than % 20.0
3	219.68	176.89	42.79			
4	193.37	168.55	24.82			
5	191.61	162.01	29.61			
6	201.34	167.23	34.11			
7	272.78	225.93	46.85			
8	281.36	257.35	24.01			
9	263.39	226.15	37.24			
10	275.99	232.90	43.09			
11	300.83	264.69	36.14	6.23	19.92	YES
12						
13						
14						
15						
16						
17						
18						

Run	Mean di	SUM di	Sd	Mean RM	di^2 (ppm)	Sigma di^2 (ppm)
1						
2						
3						
4						
5						
6						
7						
8						
9	35.4	318.7	8.1	209.1	1.31E+03	1.18E+04
10						
11						
12						
13						

Table 2

RELATIVE ACCURACY TEST RESULTS

Plant: Rinker Materials, Miami, Florida
Source/Unit: Kiln/Rawmill/Clinker Cooler
Test Date: 8/4/04 and 8/5/04
Test Type: SO2 CEM RATA
Units: ppm

Applicable Standard (ppm): 131.0
Accuracy (ppm): 13.1
Less than 10 % of Standard (306 lb/hr *24hr ave) (Standard approx. 131 ppm)

Method 40 CFR 60, Appendix B, P.S. 2

Run	Rinker Materials, Miami, Florida ppm	K&A Reference Method ppm	di ppm	CC	RA ppm	Relative Accuracy Less than 10 % of Standard 13.1 ppm
1	0.00	4.01				
2	1.71	2.37	-0.66			
3	7.07	2.01	5.07			
4	5.30	0.00	5.30			
5	0.24	0.00	0.24			
6	0.00	0.00	0.00			
7	0.00	3.67	-3.67			
8	0.00	2.26	-2.26			
9	0.00	1.84	-1.84	2.36	2.01	YES
10						
11						
12						
13						
14						
15						
16						-

Run	Mean di	SUM di	Sd	Mean RM	di^2 (ppm)	Sigma di^2 (ppm)
1						
2						
3						
4						
5						
6						
7						
8						
9	0.27	2.17	3.08	1.80	3.39E+00	7.62E+01
10						
11						
12						
13						

Table 3

RELATIVE ACCURACY TEST RESULTS

Plant: Rinker Materials, Miami, Florida
Source/Unit: Kiln/Rawmill/Clinker Cooler
Test Date: 8/4/04 and 8/05/04
Test Type: THC CEM RATA (Non-Methane)
Units: ppm
Accuracy: 20.0 Less than %
Method 40 CFR 60, Appendix B, P.S. 2

Run	Rinker Materials, Miami, Florida ppm	K&A Reference Method ppm	di ppm	CC	RA %	Relative Accuracy Less than % 20.0
3	5.74	6.88	-1.14			
4	6.17	6.67	-0.50			
5	5.63	6.30	-0.67			
6	5.93	7.21	-1.28			
7	6.28	7.43	-1.16			
8	6.12	5.45	0.67			
9	6.49	6.29	0.20			
10	7.44	6.56	0.88			
11	7.55	6.70	0.86	0.69	14.04	YES
12						
13						
14						
15						
16						
17						
18						

Run	Mean di	SUM di	Sd	Mean RM	di^2 (ppm)	Sigma di^2 (ppm)
1						
2						
3						
4						
5						
6						
7						
8						
9	(0.2)	(2.1)	0.9	6.6	7.33E-01	6.96E+00
10						
11						
12						
13						

Table 4

RELATIVE ACCURACY TEST RESULTS

Plant: Rinker Materials, Miami, Florida
Source/Unit: Kiln/Rawmill/Clinker Cooler
Test Date: 8/04/04, 8/05/04, 8/6/04
Test Type: FLOW RATE MONITOR
Units: scfm
Accuracy: 20.0 Relative Accuracy Less than %
Method 40 CFR 60; Appendix B, P.S. 6

Run	Rinker Materials, Miami, Florida scfm	K&A Reference Method scfm	di scfm	CC	RA %	Relative Accuracy Less than % 20.0
1	305,006	298,428	6,578			
2	284,225	292,469	-8,244			
3	245,928	258,153	-12,226			
4	211,550	217,495	-5,945			
5	207,874	214,964	-7,090			
6	220,368	221,313	-945			
7	245,691	257,493	-11,802			
8	248,516	272,245	-23,730			
9	250,253	255,688	-5,435	6,388.50	5.52	YES
10						
11						
12						
13						
14						
15						
16						

Run	Mean di	SUM di	Sd	Mean RM	di^2 (ppm)	Sigma di^2 (ppm)
1						
2						
3						
4						
5						
6						
7						
8						
9	(7,648.8)	(68,839.0)	8,311	254,250	2.95E+07	1.08E+09
10						
11						
12						
13						
14						

Table 5a
Kiln/Raw-mill/Clinker Cooler COM RATA
Rinker materials

Miami, Florida

Testing Party:|Glen Haven		Analyzer manufacturer:	United Sciences
Affiliation:|Koogler & Associates / Rinker,Miami		Model/Serial No.	500C /07971657
September 16, 2004		Location:	Kiln/Rawmill/Clinker cooler Stack
Monitor Pathlenghth, L1	132.4	Emission Outlet Pathlength, L2	132.4
Monitoring System Output Pathlength Corrected? (yes/no)	no	OPLR	0.5

Calibrated Neutral Density Filter Values

Actual Optical Density (From Filter)		Path Adjusted Optical Density		
			Parallel	***w/OPLR***
Low Range	9.70%	Low	18.46%	0.097
Med Range	24.20%	Med	42.54%	0.242
High Range	63.50%	High	86.68%	0.635

Filter Audit

Run Number	Calibrated Filter value	Instrument Reading	Arithmetic Difference (Opacity),Decimal Low	Med	High
1-low	9.7	9.9	-0.002		
2-med	24.2	24.8		-0.006	
3-high	63.5	65.9			-0.024
4-low	9.7	9.7	0		
5-med	24.2	24.8		-0.006	
6-high	63.5	65.9			-0.024
7-low	9.7	9.9	-0.002		
8-med	24.2	24.6		-0.004	
9-high	63.5	65.9			-0.024
10low	9.7	9.9	-0.002		
11-med	24.2	24.6		-0.004	
12-high	63.5	65.9			-0.024
13-low	9.7	10	-0.003		
14-med	24.2	24.8		-0.006	
15-high	63.5	65.5			-0.02
			-0.009	**-0.026**	**-0.116**
Arithmetic Mean (Equation 1-2):			**-0.18%**	**-0.52%**	**-2.32%**
Confidence Coefficient (Equation 1-4):			**0.14%**	**0.14%**	**0.22%**
Calibration Error			**0.32%**	**0.66%**	**2.54%**

Table 5b
Kiln/Raw-mill/Clinker Cooler COM RATA
Rinker materials

Miami, Florida

Response Time Test

95 % value high Range filter	60.325
5% of value Low Range Filter	3.175

High In Upscale		Low Out Downscale	
20.00	Sec.	12.00	Sec.
21.00	Sec.	12.00	Sec.
18.00	Sec.	13.00	Sec.
18.00	Sec.	15.00	Sec.
18.00	Sec.	12.00	Sec.

Arithmetic Means High 19 Low 12.8 Combined 15.9

6 Minute Average Test (Drop **Each** filter for 13 Minutes)

	Low Filter		Mid Filter		High Filter
Start Time	14:15	Start Time	14:29	Start Time	14:45
End Time	14:28	End Time	14:44	End Time	15:00

Table 6

CO, SO2, NOx, CH4, and NMHC Emissions Test

Summary of Operating Conditions
CSR Rinker Materials Miami, Florida
Cement Kiln / Raw Mill
August 5, 2004

Run No.	Preheater Feed Rate (Ton/Hr)	Clinker Production (Ton/Hr)	Stack Gas Conditions			
			Flow (dscfm)	Flow (scfm,wet)	Temp. (F)	Moisture (%)
1	245.5	147.4	262708	298532	291	12.0
2	245.5	147.4	256008	292247	301	12.4
3	245.5	147.4	223597	259093	267	13.7
Ave.>	245.5	147.4	247438	283290	286	12.7

Summary of Emissions for CO, SO2, NOx, CH4, and NMHC
CSR Rinker Materials Miami, Florida
Cement Kiln / Raw Mill
August 5, 2004

Run No.	Carbon Monoxide		Sulfur Dioxide		Nitrogen Oxides		Methane(1)(3)		NMHC(2)(3)	
	(ppm)	(lb/hr)	(ppm)	(lb/hr)	(ppm)	(lb/hr)	(ppm)	(lb/hr)	(ppm)	(lb/hr)
1	216	247	2.79	7.3	186	349	2.42	1.8	6.66	13.7
2	232	259	0.00	0.0	166	304	2.30	1.7	7.27	14.6
3	247	241	2.54	5.7	239	384	2.37	1.5	6.62	11.8
Ave.>	232	249	1.78	4.3	197	346	2.36	1.7	6.85	13.4

(1) As Methane
(1) As Propane
(2) Wet Basis

Appendix

CEMS RATAs

Reference Method Calculations for NO_x, SO_2, and NMHC
Flow Rate

Field Data Sheets

NO_x, SO_2, and NMHC
Opacity

Plant Continuous Monitor Data

NO_x, SO_2 and NMHC
Flow Rate
Opacity

Emission Rate Measurements for CO, Hydrocarbons, NO_x, and SO_2

Plant Process Data

Equipment Calibrations

Sampling Equipment
Calibration Gas Certifications

Project Participants

ENVIRONMENTAL SERVICES

CEMS RATAs

ENVIRONMENTAL SERVICES

Reference Method Calculations for NO_x, SO_2, and NMHC

ENVIRONMENTAL SERVICES

Calibration Gas Requirements Determination Table

Plant: Rinker Materials, miami, Florida
Source: Kiln/Rawmill/Clinker Cooler stack

Pollutant Gas	Test Method EPA	Performance Specification Appendix B	Source Emission Limit(Std.) (lb/hr)	Source Flow Rate (dscfm)	Source Moisture (%)	Source Flow Rate (scfmw)	Source Emission (Std.) (ppm)
SO2	6C	2	306	234000	11.2	263514	**131.1**
NOx	7E	2	671	234000	11.2	263514	**400.0**
CO	10	4	412	234000	11.2	263514	**403.5**
VOC	25A	8	16.4	234000	11.2	263514	**9.1**

Pollutant	Reference Method Maximum Insrument Span (0- XX ppm)			Required Calibration Gases	Calculated Calibration Gases Required * All require Zero Air Gas					
					MID (Range)		MID (Range)		SPAN (Range)	
Gas	30%min.	(1.5 X)	(2.0 X)or(2.5 X)		low	high	low	high	low	high
SO2	437	**197**	262	(40-60%) +(80-100%)	**79**	**118**	NA	NA	**157**	197
NOx	1333	**600**	800	(40-60%) +(80-100%)	**240**	**360**	NA	NA	**480**	600
CO	NA	**605**	NA	(30%) +(60%) +(100%)	NA	**182**	NA	**363**	NA	605
VOC	NA	14	**23**	(25-30%) +(45-55%) +(80-90%)	**6**	**7**	**10**	**12**	**18**	20

EPA Protocol Gas Analyzer Calibration Data
CO Concentration Instrument Range Setting (0 - 650 ppm)
August 4, 2004

Calibration Gas	Conc. (ppmv)	Run No.	Date/Time	Response through Train System Loop (ppmv)	Drift (% of Range)	Accuracy Diff. from Actual (% of Range)
Zero	0.0	R1-Pre	8/4/2004 10:32	0.00		0.00
Zero	0.0	R1-Post	8/4/2004 15:47	0.08	0.01	0.01
CO	89.9	R1-Pre	8/4/2004 11:39	87		-0.45
CO	302	R1-Pre	8/4/2004 10:41	308		0.90
CO	302	R1-Pre	8/4/2004 16:01	305	-0.39	0.51
CO	499	R1-Pre	8/4/2004 11:05	511		1.86
Zero	0.0	R2-Pre	8/4/2004 15:47	0.08		0.01
Zero	0.0	R2-Post	17:23	-0.30	-0.06	-0.05
CO	302	R2-Pre	8/4/2004 16:01	305		0.51
CO	302	R2-Post	17:29	298	-1.20	-0.69
Zero	0.0	R3-Pre	17:23	-0.30		-0.05
Zero	0.0	R3-Post	8/4/2004 18:57	0.00	0.05	0.00
CO	302	R3-Pre	17:29	298		-0.69
CO	302	R3-Post	8/4/2004 19:02	306	1.37	0.68
Zero	0.0	R1-Pre	8/4/2004 10:32	0.00		0.00
Zero	0.0	R3-Post	8/4/2004 18:57	0.00	0.00	0.00
CO	89.9	R1-Pre	8/4/2004 11:39	87		-0.45
CO	89.9	R3-Post	8/4/2004 19:44	92	0.75	0.30
CO	302	R1-Pre	8/4/2004 10:41	308		0.90
CO	302	R3-Post	8/4/2004 19:02	306	-0.22	0.68
CO	499	R1-Pre	8/4/2004 11:05	511		1.86
CO	499	R3-Post	8/4/2004 19:07	509	-0.36	1.50

Range Setting (0-650ppmv CO)

Cal. Gas ppm	% of Range
89.9	13.83
302	46.46
499	76.77

EPA Protocol Gas Analyzer Calibration Data
SO2 Concentration Instrument Range Setting (0 - 100 ppm)

Calibration Gas	Conc. (ppmv)	Run No.	Date/Time	Response through Train System Loop (ppmv)	Drift (% of Range)	Accuracy Diff. from Actual (% of Range)
Zero	0.00	R1-Pre	8/4/2004 10:33	0.29		0.29
Zero	0.00	R1-Post	8/4/2004 15:47	0.58	0.29	0.58
SO2	25.47	R1-Pre	8/4/2004 11:14	26.69		1.22
SO2	25.47	R1-Post	8/4/2004 16:08	25.58	-1.11	0.11
SO2	49.90	R1-Pre	8/4/2004 11:19	51.49		1.59
SO2	0.00	R2-Pre	8/4/2004 15:47	0.58		0.58
SO2	0.00	R2-Post	17:23	0.00	-0.58	0.00
SO2	25.47	R2-Pre	8/4/2004 16:08	25.58		0.11
SO2	25.47	R2-Post	NA	NA	NA	NA
SO2	0.00	R3-Pre	17:23	0.00		0.00
SO2	0.00	R3-Post	8/4/2004 18:57	0.03	0.03	0.03
SO2	25.47	R3-Pre	NA	NA		NA
SO2	25.47	R3-Post	8/4/2004 19:33	25.66	NA	0.19
Zero	0.00	R1-Pre	8/4/2004 10:33	0.29		0.29
Zero	0.00	R3-Post	8/4/2004 18:57	0.03	-0.27	0.03
SO2	25.47	R1-Pre	8/4/2004 11:14	26.69		1.22
SO2	25.47	R3-Post	8/4/2004 19:33	25.66	-1.04	0.19
SO2	49.90	R1-Pre	8/4/2004 11:19	51.49		1.59
SO2	49.90	R3-Post	8/4/2004 19:28	50.71	-0.78	0.81

Range Setting (0-100ppmv SO2)

Cal. Gas ppm	% of Range
25.47	25.47
49.90	49.90

EPA Protocol Gas Analyzer Calibration Data
NOx Concentration Instrument Range Setting (0 - 550 ppm)

Calibration Gas	Conc. (ppmv)	Run No.	Date/Time	Response through Train System Loop (ppmv)	Drift (% of Range)	Accuracy Diff. from Actual (% of Range)
Zero	0.0	R1-Pre	8/4/2004 10:33	0.00		0.00
Zero	0.0	R1-Post	8/4/2004 15:47	0.00	0.00	0.00
NOX	307	R1-Pre	8/4/2004 10:42	295		-2.16
NOX	307	R1-Post	8/4/2004 16:01	298	0.51	-1.66
NOX	508	R1-Pre	8/4/2004 10:49	491		-3.03
Zero	0.0	R2-Pre	8/4/2004 15:47	0.00		0.00
Zero	0.0	R2-Post	17:23	1.82	0.33	0.33
NOX	307	R2-Pre	8/4/2004 16:01	298		-1.66
NOX	307	R2-Post	17:38	297	-0.19	-1.85
Zero	0.0	R3-Pre	17:23	1.82		0.33
Zero	0.0	R3-Post	8/4/2004 18:57	0.28	-0.28	0.05
NOX	307	R3-Pre	17:38	297		-1.85
NOX	307	R3-Post	8/4/2004 19:15	299	0.43	-1.42
Zero	0.0	R1-Pre	8/4/2004 10:33	0.00		0.00
Zero	0.0	R3-Post	8/4/2004 18:57	0.28	0.05	0.05
NOX	307	R1-Pre	8/4/2004 10:42	295		-2.16
NOX	307	R3-Post	8/4/2004 19:15	299	0.75	-1.42
NOX	508	R1-Pre	8/4/2004 10:49	491		-3.03
NOX	508	R3-Post	8/4/2004 19:22	496	0.91	-2.12

Range Setting (0-550ppmv NOX)

Cal. Gas ppm	% of Range
300	59.90
495	99.00

EPA Protocol Gas Analyzer Calibration Data
NOx Concentration Instrument Range Setting (0 - 550 ppm)

Calibration Gas	Conc. (ppmv)	Run No.	Date/Time	Response through Train System Loop (ppmv)	Drift (% of Range)	Accuracy Diff. from Actual (% of Range)
Zero	0.0	R1-Pre	8/5/2004 13:20	0.07		0.01
Zero	0.0	R1-Post	8/5/2004 16:02	0.00	-0.01	0.00
NOX	307	R1-Pre	8/5/2004 13:40	306		-0.11
NOX	307	R1-Post	8/5/2004 16:11	305	-0.23	-0.34
NOX	508	R1-Pre	8/5/2004 13:34	508		0.05
NOX	508	R1-Pre	8/5/2004 16:16	506	-0.34	-0.29

Range Setting (0-550ppmv NOX)

Cal. Gas ppm	% of Range
300	59.90
495	99.00

EPA Protocol Gas Analyzer Calibration Data
NMHC Concentration Instrument Range Setting (0 - 75 ppm)

Calibration Gas	Conc. (ppmv)	Run No.	Time	Response through Train System Loop (ppmv)	Drift (% of Range)	Accuracy Diff. from Actual (% of Range)
Zero	0.00	R1-Pre	8/4/2004 10:33	0.00		0.00
Zero	0.00	R1-Post	8/4/2004 15:47	0.00	0.00	0.00
VOC	7.0	R1-Pre	8/4/2004 10:57	5.3		-2.18
VOC	7.0	R1-Post	8/4/2004 15:53	5.3	0.03	-2.15
VOC	24.7	R1-Pre	8/4/2004 11:05	22.9		-2.43
VOC	49.1	R1-Pre	8/4/2004 11:29	49.6		0.71
Zero	0.00	R2-Pre	8/4/2004 15:47	0.00		0.00
Zero	0.00	R2-Post	17:23	0.00	0.00	0.00
VOC	7.0	R2-Pre	8/4/2004 15:53	5.3		-2.15
VOC	7.0	R2-Post	17:29	6.5	1.62	-0.53
Zero	0.00	R3-Pre	17:23	0.00		0.00
Zero	0.00	R3-Post	8/4/2004 18:57	0.00	0.00	0.00
VOC	7.0	R3-Pre	17:29	6.5		-0.53
VOC	7.0	R3-Post	8/4/2004 19:02	5.3	-1.63	-2.16
Zero	0.00	R1-Pre	8/4/2004 10:33	0.00		0.00
Zero	0.00	R3-Post	8/4/2004 18:57	0.00	0.00	0.00
VOC	7.0	R1-Pre	8/4/2004 10:57	5.3		-2.18
VOC	7.0	R3-Post	8/4/2004 19:02	5.3	0.01	-2.16
VOC	24.7	R1-Pre	8/4/2004 11:05	22.9		-2.43
VOC	24.7	R3-Post	8/4/2004 19:07	22.9	0.00	-2.43
VOC	49.1	R1-Pre	8/4/2004 11:29	49.6		0.71
VOC	49.1	R3-Post	8/4/2004 19:44	47.0	-3.53	-2.83

Range Setting (0- 75 ppmv NMHC)

Cal. Gas ppm	% of Range
7.0	9.27
24.7	32.93
49.1	65.47

RINKER, MIAMI
KILN / RAWMILL / COOLER

TimeStamp	CO	SO2	NO	NOx	CH4	NMHC	O2%
8/4/2004 10:28	0.0	0.4	0.0	0.0	1.5	0.0	21.1
8/4/2004 10:29	0.0	0.4	0.0	0.0	1.5	0.0	20.7
8/4/2004 10:30	0.0	0.3	0.0	0.0	1.5	0.0	20.6
8/4/2004 10:31	0.0	0.3	0.0	0.0	0.0	0.0	21.0
8/4/2004 10:32	0.0	0.3	0.0	0.0	0.0	0.0	21.1
8/4/2004 10:33	0.0	0.3	0.0	0.0	0.0	0.0	21.1
8/4/2004 10:34	0.0	15.5	0.0	0.0	0.0	0.0	20.9
8/4/2004 10:35	0.2	99.7	0.0	67.5	0.0	0.0	19.3
8/4/2004 10:36	0.0	99.8	0.0	264.0	0.0	0.0	17
8/4/2004 10:37	0.0	99.8	0.0	292.3	0.0	0.0	0.2
8/4/2004 10:38	0.0	99.8	0.0	294.8	0.0	0.0	0.0
8/4/2004 10:39	0.0	99.8	0.0	295.2	0.0	0.0	0.0
8/4/2004 10:40	0.0	99.8	0.0	295.0	0.0	0.0	0.0
8/4/2004 10:41	0.0	99.8	0.0	295.0	0.0	0.0	0.0
8/4/2004 10:42	0.0	99.8	0.0	295.2	0.0	0.0	0.0
8/4/2004 10:43	0.0	99.7	0.0	295.0	0.0	0.0	1.6
8/4/2004 10:44	0.2	99.7	0.0	197.7	0.0	0.0	6.3
8/4/2004 10:45	0.0	99.7	0.0	433.7	0.0	0.0	0.9
8/4/2004 10:46	0.0	99.8	0.0	486.9	0.0	0.0	0.0
8/4/2004 10:47	0.0	99.8	0.0	491.2	0.0	0.0	0.0
8/4/2004 10:48	0.0	99.8	0.0	491.3	0.0	0.0	0.0
8/4/2004 10:49	0.0	99.8	0.0	491.3	0.0	0.0	0.0
8/4/2004 10:50	0.0	99.7	0.0	490.5	0.4	0.0	2.7
8/4/2004 10:51	0.0	71.6	0.0	175.3	1.0	0.0	16.4
8/4/2004 10:52	0.0	30.5	0.0	9.3	1.0	0.0	20.0
8/4/2004 10:53	23.4	20.9	0.0	1.4	0.9	0.0	19.9
8/4/2004 10:54	245.4	13.7	0.0	10.2	0.0	1.9	7.4
8/4/2004 10:55	304.8	9.4	0.0	2.2	0.0	5.3	0.9
8/4/2004 10:56	307.8	7.5	0.0	0.4	0.0	5.3	0.0
8/4/2004 10:57	307.8	6.2	0.0	0.0	0.0	5.3	0.0
8/4/2004 10:58	167.5	5.1	0.0	0.0	0.4	5.3	5.6
8/4/2004 10:59	30.3	4.3	0.0	0.0	0.8	3.1	17.6
8/4/2004 11:00	371.6	3.4	0.0	0.1	0.5	0.3	8.9
8/4/2004 11:01	502.8	3.6	0.0	0.0	0.0	18.1	1.1
8/4/2004 11:02	510.5	3.4	0.0	0.0	0.0	22.9	0.0
8/4/2004 11:03	510.4	3.5	0.0	0.0	0.0	22.9	0.0
8/4/2004 11:04	511.0	3.4	0.0	0.0	0.0	22.9	0.0
8/4/2004 11:05	511.2	3.3	0.0	0.0	0.0	22.9	0.0
8/4/2004 11:06	510.7	3.2	0.0	0.0	0.0	22.9	0.0
8/4/2004 11:07	316.7	5.3	0.0	0.0	0.0	22.9	1.4
8/4/2004 11:08	30.8	15.9	0.0	0.0	0.0	19.9	3.5
8/4/2004 11:09	1.9	21.6	0.0	0.0	0.0	0.0	0.2
8/4/2004 11:10	0.2	24.5	0.0	0.0	0.0	0.0	0.0
8/4/2004 11:11	0.2	25.7	0.0	0.0	0.0	0.0	0.0
8/4/2004 11:12	0.2	26.4	0.0	0.0	0.0	0.0	0.0
8/4/2004 11:13	0.0	26.9	0.0	0.0	0.0	0.0	0.0
8/4/2004 11:14	0.2	26.5	0.0	0.0	0.0	0.0	0.0
8/4/2004 11:15	0.2	32.3	0.0	0.8	0.0	0.0	4.0
8/4/2004 11:16	0.2	46.8	0.0	34.6	0.0	0.0	0.7
8/4/2004 11:17	0.2	50.1	0.0	46.3	0.0	0.0	0.0
8/4/2004 11:18	0.2	51.2	0.0	46.9	0.0	0.0	0.0
8/4/2004 11:19	0.2	51.8	0.0	46.9	0.0	0.0	0.0
8/4/2004 11:20	0.2	52.0	0.0	46.9	0.0	0.0	0.0
8/4/2004 11:21	0.0	43.4	0.0	46.7	0.0	0.0	0.0
8/4/2004 11:22	1.2	17.9	0.0	27.4	0.7	0.0	1.5
8/4/2004 11:23	0.8	9.6	0.0	16.7	28.8	0.0	12.6
8/4/2004 11:24	0.0	6.7	0.0	33.2	48.8	7.2	18.7
8/4/2004 11:25	0.0	6.3	0.0	2.5	49.3	8.4	19.7
8/4/2004 11:26	0.0	5.3	0.0	0.1	49.6	8.4	19.9
8/4/2004 11:27	0.0	4.6	0.0	0.0	49.6	8.4	20.1
8/4/2004 11:28	0.0	4.1	0.0	0.0	49.6	8.4	20.1
8/4/2004 11:29	0.0	3.8	0.0	0.0	49.6	8.4	20.2
8/4/2004 11:30	0.0	3.5	0.0	0.0	49.6	8.4	20.2
8/4/2004 11:31	0.0	3.2	0.0	0.0	49.6	8.4	20.2
8/4/2004 11:32	0.0	2.7	0.0	0.0	10.2	7.5	20.3
8/4/2004 11:33	38.5	2.2	0.0	0.0	2.5	0.4	20.2
8/4/2004 11:34	79.2	1.8	0.0	0.0	1.0	37.3	20.4
8/4/2004 11:35	84.6	1.9	0.0	0.0	0.0	45.0	20.4
8/4/2004 11:36	86.6	2.6	0.0	0.0	0.0	46.4	20.4
8/4/2004 11:37	87.6	2.7	0.0	0.0	0.0	46.5	20.4
8/4/2004 11:38	87.1	2.7	0.0	0.0	0.0	46.5	20.4
8/4/2004 11:39	86.8	2.5	0.0	0.0	0.0	46.5	20.5
8/4/2004 11:40	86.5	2.5	0.0	0.0	0.1	46.5	15.2
8/4/2004 11:41	26.7	1.9	0.0	0.0	1.0	35.2	11.6
8/4/2004 11:42	1.0	1.7	0.0	0.0	1.0	10.3	19.4
8/4/2004 11:43	1.2	6.9	0.0	0.0	1.0	0.0	20.3

<<Zero air				
CO	SO2	NOx	CH4	NMHC
0.00	0.29	0.00	0.00	0.00

<< 307 NOx		
	NOx	
	295.1	<average

<< 508 NOx		
	NOx	
	491.3	<average

<< 302 CO / 6.95 Propane			
	CO	Propane	
	307.8	5.3	<average

<< 499 CO/24.7 Propane			
	CO	Propane	
	511.1	22.9	<average

<< 25.47 SO2		
	SO2	
	26.7	<average

<< 49.9 SO2 / 50.5 nox			
	SO2	NOx	
	51.5	46.9	<average

<< 49.54 CH4 / 10.29 Propane			
	CH4	NMHC	
	49.6	8.4	<average

<< 89.9 CO / 49.1 Propane			
	CO	NMHC	
	87.0	46.5	<average

RINKER, MIAMI
KILN / RAWMILL / COOLER

TimeStamp	CO	SO2	NOX	CH4	NMHC	O2%	
8/4/2004 12:10	206.1	5.0	195.1	2.0	5.3	13.0	<<start run 1 Comp/Run RATA
8/4/2004 12:11	195.8	4.9	194.3	2.2	5.3	11.9	
8/4/2004 12:12	197.5	5.1	199.5	2.4	5.4	10.5	
8/4/2004 12:13	217.7	5.0	196.4	2.1	5.3	12.2	
8/4/2004 12:14	209.6	5.1	189.0	2.5	5.3	13.0	
8/4/2004 12:15	189.1	5.0	191.6	2.5	5.3	13.1	
8/4/2004 12:16	197.5	4.6	193.6	2.0	5.3	13.2	
8/4/2004 12:17	199.0	4.7	189.5	2.0	5.3	13.1	
8/4/2004 12:18	198.3	4.6	190.8	2.5	5.3	13.1	
8/4/2004 12:19	181.3	4.6	189.7	2.5	5.2	13.2	
8/4/2004 12:20	205.1	4.4	191.3	2.2	5.3	13.2	
8/4/2004 12:21	205.9	4.4	181.9	2.3	5.3	13.2	
8/4/2004 12:22	190.1	4.4	185.6	2.3	5.3	13.2	
8/4/2004 12:23	181.3	4.4	192.9	2.0	5.3	13.2	
8/4/2004 12:24	189.6	4.3	195.3	2.0	5.3	13.2	
8/4/2004 12:25	188.9	4.2	190.7	2.0	5.3	13.2	
8/4/2004 12:26	184.4	4.0	186.3	2.0	5.3	13.2	
8/4/2004 12:27	180.3	4.0	193.9	2.0	5.3	13.2	
8/4/2004 12:28	203.0	4.0	196.6	2.1	5.3	12.6	
8/4/2004 12:29	222.4	3.9	187.1	2.0	5.3	13.0	
8/4/2004 12:30	232.5	3.8	181.8	2.4	5.3	13.1	
8/4/2004 12:31	230.5	3.9	177.9	2.5	5.3	13.1	<end Rata Run 1
8/4/2004 12:32	207.7	3.8	180.8	2.5	5.3	13.1	
8/4/2004 12:33	201.2	3.6	180.4	2.5	5.3	13.1	
8/4/2004 12:34	202.9	3.7	179.6	2.5	5.3	13.1	
8/4/2004 12:35	192.6	3.7	181.7	2.4	5.3	13.1	
8/4/2004 12:36	195.0	3.7	188.8	2.0	5.3	13.1	
8/4/2004 12:37	200.8	3.6	188.9	2.0	5.3	13.1	
8/4/2004 12:38	196.8	3.6	181.4	2.0	5.3	12.8	
8/4/2004 12:39	192.9	3.6	181.1	2.5	5.3	13.0	
8/4/2004 12:40	208.4	3.6	190.0	2.0	5.3	13.1	
8/4/2004 12:41	207.2	3.7	178.9	2.0	5.3	13.1	
8/4/2004 12:42	188.6	3.7	176.5	2.1	5.4	12.2	
8/4/2004 12:43	191.8	3.8	187.4	2.0	5.3	12.9	<<Raw Mill Down
8/4/2004 14:00	239.7	2.2	173.2	2.5	5.3	20.2	<<start Cal check
8/4/2004 14:01	207.2	2.2	177.1	2.5	5.3	20.2	
8/4/2004 14:02	195.0	2.2	183.2	2.5	5.3	20.1	
8/4/2004 14:03	215.8	2.1	191.4	2.5	5.2	20.2	
8/4/2004 14:04	155.1	2.4	162.3	0.7	4.5	19.8	
8/4/2004 14:05	93.9	2.4	22.4	0.0	45.6	5.5	
8/4/2004 14:06	92.2	2.2	3.8	0.0	46.5	0.4	
8/4/2004 14:07	91.5	2.0	1.8	0.0	46.5	0.0	
8/4/2004 14:08	91.0	1.9	0.8	0.0	46.5	0.0	
8/4/2004 14:09	101.9	1.7	0.6	0.6	46.5	0.7	
8/4/2004 14:10	185.9	15.6	62.0	2.2	25.8	8.5	
8/4/2004 14:11	40.4	98.9	266.9	0.0	3.1	2.2	
8/4/2004 14:12	3.7	99.8	477.7	0.0	0.0	0.0	
8/4/2004 14:13	1.7	99.8	487.8	0.0	0.0	0.0	
8/4/2004 14:14	0.5	99.8	490.6	0.0	0.0	0.0	
8/4/2004 14:15	2.2	99.8	491.6	0.0	0.0	0.0	
8/4/2004 14:16	127.8	99.4	447.2	1.7	0.0	6.8	
8/4/2004 14:17	56.9	67.0	184.3	1.1	4.3	3.3	
8/4/2004 14:18	3.5	41.9	19.8	0.0	0.6	0.1	
8/4/2004 14:19	1.5	32.5	4.0	0.0	0.0	0.0	
8/4/2004 14:20	0.5	28.2	1.8	0.0	0.0	0.0	
8/4/2004 14:21	0.2	26.3	0.8	0.0	0.0	0.0	
8/4/2004 14:22	1.5	25.2	0.6	0.3	0.0	0.0	
8/4/2004 14:23	134.9	18.0	23.5	2.6	1.9	6.6	<<Back on Stack
8/4/2004 14:24	243.2	10.9	164.7	2.5	4.8	11.8	
8/4/2004 14:25	244.4	7.6	174.2	2.5	5.3	12.4	
8/4/2004 14:26	262.6	5.9	178.2	2.5	5.3	12.6	
8/4/2004 14:27	254.2	5.0	163.4	2.5	5.3	12.6	
8/4/2004 14:28	218.7	4.4	174.0	2.5	5.3	12.7	
8/4/2004 14:29	206.2	4.0	183.1	2.5	5.3	12.7	
8/4/2004 14:30	213.5	3.7	190.3	2.5	4.6	12.7	<Restart Run 1 Compliance/Start Rata Run 2
8/4/2004 14:31	221.7	3.4	181.5	2.5	5.1	12.7	
8/4/2004 14:32	222.4	3.3	185.3	2.5	4.8	12.7	
8/4/2004 14:33	226.2	3.2	185.8	2.5	4.9	12.7	
8/4/2004 14:34	233.0	3.1	184.3	2.5	5.3	12.7	
8/4/2004 14:35	217.2	3.0	182.9	2.5	5.3	12.7	
8/4/2004 14:36	219.3	3.0	183.2	2.5	5.3	12.8	
8/4/2004 14:37	214.8	2.9	189.9	2.5	5.3	12.8	

RATA Run 1 AVERAGE

SO2	Nox	CH4	NMHC	THC
4.5	190.6	2.2	5.3	6.0
		0.7		

8/4/2004 14:38	199.2	2.9	192.2	2.5	5.3	12.8	
8/4/2004 14:39	203.9	2.8	197.1	2.5	5.3	12.9	
8/4/2004 14:40	222.5	2.8	185.5	2.5	4.5	13.6	
8/4/2004 14:41	226.1	2.7	180.6	2.5	5.2	12.6	
8/4/2004 14:42	233.5	2.7	176.1	2.5	5.3	13.6	
8/4/2004 14:43	219.7	2.7	180.1	2.5	5.3	12.5	
8/4/2004 14:44	207.6	3.0	181.9	2.5	5.3	12.9	
8/4/2004 14:45	233.0	2.6	183.3	2.5	4.9	13.9	
8/4/2004 14:46	207.3	2.6	165.4	2.5	4.8	12.8	
8/4/2004 14:47	250.6	2.6	183.4	2.5	5.3	12.8	
8/4/2004 14:48	235.0	2.6	166.5	2.5	5.3	12.8	
8/4/2004 14:49	220.9	2.6	170.3	2.5	5.3	12.9	
8/4/2004 14:50	229.8	2.6	175.2	2.5	5.3	12.9	
8/4/2004 14:51	239.4	2.6	169.6	2.5	4.5	12.9	
8/4/2004 14:52	243.1	2.6	165.3	2.5	5.2	12.8	<End RATA Run 2
8/4/2004 14:53	**221.9**	**2.6**	**171.9**	**2.5**	**5.3**	**12.8**	<Start RATA Run 3
8/4/2004 14:54	**234.5**	**2.5**	**172.6**	**2.5**	**5.3**	**12.9**	
8/4/2004 14:55	**244.4**	**2.4**	**165.9**	**2.5**	**5.3**	**12.8**	
8/4/2004 14:56	**223.0**	**2.6**	**165.0**	**2.5**	**5.3**	**12.8**	
8/4/2004 14:57	**238.2**	**2.5**	**172.1**	**2.6**	**5.3**	**12.8**	
8/4/2004 14:58	**249.3**	**2.5**	**163.9**	**3.1**	**5.3**	**12.8**	
8/4/2004 14:59	**202.5**	**2.5**	**167.6**	**2.5**	**5.1**	**12.9**	
8/4/2004 15:00	**227.8**	**2.5**	**180.3**	**2.5**	**4.5**	**12.9**	
8/4/2004 15:01	**279.4**	**2.4**	**165.8**	**2.5**	**4.6**	**12.8**	
8/4/2004 15:02	**265.1**	**2.4**	**153.3**	**2.5**	**5.3**	**12.8**	
8/4/2004 15:03	**226.6**	**2.5**	**165.4**	**2.5**	**5.3**	**12.9**	
8/4/2004 15:04	**227.9**	**2.4**	**169.3**	**2.5**	**4.6**	**12.9**	
8/4/2004 15:05	**217.2**	**2.5**	**171.1**	**2.5**	**4.5**	**12.9**	
8/4/2004 15:06	**220.4**	**2.5**	**175.1**	**2.5**	**4.5**	**12.9**	
8/4/2004 15:07	**218.2**	**2.5**	**174.9**	**2.5**	**4.5**	**12.9**	
8/4/2004 15:08	**217.3**	**2.5**	**174.7**	**2.5**	**4.5**	**12.9**	
8/4/2004 15:09	**220.9**	**2.4**	**176.2**	**2.5**	**4.5**	**12.9**	
8/4/2004 15:10	**206.2**	**2.5**	**177.4**	**2.5**	**4.5**	**12.9**	
8/4/2004 15:11	**208.2**	**2.4**	**186.5**	**2.5**	**4.5**	**12.9**	
8/4/2004 15:12	**223.4**	**2.4**	**181.7**	**2.5**	**4.5**	**12.9**	
8/4/2004 15:13	**235.2**	**2.3**	**170.4**	**2.5**	**4.5**	**12.9**	
8/4/2004 15:14	**245.1**	**2.2**	**157.3**	**2.5**	**4.5**	**12.9**	<End RATA Run 3
8/4/2004 15:15	**263.6**	**2.2**	**160.4**	**2.5**	**5.3**	**12.9**	
8/4/2004 15:16	**253.3**	**2.2**	**155.0**	**2.5**	**5.3**	**12.8**	
8/4/2004 15:17	**256.9**	**2.2**	**159.7**	**2.5**	**5.3**	**12.8**	
8/4/2004 15:18	**290.8**	**2.2**	**153.6**	**2.7**	**5.3**	**12.8**	
8/4/2004 15:19	**259.4**	**2.3**	**153.2**	**3.0**	**5.3**	**12.4**	
8/4/2004 15:20	**233.8**	**2.4**	**165.4**	**2.5**	**5.3**	**12.9**	<<End Run 1 Compliance
8/4/2004 15:21	**249.1**	**2.8**	**167.6**	**2.5**	**5.3**	**12.8**	
8/4/2004 15:22	**106.8**	**68.4**	**175.5**	**0.0**	**3.7**	**10.8**	
8/4/2004 15:23	**4.2**	**99.7**	**212.8**	**0.0**	**0.0**	**11.4**	
8/4/2004 15:24	**1.5**	**99.7**	**203.2**	**0.0**	**0.0**	**11.4**	
8/4/2004 15:25	**0.3**	**99.7**	**203.4**	**0.0**	**0.0**	**11.4**	
8/4/2004 15:26	**0.0**	**99.7**	**203.4**	**0.0**	**0.0**	**11.4**	
8/4/2004 15:27	**0.0**	**99.7**	**203.4**	**0.0**	**0.0**	**11.4**	
8/4/2004 15:28	**0.0**	**99.7**	**203.6**	**0.0**	**0.0**	**11.3**	
8/4/2004 15:29	**0.0**	**99.7**	**204.1**	**0.0**	**0.0**	**11.5**	
8/4/2004 15:30	**0.0**	**73.7**	**162.6**	**0.0**	**0.0**	**17.4**	
8/4/2004 15:31	**0.0**	**30.6**	**14.9**	**0.0**	**0.0**	**19.9**	
8/4/2004 15:32	**0.2**	**17.1**	**4.0**	**0.0**	**0.0**	**20.1**	
8/4/2004 15:33	**0.0**	**11.6**	**3.8**	**0.0**	**0.0**	**20.1**	
8/4/2004 15:34	**0.2**	**8.8**	**4.0**	**0.0**	**0.0**	**20.1**	
8/4/2004 15:35	**0.0**	**7.0**	**4.2**	**0.0**	**0.0**	**20.1**	
8/4/2004 15:36	**0.0**	**5.6**	**3.2**	**0.0**	**0.0**	**20.2**	
8/4/2004 15:37	**0.0**	**4.5**	**2.4**	**0.0**	**0.0**	**20.2**	
8/4/2004 15:38	**0.0**	**3.5**	**1.7**	**0.0**	**0.0**	**20.2**	
8/4/2004 15:39	**0.2**	**2.8**	**1.1**	**0.0**	**0.0**	**20.3**	
8/4/2004 15:40	**0.0**	**2.3**	**1.0**	**0.0**	**0.0**	**20.3**	
8/4/2004 15:41	**0.2**	**1.9**	**0.4**	**0.0**	**0.0**	**20.3**	
8/4/2004 15:42	**0.2**	**1.4**	**0.1**	**0.0**	**0.0**	**20.3**	
8/4/2004 15:43	**0.2**	**1.1**	**0.0**	**0.0**	**0.0**	**20.3**	
8/4/2004 15:44	**0.2**	**1.0**	**0.0**	**0.0**	**0.0**	**20.3**	
8/4/2004 15:45	**0.2**	**0.8**	**0.0**	**0.0**	**0.0**	**20.3**	
8/4/2004 15:46	**0.2**	**0.7**	**0.0**	**0.0**	**0.0**	**20.3**	<<Zero air
8/4/2004 15:47	**0.0**	**0.5**	**0.0**	**0.0**	**0.0**	**20.3**	
8/4/2004 15:48	**27.6**	**1.1**	**0.0**	**0.0**	**0.0**	**18.9**	
8/4/2004 15:49	**257.2**	**1.6**	**22.5**	**0.0**	**0.1**	**4.6**	
8/4/2004 15:50	**301.6**	**1.4**	**3.8**	**0.0**	**5.3**	**0.3**	
8/4/2004 15:51	**303.5**	**1.2**	**0.7**	**0.0**	**5.3**	**0.0**	
8/4/2004 15:52	**305.5**	**1.1**	**0.1**	**0.0**	**5.3**	**0.0**	<< 302 CO / 6.95 Propane
8/4/2004 15:53	**305.1**	**1.0**	**0.0**	**0.0**	**5.3**	**0.0**	
8/4/2004 15:54	**305.0**	**1.0**	**0.0**	**0.0**	**5.3**	**0.0**	
8/4/2004 15:55	**271.8**	**21.0**	**0.0**	**0.0**	**5.3**	**1.1**	

RATA Run 2 AVERAGE

SO2	Nox	CH4	NMHC	THC
2.8	179.3	2.5	5.1	5.1

RATA Run 3 AVERAGE

SO2	NOx	CH4	NMHC	THC
2.5	170.8	2.6	4.8	4.8

CO	SO2	NOx	CH4	NMHC
0.08	0.58	0.00	0.00	0.00

	CO	Propane	
	305.3	5.3	<average

8/4/2004 15:56	39.2	99.5	136.9	0.0	2.9	0.6
8/4/2004 15:57	3.0	99.8	288.1	0.0	0.0	0.0
8/4/2004 15:58	1.0	99.8	295.3	0.0	0.0	0.0
8/4/2004 15:59	0.2	99.8	297.0	0.0	0.0	0.0
8/4/2004 16:00	0.0	99.8	298.0	0.0	0.0	0.0
8/4/2004 16:01	22.4	99.8	297.6	0.0	0.0	0.9
8/4/2004 16:02	14.5	77.2	165.0	0.0	0.0	0.3
8/4/2004 16:03	1.3	44.6	10.0	0.0	0.0	0.0
8/4/2004 16:04	0.2	33.9	2.9	0.0	0.0	0.0
8/4/2004 16:05	0.0	29.6	1.0	0.0	0.0	0.0
8/4/2004 16:06	0.0	27.4	0.3	0.0	0.0	0.0
8/4/2004 16:07	0.0	26.1	0.0	0.0	0.0	0.0
8/4/2004 16:08	4.4	25.0	0.0	0.2	0.0	0.2
8/4/2004 16:09	139.1	16.2	41.5	2.6	1.7	5.6

<< 297 NOx		
	NOx	
	297.9	<average

<< 25.47 SO2		
	SO2	
	25.6	<average

RUN 1	ANALYZER RESPONSE TO STACK GAS ppmv	ZERO BIAS ppmv	ACTUAL CAL.GAS VALUE ppmv	ANALYZER RESPONSE TO CAL. GAS ppmv	CORRECTED STACK GAS CONC. ppmv
CO	218.9	0.0	302.0	306.6	215.6
SO2	3.3	0.4	25.5	26.1	2.8
NOx	179.2	0.0	307.0	296.5	185.5
CH4	2.4	0.0	49.5	49.6	2.4
NMHC	5.1	0.0	6.95	5.3	6.7

CH4	THC	O2 %
0.8	7.5	12.9

RATA Run 1-3	ANALYZER RESPONSE TO STACK GAS ppmv	ZERO BIAS ppmv	ACTUAL CAL.GAS VALUE ppmv	ANALYZER RESPONSE TO CAL. GAS ppmv	CORRECTED STACK GAS CONC. ppmv
SO2	4.5	0.4	25.5	26.1	4.0
SO2	2.8	0.4	25.5	26.1	2.4
SO2	2.5	0.4	25.5	26.1	2.0

RATA Run 1-3	ANALYZER RESPONSE TO STACK GAS ppmv	ZERO BIAS ppmv	ACTUAL CAL.GAS VALUE ppmv	ANALYZER RESPONSE TO CAL. GAS ppmv	CORRECTED STACK GAS CONC. ppmv
Nox	190.6	0.0	307.0	296.5	197.4
NOx	179.3	0.0	307.0	296.5	185.6
NOx	170.8	0.0	307.0	296.5	176.9

RATA Run 1-3	ANALYZER RESPONSE TO STACK GAS ppmv	ZERO BIAS ppmv	ACTUAL CAL.GAS VALUE ppmv	ANALYZER RESPONSE TO CAL. GAS ppmv	CORRECTED STACK GAS CONC. ppmv
CH4	2.2	0.0	49.5	49.6	2.2
CH4	2.5	0.0	49.5	49.6	2.5
CH4	2.6	0.0	49.5	49.6	2.6

RATA Run 1-3	ANALYZER RESPONSE TO STACK GAS ppmv	ZERO BIAS ppmv	ACTUAL CAL.GAS VALUE ppmv	ANALYZER RESPONSE TO CAL. GAS ppmv	CORRECTED STACK GAS CONC. ppmv
NMHC	5.3	0.0	7.0	5.3	6.9
NMHC	5.1	0.0	7.0	5.3	6.7
NMHC	4.8	0.0	7.0	5.3	6.3

RINKER, MIAMI
KILN / RAWMILL / COOLER
DATE 8-4-04

TimeStamp	CO	SO2	NOX	CH4	NMHC	O2%	
16:10	186.9	0.2	20.4				
16:11	192.3	0.2	171.4				
16:12	201.5	0.2	150.9				
16:13	231.9	0.2	152.3				
16:14	252.3	0.3	160.1				
16:15	239.5	0.2	167.9				<<Start Run 2 compliance/ Rata run 4
16:16	219.6	0.2	174.1	3.2	5.7		
16:17	215.4	0.2	175.0	3.1	5.7		
16:18	224.5	0.2	179.2	3.2	6.0		
16:19	226.3	0.2	173.5	3.4	6.2		
16:20	240.2	0.2	166.5	3.6	6.3		
16:21	237.6	0.2	157.5	3.4	6.1		
16:22	228.5	0.2	158.5	3.3	6.3		
16:23	217.7	0.2	162.0	3.4	6.2		
16:24	213.8	0.2	161.4	3.4	6.1		
16:25	222.4	0.2	162.4	3.4	6.1		
16:26	221.4	0.2	162.5	3.5	6.1		
16:27	233.2	0.2	162.0	3.5	6.2		
16:28	243.0	0.2	161.5	3.3	6.1		
16:29	234.4	0.2	158.8	3.3	6.0		
16:30	226.8	0.2	161.1	3.4	6.2		
16:31	216.9	0.2	162.7	3.5	6.2		
16:32	242.4	0.2	162.6	3.5	6.2		
16:33	254.5	0.3	162.7	3.5	6.2		
16:34	277.8	0.3	155.5	3.4	6.1		
16:35	267.3	0.3	158.1	3.4	6.1		
16:36	245.3	0.2	154.3	3.5	6.1		<<End Rate Run 4
16:37	249.1	0.2	162.7	3.5	6.3		<<Start Rata Run 5
16:38	242.3	0.2	161.2	3.6	6.2		
16:39	223.0	0.2	153.7	3.5	6.2		
16:40	263.4	0.3	154.7	3.5	6.2		
16:41	270.5	0.3	152.5	3.5	6.3		
16:42	259.6	0.3	151.4	3.4	6.1		
16:43	233.8	0.2	145.8	3.5	6.1		
16:44	234.7	0.2	150.3	3.6	6.4		
16:45	262.4	0.3	158.3	3.6	6.4		
16:46	268.7	0.3	158.5	3.5	6.1		
16:47	234.1	0.2	152.8	3.4	6.2		
16:48	222.9	0.2	157.2	3.7	6.3		
16:49	244.2	0.2	165.3	3.9	6.6		
16:50	251.8	0.3	163.7	3.5	6.4		
16:51	240.4	0.2	159.9	3.4	6.2		
16:52	259.1	0.3	162.4	3.5	6.3		
16:53	263.3	0.3	160.6	3.5	6.6		
16:54	258.5	0.3	159.6	3.6	6.5		
16:55	244.1	0.2	156.4	3.6	6.5		
16:56	233.3	0.2	154.5	3.8	6.6		
16:57	238.1	0.2	157.6	3.6	6.5		
16:58	241.0	0.2	162.7	3.6	6.5		<<End Rate Run 5
16:59	223.0	0.2	159.8	3.4	6.2		<<Start Rata Run 6
17:00	209.3	0.2	165.4	3.5	6.4		
17:01	212.8	0.2	164.3	3.4	6.1		
17:02	233.1	0.2	163.8	3.4	6.2		
17:03	221.1	0.2	164.4	3.4	6.4		
17:04	204.1	0.2	166.7	3.5	6.3		
17:05	206.5	0.2	167.8	3.5	6.3		
17:06	226.2	0.2	173.3	3.3	6.2		
17:07	209.2	0.2	170.1	3.5	6.3		
17:08	190.1	0.2	170.0	3.4	6.2		
17:09	139.6	0.1	171.2	3.4	6.2		
17:10	241.1	0.2	92.0	3.3	6.0		
17:11	213.0	0.2	153.0	3.7	6.3		
17:12	207.9	0.2	162.0	3.3	6.0		
17:13	215.7	0.2	168.4	3.3	6.0		
17:14	215.3	0.2	167.4	3.4	5.9		
17:15	196.3	0.2	161.9	3.4	6.1		
17:16	221.4	0.2	170.5	3.3	6.0		<<End Run 2 Compliance
17:17	242.6	0.2	173.0	3.6	6.2		
17:18	239.9	0.2	166.0	3.7	6.3		<<End Rate Run 6
17:19	156.8	0.2	160.1	3.4	6.1		
17:20	6.4	0.0	161.6	0.0	0.1		
17:21	-0.3	0.0	54.8	0.0	0.0		

RATA Run 4 AVERAGE

SO2	Nox	CH4	NMHC	THC
0.2	163.7	3.4	6.2	7.3
		1.1		

RATA Run 5 AVERAGE

SO2	Nox	CH4	NMHC	THC
0.2	157.4	3.5	6.4	7.5
		1.2		

RATA Run 6 AVERAGE

SO2	Nox	CH4	NMHC	THC
0.2	162.4	2.4	4.7	5.5
		0.8		

17:22	-0.3	0.0	2.7	0.0	0.0	<<Zero air
17:23	-0.3	0.0	1.0	0.0	0.0	
17:24	5.8	0.0	0.5	1.7	2.4	
17:25	194.3	0.2	0.3	0.1	7.4	
17:26	295.8	0.3	39.4	0.0	0.4	
17:27	297.7	0.3	16.9	0.0	0.0	
17:28	297.6	0.3	0.7	0.0	6.5	
17:29	297.4	0.3	0.2	0.0	6.6	
17:30	297.7	0.3	0.1	0.0	6.5	
17:31	297.6	0.3	0.0	0.0	0.0	
17:32	211.9	0.2	0.0	0.0	0.0	
17:33	11.4	0.0	12.4	0.0	0.0	
17:34	0.0	0.0	226.5	0.0	0.0	
17:35	-0.3	0.0	294.5	0.0	0.0	
17:36	-0.3	0.0	296.7	0.0	0.0	
17:37	-0.3	0.0	296.9	0.1	0.0	
17:38	4.5	0.0	296.8	0.0	0.0	
17:39	48.7	0.0	296.5	0.0	0.0	
17:40	2.4	0.0	250.2	0.0	0.0	
17:41	0.3	0.0	27.2	0.0	0.0	
17:42	-0.2	0.0	3.3	3.5	5.9	
17:43	-0.4	0.0	0.9	3.7	6.4	

<<Zero air				
CO	SO2	NOx	CH4	NMHC
-0.30	0.00	1.60	0.00	0.00

<< 302 CO / 6.95 Propane		
	CO	Propane
	297.5	6.5

<average

<< 307 NOx		
	NOx	
	296.9	<average

RUN 2	ANALYZER RESPONSE TO STACK GAS ppmv	ZERO BIAS ppmv	ACTUAL CAL.GAS VALUE ppmv	ANALYZER RESPONSE TO CAL. GAS ppmv	CORRECTED STACK GAS CONC. ppmv
CO	231.7	-0.1	302.0	301.4	232.2
SO2	0.2	0.3	25.5	25.6	-0.1
NOx	160.9	0.9	307.0	297.4	165.7
CH4	3.5	1.2	49.5	49.6	2.3
NMHC	6.2	0.0	6.95	5.9	7.3

CH4	THC	O2 %
0.8	8.0	11.5

RATA Run 4-6	ANALYZER RESPONSE TO STACK GAS ppmv	ZERO BIAS ppmv	ACTUAL CAL.GAS VALUE ppmv	ANALYZER RESPONSE TO CAL. GAS ppmv	CORRECTED STACK GAS CONC. ppmv
SO2	0.2	0.3	25.5	25.6	-0.1
SO2	0.2	0.3	25.5	25.6	0.0
SO2	0.2	0.3	25.5	25.6	-0.1

RATA Run 4-6	ANALYZER RESPONSE TO STACK GAS ppmv	ZERO BIAS ppmv	ACTUAL CAL.GAS VALUE ppmv	ANALYZER RESPONSE TO CAL. GAS ppmv	CORRECTED STACK GAS CONC. ppmv
Nox	163.7	0.9	307.0	297.4	168.6
NOx	157.4	0.9	307.0	297.4	162.0
NOx	162.4	0.9	307.0	297.4	167.2

RATA Run 4-6	ANALYZER RESPONSE TO STACK GAS ppmv	ZERO BIAS ppmv	ACTUAL CAL.GAS VALUE ppmv	ANALYZER RESPONSE TO CAL. GAS ppmv	CORRECTED STACK GAS CONC. ppmv
CH4	3.4	1.2	49.5	49.6	2.3
CH4	3.5	1.2	49.5	49.6	2.4
CH4	2.4	1.2	49.5	49.6	1.2

RATA Run 4-6	ANALYZER RESPONSE TO STACK GAS ppmv	ZERO BIAS ppmv	ACTUAL CAL.GAS VALUE ppmv	ANALYZER RESPONSE TO CAL. GAS ppmv	CORRECTED STACK GAS CONC. ppmv
NMHC	6.2	0.0	7.0	5.9	7.2
NMHC	6.4	0.0	7.0	5.9	7.4
NMHC	4.7	0.0	7.0	5.9	5.5

RINKER, MIAMI
KILN / RAWMILL / COOLER

TimeStamp	CO	SO2	NOX	CH4	NMHC	O2%	
8/4/2004 16:10	-	-	-	-	-	-	
8/4/2004 17:46	236.3	9.0	160.9	3.0	4.9	12.5	
8/4/2004 17:47	232.9	8.9	170.0	2.5	5.3	12.6	<<Start Compliance Run 3/ RATA Run 7
8/4/2004 17:48	232.3	5.6	166.5	2.5	5.3	12.7	
8/4/2004 17:49	229.9	5.0	169.6	2.5	5.3	12.7	
8/4/2004 17:50	224.9	4.4	168.5	3.0	5.3	12.7	
8/4/2004 17:51	207.6	4.0	169.6	2.6	5.3	12.8	
8/4/2004 17:52	223.4	3.7	172.2	2.5	5.3	12.8	
8/4/2004 17:53	219.0	3.6	175.1	2.5	5.3	12.7	
8/4/2004 17:54	227.9	3.6	186.6	2.5	5.3	12.1	
8/4/2004 17:55	252.5	3.5	212.0	2.5	5.9	11.4	
8/4/2004 17:56	251.8	3.3	217.7	2.5	6.0	11.1	
8/4/2004 17:57	236.2	3.3	227.2	2.5	6.0	11.1	
8/4/2004 17:58	234.8	3.2	238.4	2.5	5.6	11.1	
8/4/2004 17:59	232.8	3.1	243.0	2.5	5.2	11.1	
8/4/2004 18:00	231.1	2.9	244.3	2.5	5.2	11.1	
8/4/2004 18:01	223.0	2.9	249.4	2.0	5.2	11.1	
8/4/2004 18:02	227.1	2.8	256.2	2.0	5.2	11.2	
8/4/2004 18:03	226.1	2.7	260.1	2.0	5.2	11.1	
8/4/2004 18:04	225.4	2.6	266.1	2.0	5.3	11.1	
8/4/2004 18:05	231.0	2.4	269.9	2.1	5.4	11.1	
8/4/2004 18:06	226.2	2.3	272.2	2.1	5.4	11.1	
8/4/2004 18:07	215.3	2.2	275.6	2.1	5.4	11.1	
8/4/2004 18:08	228.6	2.2	276.0	2.1	5.4	11.1	<<End Rate Run 7
8/4/2004 18:09	236.0	2.1	274.6	2.1	5.4	11.0	<<Start Rata Run 8
8/4/2004 18:10	238.0	2.1	265.1	2.1	5.4	10.9	
8/4/2004 18:11	242.1	2.0	266.2	2.6	5.4	10.8	
8/4/2004 18:12	242.1	2.0	256.9	2.6	5.6	10.8	
8/4/2004 18:13	241.0	2.2	252.1	2.6	5.9	10.7	
8/4/2004 18:14	230.5	3.0	251.2	2.3	4.9	10.5	
8/4/2004 18:15	226.1	3.1	249.1	2.3	4.9	10.5	
8/4/2004 18:16	240.0	3.0	248.6	2.0	4.9	10.6	
8/4/2004 18:17	258.9	3.0	249.4	2.0	4.9	10.5	
8/4/2004 18:18	255.5	3.0	243.0	2.3	5.5	10.4	
8/4/2004 18:19	230.6	2.2	245.9	2.4	5.9	10.5	
8/4/2004 18:20	226.4	1.8	250.9	2.4	5.8	10.6	
8/4/2004 18:21	239.7	1.8	245.9	2.4	5.8	10.6	
8/4/2004 18:22	264.3	2.2	242.6	2.4	5.9	10.5	
8/4/2004 18:23	263.3	2.2	241.6	2.4	5.8	10.5	
8/4/2004 18:24	243.2	2.1	241.3	2.5	6.0	10.5	
8/4/2004 18:25	229.4	2.1	238.6	2.5	6.0	10.6	
8/4/2004 18:26	237.0	2.1	241.8	2.5	6.0	10.7	
8/4/2004 18:27	245.9	2.1	241.5	2.5	6.0	10.7	
8/4/2004 18:28	231.3	2.2	239.5	2.5	6.0	10.7	
8/4/2004 18:29	234.0	2.1	244.1	2.5	6.0	10.0	
8/4/2004 18:30	262.7	2.1	244.0	2.5	5.5	10.7	<<End Rate Run 8
8/4/2004 18:31	252.1	2.1	233.4	2.5	5.8	10.7	<<Start Rata Run 9
8/4/2004 18:32	247.8	2.1	240.2	2.4	5.6	10.8	
8/4/2004 18:33	253.0	2.1	241.3	2.1	5.6	10.8	
8/4/2004 18:34	268.8	2.0	237.9	2.5	5.7	10.8	
8/4/2004 18:35	266.4	2.0	232.4	2.5	5.5	10.7	
8/4/2004 18:36	279.1	2.0	234.5	2.5	6.0	10.7	
8/4/2004 18:37	267.1	2.0	228.0	2.5	6.0	10.7	
8/4/2004 18:38	265.6	2.0	223.3	2.5	6.0	10.7	
8/4/2004 18:39	270.3	1.9	219.2	2.5	6.0	10.7	
8/4/2004 18:40	287.5	2.0	213.8	2.5	6.0	10.7	
8/4/2004 18:41	293.4	1.9	213.2	2.5	6.0	10.6	
8/4/2004 18:42	276.2	1.9	212.7	2.5	6.0	10.6	
8/4/2004 18:43	271.5	1.9	218.9	2.5	6.0	10.6	
8/4/2004 18:44	288.8	1.9	222.8	2.6	6.0	10.5	
8/4/2004 18:45	268.6	1.9	222.7	3.0	6.0	10.4	
8/4/2004 18:46	260.6	1.9	225.9	2.5	6.0	10.4	
8/4/2004 18:47	256.2	1.9	229.7	2.5	6.0	10.4	<<End Run 3 Compliance
8/4/2004 18:48	282.9	2.0	233.6	2.5	6.0	10.4	
8/4/2004 18:49	331.5	1.9	231.5	2.9	6.1	10.3	
8/4/2004 18:50	294.7	2.1	218.4	2.7	6.8	10.3	
8/4/2004 18:51	143.7	1.1	228.7	1.0	6.0	13.9	
8/4/2004 18:52	5.9	0.3	49.7	0.0	0.7	19.5	<<End Rate Run 9
8/4/2004 18:53	0.7	0.1	4.9	0.0	0.0	20.1	
8/4/2004 18:54	0.0	0.1	1.4	0.0	0.0	20.2	
8/4/2004 18:55	0.0	0.0	0.8	0.0	0.0	20.2	

RATA Run 7 AVERAGE

SO2	Nox	CH4	NMHC	THC
3.7	219.6	2.4	5.4	6.2

0.8

RATA Run 8 AVERAGE

SO2	Nox	CH4	NMHC	THC
2.3	250.0	2.4	5.6	6.4

0.8

RATA Run 9 AVERAGE

SO2	Nox	CH4	NMHC	THC
1.9	219.8	2.4	5.7	6.5

0.8

8/4/2004 18:56	0.0	0.0	0.3	0.0	0.0	20.2
8/4/2004 18:57	0.0	0.0	0.3	0.0	0.0	20.2
8/4/2004 18:58	0.0	0.0	0.3	0.0	0.0	20.2
8/4/2004 18:59	93.9	0.6	5.0	0.0	0.0	15.0
8/4/2004 19:00	291.6	0.7	55.4	0.0	0.8	1.9
8/4/2004 19:01	306.0	0.6	3.2	0.0	5.3	0.0
8/4/2004 19:02	306.8	0.6	0.4	0.0	5.3	0.0
8/4/2004 19:03	298.6	0.9	0.6	1.5	5.3	1.6
8/4/2004 19:04	448.6	1.0	69.6	1.3	5.3	1.1
8/4/2004 19:05	506.3	0.6	6.1	0.0	18.6	0.0
8/4/2004 19:06	505.2	0.6	1.0	0.0	22.9	0.0
8/4/2004 19:07	509.3	0.5	0.1	0.0	22.9	0.0
8/4/2004 19:08	509.0	0.5	0.0	0.0	22.9	0.0
8/4/2004 19:09	434.8	4.9	1.5	0.0	22.9	1.9
8/4/2004 19:10	80.1	91.7	157.3	0.0	16.3	1.5
8/4/2004 19:11	2.9	99.8	291.1	0.0	0.0	0.0
8/4/2004 19:12	0.3	99.8	297.8	0.0	0.0	0.0
8/4/2004 19:13	0.2	99.8	298.8	0.0	0.0	0.0
8/4/2004 19:14	0.2	99.8	299.2	0.0	0.0	0.0
8/4/2004 19:15	0.2	99.8	299.2	0.0	0.0	0.0
8/4/2004 19:16	72.8	99.5	296.6	1.4	0.0	2.7
8/4/2004 19:17	94.2	99.7	264.4	1.9	3.9	3.7
8/4/2004 19:18	3.9	99.7	457.5	0.0	1.9	0.1
8/4/2004 19:19	0.7	99.7	491.4	0.0	0.0	0.0
8/4/2004 19:20	0.2	99.8	494.8	0.0	0.0	0.0
8/4/2004 19:21	0.0	99.8	495.9	0.0	0.0	0.0
8/4/2004 19:22	0.0	99.8	496.7	0.0	0.0	0.0
8/4/2004 19:23	0.0	99.8	472.7	0.9	0.0	3.1
8/4/2004 19:24	0.0	89.3	113.6	0.2	0.0	0.2
8/4/2004 19:25	0.0	65.4	51.9	0.0	0.0	0.0
8/4/2004 19:26	0.2	56.4	49.0	0.0	0.0	0.0
8/4/2004 19:27	0.2	51.8	48.7	0.0	0.0	0.0
8/4/2004 19:28	0.2	49.6	48.7	0.0	0.0	0.0
8/4/2004 19:29	0.2	48.4	48.5	0.0	0.0	0.0
8/4/2004 19:30	0.2	35.6	45.5	0.0	0.0	4.2
8/4/2004 19:31	0.2	28.5	8.2	0.0	0.0	0.5
8/4/2004 19:32	0.0	26.2	0.7	0.0	0.0	0.0
8/4/2004 19:33	0.2	25.1	0.1	0.0	0.0	0.0
8/4/2004 19:34	0.2	24.6	0.0	0.0	0.0	0.0
8/4/2004 19:35	0.2	17.7	0.0	1.0	0.0	9.9
8/4/2004 19:36	0.2	10.2	0.1	42.1	0.8	7.7
8/4/2004 19:37	0.2	6.8	0.1	51.0	8.4	0.3
8/4/2004 19:38	0.2	5.0	0.0	51.2	8.4	0.0
8/4/2004 19:39	0.2	3.7	0.0	50.9	8.4	0.0
8/4/2004 19:40	0.2	2.9	0.0	8.4	50.9	0.3
8/4/2004 19:41	49.5	2.3	0.0	8.4	33.2	2.5
8/4/2004 19:42	90.5	2.0	0.1	32.4	0.0	0.0
8/4/2004 19:43	91.7	1.9	0.0	47.0	0.0	0.0
8/4/2004 19:44	92.0	1.7	0.1	47.0	0.0	0.0
8/4/2004 19:45	91.7	1.5	0.1	46.6	0.0	0.0
8/4/2004 19:46	91.8	1.3	0.0	46.8	0.0	0.0
8/4/2004 19:47	42.9	0.5	0.0	40.9	0.9	2.1
8/4/2004 19:48	0.3	0.1	0.0	5.9	1.1	0.1
8/4/2004 19:49	0.3	0.1	0.1	3.1	0.7	0.0
8/4/2004 19:50	0.3	0.0	0.1	14.1	0.6	0.1

<<Zero air

CO	SO2	NOx	CH4	NMHC
0.00	0.03	0.28	0.00	0.00

<< 302 CO / 6.95 Propane

	CO	Propane	
	306.4	5.3	<average

<< 499 CO/24.7 Propane

	CO	Propane	
	505.8	22.9	<average

<< 307 NOx

	NOx	
	299.2	<average

<< 508 NOx

	NOx	
	496.3	<average

<< 49.9 SO2 / 50.5 nox

SO2	NOx	
50.7	48.7	<average

<< 25.47 SO2

	SO2	
	25.7	<average

<< 49.54 CH4 / 10.29 Propane

CH4	NMHC	
51.0	8.4	<average

<< 89.9 CO / 49.1 Propane

CO	NMHC	
91.8	47.0	<average

RUN 3	ANALYZER RESPONSE TO STACK GAS ppmv	ZERO BIAS ppmv	ACTUAL CAL.GAS VALUE ppmv	ANALYZER RESPONSE TO CAL. GAS ppmv	CORRECTED STACK GAS CONC. ppmv
CO	247.3	-0.1	302.0	301.9	247.4
SO2	2.6	0.0	25.5	25.7	2.5
NOx	232.7	1.0	307.0	298.0	239.5
CH4	2.4	0.0	49.5	50.3	2.4
NMHC	5.7	0.0	6.95	5.9	6.6

CH4	THC	O2 %
0.8	7.4	11.0

RATA Run 7-9	ANALYZER RESPONSE TO STACK GAS ppmv	ZERO BIAS ppmv	ACTUAL CAL.GAS VALUE ppmv	ANALYZER RESPONSE TO CAL. GAS ppmv	CORRECTED STACK GAS CONC. ppmv
SO2	3.7	0.0	25.5	25.7	3.7
SO2	2.3	0.0	25.5	25.7	2.3
SO2	1.9	0.0	25.5	25.7	1.8

RATA Run 7-9	ANALYZER RESPONSE TO STACK GAS ppmv	ZERO BIAS ppmv	ACTUAL CAL.GAS VALUE ppmv	ANALYZER RESPONSE TO CAL. GAS ppmv	CORRECTED STACK GAS CONC. ppmv
Nox	219.6	1.0	307.0	298.0	225.9
NOx	250.0	1.0	307.0	298.0	257.4
NOx	219.6	1.0	307.0	298.0	226.1

RATA Run 7-9	ANALYZER RESPONSE TO STACK GAS ppmv	ZERO BIAS ppmv	ACTUAL CAL.GAS VALUE ppmv	ANALYZER RESPONSE TO CAL. GAS ppmv	CORRECTED STACK GAS CONC. ppmv
CH4	2.4	0.0	49.5	50.3	2.4
CH4	2.4	0.0	49.5	50.3	2.3
CH4	2.4	0.0	49.5	50.3	2.3

RATA Run 7-9	ANALYZER RESPONSE TO STACK GAS ppmv	ZERO BIAS ppmv	ACTUAL CAL.GAS VALUE ppmv	ANALYZER RESPONSE TO CAL. GAS ppmv	CORRECTED STACK GAS CONC. ppmv
NMHC	5.4	0.0	7.0	5.9	6.3
NMHC	5.6	0.0	7.0	5.9	6.6
NMHC	5.7	0.0	7.0	5.9	6.7

RINKER, MIAMI
KILN / RAWMILL / COOLER

TimeStamp	NOX	O2%			
8/5/2004 13:15	0.0	20.6			
8/5/2004 13:16	0.0	20.6			
8/5/2004 13:17	0.0	20.6			
8/5/2004 13:18	0.0	20.6			
8/5/2004 13:19	0.0	20.6	<<Zero air		
8/5/2004 13:20	0.1	20.6	NOx		O2 %
8/5/2004 13:21	0.0	20.6	0.07		20.63
8/5/2004 13:22	0.0	20.6			
8/5/2004 13:23	0.0	20.6			
8/5/2004 13:24	41.2	14.3			
8/5/2004 13:25	359.6	3.4			
8/5/2004 13:26	484.5	0.7			
8/5/2004 13:27	492.1	0.2			
8/5/2004 13:28	494.0	0.0			
8/5/2004 13:29	494.6	0.0			
8/5/2004 13:30	495.2	0.0			
8/5/2004 13:31	496.9	0.0			
8/5/2004 13:32	508.4	0.0			
8/5/2004 13:33	508.4	0.0	<< 508 NOx		
8/5/2004 13:34	508.1	0.3		NOx	
8/5/2004 13:35	377.7	1.0		508.3	<average
8/5/2004 13:36	310.2	0.1			
8/5/2004 13:37	306.6	0.0			
8/5/2004 13:38	306.6	0.0			
8/5/2004 13:39	306.6	0.0	<< 307 NOx		
8/5/2004 13:40	306.2	0.6		NOx	
8/5/2004 13:41	176.5	11.3		306.4	<average
8/5/2004 13:42	12.9	18.6			
8/5/2004 13:43	1.3	19.9			
8/5/2004 13:44	0.4	20.1			
8/5/2004 13:45	0.0	20.2			
8/5/2004 13:46	0.0	20.2	<<Zero air		
8/5/2004 13:47	0.0	20.2	NOx		O2 %
8/5/2004 13:48	16.4	19.2	0.00		20.23
8/5/2004 13:49	209.6	17.7			
8/5/2004 13:50	249.0	17.6			
8/5/2004 13:51	250.8	17.6			
8/5/2004 13:52	240.6	17.7			
8/5/2004 13:53	231.2	18.0			
8/5/2004 13:54	228.1	18.2			
8/5/2004 13:55	227.0	18.4			
8/5/2004 13:56	224.0	18.1			
8/5/2004 13:57	220.6	18.3			
8/5/2004 13:58	223.0	18.4			
8/5/2004 13:59	223.4	18.0			
8/5/2004 14:00	222.4	17.9			
8/5/2004 14:01	228.0	18.1			
8/5/2004 14:02	225.6	18.1			
8/5/2004 14:03	218.9	18.3			
8/5/2004 14:04	218.5	19.1			
8/5/2004 14:05	222.0	19.5			
8/5/2004 14:06	223.4	19.5			
8/5/2004 14:07	218.1	19.5			
8/5/2004 14:08	224.1	19.3			
8/5/2004 14:09	225.6	19.3			
8/5/2004 14:10	218.0	19.3			
8/5/2004 14:11	212.7	19.5			
8/5/2004 14:12	220.5	19.5			
8/5/2004 14:13	229.1	19.7			
8/5/2004 14:14	172.8	20.1			
8/5/2004 14:15	152.9	20.2			
8/5/2004 14:16	158.9	20.1			
8/5/2004 14:17	209.3	19.9			
8/5/2004 14:18	201.0	19.9			
8/5/2004 14:19	187.5	19.9			
8/5/2004 14:20	205.6	19.8			
8/5/2004 14:21	199.2	20.1			
8/5/2004 14:22	134.2	20.2			
8/5/2004 14:23	129.6	20.3			
8/5/2004 14:24	143.1	20.3			
8/5/2004 14:25	134.8	20.3			
8/5/2004 14:26	108.2	20.3			
8/5/2004 14:27	129.6	20.2			

8/5/2004 14:28	143.1	20.1	
8/5/2004 14:29	153.0	20.2	
8/5/2004 14:30	144.8	20.3	
8/5/2004 14:31	145.2	20.3	
8/5/2004 14:32	146.2	20.3	
8/5/2004 14:33	136.5	20.3	
8/5/2004 14:34	127.7	20.3	
8/5/2004 14:35	141.5	20.3	
8/5/2004 14:36	119.3	10.3	
8/5/2004 14:37	202.8	11.3	
8/5/2004 14:38	223.4	10.7	
8/5/2004 14:39	220.1	10.5	
8/5/2004 14:40	214.2	10.5	<<Start Rata Run 10
8/5/2004 14:41	210.2	10.4	
8/5/2004 14:42	204.6	10.4	
8/5/2004 14:43	196.4	10.4	
8/5/2004 14:44	192.4	10.3	
8/5/2004 14:45	207.8	10.4	
8/5/2004 14:46	212.4	10.4	
8/5/2004 14:47	224.8	10.4	
8/5/2004 14:48	238.0	10.4	
8/5/2004 14:49	244.0	10.4	
8/5/2004 14:50	240.2	10.4	
8/5/2004 14:51	240.4	10.5	
8/5/2004 14:52	245.4	10.5	
8/5/2004 14:53	251.6	10.5	
8/5/2004 14:54	249.8	10.5	
8/5/2004 14:55	251.8	10.6	
8/5/2004 14:56	240.0	10.6	
8/5/2004 14:57	234.2	10.5	
8/5/2004 14:58	237.7	10.5	
8/5/2004 14:59	246.9	10.5	
8/5/2004 15:00	249.1	10.6	
8/5/2004 15:01	254.4	10.6	<<End Rata Run 10
8/5/2004 15:02	259.0	10.6	<<Start Rata Run 11
8/5/2004 15:03	263.6	10.6	
8/5/2004 15:04	260.7	10.7	
8/5/2004 15:05	257.8	10.6	
8/5/2004 15:06	261.4	10.6	
8/5/2004 15:07	261.1	10.7	
8/5/2004 15:08	262.3	10.7	
8/5/2004 15:09	273.5	10.7	
8/5/2004 15:10	267.6	10.7	
8/5/2004 15:11	270.0	10.7	
8/5/2004 15:12	263.6	10.8	
8/5/2004 15:13	262.6	10.8	
8/5/2004 15:14	266.2	10.7	
8/5/2004 15:15	262.9	10.7	
8/5/2004 15:16	263.6	10.7	
8/5/2004 15:17	265.0	10.8	
8/5/2004 15:18	264.3	10.8	
8/5/2004 15:19	260.3	10.8	
8/5/2004 15:20	260.4	10.9	
8/5/2004 15:21	264.4	10.9	
8/5/2004 15:22	266.9	10.8	
8/5/2004 15:23	262.2	10.8	<<End Rata Run 11
8/5/2004 15:24	262.1	10.9	<<Start Rata Run 12
8/5/2004 15:25	269.9	10.9	
8/5/2004 15:26	276.1	10.8	
8/5/2004 15:27	270.7	10.9	
8/5/2004 15:28	271.8	10.9	
8/5/2004 15:29	287.0	10.9	
8/5/2004 15:30	278.9	11.0	
8/5/2004 15:31	268.7	11.0	
8/5/2004 15:32	276.7	11.0	
8/5/2004 15:33	280.7	10.9	
8/5/2004 15:34	285.0	10.9	
8/5/2004 15:35	273.6	10.9	
8/5/2004 15:36	271.2	10.8	
8/5/2004 15:37	273.6	10.9	
8/5/2004 15:38	272.4	10.9	
8/5/2004 15:39	271.1	11.0	
8/5/2004 15:40	271.7	11.1	
8/5/2004 15:41	271.5	11.2	
8/5/2004 15:42	266.4	11.1	
8/5/2004 15:43	272.5	11.0	
8/5/2004 15:44	275.1	10.0	<<End Rata Run 12
8/5/2004 15:45	271.8	11.1	

8/5/2004 15:46	270.4	11.6
8/5/2004 15:47	261.8	11.2
8/5/2004 15:48	266.0	11.4
8/5/2004 15:49	272.9	11.6
8/5/2004 15:50	273.6	11.6
8/5/2004 15:51	265.4	11.1
8/5/2004 15:52	266.7	11.2
8/5/2004 15:53	263.8	14.1
8/5/2004 15:54	64.4	19.2
8/5/2004 15:55	3.1	20.0
8/5/2004 15:56	1.0	20.1
8/5/2004 15:57	0.3	20.1
8/5/2004 15:58	0.1	20.1
8/5/2004 15:59	0.1	20.2
8/5/2004 16:00	0.0	20.2
8/5/2004 16:01	0.0	20.2
8/5/2004 16:02	0.0	20.2
8/5/2004 16:03	0.0	19.4
8/5/2004 16:04	84.7	6.1
8/5/2004 16:05	293.8	0.6
8/5/2004 16:06	303.2	0.0
8/5/2004 16:07	303.9	0.0
8/5/2004 16:08	304.5	0.0
8/5/2004 16:09	304.9	0.0
8/5/2004 16:10	305.1	0.0
8/5/2004 16:11	305.2	0.0
8/5/2004 16:12	306.2	0.1
8/5/2004 16:13	432.6	0.0
8/5/2004 16:14	504.8	0.0
8/5/2004 16:15	506.7	0.0
8/5/2004 16:16	506.1	0.5
8/5/2004 16:17	413.0	8.0

<<Zero air		
N0x		O2 %
0.00		20.17

<< 307 N0x		
	N0x	
	305.1	<average

<< 508 N0x		
	N0x	
	506.4	<average

RATA Run 10-12	ANALYZER RESPONSE TO STACK GAS ppmv	ZERO BIAS ppmv	ACTUAL CAL.GAS VALUE ppmv	ANALYZER RESPONSE TO CAL. GAS ppmv	CORRECTED STACK GAS CONC. ppmv
Nox	231.2	0.0	308.0	305.7	232.9
N0x	263.6	0.0	307.0	305.7	264.7
N0x	273.7	0.0	308.0	305.7	275.7

Flow Rate

Koogler & Associates
Reference Data Summary

Sample Date	Test	Run No.	RATA Run No.	Test Time	Flow (dscfm)	Moisture (%)	Flow (scfm)
08/04/04	PM Mill UP	1	1	1210-1245/1427-1500	262915	11.9	298428
08/04/04	PM Mill UP	2	2	1615-1722	255618	12.6	292469
08/04/04	PM Mill UP	3	3	1723-1730/1750-1858	222270	13.9	258153
08/05/04	PM Mill Down	1	4	0814-0920	195528	10.1	217495
08/05/04	PM Mill Down	2	5	9:55-1059	193468	10.0	214964
08/05/04	PM Mill Down	3	6	1440-1530/1607-1635	198739	10.2	221313
08/06/04	Acid Mist	1	7	1023-1130	218354	15.2	257493
08/06/04	Acid Mist	2	8	1205-1311	228686	16.0	272245
08/06/04	Acid Mist	3	9	1346-1454	215801	15.6	255688

Field Data Sheets

NO_x, SO_2, and NMHC

Riker, Miami
8/4/04

1 - CO
2 - SO_2
3 - ~~Br~~ NO
4 - NO_x
5 - Methane
6 - NMHC(prop)
8 - O_2

Annual Compliance / Temp. Permit Compliance

Range
CO - (0-650)
NO_x - (0-550)
SO_2 - (0-100)
VOC NMHC (0-75)
CH (0-50)

0850 Start Calibrations / Leak Check
1013 > Program Data Logger
1029 Zero Air on
1034 Low NO_x (300 ppm) on
1041 307 NO_x = 295, 0351 ppm
1043 508 (499 SO_2) NO_x on
1048 508 NO_x = 491 ppm
1053 302 (low) CO / 6.95 prop on
1057 499 CO / 24.7 prop on
1104 499 CO = 511 ppm / 24.7 prop = 22 ppm
1107 25.47 (low) SO_2 on
1113 25.47 SO_2 = 24.91 ppm
1114 49.9 SO_2 / 50.5 NO_x on
1119 49.9 SO_2 = 51.79 ppm
1122 10.29 (low) prop / 49.54 CH_4 on
1128 10.29 prop = 8.36 ppm / 49.54 CH_4 = 49.42 ppm
1132 49.1 prop / 89.9 CO on
1138 49.1 prop = 46.5 ppm 89.9 CO = 87.13 ppm
1140 > Test Gas for Tom Stokes
1200 > on stack
1210 > Start R1 RATA/COMP
1243 > Raw mill went Down
1402 > 49.1 prop / 89.9 CO on
1410 508 NO_x on
1415 NO_x = 492

.913 = 508 N
.755 = 499 C
.494 = 49.9 SO_2
.64 = 48.8 NMH
.988 = 50.48 CH_4

* CO Dogger = 308 Inst = 301
# 1059 - Removed cylinder / gas dropped off

Richter Miami 8/4/04 184

1416 25.47 SO_2 on

1423 25.47 SO_2 = 25.7 ppm

1425 ON Stack

1430 Restart Run 1

1520 > End Run 1 & Run 3 Rata

1521 > Zero Air on

1528 > 302 CO / 6.95 prop on

1552 302 CO = 304.46 ppm 6.95 prop = 5.34 ppm

1554 307 NO_x ~~307~~ on

1559 307 NO_x = 296.98 ppm

1600 25.47 SO_2 on

1607 25.47 SO_2 = ~~25~~ 25.65 ppm

1610 ON-Stack

1615 Start Run 2 / Run 4 Rata

1718 > Zero Air on

1724 > 302 CO / 6.95 prop on

1727 > 302 CO = 305.4 ppm ~~6.95 prop~~

1730 > 6.95 prop = 5.31 ppm

1732 > 307 NO_x on

1735 > 307 NO_x = 298 ppm

1738 > 25.47 SO_2 on

1743 > 25.47 SO_2 = 28 ppm Cal gases ff

1745 > ON Stack

1747 > Start R3 / Run 6 Rata

1850 > End R3 / RR9

1850 > Ø air ON

CO_2 % = 10%

R2 CO_2 % = 13.2 %

* 55C Time/Data
10:32 = 18:06
10-3-15 = 8-4-04

19:36 ≤ 16:10

Rinker, Miami 8/4/04

1859 302 CO / 6.85 prop ON

1901 302 CO = 300 ppm 6.85 prop = 6.58 ppm (O_2 = 14%

1903 499 CO / 24.7 prop ON O_2 = 12%

1906 499 CO = 496 ppm 24.7 prop = 23.7 ppm

1909 307 NO_x / 305 SO_2 ON

1914 307 NO_x = 299 ppm

1917 508 NO_x / 499 SO_2 ON

1920 508 NO_x = 495 ppm

1922 49.9 SO_2 / 50.5 NO_x ON

1926 49.9 SO_2 = 53.9 ppm 50.5 NO_x = 48.4

1929 25.47 SO_2 ON

1932 25.47 SO_2 = 26.7

1935 49.54 CH_4 / 10.29 prop. ON

1937 49.54 CH_4 = 51.1 10.29 prop = 8.4

1941 89.9 CO / 49.1 prop ON

1943 89.9 CO = 91 ppm 49.1 prop = 47 ppm

Rinker Materials, Miami

Annual Compliance / RATA 8/5/04 Clouties

NOx span 0-550 ppm
Gases 508 span Gas
307 mid Gas

13:20 Prep NOx Test CEM
13:25 NOx 508 ON
13:30 Set Span NOx 507/Log = 508
1353 NOx 307 ON
1339 Ø air ON
1346 Cal gases off / probe in stack
1440 Start Rata Run 10 (NO_x)
1550 End Run 12 Rata (NO_x)
1552 Ø air ON
1603 308 NO_x ON

16:16 Cal gases off

Opacity

Plant: RINKER - MIAMI		Location: Miami FL	
K&A Testing Party: NEIL A. LOFGREN		Analyzer manufacturer: ~~SICK Maihak~~, Inc. UNITED SCIENCES	
Plant Testing Party: TOM STOKES		Model/Serial No. ~~OMB-IT~~ 500C/0797 1657	
Date: 9/16/04		Source Location	Main Stack
Monitor Pathlenghth, L1	11'-3.5"	Instrument Span D1, (0 - ??)	0 — 100 %
Emission Outlet Pathlength, L2	11'-3.5"		
Monitoring System Output Pathlength Corrected? (yes/no)		OPLR=L2/(2xL1)	OPLR

Calibrated Neutral Density Filter Values

Actual Optical Density (From Filter) (0 - X%)	Actual			Path Adjusted (PA) Optical Density Parallel		w/OPLR
Low Range (D1= 40%=11%) (D1=50to100=20%)	9.7	%	Low	=(1-(1-Actual %)^2)		=(1-(1-Parallel)$^{(OPLR)}$)
Mid Range (D1=40%=20%)(D1=50to60=37%) (D1=70to80=50%)(D1=80to100=60%)	24.2	%	Med	=(1-(1-Actual %)^2)		=(1-(1-Parallel)$^{(OPLR)}$)
High Range (D1=40%=37%)(D1=50to60%=50%) (D1=70%=60%)(D1=80=75%)(D1=90%=80%) (D1=100%=87.5%)	63.5	%	High	=(1-(1-Actual %)^2)		=(1-(1-Parallel)$^{(OPLR)}$)

Field Filter Audit Data

Run Number	Instrument Reading	Calculated w/OPLR Density %	Percent Difference (Reading-actual)x100	Percent Difference Max 3.0% ((Reading-PA)/PA)x100
1-low	9.9			
2-med	24.8			
3-high	65.9			
4-low	9.9			
5-med	24.8			
6-high	65.9			
7-low	9.9			
8-med	24.6			
9-high	65.9			
10low	9.9			
11-med	24.6			
12-high	65.9			
13-low	10.0			
14-med	24.8			
15-high	65.5			

Response Time Test

95 % value high Range filter	=High range x.95	
5% of value Low Range Filter	=Low range x.5	

High In Time to Upscale		Low Out Time to Downscale	
20	Sec.	12	Sec.
21	Sec.	12	Sec.
18	Sec.	13	Sec.
18	Sec.	15	Sec.
18	Sec.	12	Sec.
Arithmetic Mean High			Arithmetic Mean Low

6 Minute Average Test (Drop Each filter for 13 Minutes)

	Low Filter	Mid Filter	High Filter
Start Time	14:15	14:29	14:45
End Time	14:28	14:44	15:00

Plant Continuous Monitor Data

ENVIRONMENTAL SERVICES

NO_x, SO_2 and NMHC

Rinker Materials, Miami, Florida
Annual Compliance Tests
CEMS RATA , Plant Process data

REPORT DATE :**8/4/2004**

TIME hh:mm	SO2 RAW (PPM)	NOx RAW (PPM)	METH HC RAW (PPM)	N-METH RAW (PPM)	
12:10	0.00	252.3	2.7	5.7	
12:11	0.00	249.6	2.9	5.9	
12:12	0.00	255.1	2.9	5.8	
12:13	0.00	248.7	2.8	5.7	
12:14	0.00	251.8	2.8	5.8	
12:15	0.00	245.9	2.8	5.7	
12:16	0.00	256.8	2.8	5.7	
12:17	0.00	239.7	2.6	5.2	
12:18	0.00	245.4	2.8	5.7	
12:19	0.00	247.4	2.9	5.6	
12:20	0.00	256.4	2.8	5.5	
12:21	0.00	251.9	2.6	5.4	
12:22	0.00	247.0	2.8	5.8	
12:23	0.00	245.3	2.8	5.7	
12:24	0.00	260.7	2.8	5.6	
12:25	0.00	251.1	2.7	5.6	
12:26	0.00	243.7	2.7	6.0	
12:27	0.00	235.2	2.8	6.1	
12:28	0.00	242.3	2.8	6.0	
12:29	0.00	241.4	2.9	6.0	
12:30	0.00	238.6	2.9	5.8	
12:31	0.00	238.1	2.8	5.9	<End RATA Run 1
12:32	0.00	246.2	2.9	5.9	
12:33	0.00	249.2	2.8	6.0	
12:34	0.00	246.7	2.8	6.0	
12:35	0.00	236.4	2.9	6.1	
12:36	0.00	248.5	3.0	6.0	
12:37	0.00	245.8	2.8	5.8	
12:38	0.00	232.4	2.9	5.9	
12:39	0.00	244.1	2.9	5.9	
12:40	0.00	251.0	2.9	5.9	
14:25	1.70	212.5	3.0	6.4	
14:26	1.70	233.8	3.0	6.3	
14:27	1.70	237.2	3.0	6.2	
14:28	1.70	248.3	2.9	6.1	
14:29	1.70	232.8	3.0	6.1	
14:30	1.70	242.8	2.9	6.3	<Start RATA Run 2
14:31	1.60	242.4	2.9	6.4	
14:32	1.70	237.5	2.9	6.5	

RATA Run 1 AVERAGE

SO2	Nox	CH4	NMHC
0.00	247.5	2.8	5.7

14:33	1.70	238.4	2.7	6.1
14:34	1.80	238.5	2.8	6.6
14:35	1.60	248.1	2.9	6.3
14:36	1.70	247.2	2.9	6.2
14:37	1.70	253.2	2.9	6.1
14:38	1.70	238.7	2.9	6.1
14:39	1.70	233.8	2.9	6.3
14:40	1.70	229.2	2.9	6.2
14:41	1.70	236.2	2.9	6.3
14:42	1.70	236.9	2.9	6.1
14:43	1.80	236.9	2.8	6.0
14:44	1.70	213.4	2.9	6.1
14:45	1.80	219.5	3.1	6.4
14:46	1.70	220.2	3.0	5.9
14:47	1.70	224.3	3.0	5.9
14:48	1.70	226.2	2.9	5.9
14:49	1.70	221.8	3.0	5.9
14:50	1.70	218.4	2.8	6.5
14:51	1.70	229.2	3.0	6.2
14:52	1.80	224.4	3.0	5.8
14:53	1.70	218.4	2.9	5.9
14:54	7.30	214.5	0.3	5.8
14:55	8.40	228.9	0.3	5.9
14:56	7.10	210.9	0.3	5.7
14:57	6.90	236.4	0.3	5.6
14:58	7.00	234.1	0.3	5.9
14:59	7.20	212.9	0.3	5.7
15:00	7.00	206.8	0.3	5.7
15:01	6.90	222.7	0.3	5.7
15:02	7.00	221.2	0.3	5.6
15:03	6.90	218.0	0.4	5.3
15:04	7.60	228.0	0.3	5.8
15:05	8.10	216.4	0.3	5.5
15:06	8.10	228.3	0.3	5.5
15:07	7.60	220.5	0.3	5.4
15:08	7.40	230.2	0.3	5.4
15:09	7.20	235.4	0.3	5.5
15:10	7.20	227.8	0.3	5.5
15:11	7.20	212.8	0.3	5.5
15:12	7.40	200.6	0.3	5.8
15:13	7.20	208.2	0.3	5.5
15:14	7.20	200.0	0.3	5.6
15:15	6.90	205.3	0.3	5.8
15:16	6.90	199.3	0.3	6.0
15:17	6.80	201.1	0.3	5.8
15:18	6.80	214.1	0.3	6.0
15:19	6.60	214.4	0.3	5.8
15:20	6.40	207.5	0.3	5.6
15:21	2.10	212.1	2.6	5.4
15:22	1.80	206.0	2.6	5.5
15:23	1.60	206.8	2.6	5.4
15:24	1.70	205.7	2.8	5.6

<End RATA Run 2
<Start RATA Run 3

RATA Run 2 AVERAGE

SO2	Nox	CH4	NMHC
1.71	232.5	2.9	6.2

<End RATA Run 3

RATA Run 3 AVERAGE

SO2	Nox	CH4	NMHC
7.07	219.7	0.4	5.6

15:25	1.70	204.3	2.8	5.7	
15:26	1.60	203.9	2.9	5.8	
15:27	1.60	213.1	2.9	5.8	
15:28	1.60	220.1	3.0	5.7	
15:29	1.60	210.4	3.1	5.7	
15:30	1.60	213.7	2.6	5.6	
15:31	1.70	220.9	3.0	5.7	
15:32	1.60	213.8	3.0	5.7	
15:33	1.60	223.4	3.0	5.6	
15:34	1.60	225.9	3.0	5.6	
15:35	1.70	228.1	3.0	5.6	
15:36	1.60	230.0	3.0	5.7	
15:37	1.70	233.8	2.8	5.4	
15:38	1.60	237.1	2.8	5.4	
15:39	1.60	227.2	2.9	5.4	
15:40	1.70	226.1	2.7	5.5	
15:41	1.70	218.1	3.0	5.8	
15:42	1.60	211.1	3.1	5.8	
15:43	1.50	214.0	3.0	5.5	
15:44	1.60	213.6	2.9	5.5	
15:45	1.50	213.8	2.9	5.4	
15:46	1.60	212.4	2.8	5.5	
15:47	1.50	208.4	2.8	5.6	
15:48	1.60	203.4	3.0	5.8	
15:49	1.60	206.6	3.1	5.6	
15:50	1.50	211.0	2.9	5.5	
15:51	1.60	213.2	2.9	5.6	
15:52	1.50	210.9	3.0	5.6	
15:53	1.60	213.4	3.0	5.4	
15:54	1.50	209.9	2.9	5.5	
15:55	1.60	212.7	2.8	5.4	
15:56	1.70	69.0	2.9	5.8	
15:57	1.60	69.1	2.9	5.3	
15:58	1.60	69.0	2.8	5.6	
15:59	1.60	216.8	2.9	5.6	
16:00	1.30	213.0	3.0	5.6	
16:01	1.70	221.3	2.9	5.4	
16:02	1.60	219.4	2.9	5.6	
16:03	1.60	225.7	2.9	5.5	
16:04	1.50	223.3	2.8	5.5	
16:05	1.60	225.2	2.9	5.6	
16:06	1.60	225.4	2.8	5.5	
16:07	1.60	228.4	2.8	5.3	
16:08	1.60	232.8	2.8	5.4	
16:09	1.50	228.1	2.5	5.2	
16:10	75.90	229.8	2.3	6.3	
16:11	76.00	548.4	2.9	5.9	
16:12	76.00	548.7	2.8	6.1	
16:13	169.90	548.6	2.6	6.0	
16:14	28.80	216.2	2.4	5.8	
16:15	15.60	208.6	2.4	5.8	<Start RATA Run 4
16:16	11.50	198.2	2.5	5.8	

16:17	9.30	190.7	2.6	5.9
16:18	8.50	190.7	2.7	6.3
16:19	7.10	191.3	2.8	5.8
16:20	6.20	195.6	2.8	5.8
16:21	5.60	191.9	2.8	5.7
16:22	5.10	194.5	2.8	5.8
16:23	4.80	194.4	2.9	5.9
16:24	4.40	194.6	2.9	5.8
16:25	4.00	193.1	3.0	5.8
16:26	3.80	191.0	3.0	5.8
16:27	3.60	193.6	3.0	5.9
16:28	3.40	196.3	3.0	5.9
16:29	3.30	195.5	3.0	5.8
16:30	3.20	192.3	3.0	5.9
16:31	3.10	188.6	3.1	6.0
16:32	3.00	190.1	2.9	6.1
16:33	2.90	190.1	3.1	6.3
16:34	2.80	197.2	3.2	6.1
16:35	2.70	191.0	3.1	6.1
16:36	2.70	184.8	3.1	6.1
16:37	2.60	186.2	3.0	5.9
16:38	2.50	183.1	3.1	6.0
16:39	0.20	181.3	3.1	6.2
16:40	0.00	178.4	3.1	6.4
16:41	0.00	185.2	3.1	6.1
16:42	0.00	194.8	3.0	6.2
16:43	0.00	191.4	3.2	6.3
16:44	0.00	187.5	3.2	6.5
16:45	0.00	193.7	3.2	6.3
16:46	0.00	199.3	3.0	6.2
16:47	0.00	196.1	3.1	6.3
16:48	0.00	195.1	3.1	6.3
16:49	0.00	197.0	3.1	6.3
16:50	0.00	193.3	3.2	6.5
16:51	0.00	194.8	3.2	6.6
16:52	0.00	188.3	3.2	6.3
16:53	0.00	189.1	3.2	6.4
16:54	0.00	192.7	3.2	6.3
16:55	0.00	197.4	3.1	6.2
16:56	0.00	194.3	3.2	6.3
16:57	0.00	199.3	3.1	6.3
16:58	0.00	197.2	3.0	6.2
16:59	0.00	196.7	3.0	6.2
17:00	0.00	198.6	3.1	6.2
17:01	0.00	201.5	3.1	6.2
17:02	0.00	201.8	3.1	6.2
17:03	0.00	207.2	3.0	6.2
17:04	0.00	201.5	3.1	6.2
17:05	0.00	205.2	3.1	6.1
17:06	0.00	206.6	3.0	6.1
17:07	0.00	206.9	3.1	6.2
17:08	0.00	199.2	3.1	6.3

<End RATA Run 4
<Start RATA Run 5

RATA Run 4 AVERAGE

SO2	Nox	CH4	NMHC
5.30	193.4	2.9	5.9

<End RATA Run 5
<Start RATA Run 6

RATA Run 5 AVERAGE

SO2	Nox	CH4	NMHC
0.24	191.6	3.1	6.3

17:09	0.00	197.6	3.2	6.0
17:10	0.00	202.2	3.0	5.9
17:11	0.00	199.5	3.1	6.0
17:12	0.00	194.3	3.1	5.9
17:13				
17:14				
17:15				
17:16				
17:17				
17:18				
17:19				

<End RATA Run 6

RATA Run 6 AVERAGE

SO2	Nox	CH4	NMHC
0.00	201.34	3.08	6.12

Rinker Materials, Miami, Florida
Annual Compliance Tests
CEMS RATA , Plant Process data

REPORT DATE :**8/4/2004**

TIME hh:mm	SO2 RAW (PPM)	NOx RAW (PPM)	METH HC RAW (PPM)	N-METH RAW (PPM)	
17:45	0.00	201.9	2.9	6.2	
17:46	0.00	204.6	2.9	6.0	
17:47	0.00	201.7	2.9	6.0	<<Start RATA Run 7
17:48	0.00	204.4	3.0	6.3	
17:49	0.00	206.1	3.0	6.1	
17:50	0.00	209.0	2.9	6.1	
17:51	0.00	227.3	3.0	6.2	
17:52	0.00	253.1	3.0	6.7	
17:53	0.00	255.7	3.0	6.9	
17:54	0.00	266.3	3.0	7.0	
17:55	0.00	277.7	3.0	6.9	
17:56	0.00	281.3	2.9	6.9	
17:57	0.00	280.6	2.9	6.7	
17:58	0.00	287.4	2.9	6.8	
17:59	0.00	293.5	2.8	6.5	
18:00	0.00	297.3	2.8	6.5	
18:01	0.00	303.5	2.7	6.5	
18:02	0.00	306.7	2.8	6.4	
18:03	0.00	310.4	2.2	5.6	
18:04	0.00	312.2	2.8	6.3	
18:05	0.00	312.1	2.8	6.4	
18:06	0.00	311.1	2.7	6.5	
18:07	0.00	300.5	2.7	6.7	
18:08	0.00	303.2	2.7	6.8	<<End RATA Run 7
18:09	0.00	290.7	2.3	7.9	<<Start RATA Run 8
18:10	0.00	289.2	2.6	7.3	
18:11	0.00	289.4	2.6	7.9	
18:12	0.00	286.3	2.7	7.2	
18:13	0.00	287.7	2.7	7.0	
18:14	0.00	287.2	2.7	7.0	
18:15	0.00	280.8	2.6	7.9	
18:16	0.00	282.2	2.7	7.7	
18:17	0.00	284.5	2.7	7.9	
18:18	0.00	279.4	2.7	7.9	
18:19	0.00	281.1	2.8	7.2	
18:20	0.00	279.9	2.9	7.3	
18:21	0.00	278.6	2.9	7.2	
18:22	0.00	274.7	3.0	7.2	
18:23	0.00	278.6	2.9	7.0	

RATA Run 7 AVERAGE

SO2	Nox	CH4	NMHC
0.00	272.8	2.8	6.5

18:24	0.00	277.7	2.7	7.7
18:25	0.00	276.0	2.9	7.6
18:26	0.00	281.7	2.8	7.4
18:27	0.00	279.5	2.7	8.3
18:28	0.00	268.6	2.9	7.1
18:29	0.00	279.5	3.0	7.0
18:30	0.00	276.6	2.8	6.9
18:31	0.00	274.7	2.8	6.9
18:32	0.00	269.2	2.8	7.2
18:33	0.00	271.8	2.7	8.2
18:34	0.00	264.8	2.9	7.0
18:35	0.00	260.1	2.9	7.0
18:36	0.00	255.5	2.8	7.5
18:37	0.00	251.1	2.9	7.6
18:38	0.00	252.9	3.0	7.7
18:39	0.00	251.0	3.1	7.3
18:40	0.00	258.0	2.9	7.3
18:41	0.00	261.3	2.9	8.1
18:42	0.00	261.3	3.0	7.7
18:43	0.00	263.4	3.1	7.4
18:44	0.00	267.0	3.0	7.5
18:45	0.00	270.8	2.9	7.8
18:46	0.00	268.7	2.8	7.7
18:47	0.00	258.0	2.9	7.8
18:48	0.00	272.8	3.1	7.8
18:49	0.00	270.0	2.9	7.8
18:50	0.00	258.1	2.8	7.9
18:51	0.00	261.3	3.0	7.5
18:52	0.00	272.7	2.9	7.5
18:53	0.00	267.1	2.9	7.3
18:54	0.00	274.1	2.6	7.0
18:55	0.00	270.0	2.8	7.5
18:56	0.00	272.4	2.9	7.4
18:57	0.00	273.4	2.9	7.2
18:58	0.00	261.6	2.6	6.5
18:59	0.00	270.1	2.9	7.2

<<End RATA Run 8

<<Start RATA Run 9

RATA Run 8 AVERAGE

SO2	Nox	CH4	NMHC
0.00	281.4	2.8	7.4

<<End RATA Run 9

RATA Run 9 AVERAGE

SO2	Nox	CH4	NMHC
0.00	263.4	2.9	7.6

ONE MINUTE REPORT

COMPANY NAME :	Rinker Materials Corporation
COMPANY LOCATION :	1200 NW 137th Ave. Miami,FL 33182
SOURCE :	KILN
CEMS ID NO :	1234
DATE CREATED :	08-05-2004 @ 16:49
TIME PERIOD :	START:07:00 END:16:45
REPORT DATE :	8/5/2004

TIME hh:mm	INVALI QTY	NOx RAW (PPM)	
14:40	0	235.4	Start RATA Run 10
14:41	0	234.7	
14:42	0	250.5	
14:43	0	252.1	
14:44	0	266.2	
14:45	0	276.5	
14:46	0	281.3	
14:47	0	274.7	
14:48	0	279.1	
14:49	0	281.4	
14:50	0	290.3	
14:51	0	287.5	
14:52	0	285.2	
14:53	0	271.5	
14:54	0	272.0	
14:55	0	278.2	
14:56	0	285.0	
14:57	0	286.2	
14:58	0	292.7	
14:59	0	294.9	
15:00	0	300.1	
15:01	0	296.3	<<End RATA Run 10 Average
15:02	0	293.0	<<Start RATA Run 11
15:03	0	298.8	
15:04	0	295.5	
15:05	0	299.0	
15:06	0	312.1	
15:07	0	302.8	
15:08	0	305.5	
15:09	0	297.9	
15:10	0	298.2	
15:11	0	304.3	
15:12	0	298.3	
15:13	0	303.1	
15:14	0	301.0	
15:15	0	298.0	
15:16	0	297.3	
15:17	0	294.7	
15:18	0	301.8	

NOx Average	
276.0	

15:19	0	303.2	
15:20	0	296.1	
15:21	0	299.4	
15:22	0	307.5	
15:23	0	310.8	<<End RATA Run 11
15:24	0	302.5	<<Start RATA Run 12
15:25	0	310.0	
15:26	0	326.0	
15:27	0	308.7	
15:28	0	304.9	
15:29	0	314.4	
15:30	0	317.7	
15:31	0	319.3	
15:32	0	304.9	
15:33	0	306.2	
15:34	0	309.7	
15:35	0	304.4	
15:36	0	303.4	
15:37	0	303.8	
15:38	0	301.1	
15:39	0	299.6	
15:40	0	307.3	
15:41	0	304.7	
15:42	0	304.9	
15:43	0	302.1	
15:44	0	294.5	
15:45	0	303.1	<<End RATA Run 12
15:46	0	309.6	
15:47	0	305.4	
15:48	0	299.3	
15:49	0	300.3	
15:50	0	302.7	

NOx Average	
300.8	

NOx Average	
307.0	

Flow Rate

ONE MINUTE REPORT
COMPANY NAME :Rinker Materials Corporation
COMPANY LOCATION : 1200 NW 137th Ave. Miami, FL 33182
SOURCE : KILN
CEMS ID NO :1234
DATE CREATED :09-20-2004 @ 13:16
TIME PERIOD :START:12:00 END:19:00
REPORT DATE :8/4/2004

RATA Run	SCFM
1	305006
2	284225
3	245928

TIME hh:mm	WET FLOW RAW KSCFM	
12:10	288.7	Start Rata Run1
12:11	289.2	
12:12	289.9	
12:13	290.1	
12:14	291.3	
12:15	291.5	
12:16	291.6	
12:17	291.5	
12:18	290.8	
12:19	290.1	
12:20	288.8	
12:21	288.5	
12:22	288.3	
12:23	289.2	
12:24	289.7	
12:25	289.5	
12:26	290.6	
12:27	291.0	
12:28	290.2	
12:29	291.3	
12:30	292.2	
12:31	291.8	
12:32	291.0	
12:33	290.3	
12:34	289.0	
12:35	289.1	
12:36	289.2	
12:37	288.1	
12:38	290.1	
12:39	290.2	
12:40	290.2	
12:41	293.5	
12:42	291.5	
12:43	276.6	
12:44	272.6	
12:45	264.9	

Run stopped/Resume		
14:27	284.5	
14:28	283.8	
14:29	281.5	
14:30	281.9	
14:31	282.2	
14:32	283.7	
14:33	284.8	
14:34	285.1	
14:35	285.0	
14:36	285.1	
14:37	283.9	
14:38	280.7	
14:39	281.3	
14:40	281.7	
14:41	283.6	
14:42	284.3	
14:43	287.5	
14:44	287.2	
14:45	287.4	
14:46	287.6	
14:47	288.1	
14:48	288.5	
14:49	289.7	
14:50	289.9	
14:51	290.0	
14:52	289.7	
14:53	339.3	
14:54	458.5	
14:55	457.0	
14:56	457.7	
14:57	458.3	
14:58	456.8	
14:59	456.4	
15:00	455.6	End RATA Run 1

16:15	286.1 Start RATA Run 2	17:03	282.2
16:16	285.4	17:04	282.7
16:17	285.1	17:05	282.2
16:18	286.0	17:06	281.8
16:19	286.3	17:07	281.8
16:20	287.0	17:08	282.4
16:21	287.3	17:09	282.6
16:22	287.3	17:10	283.1
16:23	287.5	17:11	283.3
16:24	286.3	17:12	284.9
16:25	286.2	17:13	284.8
16:26	287.2	17:14	284.9
16:27	288.0	17:15	284.3
16:28	288.6	17:16	284.0
16:29	290.5	17:17	281.5
16:30	290.6	17:18	281.5
16:31	289.9	17:19	280.8
16:32	288.4	17:20	278.5
16:33	287.9	17:21	278.3
16:34	285.1	17:22	278.8 <<End RATA Run 2
16:35	284.8		
16:36	284.8		
16:37	286.3		
16:38	286.5		
16:39	287.5		
16:40	286.6		
16:41	286.1		
16:42	285.3		
16:43	285.0		
16:44	283.4		
16:45	283.6		
16:46	283.7		
16:47	283.6		
16:48	283.6		
16:49	283.4		
16:50	281.7		
16:51	281.1		
16:52	280.0		
16:53	280.8		
16:54	280.5		
16:55	279.6		
16:56	279.9		
16:57	279.9		
16:58	279.3		
16:59	281.2		
17:00	281.6		
17:01	281.2		
17:02	280.9		

17:23	279.9	<<Start RATA Run 3	18:30	243.3
17:24	280.5		18:31	243.7
17:25	281.5		18:32	243.2
17:26	281.8		18:33	242.9
17:27	281.9		18:34	242.3
17:28	281.1		18:35	242.5
17:29	280.9		18:36	241.9
17:30	280.4		18:37	240.0
Run stopped/Resume			18:38	238.9
17:50	288.0		18:39	238.9
17:51	286.1		18:40	239.1
17:52	279.4		18:41	239.2
17:53	268.5		18:42	238.7
17:54	261.7		18:43	238.1
17:55	249.1		18:44	237.7
17:56	244.8		18:45	234.3
17:57	242.7		18:46	233.9
17:58	244.1		18:47	233.5
17:59	244.1		18:48	232.5
18:00	244.0		18:49	232.6
18:01	244.1		18:50	232.8
18:02	244.8		18:51	233.4
18:03	245.4		18:52	234.6
18:04	246.1		18:53	235.1
18:05	246.3		18:54	238.4
18:06	244.5		18:55	241.0
18:07	242.9		18:56	243.5
18:08	242.9		18:57	245.6
18:09	242.0		18:58	245.9 End RATA Run 3
18:10	242.2			
18:11	241.4			
18:12	239.6			
18:13	238.8			
18:14	237.3			
18:15	237.4			
18:16	237.5			
18:17	238.0			
18:18	239.0			
18:19	239.6			
18:20	239.3			
18:21	239.4			
18:22	239.3			
18:23	236.8			
18:24	237.4			
18:25	238.0			
18:26	239.5			
18:27	240.2			
18:28	242.0			
18:29	242.9			

ONE MINUTE REPORT
COMPANY NAME Rinker Materials Corporation
COMPANY LOCATION : 1200 NW 137th Ave. Miami, FL 33182
SOURCE : KILN
CEMS ID NO :1234
DATE CREATED: 09-20-2004 @ 13:18
TIME PERIOD: START:08:00 END:17:00
REPORT DATE:: 08-05-2004

RATA Run	SCFM
4	211550
5	207874
6	220368

TIME hh:mm	WET FLOW RAW KSCFM		TIME hh:mm	WET FLOW RAW KSCFM	
8:14	212.1	<<Start RATA Run 4	8:48	210.7	
8:15	211.3		8:49	210.1	
8:16	213.1		8:50	210.1	
8:17	214.1		8:51	210.8	
8:18	210.6		8:52	210.5	
8:19	211.1		8:53	210.3	
8:20	213.3		8:54	211.4	
8:21	211.5		8:55	211.2	
8:22	212.0		8:56	211.0	
8:23	214.2		8:57	212.8	
8:24	213.1		8:58	212.8	
8:25	212.8		8:59	212.6	
8:26	213.3		9:00	212.6	
8:27	212.9		9:01	212.4	
8:28	212.4		9:02	210.6	
8:29	211.0		9:03	210.3	
8:30	211.3		9:04	209.6	
8:31	212.2		9:05	207.9	
8:32	211.0		9:06	205.9	
8:33	211.1		9:07	205.2	
8:34	211.4		9:08	205.2	
8:35	211.2		9:09	205.0	
8:36	211.6		9:10	205.5	
8:37	213.1		9:11	205.7	
8:38	213.1		9:12	207.1	
8:39	212.0		9:13	207.3	
8:40	211.2		9:14	208.1	
8:41	207.9		9:15	209.9	
8:42	208.3		9:16	210.2	
8:43	208.5		9:17	210.9	
8:44	209.1		9:18	209.0	
8:45	209.4		9:19	209.2	
8:46	210.6		9:20	209.6	<<End RATA Run 4
8:47	210.9				

9:55	208.3	<<Start RATA Run 5
9:56	207.2	
9:57	207.0	
9:58	207.1	
9:59	207.9	
10:00	208.5	
10:01	208.6	
10:02	208.2	
10:03	209.4	
10:04	209.9	
10:05	210.0	
10:06	208.4	
10:07	207.3	
10:08	207.0	
10:09	206.3	
10:10	206.0	
10:11	205.0	
10:12	204.7	
10:13	206.1	
10:14	206.3	
10:15	207.2	
10:16	209.9	
10:17	210.4	
10:18	210.3	
10:19	209.7	
10:20	208.9	
10:21	208.4	
10:22	207.0	
10:23	206.5	
10:24	204.6	
10:25	206.1	
10:26	207.0	
10:27	207.6	
10:28	210.8	
10:29	212.1	
10:30	212.3	
10:31	213.2	
10:32	212.3	
10:33	211.0	
10:34	207.9	
10:35	208.1	
10:36	204.3	
10:37	203.2	
10:38	203.3	
10:39	203.8	
10:40	204.6	
10:41	207.6	
10:42	208.7	
10:43	209.5	
10:44	208.2	
10:45	208.2	
10:46	209.2	
10:47	208.3	
10:48	208.7	
10:49	211.8	
10:50	212.6	
10:51	212.8	
10:52	212.3	
10:53	210.9	
10:54	209.9	
10:55	209.6	
10:56	210.2	
10:57	212.6	
10:58	214.4	
10:59	215.6	<<End RATA Run 5

14:40	212.4	<<Start RATA Run 6	15:30	218.6	
14:41	213.0		Run stopped/Resume		
14:42	213.9		16:07	223.0	
14:43	214.3		16:08	220.8	
14:44	215.1		16:09	220.6	
14:45	216.0		16:10	220.3	
14:46	216.5		16:11	220.1	
14:47	215.6		16:12	221.0	
14:48	215.2		16:13	223.9	
14:49	214.4		16:14	223.5	
14:50	214.6		16:15	222.5	
14:51	215.1		16:16	223.6	
14:52	215.5		16:17	224.4	
14:53	214.7		16:18	227.5	
14:54	215.2		16:19	227.5	
14:55	215.5		16:20	227.8	
14:56	213.9		16:21	225.5	
14:57	215.2		16:22	224.7	
14:58	216.1		16:23	224.7	
14:59	216.8		16:24	225.7	
15:00	216.8		16:25	226.5	
15:01	217.0		16:26	227.2	
15:02	217.7		16:27	227.1	
15:03	217.8		16:28	226.5	
15:04	218.3		16:29	226.9	
15:05	219.2		16:30	227.1	
15:06	222.3		16:31	228.5	
15:07	222.0		16:32	228.5	
15:08	221.7		16:33	227.8	
15:09	220.7		16:34	227.4	
15:10	220.2		16:35	227.2	End RATA Run 6
15:11	219.0				
15:12	217.9				
15:13	217.5				
15:14	217.3				
15:15	217.1				
15:16	216.4				
15:17	218.3				
15:18	218.7				
15:19	219.6				
15:20	221.6				
15:21	221.8				
15:22	219.4				
15:23	220.0				
15:24	220.6				
15:25	219.4				
15:26	220.3				
15:27	222.8				
15:28	221.0				
15:29	219.9				

ONE MINL Page : 1
COMPANY NAME :Rinker Materials Corporation
COMPANY LOCATION : 1200 NW 137th Ave. Miami, FL33182
SOURCE :KILN
CEMS ID NO :1234
DATE CREATED :09-20-2004 @ 13:20
TIME PERIOD :START:10:00 END:15:00
REPORT DATE :8/6/2004

RATA Run	SCFM
7	245691
8	248516
9	250253

TIME hh:mm	WET FLOW RAW KSCFM		TIME hh:mm	WET FLOW RAW KSCFM	
10:23	246.8	<<Start RATA Run 7	10:57	247.4	
10:24	247.0		10:58	246.7	
10:25	246.7		10:59	245.4	
10:26	245.2		11:00	245.5	
10:27	246.2		11:01	245.5	
10:28	247.0		11:02	246.0	
10:29	245.8		11:03	246.2	
10:30	245.4		11:04	246.6	
10:31	244.1		11:05	246.6	
10:32	243.1		11:06	246.2	
10:33	243.2		11:07	246.3	
10:34	242.7		11:08	246.0	
10:35	243.4		11:09	245.1	
10:36	240.8		11:10	245.2	
10:37	241.2		11:11	245.0	
10:38	241.4		11:12	244.5	
10:39	241.9		11:13	244.3	
10:40	243.8		11:14	246.5	
10:41	244.0		11:15	246.9	
10:42	244.4		11:16	247.9	
10:43	244.7		11:17	247.4	
10:44	244.9		11:18	248.1	
10:45	247.4		11:19	249.7	
10:46	247.7		11:20	250.6	
10:47	247.7		11:21	251.3	
10:48	248.4		11:22	252.1	
10:49	248.5		11:23	251.9	
10:50	248.2		11:24	251.3	
10:51	248.6		11:25	249.9	
10:52	248.9		11:26	251.0	
10:53	249.3		11:27	251.9	
10:54	248.9		11:28	251.4	
10:55	248.4		11:29	251.8	
10:56	247.8		11:30	252.3	<<End RATA Run 7

12:05	246.6	<<Start RATA Run 8
12:06	246.7	
12:07	246.2	
12:08	244.4	
12:09	244.0	
12:10	242.9	
12:11	242.7	
12:12	242.6	
12:13	242.2	
12:14	243.1	
12:15	243.7	
12:16	244.0	
12:17	243.8	
12:18	243.5	
12:19	243.0	
12:20	243.2	
12:21	244.0	
12:22	246.3	
12:23	247.3	
12:24	249.3	
12:25	250.4	
12:26	250.6	
12:27	250.5	
12:28	250.8	
12:29	251.4	
12:30	250.8	
12:31	250.4	
12:32	249.7	
12:33	250.5	
12:34	251.0	
12:35	252.1	
12:36	252.2	
12:37	252.5	
12:38	250.7	
12:39	250.2	
12:40	250.2	
12:41	253.6	
12:42	253.8	
12:43	254.6	
12:44	254.9	
12:45	254.8	
12:46	253.8	
12:47	252.3	
12:48	251.7	
12:49	250.2	
12:50	249.9	
12:51	249.7	
12:52	250.9	
12:53	251.4	
12:54	252.7	
12:55	251.7	
12:56	250.9	
12:57	250.1	
12:58	249.2	
12:59	248.8	
13:00	248.1	
13:01	249.1	
13:02	249.6	
13:03	248.8	
13:04	249.1	
13:05	249.9	
13:06	250.9	
13:07	249.8	
13:08	249.7	
13:09	249.6	
13:10	249.4	
13:11	248.8	<<End RATA Run 8

13:46	250.0	<<Start RATA Run 9	14:37	248.2	
13:47	249.5		14:38	247.4	
13:48	249.2		14:39	246.7	
13:49	248.8		14:40	245.8	
13:50	247.5		14:41	245.5	
13:51	247.0		14:42	242.7	
13:52	246.6		14:43	243.8	
13:53	246.4		14:44	244.8	
13:54	247.8		14:45	246.6	
13:55	248.1		14:46	247.3	
13:56	248.0		14:47	249.1	
13:57	249.5		14:48	247.3	
13:58	249.8		14:49	247.2	
13:59	249.7		14:50	247.2	
14:00	251.1		14:51	246.6	
14:01	251.6		14:52	246.8	
14:02	252.0		14:53	249.1	
14:03	251.5		14:54	248.2	<<End RATA Run 9
14:04	251.1				
14:05	251.4				
14:06	252.5				
14:07	252.9				
14:08	253.0				
14:09	252.8				
14:10	252.7				
14:11	252.4				
14:12	252.5				
14:13	252.5				
14:14	252.3				
14:15	252.0				
14:16	251.4				
14:17	250.5				
14:18	250.8				
14:19	251.9				
14:20	251.7				
14:21	251.3				
14:22	250.8				
14:23	251.1				
14:24	251.6				
14:25	251.5				
14:26	251.3				
14:27	251.0				
14:28	248.1				
14:29	247.7				
14:30	247.9				
14:31	247.6				
14:32	248.2				
14:33	250.2				
14:34	249.0				
14:35	248.5				
14:36	248.6				

Opacity

ENVIRONMENTAL SERVICES

ONE MINUTE : 1
COMPANY NAME :Rinker Materials Corporation
COMPANY LOCATION : 1200 NW 137th Ave. Miami, FL 33182
SOURCE :KILN
CEMS ID NO :1234
DATE CREATED :09-16-2004 @ 15:09
TIME PERIOD .START:14:00 END:15:00
REPORT DATE :9/16/2004

TIME hh:mm	OPACITY RAW (%)	TIME hh:mm	OPACITY RAW (%)
14:00	61.8	14:30	25.2
14:01	0.4	14:31	25.1
14:02	0.4	14:32	25.1
14:03	0.4	14:33	25.3
14:04	0.8	14:34	25.2
14:05	0.4	14:35	25.2
14:06	55.6	14:36	25.3
14:07	0.5	14:37	25.3
14:08	62	14:38	25.4
14:09	0.4	14:39	62.1
14:10	10.2	14:40	62.5
14:11	10.2	14:41	62.3
14:12	10.2	14:42	62.2
14:13	10.2	14:43	62.2
14:14	10.2	14:44	62.4
14:15	10.3	14:45	62.3
14:16	10.2	14:46	62.5
14:17	10.3	14:47	62.4
14:18	10.2	14:48	62.5
14:19	10.3	14:49	62.4
14:20	10.3	14:50	62.5
14:21	10.3	14:51	62.5
14:22	10.3	14:52	62.4
14:23	23.6	14:53	62.2
14:24	25.1	14:54	62.3
14:25	25.2	14:55	93.1
14:26	25.1	14:56	98.4
14:27	25.2	14:57	99.7
14:28	25.2	14:58	98
14:29	25.2	14:59	97

Plant Process Data

			AAGLOGS+Kiln													Raw Mill	
	0.6003		461-KL1_ONTIME		431-RW1-FZ1		481-RW1-FZ1	481-BU1-FZ1	451-RW1-FZ1	461-2K1-AZ3	461-2K1-AZ1	461-2K1-AZ2	441-2K1-AZ3	441-2K1-AZ1	441-2K1-AZ2	421-BF1-TZ4	421-BF1-TZ5
			kiln run time	Kiln run Hours	kiln feed flow rate	Clinker Rate	pulv. coal to kiln	oil to kiln	pulv. coal to calciner	kiln O2	kiln CO	kiln NO	pre heater O2	pre heater CO	pre heater NO	MAIN BAGHOUSE INLET TEMPERATURE MIXING	MAIN BAGHOUSE INLET TEMPERATURE MIXING
4-Aug-04	0:00:00	1:00:00	13739.7	1.0	250.6	150.4	6.6	0.0	8.8	1.2	312.1	633.4	5.0	717.4	325.2	255.0	235.8
4-Aug-04	1:00:00	2:00:00	13740.7	1.0	250.4	150.3	6.6	0.0	8.9	1.0	279.6	551.4	3.8	779.2	349.9	263.1	241.2
4-Aug-04	2:00:00	3:00:00	13741.7	1.0	250.4	150.3	6.5	0.0	9.0	0.8	458.8	507.5	3.3	801.1	357.0	303.2	280.2
4-Aug-04	3:00:00	4:00:00	13742.7	1.0	250.4	150.3	6.6	0.0	9.1	1.7	162.8	621.4	3.5	740.6	380.8	248.4	233.7
4-Aug-04	4:00:00	5:00:00	13743.6	1.0	250.4	150.3	6.7	0.2	9.0	1.2	164.7	802.7	3.5	740.5	399.4	254.9	236.3
4-Aug-04	5:00:00	6:00:00	13744.6	1.0	250.4	150.3	6.6	0.0	9.6	1.2	159.0	1877.7	3.0	693.6	542.1	268.4	243.7
4-Aug-04	6:00:00	7:00:00	13745.6	1.0	250.5	150.4	6.4	0.1	9.9	1.8	156.2	2015.8	2.9	684.6	573.4	283.5	252.2
4-Aug-04	7:00:00	8:00:00	13746.6	1.0	248.3	149.0	6.5	0.2	9.9	1.4	158.7	1924.3	2.7	702.6	548.4	290.3	254.7
4-Aug-04	8:00:00	9:00:00	13747.6	1.0	245.6	147.4	6.6	0.1	9.9	0.8	175.6	1858.5	2.7	695.0	525.5	295.6	254.5
4-Aug-04	9:00:00	10:00:00	13748.6	1.0	245.6	147.4	6.5	0.0	9.8	0.3	241.7	1360.2	2.6	738.6	466.2	295.9	253.9
4-Aug-04	10:00:00	11:00:00	13749.6	1.0	245.6	147.4	6.4	0.1	9.7	0.2	308.6	1385.7	2.6	721.0	472.6	298.4	256.1
4-Aug-04	11:00:00	12:00:00	13750.6	1.0	245.6	147.4	6.2	0.2	9.7	0.2	359.7	1542.7	2.3	787.9	473.6	328.9	288.8
4-Aug-04	12:00:00	13:00:00	13751.6	1.0	245.5	147.4	6.1	0.4	9.7	0.8	163.7	1940.2	2.7	718.7	513.7	404.2	326.8
4-Aug-04	13:00:00	14:00:00	13752.6	1.0	245.5	147.4	6.2	0.4	9.7	0.5	210.5	1753.5	2.6	758.6	499.4	382.4	368.5
4-Aug-04	14:00:00	15:00:00	13753.6	1.0	245.6	147.4	6.3	0.4	9.5	0.2	218.2	1670.4	2.3	818.9	476.5	337.1	283.0
4-Aug-04	15:00:00	16:00:00	13754.6	1.0	245.6	147.4	6.3	0.5	9.5	0.0	354.1	1124.3	2.3	831.4	452.5	358.4	273.4
4-Aug-04	16:00:00	17:00:00	13755.6	1.0	245.6	147.4	6.4	0.4	9.5	0.1	309.9	1286.1	2.3	866.9	438.6	367.9	273.1
4-Aug-04	17:00:00	18:00:00	13756.6	1.0	245.6	147.4	6.4	0.5	9.3	0.1	225.3	1424.7	2.4	814.9	457.5	378.3	276.7
4-Aug-04	18:00:00	19:00:00	13757.6	1.0	245.6	147.4	6.4	0.4	9.6	1.6	183.4	1551.6	2.9	706.8	489.1	264.2	239.6
4-Aug-04	19:00:00	20:00:00	13758.6	1.0	245.2	147.2	6.3	0.3	9.5	2.7	163.5	1455.4	2.9	681.6	491.5	263.1	239.7
4-Aug-04	20:00:00	21:00:00	13759.6	1.0	250.6	150.5	6.4	0.2	9.7	2.9	163.2	1355.2	2.7	733.6	466.3	272.9	248.2
4-Aug-04	21:00:00	22:00:00	13760.6	1.0	250.6	150.4	6.5	0.2	9.6	4.6	229.7	1238.6	2.6	773.5	459.4	310.1	287.0
4-Aug-04	22:00:00	23:00:00	13761.6	1.0	250.6	150.4	6.5	0.2	9.6	1.0	403.9	1514.3	2.6	819.5	449.2	351.2	353.9
4-Aug-04	23:00:00	0:00:00	13762.6	1.0	250.6	150.4	6.4	0.0	9.6	1.0	321.5	1542.2	2.7	771.5	456.6	253.9	236.9
5-Aug-04	0:00:00	1:00:00	13763.6	1.0	250.5	150.4	6.4	0.1	9.8	1.1	285.8	1449.1	2.7	778.5	461.8	259.8	240.4
5-Aug-04	1:00:00	2:00:00	13764.6	1.0	250.6	150.4	6.4	0.0	9.8	0.8	352.5	1306.1	2.7	790.4	462.4	262.1	239.0
5-Aug-04	2:00:00	3:00:00	13765.6	1.0	250.5	150.4	6.4	0.0	9.6	0.7	406.8	1260.6	2.8	775.8	434.1	264.7	241.4
5-Aug-04	3:00:00	4:00:00	13766.6	1.0	250.5	150.4	6.4	0.1	9.5	0.8	276.5	1317.7	2.9	753.8	443.5	267.1	245.2
5-Aug-04	4:00:00	5:00:00	13767.6	1.0	250.6	150.4	6.4	0.1	9.4	1.0	270.5	1198.7	2.9	782.4	422.2	342.0	331.9
5-Aug-04	5:00:00	6:00:00	13768.6	1.0	250.6	150.4	6.4	0.1	9.4	0.9	478.4	1025.0	3.0	800.6	413.9	331.2	330.4
5-Aug-04	6:00:00	7:00:00	13769.5	1.0	250.6	150.5	6.3	0.0	9.6	1.3	262.7	1059.3	3.1	756.8	427.9	290.4	280.3
5-Aug-04	7:00:00	8:00:00	13770.5	1.0	248.2	149.0	6.3	0.1	9.5	1.4	371.7	910.2	3.1	764.2	402.5	427.6	432.3
5-Aug-04	8:00:00	9:00:00	13771.5	1.0	245.6	147.4	6.3	0.1	9.2	0.8	458.3	1145.4	3.1	727.9	428.0	510.1	517.0
5-Aug-04	9:00:00	10:00:00	13772.5	1.0	245.6	147.4	6.2	0.1	9.6	0.6	392.0	1385.1	2.8	745.6	442.8	508.5	515.5
5-Aug-04	10:00:00	11:00:00	13773.5	1.0	245.6	147.4	6.2	0.1	9.4	0.5	409.6	1508.9	2.8	753.5	447.1	508.7	515.4
5-Aug-04	11:00:00	12:00:00	13774.5	0.2	165.3	99.2	1.5	0.1	2.3	14.1	161.3	410.7	14.6	421.4	151.9	512.1	516.9
5-Aug-04	12:00:00	13:00:00	13774.8	0.5	124.0	74.4	0.0	13.5	2.9	6.3	1134.3	484.5	9.9	396.1	236.3	437.0	437.5
5-Aug-04	13:00:00	14:00:00	13775.3	1.0	222.8	133.7	2.6	14.4	6.8	1.6	372.7	1659.2	2.8	845.9	469.8	453.9	459.9
5-Aug-04	14:00:00	15:00:00	13776.3	1.0	245.6	147.4	6.3	1.6	9.1	1.2	290.3	1255.3	2.4	865.9	457.9	498.4	505.2

			AAGLOGS Kiln													Raw Mill	
		0.6003	461-KL1_ONTIME		431-RW1-FZ1		481-RW1-FZ1	481-BU1-FZ1	451-RW1-FZ1	461-2K1-AZ3	461-2K1-AZ1	461-2K1-AZ2	441-2K1-AZ3	441-2K1-AZ1	441-2K1-AZ2	421-BF1-TZ4	421-BF1-TZ5
			kiln run time	Kiln run Hours	kiln feed flow rate	Clinker Rate	pulv. coal to kiln	oil to kiln	pulv. coal to calciner	kiln O2	kiln CO	kiln NO	pre heater O2	pre heater CO	pre heater NO	MAIN BAGHOUSE INLET TEMPERATURE	MAIN BAGHOUSE INLET TEMPERATURE
5-Aug-04	15:00:00	16:00:00	13777.3	1.0	245.6	147.4	6.5	0.3	9.3	3.3	159.3	1420.8	3.0	720.8	528.7	505.5	512.3
5-Aug-04	16:00:00	17:00:00	13778.3	0.7	245.6	147.4	4.4	0.0	6.4	6.9	129.2	1191.5	7.4	708.8	382.3	506.0	513.0
5-Aug-04	17:00:00	18:00:00	13779.0	0.8	174.4	104.7	0.3	17.0	5.7	5.7	300.3	1273.2	8.7	521.7	323.0	473.1	475.7
5-Aug-04	18:00:00	19:00:00	13779.8	1.0	239.3	143.7	6.1	0.4	9.6	3.8	160.7	1911.5	2.8	756.8	455.8	484.6	490.8
5-Aug-04	19:00:00	20:00:00	13780.8	1.0	245.6	147.4	6.2	0.1	9.1	4.4	156.9	1639.7	3.1	751.9	478.0	505.0	510.7
5-Aug-04	20:00:00	21:00:00	13781.8	1.0	237.4	142.5	6.2	0.0	8.8	4.5	157.0	1709.5	3.4	691.6	194.1	385.9	402.2
5-Aug-04	21:00:00	22:00:00	13782.8	1.0	235.6	141.4	6.2	0.0	8.9	5.0	153.4	1782.3	3.9	614.2	499.5	236.9	225.9
5-Aug-04	22:00:00	23:00:00	13783.7	1.0	235.6	141.4	6.2	0.1	8.7	4.3	154.8	1805.2	3.7	613.7	530.7	243.3	230.3
5-Aug-04	23:00:00	0:00:00	13784.7	1.0	235.6	141.4	6.2	0.0	8.7	3.5	158.9	1698.5	3.6	616.5	552.6	247.8	233.8
6-Aug-04	0:00:00	1:00:00	13785.7	1.0	235.6	141.4	6.2	0.0	8.7	3.9	157.3	1567.0	3.6	625.5	518.7	242.1	228.8
6-Aug-04	1:00:00	2:00:00	13786.7	1.0	235.6	141.4	6.3	0.0	8.5	3.2	161.7	1169.1	3.4	670.7	452.2	243.3	229.7
6-Aug-04	2:00:00	3:00:00	13787.7	1.0	235.6	141.4	6.4	0.0	8.5	2.2	175.7	1151.8	3.5	677.7	457.2	249.6	232.7
6-Aug-04	3:00:00	4:00:00	13788.7	1.0	235.6	141.4	6.4	0.0	8.6	2.2	176.6	1208.3	3.5	680.4	459.6	249.2	232.0
6-Aug-04	4:00:00	5:00:00	13789.7	1.0	218.1	130.9	6.2	0.0	7.7	3.2	163.3	1046.7	4.3	641.1	437.9	254.2	235.4
6-Aug-04	5:00:00	6:00:00	13790.7	1.0	205.1	123.1	6.0	0.1	7.7	3.0	168.3	1123.9	4.0	621.7	424.4	281.5	276.0
6-Aug-04	6:00:00	7:00:00	13791.7	0.0	125.2	75.1	0.1	4.4	0.2	3.8	3488.3	216.6	9.7	194.2	89.4	337.2	342.3
6-Aug-04	7:00:00	8:00:00	13791.7	0.0	151.4	90.9	0.0	4.4	0.0	3.1	822.8	439.1	8.1	156.2	271.1	289.5	295.1
6-Aug-04	8:00:00	9:00:00	13791.7	0.9	131.6	79.0	0.0	21.0	5.2	4.1	153.7	1443.4	5.4	547.8	486.8	358.0	372.2
6-Aug-04	9:00:00	10:00:00	13792.7	1.0	234.8	140.9	3.5	10.9	9.3	2.1	469.0	2216.5	2.2	1131.7	492.6	394.2	415.0
6-Aug-04	10:00:00	11:00:00	13793.7	1.0	244.4	146.7	6.5	0.3	8.8	2.3	324.6	1800.7	3.0	756.6	517.3	248.0	237.7
6-Aug-04	11:00:00	12:00:00	13794.7	1.0	244.4	146.7	6.5	0.2	9.2	2.5	213.8	2014.2	3.2	702.2	527.9	241.5	228.2
6-Aug-04	12:00:00	13:00:00	13795.7	1.0	245.5	147.4	6.5	0.2	9.4	1.9	181.1	1837.7	3.0	760.8	504.4	264.0	243.4
6-Aug-04	13:00:00	14:00:00	13796.7	1.0	245.4	147.3	6.5	0.2	9.6	1.8	194.9	1800.6	3.1	739.9	508.3	266.2	245.1
6-Aug-04	14:00:00	15:00:00	13797.7	1.0	245.3	147.3	6.3	0.2	10.0	2.4	181.3	1763.7	3.2	658.7	533.7	270.1	246.4
6-Aug-04	15:00:00	16:00:00	13798.6	1.0	245.4	147.3	6.3	0.3	10.0	2.5	170.1	1877.0	3.4	627.0	557.2	261.3	241.2
6-Aug-04	16:00:00	17:00:00	13799.6	1.0	245.4	147.3	6.3	0.3	9.9	3.1	174.6	1723.5	3.3	662.2	545.6	254.9	236.2
6-Aug-04	17:00:00	18:00:00	13800.6	1.0	245.4	147.3	6.3	0.3	9.8	2.6	171.7	1723.5	3.3	647.9	541.1	254.4	235.8
6-Aug-04	18:00:00	19:00:00	13801.6	1.0	245.5	147.3	6.3	0.3	9.9	2.2	165.8	1725.8	3.1	686.3	525.5	262.1	239.1
6-Aug-04	19:00:00	20:00:00	13802.6	1.0	245.4	147.3	6.3	0.2	9.7	2.2	163.3	1707.8	3.2	702.5	525.7	268.8	244.5
6-Aug-04	20:00:00	21:00:00	13803.6	1.0	245.5	147.3	6.3	0.1	9.9	2.6	162.8	1641.0	3.3	661.1	535.3	264.9	242.2
6-Aug-04	21:00:00	22:00:00	13804.6	1.0	245.6	147.4	6.2	0.0	9.9	1.7	188.2	1856.1	3.1	675.9	535.6	260.5	237.4
6-Aug-04	22:00:00	23:00:00	13805.6	1.0	245.6	147.4	6.2	0.0	9.9	2.1	161.5	1913.0	3.3	644.1	552.2	261.7	238.4
6-Aug-04	23:00:00	0:00:00	13806.6	1.0	245.6	147.4	6.2	0.0	10.0	1.7	162.6	1910.8	3.1	673.5	540.7	258.4	237.1
7-Aug-04	0:00:00	1:00:00	13807.6	1.0	245.6	147.4	6.2	0.0	9.9	2.2	161.2	1839.7	3.0	671.1	520.7	344.4	334.6
7-Aug-04	1:00:00	2:00:00	13808.6	1.0	245.6	147.4	6.2	0.1	9.7	3.2	160.2	1714.9	3.0	704.2	512.6	370.9	375.3
7-Aug-04	2:00:00	3:00:00	13809.6	1.0	245.6	147.4	6.4	0.1	9.4	8.9	110.0	1196.1	3.2	680.2	542.3	259.8	248.6
7-Aug-04	3:00:00	4:00:00	13810.6	1.0	245.6	147.4	6.5	0.0	9.6	20.5	-4.2	-4.2	3.1	710.9	540.8	252.2	234.1
7-Aug-04	4:00:00	5:00:00	13811.6	1.0	245.6	147.4	6.5	0.0	9.4	20.5	-4.0	0.4	3.1	720.1	516.6	246.0	230.4
7-Aug-04	5:00:00	6:00:00	13812.6	1.0	245.6	147.4	6.5	0.0	9.1	20.5	-4.0	-3.9	3.3	721.4	489.7	235.1	224.2
7-Aug-04	6:00:00	7:00:00	13813.6	1.0	245.6	147.4	6.6	0.0	9.1	20.5	-4.0	-4.0	3.3	693.4	484.8	239.2	225.6
7-Aug-04	7:00:00	8:00:00	13814.6	1.0	245.5	147.4	6.6	0.0	9.0	10.4	107.6	884.7	2.9	772.8	480.3	277.4	240.8
7-Aug-04	8:00:00	9:00:00	13815.6	1.0	245.5	147.4	6.6	0.0	9.0	1.3	209.7	1298.9	2.5	988.6	492.8	348.5	263.7
7-Aug-04	9:00:00	10:00:00	13816.6	1.0	245.6	147.4	6.5	0.1	8.9	1.0	255.8	933.1	2.5	1090.2	373.3	360.1	281.9
7-Aug-04	10:00:00	11:00:00	13817.6	1.0	245.6	147.4	6.4	0.1	9.2	1.0	249.8	1298.2	2.5	924.3	424.5	366.8	282.0

	0.6003		461-KL1_ONTIME		431-RW1-FZ1		481-RW1-FZ1	481-SU1-FZ1	451-RW1-FZ1	461-2K1-AZ3	461-2K1-AZ1	461-2K1-AZ2	441-2K1-AZ3	441-3K1-AZ1	441-2K1-AZ2	421-BF1-TZ4	421-BF1-TZ5
			kiln run time	Kiln run Hours	kiln feed flow rate	Clinker Rate	pulv. coal to kiln	oil to kiln	pulv. coal to calciner	kiln O2	kiln CO	kiln NO	pre heater O2	pre heater CO	pre heater NO	MAIN BAGHOUSE INLET TEMPERATURE MIXING	MAIN BAGHOUSE INLET TEMPERATURE MIXING
7-Aug-04	11:00:00	12:00:00	13818.6	1.0	245.6	147.4	6.3	0.1	9.6	2.1	173.2	1550.3	2.6	808.0	458.2	381.3	306.2
7-Aug-04	12:00:00	13:00:00	13819.6	1.0	245.6	147.4	6.3	0.1	9.4	3.1	172.6	1464.6	2.7	825.9	445.2	319.3	248.6
7-Aug-04	13:00:00	14:00:00	13820.6	1.0	245.6	147.4	6.3	0.1	9.0	3.1	196.8	1439.1	3.2	716.4	445.1	305.3	254.5
7-Aug-04	14:00:00	15:00:00	13821.6	1.0	245.6	147.4	6.3	0.1	9.2	12.1	125.4	501.4	3.0	797.1	410.2	350.9	258.4
7-Aug-04	15:00:00	16:00:00	13822.6	1.0	245.6	147.4	6.3	0.1	9.6	2.9	194.4	1335.9	3.3	715.0	452.8	423.9	408.9
7-Aug-04	16:00:00	17:00:00	13823.6	1.0	245.6	147.4	6.3	0.0	9.2	2.1	232.7	1224.2	2.7	867.3	405.0	357.4	288.1
7-Aug-04	17:00:00	18:00:00	13824.5	1.0	237.8	142.8	6.3	0.0	8.9	3.0	242.9	732.5	3.3	776.9	380.3	355.5	267.4
7-Aug-04	18:00:00	19:00:00	13825.5	1.0	205.6	123.4	6.1	0.0	7.9	20.0	0.4	18.4	3.3	621.1	367.4	239.6	225.4
7-Aug-04	19:00:00	20:00:00	13826.5	1.0	205.6	123.4	6.0	0.0	7.6	20.6	-4.6	-4.6	3.3	609.9	377.4	247.4	228.7
7-Aug-04	20:00:00	21:00:00	13827.5	1.0	205.6	123.4	6.1	0.0	7.5	20.7	-4.3	-3.5	3.5	583.5	388.1	247.2	227.6
7-Aug-04	21:00:00	22:00:00	13828.5	1.0	205.6	123.4	6.1	0.0	7.5	6.9	159.4	1328.7	3.7	554.5	432.6	245.3	225.6
7-Aug-04	22:00:00	23:00:00	13829.5	1.0	205.6	123.4	6.0	0.1	7.7	1.1	254.9	1839.8	3.7	545.8	447.1	257.8	234.9
7-Aug-04	23:00:00	0:00:00	13830.5	1.0	205.6	123.4	6.0	0.2	7.7	1.9	288.6	1402.5	4.2	532.4	408.0	256.3	234.0
8-Aug-04	0:00:00	1:00:00	13831.5	1.0	205.6	123.4	6.0	0.3	7.7	2.8	162.7	1369.9	4.1	518.5	417.1	249.9	227.7
8-Aug-04	1:00:00	2:00:00	13832.5	1.0	205.6	123.4	6.0	0.2	7.9	1.6	182.2	1403.0	4.2	532.1	400.2	251.4	228.7
8-Aug-04	2:00:00	3:00:00	13833.5	1.0	205.6	123.4	6.0	0.2	7.8	3.4	160.4	1864.6	4.2	493.3	401.1	262.3	242.0
8-Aug-04	3:00:00	4:00:00	13834.5	1.0	205.6	123.4	5.9	0.2	7.9	3.2	155.5	2508.4	4.1	476.7	557.8	257.4	235.2
8-Aug-04	4:00:00	5:00:00	13835.5	1.0	205.6	123.4	5.9	0.2	8.3	3.0	155.2	2529.0	4.0	486.9	549.6	264.8	243.5
8-Aug-04	5:00:00	6:00:00	13836.5	1.0	208.6	125.2	5.9	0.2	8.5	2.5	156.6	2438.8	3.5	517.2	522.2	267.6	245.5
8-Aug-04	6:00:00	7:00:00	13837.5	1.0	224.9	135.0	6.3	0.2	9.0	2.5	166.8	2341.3	4.1	565.3	490.6	270.0	248.6
8-Aug-04	7:00:00	8:00:00	13838.5	1.0	242.0	145.3	6.5	0.2	9.4	3.2	161.0	2140.6	3.3	680.5	483.8	462.6	464.8
8-Aug-04	8:00:00	9:00:00	13839.5	1.0	245.6	147.4	6.5	0.2	9.5	2.6	166.7	1778.7	3.2	771.9	437.7	511.4	516.0
8-Aug-04	9:00:00	10:00:00	13840.5	1.0	245.6	147.4	6.5	0.2	9.5	2.1	183.6	1359.7	3.3	832.0	397.9	510.3	514.9
8-Aug-04	10:00:00	11:00:00	13841.5	1.0	245.6	147.4	6.6	0.3	9.4	1.9	170.2	1176.6	3.5	791.6	380.5	514.3	518.8
8-Aug-04	11:00:00	12:00:00	13842.5	1.0	237.0	142.3	6.6	0.3	8.9	2.4	158.6	1250.2	5.5	601.1	370.3	434.8	451.7
8-Aug-04	12:00:00	13:00:00	13843.5	1.0	235.6	141.4	6.6	0.3	8.7	2.2	171.1	955.7	6.3	591.1	333.9	293.8	289.9
8-Aug-04	13:00:00	14:00:00	13844.5	1.0	235.6	141.4	6.6	0.3	8.5	1.9	169.7	829.3	6.5	582.0	309.4	244.5	228.6
8-Aug-04	14:00:00	15:00:00	13845.5	1.0	235.6	141.4	6.6	0.2	8.3	1.7	172.2	763.8	6.8	581.6	291.0	242.6	227.1
8-Aug-04	15:00:00	16:00:00	13846.5	1.0	235.6	141.4	6.6	0.2	8.4	2.1	164.6	748.0	6.7	591.4	291.2	250.5	231.1
8-Aug-04	16:00:00	17:00:00	13847.5	1.0	235.6	141.4	6.7	0.3	8.4	1.4	198.6	561.1	6.8	604.0	283.2	262.2	238.0
8-Aug-04	17:00:00	18:00:00	13848.5	1.0	235.6	141.4	6.7	0.3	8.3	1.1	1135.8	469.6	6.8	600.6	273.1	265.6	241.1
8-Aug-04	18:00:00	19:00:00	13849.5	1.0	235.6	141.4	6.7	0.3	7.9	5.4	2697.8	212.6	7.0	581.6	269.2	260.4	236.9
8-Aug-04	19:00:00	20:00:00	13850.5	1.0	235.6	141.4	6.7	0.3	8.1	2.2	163.8	657.5	6.9	571.6	290.3	241.4	226.0
8-Aug-04	20:00:00	21:00:00	13851.4	1.0	226.8	136.1	6.9	0.3	7.7	1.9	185.2	856.0	7.5	520.9	304.7	245.3	227.9
8-Aug-04	21:00:00	22:00:00	13852.4	1.0	225.5	135.4	6.9	0.3	7.8	2.3	172.1	1785.3	7.8	465.9	398.9	256.3	235.7
8-Aug-04	22:00:00	23:00:00	13853.4	1.0	225.5	135.4	6.9	0.2	7.8	1.7	209.8	2136.8	8.0	453.9	427.3	262.4	239.3
8-Aug-04	23:00:00	0:00:00	13854.4	-13854.4	225.5	135.3	6.7	0.1	8.4	1.2	302.4	1983.4	7.6	465.7	409.9	275.9	245.8

GEOCHEMICAL TESTING
Environmental and Energy Analysis

Mike Miller
2005 N Center Ave
Somerset PA 15501

814/443-1671
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COAL ANALYSIS REPORT

Client: RINKER MATERIALS CORP

Sampled by: Oliver Sohn

Sampling Date: 08/04/2004

Analyzed on: 08/13/2004

Description: Coal Sample 10:00

LAB NO. 04-069547

		As Received	Dry	Dry Ash-Free
Total Moisture	D2961-02	1.43		
Ash	D3174-02	17.30	17.55	
Sulfur	D4239-02	1.09	1.11	
BTU/LB	D5865-03	12330	12509	15172
Free Swelling Index	D720-91	7.5		
Lbs Sulfur/Million Btu		0.88		
Nitrogen	D5373	1.34	1.36	1.65
Mercury	ASTM D3684-01		.173 mg/kg, dry	

Robert L. Stull
Director of Coal Services

MEMBER ACIL

GEOCHEMICAL TESTING
Environmental and Energy Analysis

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Somerset PA 15501

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814/445-6666
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COAL ANALYSIS REPORT

Client: RINKER MATERIALS CORP

Sampled by: Oliver Sohn

Sampling Date: 08/04/2004

Analyzed on: 08/13/2004

Description: Coal Sample 14:00

LAB NO. 04-069548

		As Received	Dry	Dry Ash-Free
Total Moisture	D2961-02	1.33		
Ash	D3174-02	17.21	17.44	
Sulfur	D4239-02	1.11	1.12	
BTU/LB	D5865-03	12414	12581	15239
Free Swelling Index	D720-91	7.5		
Lbs Sulfur/Million Btu		0.89		
Nitrogen	D5373	1.31	1.33	1.61
Mercury	ASTM D3684-01		.181 mg/kg, dry	

Robert L. Stull
Director of Coal Services

MEMBER ACIL

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FAX: 814/445-6729

COAL ANALYSIS REPORT

Client: RINKER MATERIALS CORP

Sampled by: Oliver Sohn

Sampling Date: 08/05/2004

Analyzed on: 08/13/2004

Description: Coal Sample 10:00

LAB NO. 04-069549

		As Received	Dry	Dry Ash-Free
Total Moisture	D2961-02	1.36		
Ash	D3174-02	17.69	17.93	
Sulfur	D4239-02	1.11	1.13	
BTU/LB	D5865-03	12318	12488	15216
Free Swelling Index	D720-91	7.5		
Lbs Sulfur/Million Btu		0.90		
Nitrogen	D5373	1.29	1.31	1.59
Mercury	ASTM D3684-01		.206 mg/kg, dry	

Robert L. Stull
Director of Coal Services

MEMBER ACIL

GEOCHEMICAL TESTING
Environmental and Energy Analysis

2005 N Center Ave
Somerset PA 15501

814/443-1671
814/445-6666
FAX: 814/445-6729

COAL ANALYSIS REPORT

Client: RINKER MATERIALS CORP

Sampled by: Oliver Sohn

Sampling Date: 08/05/2004

Analyzed on: 08/13/2004

Description: Coal Sample 14:00

LAB NO. 04-069550

		As Received	Dry	Dry Ash-Free	
Total Moisture	D2961-02	1.45			
Ash	D3174-02	18.99	19.27		
Sulfur	D4239-02	1.08	1.10		
BTU/LB	D5865-03	11961	12137	15034	
Free Swelling Index	D720-91	7.0			
Lbs Sulfur/Million Btu		0.90			
Nitrogen	D5373	1.26	1.28	1.58	
Mercury	ASTM D3684-01		.257		mg/kg, dry

Robert L. Stull
Director of Coal Services

MEMBER ACIL

Equipment Calibrations

ENVIRONMENTAL SERVICES

Sampling Equipment

Calibration Gas Certifications

Airgas

Airgas South
5837 W. Fifth Street
Jacksonville FL 32254
(904) 781-8150 Fax: (904) 693-9128
www.airgas.com

CERTIFICATE OF PURE GAS BATCH ANALYSIS

PURE GAS PRODUCT: Air

Date: January 15, 2004 Reference Number: 55-04013-1

Customer Name: Airgas South
Address:

Purchase Order #:

Grade of Product: Ultra Zero

Cylinder Number (Analyzed Cylinder)	Impurity	Specification	Actual Level
SG221738	Oxygen	20-22	21.1 %
	THC	0.1	ND<0.1 ppm
	Water	2.0	0.1 ppm
	Carbon Dioxide	1.0	ND<0.1 ppm
	Carbon Monoxide	1.0	ND<0.1 ppm

Cylinders in Batch:

SW840435	H2098	SG044338A	SG645166
SG057356A	SG221738	SG38237A	1189410Y
SG9106352A	SG634414	SG9704721A	SG1152A
SW096000	SG18412A	SG52313A	634996
644653	SG057194A	SG20081A	SG58273A
SG6514A	722450Y	SG62240A	SG404938
TWC014313	3004256	300088	SG9704584
104677	SG54817A	TWC523267	SG432418
SG32655A	SG473950	SG839717	SG9704592A
SG58486	SG862093	T009625	SG26170
SG26162A	SG701410		

Delivery Ticket #:

M. Schumacher
Approval Signature

Airgas

Airgas Specialty Gases
12722 S. Wentworth Ave.
Chicago, IL. 60628
773-785-3000 Fax: 773-785-1926
www.airgas.com

Certificate of Analysis: E.P.A. Protocol Gas Mixture

Certification performed in accordance with "EPA Traceability Protocol (Sept.1997)" using assay procedures listed.

Cylinder No:	SG9149481BAL	Order No:	829679-00
Certification Date:	05/20/2002	Expiration Date:	05/20/2005
Cylinder Pressure:	2000	Part No:	E03NI99E15A0527

*Do not use cylinder below 150 psig.

Component	Certified Concentration	Unit of Measure	Accuracy	Procedure	Analytical Principle
Carbon Monoxide	302	ppm	+/- 1%	G-1	NDIR
Propane	6.95	ppm	+/- 1%	G-1	FID
Nitrogen	Balance				
Nox (Reference Value Only)		ppm			

Reference Standard Information

Type	Component	Concentration	Unit	Cylinder Number
Ntrm	Carbon Monoxide	491	ppm	sg9159486bal
Ntrm	Propane	9.8	ppm	sg9160454bal

Analytical Data

Component 1: Carbon Monoxide

1st Analysis Date: 05/13/2002

Zero	0.000	Ref	4.910	Cand	3.010
Cand	3.010	Zero	0.000	Ref	4.910
Ref	4.910	Cand	3.010	Zero	0.000

2nd Analysis Date: 05/20/2002

Zero	0.000	Ref	9.730	Cand	3.020
Cand	3.020	Zero	0.000	Ref	9.740
Ref	9.730	Cand	3.020	Zero	0.000

Airgas

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12722 S Wentworth Ave
Chicago, IL 60628
773-785-3000 Fax 773-785-19
www.airgas.com

Component 2 Propane

1st Analysis Date: 05/13/2002

Zero	0	Ref	9.786	Cand	6.94
Cand	6.93	Zero	0	Ref	9.777
Ref	9.785	Cand	6.94	Zero	0

2nd Analysis Date:

Zero		Ref		Cand	
Cand		Zero		Ref	
Ref		Cand		Zero	

Approved by:

Airgas

Airgas Specialty Gases
5480 Hamilton Blvd.
Theodore, AL 36582

P.O. Box 190969
Mobile, AL 36619
(251) 653-2500 Fax: (251) 653-2530
http://www.airgas.com

Certificate of Analysis: E.P.A. Protocol Gas Mixture

Cylinder No :	CC153624	Order No.	110600824
Cylinder Pressure:	2000 PSIG	Expiration Date:	6/16/06
Certification Date	6/16/03	Laboratory:	ASG-MOBILE
Part Number:	E03NI99E15A2067		

Reference Standard Information:

Type	Component	Cyl. Number	Concentration
NTRM 0005201	PROPANE	SG9168891	50.5 ppm
NTRM 52474	CARBON MONOXIDE	SG9153982	973.6 ppm

Instrumentation:

Instrument/Model/Serial No.	Analytical Principle
SIEMENS FIDAMAT 5E-P, K4-391	FID
SIEMENS ULTRAMAT 5E/J9-661	NDIR

Analytical Methodology does not require correction for analytical interferences.

Certified Concentrations:

Component	Concentration	Accuracy	Procedure
PROPANE	24.70 ppm	+/-1%	G1
CARBON MONOXIDE	499.0 ppm	+/-1%	G1
NITROGEN	BALANCE		

Analytical Results:

1st Component: PROPANE

1st Analysis Date: 6/9/03

R	50.50	S	24.70	Z	0.00	Conc	24.70 ppm
S	24.70	Z	0.00	R	50.50	Conc	24.70 ppm
Z	0.00	R	50.50	S	24.70	Conc	24.70 ppm
						AVG:	24.70 ppm

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2nd Component: CARBON MONOXIDE

1st Analysis Date:	6/9/03						
R	973.6	S	499.2	Z	0.0	Conc	499.2 ppm
S	499.2	Z	0.0	R	973.6	Conc	499.2 ppm
Z	0.0	R	973.6	S	499.2	Conc	499.2 ppm
						AVG:	499.2 ppm

2nd Analysis Date:	6/16/03						
R	973.6	S	498.7	Z	0.0	Conc	498.7 ppm
S	498.7	Z	0.0	R	973.6	Conc	498.7 ppm
Z	0.0	R	973.6	S	498.7	Conc	498.7 ppm
						AVG:	498.7 ppm

Certification performed in accordance with "EPA Traceability Protocol (Sept. 1997)" using the assay procedures listed.

Do not use cylinder below 150 psig.

Carol Stewart
Approved for Release

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12722 South Wentworth Avenue
Chicago, IL 60628
773.785.3000 Fax: 773.785.1926
www.airgas.com

Certificate of Analysis: E.P.A. Protocol Gas Mixture

Certification performed in accordance with "EPA Traceability Protocol (Sept.1997)" using assay procedures listed.

Cylinder No:	CC17028	Order No:	332684-00
Certification Date:	04/24/2003	Expiration Date:	04/24/2005
Cylinder Pressure:	2000	Part No:	E02NI99E15A0257

*Do not use cylinder below 150 psig.

Component	*Certified Concentration*	*Unit of Measure*	*Accuracy*	*Procedure*	*Analytical Principle*
Sulfur Dioxide	25.47	ppm	1%	G-1	NDIR
Nitrogen	Balance				

Nox (Reference Value Only) ppm

Reference Standard Information

Type	*Component*	*Concentration*	*Unit*	*Cylinder Number*
NTRM	Sulfur Dioxide	44.8	ppm	SG9168422BAL

Analytical Data

Component 1: Sulfur Dioxide

1st Analysis Date: 04/17/2003

Zero	0.000	Cand	25.500	Ref	44.600
Zero	0.000	Cand	25.200	Ref	44.700
Zero	0.000	Cand	25.600	Ref	44.300

2nd Analysis Date: 04/24/03

Zero	0.000	Cand	25.200	Ref	44.800
Zero	0.000	Cand	25.400	Ref	44.900
Zero	0.000	Cand	25.500	Ref	44.800

Analyzed by: B. Baker

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5480 Hamilton Blvd.
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P.O. Box 190969
Mobile, AL 36619
Phone: (334) 653-2500
FAX: (334) 653-2530

2nd Analysis Date:	2/12/01					
R	280.00	S	90.00	Z	0.00	Conc 90.03 ppm
S	90.00	Z	0.00	R	280.00	Conc 90.03 ppm
Z	0.00	R	280.00	S	90.00	Conc 90.03 ppm
						AVG: 90.03 ppm

2nd Component: PROPANE

1st Analysis Date:	2/12/01					
R	96.200	S	49.150	Z	0.000	Conc 49.15 ppm
S	49.150	Z	0.000	R	96.200	Conc 49.15 ppm
Z	0.000	R	96.200	S	49.150	Conc 49.15 ppm
						AVG: 49.15 ppm

Certification performed in accordance with "EPA Traceability Protocol (Sept. 1997)" using the assay procedures listed.

Do not use cylinder below 150 psig.

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Theodore, AL 36582

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Mobile, AL 36619

Phone: (334) 653-2500
FAX: (334) 653-2530

Certificate of Analysis: E.P.A. Protocol Gas Mixture

Cylinder No :	CC126340	Order No.	431496
Cylinder Pressure:	2000 PSI	Expiration Date:	2/12/04
Certification Date	2/12/01	Laboratory:	ASG-MOBILE

Reference Standard Information:

Type	Component	Cyl. Number	Concentration
GMIS	CARBON MONOXIDE	CC45624	280.1PPM
NTRM81668	PROPANE	CC47113	96.2PPM

Instrumentation:

Instrument/Model/Serial No.	Analytical Principle
Siemens Ultramat 5E J9-662	NDIR
Siemens Fidamat 5E-P K4-391	FID

Analytical Methodology does not require correction for analytical interferences.

Certified Concentrations:

Component	Concentration	Accuracy	Procedure
CARBON MONOXIDE	89.93 ppm	+/- 1%	G1
PROPANE	49.15 ppm	+/- 1%	G1
NITROGEN	BALANCE		

Analytical Results:

1st Component: CARBON MONOXIDE

1st Analysis Date: 2/5/01

R	280.00	S	89.80	Z	0.00	Conc	89.83 ppm
S	89.80	Z	0.00	R	280.00	Conc	89.83 ppm
Z	0.00	R	280.00	S	89.80	Conc	89.83 ppm
						AVG:	89.83 ppm

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Certificate of Analysis EPA Protocol Gas Mixture

Cylinder No:	CC114639	Reference Number:	47-58373600-002
Cylinder Pressure:	2,013 psig	Expiration Date:	09/15/2005
Certification Date:	09/15/2003	Laboratory:	ASG - Mobile

Certified Concentrations

Component	Concentration	Accuracy	Analytical Principle	Procedure
Nitric Oxide	50.50 PPM	+/- 1%	CHEMILLUM	G1
Sulfur Dioxide	49.90 PPM	+/- 1%	NDIR	G1
Nitrogen	Balance			

Certification performed in accordance with "EPA Traceability Protocol (Sept. 1997)" using the assay procedures listed.
Analytical Methodology does not require correction for analytical interferences.

Notes: AIRGAS PO 110624020 AIRGAS LOT # 47-030904/5086 NOx 50.50ppm

Do not use cylinder below 150 psig.

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Reference Standard Information

Type	Component	Cyl. Number	Concentration
NTRM	Nitric Oxide	CC26726	96.40 PPM
GMIS	Sulfur Dioxide	ND-15721	103.8 PPM

Analytical Results

1st Component Nitric Oxide

1st Analysis Date:							09/08/2003
R	96.40	S	50.50	Z	0.0000	Conc	50.50 PPM
S	50.50	Z	0.0000	R	96.40	Conc	50.50 PPM
Z	0.0000	R	96.40	S	50.50	Conc	50.50 PPM
						AVG:	50.50 PPM
2nd Analysis Date:							09/15/2003
R	96.40	S	50.50	Z	0.0000	Conc	50.50 PPM
S	50.50	Z	0.0000	R	96.40	Conc	50.50 PPM
Z	0.0000	R	96.40	S	50.50	Conc	50.50 PPM
						AVG:	50.50 PPM

2nd Component Sulfur Dioxide

1st Analysis Date:							09/08/2003
R	104.0	S	50.00	Z	0.0000	Conc	49.90 PPM
S	50.00	Z	0.0000	R	104.0	Conc	49.90 PPM
Z	0.0000	R	104.0	S	50.00	Conc	49.90 PPM
						AVG:	49.90 PPM
2nd Analysis Date:							09/15/2003
R	104.0	S	50.00	Z	0.0000	Conc	49.90 PPM
S	50.00	Z	0.0000	R	104.0	Conc	49.90 PPM
Z	0.0000	R	104.0	S	50.00	Conc	49.90 PPM
						AVG:	49.90 PPM

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(251) 653-2500 Fax: (251) 653-2530
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Certificate of Analysis EPA Protocol Gas Mixture

Cylinder No:	SG9149434	Reference Number:	47-ST1147-000
Cylinder Pressure:	2,013 psig	Expiration Date:	12/30/2005
Certification Date:	12/30/2003	Laboratory:	ASG - Mobile

Certified Concentrations

Component	Concentration	Accuracy	Analytical Principle	Procedure
Nitric Oxide	307.0 PPM	+/- 1%	CHEMILUM	G1
Sulfur Dioxide	305.0 PPM	+/- 1%	NDIR	G1
Nitrogen	Balance			

Certification performed in accordance with "EPA Traceability Protocol (Sept. 1997)" using the assay procedures listed.
Analytical Methodology does not require correction for analytical interferences.

Notes: AIRGAS PO 110649420 AIRGAS LOT # 47-031217/7277 NOx 307.0 ppm

Do not use cylinder below 150 psig.

Carol Stewart
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Reference Standard Information

Type	Component	Cyl. Number	Concentration
NTRM 1051003	Sulfur Dioxide	SG9159595	376.2 PPM
GMIS 0	Nitric Oxide	ND-17876	975.0 PPM

Analytical Results

1st Component Nitric Oxide

1st Analysis Date:			12/23/2003				
R	975.0	S	308.0	Z	0.0000	Conc	308.0 PPM
S	308.0	Z	0.0000	R	975.0	Conc	308.0 PPM
Z	0.0000	R	975.0	S	308.0	Conc	308.0 PPM
						AVG:	308.0 PPM
2nd Analysis Date:			12/30/2003				
R	975.0	S	306.0	Z	0.0000	Conc	306.0 PPM
S	306.0	Z	0.0000	R	975.0	Conc	306.0 PPM
Z	0.0000	R	975.0	S	306.0	Conc	306.0 PPM
						AVG:	306.0 PPM

2nd Component Sulfur Dioxide

1st Analysis Date:			12/23/2003				
R	376.0	S	303.5	Z	0.0000	Conc	303.7 PPM
S	303.5	Z	0.0000	R	376.0	Conc	303.7 PPM
Z	0.0000	R	376.0	S	303.5	Conc	303.7 PPM
						AVG:	303.7 PPM
2nd Analysis Date:			12/30/2003				
R	376.0	S	306.0	Z	0.0000	Conc	306.2 PPM
S	306.0	Z	0.0000	R	376.0	Conc	306.2 PPM
Z	0.0000	R	376.0	S	306.0	Conc	306.2 PPM
						AVG:	306.2 PPM

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Certificate of Analysis EPA Protocol Gas Mixture

Cylinder No:	CC160225	Reference Number:	47-ST1145-000
Cylinder Pressure:	2,013 psig	Expiration Date:	12/30/2005
Certification Date:	12/30/2003	Laboratory:	ASG - Mobile

Certified Concentrations

Component	Concentration	Accuracy	Analytical Principle	Procedure
Nitric Oxide	508.0 PPM	+/- 1%	CHEMILLUM	G1
Sulfur Dioxide	499.0 PPM	+/- 1%	NDIR	G1
Nitrogen	Balance			

Certification performed in accordance with "EPA Traceability Protocol (Sept. 1997)" using the assay procedures listed.
Analytical Methodology does not require correction for analytical interferences.

Notes: AIRGAS PO 110649420 AIRGAS LOT # 47-031217/7279 NOx 508.0 ppm

Do not use cylinder below 150 psig.

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Reference Standard Information

Type	Component	Cyl. Number	Concentration
GMIS 0	Sulfur Dioxide	ND-15687	1,026 PPM
GMIS 0	Nitric Oxide	ND-17876	975.0 PPM

Analytical Results

1st Component Nitric Oxide

1st Analysis Date:			12/23/2003				
R	975.0	S	507.0	Z	0.0000	Conc	507.0 PPM
S	507.0	Z	0.0000	R	975.0	Conc	507.0 PPM
Z	0.0000	R	975.0	S	507.0	Conc	507.0 PPM
						AVG:	507.0 PPM
2nd Analysis Date:			12/30/2003				
R	975.0	S	509.0	Z	0.0000	Conc	509.0 PPM
S	509.0	Z	0.0000	R	975.0	Conc	509.0 PPM
Z	0.0000	R	975.0	S	509.0	Conc	509.0 PPM
						AVG:	509.0 PPM

2nd Component Sulfur Dioxide

1st Analysis Date:			12/23/2003				
R	1,026	S	499.0	Z	0.0000	Conc	499.0 PPM
S	499.0	Z	0.0000	R	1,026	Conc	499.0 PPM
Z	0.0000	R	1,026	S	499.0	Conc	499.0 PPM
						AVG:	499.0 PPM
2nd Analysis Date:			12/30/2003				
R	1,026	S	499.0	Z	0.0000	Conc	499.0 PPM
S	499.0	Z	0.0000	R	1,026	Conc	499.0 PPM
Z	0.0000	R	1,026	S	499.0	Conc	499.0 PPM
						AVG:	499.0 PPM

Project Participants

KOINGLER & ASSOCIATES
ENVIRONMENTAL SERVICES

PROJECT PARTICIPANTS

Koogler & Associates

John B. Koogler, Ph.D., P.E.	Project Advisor
Steven Cloutier	Technical Manager
Glen Haven	Field Test Crew
Rodney Paul	Field Test Crew
Cory J Bell	Field Test Crew
Adam West	Field Test Crew
Eric Thomas	Field Test Crew

Rinker Materials Corporation

Michael Vardeman	Environmental Manager, Cement Division

KOOGLER & ASSOCIATES
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